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MAJOR H. W. V. COX

LATE CIVIL SURGEON PUNJAB ; LATE MEDICAL SUPERINTENDENT, PUNJAB MENTAL HOSPITAL, LAHORE

THIRD EDITION

REVISED AND ENLARGED

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DEDICATION

To the champions of innocence, imperilled liberty, and of the weak against the strong and unscrupulous, I dedicate this volume

PREFACE TO THE THIRD EDITION

This edition has been entirely revised and brought up to date.

In Part I, new chapters have been introduced under the headings : Identification ; Post-mortem conditions ; Impotence ; Pregnancy and Legitimacy ; Death by Burning. Chapter I (Wounds and Injuries) has been exhaustively treated. As in the first edition, questions relative to the subject-matter have been added at the end of each chapter and most of these questions are answered.

In Part III, Appendix V (Identification) has been replaced by extracts from Rules and Orders of the High Court, Punjab made under the Code of Criminal Procedure.

The object of this volume is to present in a condensed form the essential facts relating to Medical Jurisprudence.

I am glad to express my indebtedness to my publishers for their courtesy and help in the preparation of the volume.

Ladymead, Sidford,
Devon, England.

H. W. V. Cox

In this edition this book was thoroughly revised by the learned author who died before its publication. I have dealt with its legal aspect and have endeavoured to make it more useful to the legal profession. Important rulings published down to March, 1939, have been inserted in proper places.

Berhampore, Bengal
7-4-1939

N. K. Bhattacharyya

PREFACE TO THE SECOND EDITION

Encouraged by the remarkable success of the first edition, I have ventured to produce a second edition. The fact that the first edition was exhausted within the year, amply shows that it has justified its object.

In such a work as this, it is a difficult question to decide what is to be inserted and what omitted, and I am only too conscious of the imperfections with which the book abounds in this respect. My object is to make it as practical as possible.

Although but a short time has elapsed since the publication of the first edition, every page has been carefully revised. I have made both amendations and important additions ; in fact the whole book has been recast to advantage. The glossaries at the end of chapters have been carefully revised and condensed into one general glossary ; the series of questions have been treated in like manner. The explanation of technical terms has been elaborated ; a special chapter for the police and appendices containing much useful knowledge, including such subjects as :—rabies, snake-bite, first-aid for police, identification, poisons and their antidotes etc., have been added ; and what will no doubt be greatly appreciated by lawyers, all legal matter has been incorporated in the text and references given as foot notes.

I take this opportunity to return thanks to the members of the legal profession for the cordial reception accorded

to the first edition and warmly welcome any suggestions for future editions.

I wish to acknowledge the debt I owe to a few friends who have advised and helped me at many points in the preparation of the present volume. As a result I have completed a task which critics may well consider to have been presumptuously undertaken.

In particular I have to thank Rai Bahadur M. L. Rallia Ram LL.B. Public Prosecutor, for his valuable assistance in revising the legal section of the work.

My indebtedness is great to my publishers for their invariable kindness and courtesy, and the expeditious manner in which their work in this connection has been accomplished.

It will not be out of place, if I here take the opportunity of stating that it would be in the interests of justice if every magistrate and every court inspector was made to attend, at least six post-mortem examinations. The experience gained would give them an insight into the anatomy of man, and they would better grasp and understand the medical evidence.

Dalhousie
July 15th 1928

H. W. V. Cox.

PREFACE TO THE FIRST EDITION

In presenting this small manual to students, and members of the legal and medical profession, I have endeavoured to condense the subject of legal medicine into a comparatively small space, free from all that might otherwise be complex.

The preparation of such a volume suggested itself to me some years ago, for it seemed strange that there were a variety of small hand books available on practically every subject in the domain of medicine, except on medical jurisprudence, hence my humble attempt.

All leading authorities on the subject have been freely consulted, but, to enable me to present the manual in as small and convenient a size as possible, all quotations of reference have been omitted. The book is not intended to take the place of treatises, the memory with facts, and as an aid to the student when preparing for his examination. The larger text books should be consulted.

Through ignorance of technical terms, the medical jurist may frequently be called upon by the Court to translate his own evidence. For this purpose I have added a glossary at the end of each chapter.

The chapters on Rape and Insanity, include more than is usually found in the larger text books on legal medicine. They have been written with a view to easy diagnosis, and formulating answers to question that are likely to be put to a medical witness in Court. The

reader's attention is specially drawn to that part of the chapter on Insanity dealing with the detection of malingering, a subject of immense importance.

Only those poisons commonly used for criminal purposes in India, have been described, and a description of the more common tests for each variety of poison has been added, so that medical jurists might be able, in many cases, to examine the nature of any poison used.

A word to lawyers. In recording medical evidence the lawyer in India shows to least advantage ; medico-legal work is not well done. Magistrates and lawyers are in most cases disposed to accept the statements of medical witnesses as infallible. In Britain on the other hand counsels are generally well instructed on the medical aspect of the cases, and even the most expert medical witness cannot have things all his own way as too often happens in India, where it is unusual for medical evidence to be challenged.

In order to be able to examine, or cross-examine, a witness properly the lawyer must have a knowledge of the questions to be asked, and it will depend upon the questions that he puts, whether he will be successful in eliciting from the witness all the facts that bear upon the case.

When a statement has been made by a medical witness that a bone had been fractured, I have never known a Magistrate, or lawyer to satisfy himself as to the truth of the statement by an examination of the part where the fracture was alleged to have occured. Such omissions open the door to corruption and injustice.

I have attempted to supply a deficiency by adding at the end of the chapter, a set of questions that may be put to a medical witness on that subject. They are very far from being in any measure exhaustive. They will, nevertheless, give Magistrates and Legal practitioners an idea of what kind of questions to put to medical witnesses for the benefit of both the prosecution and defence.

Legal references and quotations from judgments have been incorporated where necessary, and where the case is of great importance the judgment has been quoted in extenso. These additions make the manual somewhat self-contained. In further additions the author will be glad of any suggestions or help from members of the legal profession that will tend to enhance the usefulness of the manual.

Part II contains a store of information in the form of aphorisms under various heads, alphabetically arranged for easy reference, which I strongly recommend for careful study.

ABBREVIATIONS OF INDIAN REPORTS

A. I. R.	All India Reporter.
All.	Indian Law Reports, Allahabad series.
A. L. J.	Allahabad Law Journal.
A. L. R.	Annotated Law Reporter.
A. W. N.	Allahabad Weekly Notes.
A. W. R.	Allahabad Weekly Reports.
A. I. R. All	All India Reporter, Allahabad series.
B. L. R.	Bengal Law Reports, (1868-75).
Bom.	Indian Law Reports, Bombay series.
B. H. C. R.	Bombay High Court Reports.
Bom. L. R.	Bombay Law Reporter.
A. I. R. Bom.	All India Reporter, Bombay series.
Bur. L. J.	Burma Law Journal.
Bur. L. R.	Burma Law Reports.
Bur. L. T.	Burma Law Times.
Cal.	Indian Law Reports, Calcutta series.
C. L. J.	Calcutta Law Journal.
C. L. R.	Calcutta Law Reports, (1877-84).
C. W. N.	Calcutta Weekly Notes.
A. I. R. Cal.	All India Reporter, Calcutta series.
C. P. L. R.	Central Provinces Law Reports.
Cr. C.	Criminal Cases.
Cr. L. J.	Criminal Law Journal of India.
I. C.	Indian Cases.
Ind. Rul.	Indian Rulings.
Lah. L. J.	Lahore Law Journal.
Luck.	Indian Law Reports, Lucknow series.

Mad.	Indian Law Reports, Madras series.
M. H. C. R.	Madras High Court Reports, (1862-75).
M. L. J.	Madras Law Journal.
M. L. T.	Madras Law Times.
M. L. W.	Madras Law Weekly.
M. W. N.	Madras Weekly Notes.
A. I. R. Mad.	All India Reporter, Madras series.
N. L. J.	Nagpur Law Journal.
N. L. R.	Nagpur Law Reports.
O. C.	Oudh cases.
O. L. J.	Oudh Law Journal.
O. W. N.	Oudh Weekly Notes.
O. L. R.	Oudh Law Reports.
Pat.	Indian Law Reports, Patna series.
P. L. J.	Patna Law Journal.
P. L. T.	Patna Law Times.
A. I. R. Pat.	All India Reporter, Patna series.
P. L. W.	Patna Law Weekly.
P. L. R.	Punjab Law Reporter.
P. R.	Punjab Record.
P. W. R.	Punjab Weekly Reporter.
A. I. R. Rang.	All India Reporter, Rangoon series.
S. L. R.	Sind Law Reporter.
A. I. R. Sind	All India Reporter, Sind series.
Weir.	Weir's Criminal Rulings, (Madras).
W. R.	Weekly Reporter.

ENGLISH REPORTS

C. and F.	Clark and Finnelly's House of Lords Reports, (1834-46).
C. & K.	Carrington and Kirwan's Nisi Prius Reports, (1843-49).
C. & P.	Carrington and Payne's Nisi Prius Reports, (1823-41).
Cox. C. C.	Cox's Criminal Cases, (1843-64).
K. B.	King's Bench Division.
L. J.	Law Journal. (from 1832).
L. T.	Law Times.
Russ, C and M	Russel on Crimes and Misdemeanours
Stack,	Stackic's Nisi Prius Reports, (1815-22).

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ADDENDA

Page, 17 :—Add after the nineteenth line,

The provisions relating to the production of a report by the Chemical Examiner in place of the Chemical Examiner's own personal appearance in Court are special provisions of the Cr. P. Code and must be strictly adhered to. Where all that is on the record of the case is a little scrap of paper on which it is written in somebody's handwriting that the Chemical Examiner's report shows that some packets contained cocaine, it is not legal evidence and cannot be a substitute for the original certificate or at least for a copy of it certified by the Magistrate as being a true copy. *Pearey Lal* v. *Emp.*, 39 Cr. L. J. 714 = 176 I. C. 225 = A. I. R. 1938 Lah. 496.

The forearm of a man is not a vital part, and a person stabbing another on the forearm cannot be held guilty of murder or culpable homicide not amounting to murder, though death is caused on account of hæmorrhage due to piercing of the radial artery. In re *Kottengodan Alaxi* 1938 M. W. N. 1274 = 40 Cr. L. J. 308 = 179 I. C. 982 = (1939) 1 M. L. J. 123 = A. I. R. 1939 Mad. 269.

Page, 19 :—Add at the end of the foot-note,

Ujagar Singh v. *Emp.*, A. I. R. 1939 Lah. 149.

Page, 81 :—Add after the full stop in the fourth line,

A lathi is a lethal weapon and anyone who uses it on the head of another with such force as to fracture the skull must know that he was doing an act which in all probability must cause death and is guilty of murder. *Raja Ram* v. *Emp*, A. I. R. 1938 Oudh 256 (257) = 1938 O. W. N. 1057 = 1938 O. L. R. 469 = 178 I. C. 162, following *Suraj Prasad* v. *Emp.*, 3 O. W. N. 451 = 95 I. C. 286 = 27 Cr. L. J. 766 and *Sheo Prasad* v. *Emp.*, A. I. R. 1927 Oudh 174 = 101 I. C. 484 = 28 Cr. L. J. 452 = 4 O.W.

N. 445. It can also be fairly held that a person who strikes a heavy blow on the head of another with a weapon such as a pestle must be deemed to intend to cause such bodily injury as is likely to cause death. In re *Currala Chinna Pichai Vadu*, 39 Cr. L. J. 979 = 177 I. C. 944 = 1938 M. W. N. 871 = 48 M. L. W. 415.

Page, 84 :—Add after the second line,

The deceased had received no less than 28 injuries. Of these, 12 were punctured wounds on the legs and arms ; both the legs and the arms had been fractured at several places ; the right ulna bone had been dislocated, and one of the incisor teeth in the upper jaw was missing. There were also two contused wounds skin-deep on the head, and contusions on other parts of the body. It may be that none of these injuries individully was sufficient to cause death, but as pointed out by the medical witness, death was due to the cumulative effect of the multiple injuries caused by blunt and sharp-edged weapons, which had been used by the assailants. There can thus be no doubt that they had assaulted the victim with the intention of causing such bodily injuries as were sufficient, in the ordinary cause of nature, to cause death. Their case, therefore, clearly falls within clause *thirdly* of sec. 300 I. P. C. *Waryam Sher Mohammad* v. *Emp.*, A. I. R. 1938 Lah. 834 (835) = 40 Cr. L. J. 314 = 180 I. C. 62. See also *Tun Khine* U v. *The King*, A. I. R. 1938 Rang. 331.

A man who directs a blow quite low down near the ankle as a general result would be a man who did not intend to cause injury sufficient in the ordinary course of nature to cause death, because most cuts on the leg are not injuries sufficient in the ordinary course of nature to cause death. The blow might be delivered with great force and everyone must be held to know that a violent blow of this nature with a formidable weapon is likely to cause death wherever the blow may fall, but any intention higher than this cannot be imported against the assailant who ought to be convicted under sec. 304, Part II. P. C., and not under sec. 302 I. P. C. *Abor Ahmed* v. *The King* A. I. R. 1938 Rang. 17 = 1937 R. L. R. 893.

Page, 160 :—Add after the ninth line,

Where the wound was an incised one on the back of the neck cutting the vertebral bone and exposing the spinal cord, great force was necessary and the injury was sufficient in the ordinary course of nature to cause death. It was not necessarily fatal but death took place because infection set in. This fact, however, makes no difference to the criminal responsibility of the person charged. *Nga Myank Nyo* (*a*) *Po Bein* v. *The King*, 39 Cr. L. J. 412 = 174 I. C. 338 = A. I. R. 1938 Rang. 56.

Page, 287 :—Add after the nineteenth line,

The mere existence of the injury to the vagina does not necessarily and inevitably justify the inference that there had been rape. *Maung Ba Yin* v. *The King*, 39 Cr. L. J. 944 (946) = 177 I. C. 710 = A. I. R. 1938 Rang. 298.

Page, 298.

Add *U. Toe Sein* (*a*) U *Ba Sein* v. *The King*, A. I. R. 1939 Rang. 128 ; *Mohammad Sadiq* v. *Emp.*, 39 Cr. L. J. 844 = 177 I. C. 97 = A. I. R. 1938 Lah. 474 = 40 P. L. R. 730 after *Multani Ram* v. *Emp.*, A. I. R. 1927 Lah. 836 = 9 L. L. J. 111 = 28 P. L. R. 235.

Page, 299 :—Add after the twelfth line,

But where the absence of any caution, such as is usually given in sexual cases, could not have affected the verdict of the jury, it is no ground on which the conviction should be set aside. *Abdul Gafur Kotwal* v. *Emp.*, 40 Cr. L. J. 101 (104) = 178 I. C. 637 = A. I. R. 1938 Cal. 658 = I. L. R. (1938) 1 Cal. 636.

Page, 299 :—Add after the twenty-fifth line,

It is not necessary that her story should be corroborated in all important particulars. The part of it which requires corroboration is the crucial part, which, if believed, establishes the guilt of the accused. *Abdul Gafur Kotwal* v. *Emp.*, supra.

Page, 535 :—Add after the eleventh line,

The dictum at page 643 of Lyon's Medical Jurisprudence for India, Edn. 9, is "In the East dhatura is not used with homicidal or suicidal intent ; it is almost invariably employed with the object of producing stupefaction to facilitate theft." Such a general proposition is by no means in accordance with judicial experience and certainly cases are not wanting in which the administration of dhatura has caused death, and the person who has administered it has been convicted of murder. It may be conceded that dhatura is sometimes administered in fairly large doses with the intention of stupefying the victim, but there is no doubt that if a person consciously administers dhatura and administers a fatal dose that person is guilty of murder, for the intention to cause bodily injury is clear, and knowledge of the results of the poison can safely be imputed. If one deliberately administers a common poison the effects of which are well-known, it is no defence to say that one failed to grade the exact dose correctly so as to cause some injury short of death. The question whether a person knows what he is administering and knows what its effect will be is of course a question of fact in each particular case. *Minai* v. *Emp.*, A. I. R. 1938 Nag. 318 = 174 I. C. 386 = 39 Cr. L. J. 405.

Page, 703 :—Add after the twentieth line,

Where the deceased received a spear wound which, according to the medical evidence, penetrated the chest wall on the right side, went through the ribs, through the diaphragm, penetrated the right lobe of the liver, completely penetrated the whole liver, came out of the left lobe of the liver, then went through the stomach and finally through the ribs on the left side of the chest and through the chest wall, there is a great difficulty in believing that the deceased could possibly have lived for two hours after receiving an injury of this description, much less could he have been so conscious as to make a dying declaration. *Dharam Singh* v. *Emp.*, 39 Cr. L. J. 508 = 174 I. C. 973 = A. I. R. 1938 Lah. 268. So also the

receipt of forty two gun-shot wounds in the liver, heart, stomach and lungs, and the profuse hæmorrhage occasioned thereby, would cause a great deal of shock to the person receiving it and the probability is that he would become unconscious within a few minutes and could not remain in a condition fit to make a dying declaration for more than few minutes after receiving his injuries. *Anant Ram Maya Ram* v. *Emp*, 39 C. L. J. 512 = 174 I. C. 989 = A. I. R. 1938 Lah 262.

Page, 704 :—Add after the seventh line,

The statement may be made before the cause of death has arisen, or before the deceased has any reason to anticipate being killed. The circumstances must be circumstances of the transaction ; general expressions indicating fear or suspicion whether of a particular individual or otherwise and not directly related to the occasion of the death will not be admissible. But statements made by the deceased that he was proceeding to the spot where he was in fact killed, or as to his reasons for so proceeding, or that he was going to meet a particular person, or that he had been invited by such person to meet him would each of them be circumstances of the transaction, and would be so whether the person was unknown, or was not the person accused. Such a statement might indeed be exculpatory of the person accused. "Circumstances of the transaction" is a phrase no doubt that conveys some limitations. It is not as broad as the analogous use in "circumstantial evidence" which includes evidence of all relevant facts. It is on the other hand narrower than "res gestæ". Circumstances must have some proximate relation to the actual occurence ; though, as for instance, in a case of prolonged poisoning they may be related to dates at a considerable distance from the date of the actual fatal dose. It will be observed that "the circumstances" are of the transaction which resulted in the death of the declarant. It is not necessary that there should be a known transaction other than the death of the declarant has ultimately been caused, for the condition of the admissibility of the evidence is that "the cause of (the

declarant's) death comes into question". *Narayana Swami* v. *Emp.*, A. I. R. 1939 P. C. 47 (50)

Page, 706 :—Add just before the last line,

The Magistrate should not content himself with merely recording the statement made by the injured man : he should ask him such simple questions as may occur to his mind in order that the dying deposition may be an account of some value. The *King* v. *Maung Po Thi*, A. I. R. 1938 *Rang.* 282 (284) = 39 Cr. L. J. 771 = 176 I. C. 683.

Page, 709 :—Add after the full stop in the fifth line,

The accused was charged with conspiracy to commit the offence of murder. A witness, who was a bad character, gave evidence about the alleged conspiracy. To corroborate the testimony of the witness, a statement of the deceased made several months before the murder took place as the proposal of the accused to such witness to murder the deceased was sought to the proved but was held to be inadmissible in evidence. *Harendra Kumar Mondal* v. *Emp.*, A.I.R. 1938 Cal. 125 = 66 Cr. L. J. 196 = 174 I. C. 36 = 39 Cr. L. J. 395.

Page, 714 :—Add after "Evidentiary value,"

A great deal of sanctity is attached to the dying declaration because it is expected that the person who is on the verge of death will tell the truth. *Ram Damodar* v. *Emp.*, A. I. R. 1939 Oudh 33 (34) = 40 Cr. L. J. 38 = 178 I.C. 348 = 1938 O. W. N. 1103 = 1938 O. L. R. 483.

Page, 716 :—Add after the twenty-fourth line.

The first information report, unless the man who made it dies, is not admissible evidence of any fact which is contained in it : it merely proves that this was the original story which set the police in motion. The *King* v. *Maung Po Thi*, A. I. R. 1938 *Rang.* 282 (283) = 39 Cr. L. J. 771 = 176 I. C. 683.

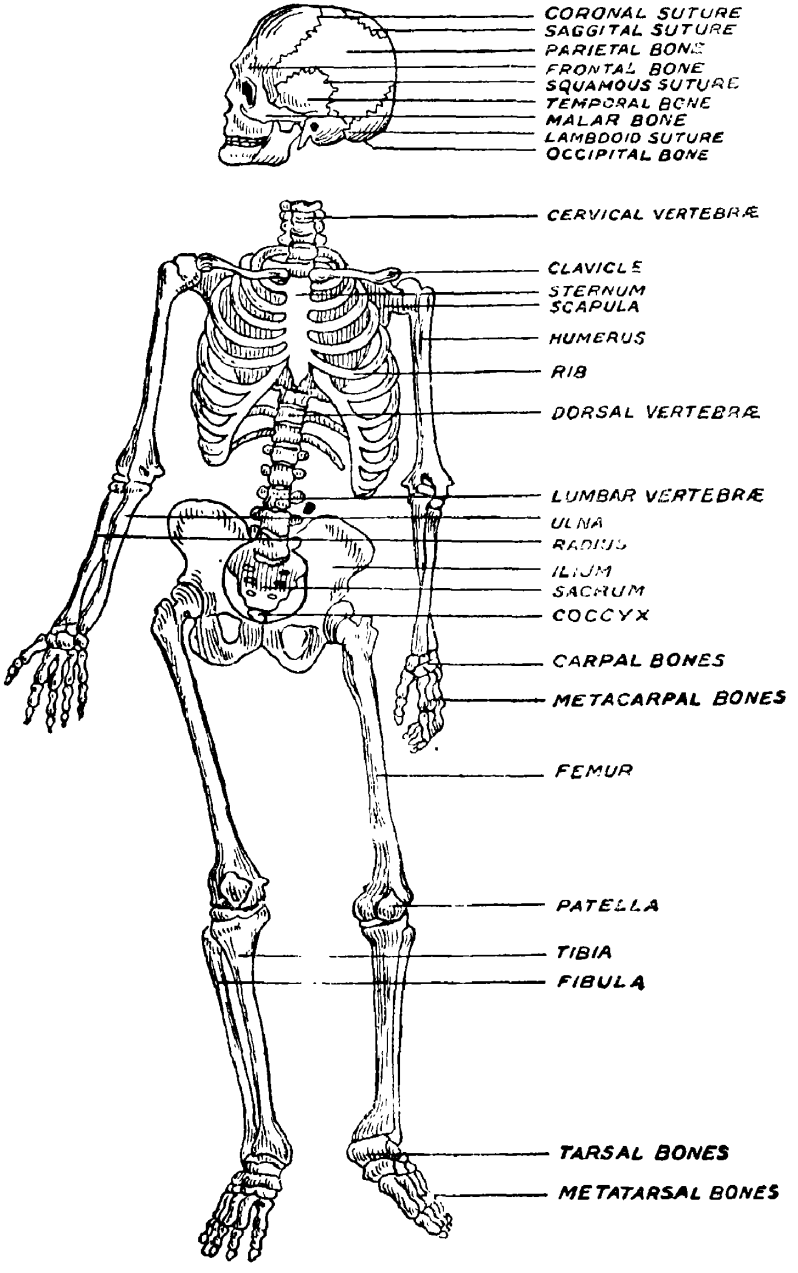
Page, 717 :—*Add after full stop in the third line,*

In any case it is safer to rely on the dying declaration

rather than on the first information report or on the eye witnesses. A.I.R. 1939 Oudh 33 (35) = 40 Cr. L. J. 38 = 178 I. C. 348 = 1938 O. W. N. 1108 = 1938 O. L. R. 483.

Corrigenda

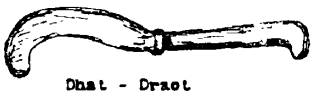
Page 238, for Chapter V, read Chapter VII.
„ 354, for Chapter VIII, read Chapter X.
„ 380, for 'to', read 'of' in the ninth line.
„ 843, for 'of', read 'to' in the 22nd line.
„ 850, 'for auditors' read 'antidotes'.


CORONAL SUTURE
SAGGITAL SUTURE
PARIETAL BONE
FRONTAL BONE
SQUAMOUS SUTURE
TEMPORAL BONE
MALAR BONE
LAMBDOID SUTURE
OCCIPITAL BONE
CERVICAL VERTEBRÆ
CLAVICLE
STERNUM
SCAPULA
HUMERUS
RIB
DORSAL VERTEBRÆ
LUMBAR VERTEBRÆ
ULNA
RADIUS
ILIUM
SACRUM
COCCYX
CARPAL BONES
METACARPAL BONES
FEMUR
PATELLA
TIBIA
FIBULA
TARSAL BONES
METATARSAL BONES

Implements and Weapons used in India that figure in cases of Assault.



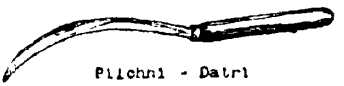
Oranti - Datri



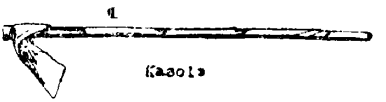
Dhat - Draot



Bagurl



Pilchni - Datri



Kasola



Tose



Kasi - Kahi



Ramba - Khurpa

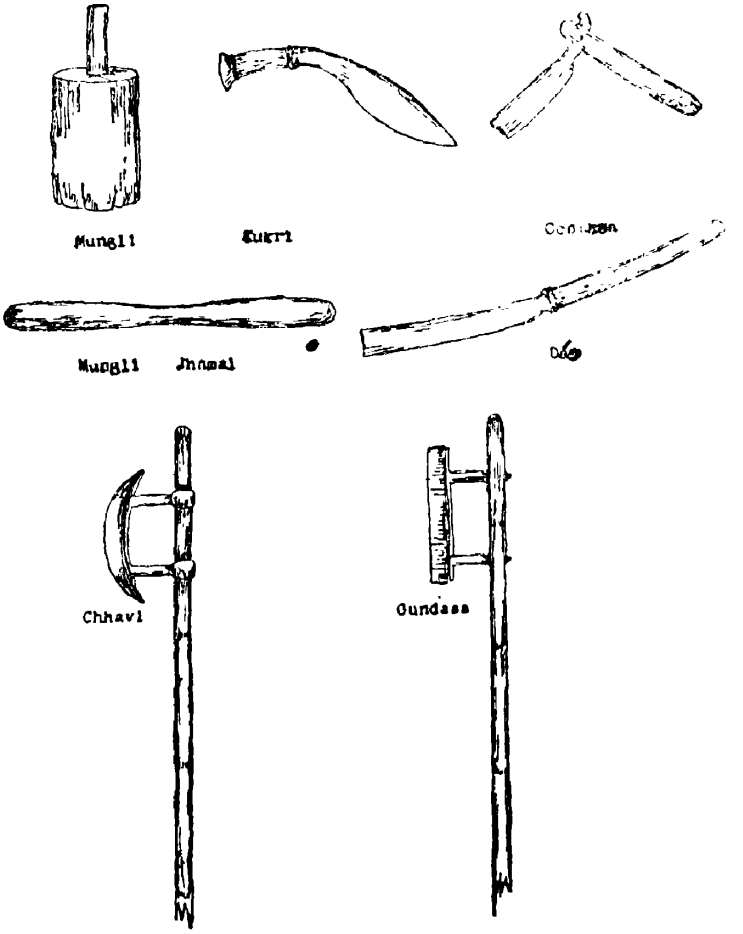


Kuhari - Kulhari



Gandala - Chhua Ramba

Implements and Weapons used in India that figure in cases of Assault. (*Contd.*)



MEDICO-LEGAL COURT COMPANION

INTRODUCTORY

For murder, though it have no tongue, will speak with most miraculous organ.

Shakespeare

A Medical man may be required to give evidence in a case, owing to his knowledge of certain facts concerning the subject matter of a trial or inquiry. He is put on oath and states the facts known to him ; so far he has performed the duty of an ordinary or common witness, a witness to facts, and nothing more may be asked of him. But in most cases, he is also required to answer questions of opinion based on the facts which he has deposed to, or which have been witnessed to by others. This duty places him in the position of an expert. The evidence of experts is given on oath and is subjected to cross-examination.

An expert is one who is skilled in any particular art, trade or profession, being possessed of peculiar knowledge concerning the same. When a witness is appearing in a trial as an expert, it is a preliminary essential, that, *before*

his evidence is recorded, he must prove himself to be an expert in the particular science, art or trade he represents.

The evidence of a medical witness who made a post mortem examination is, as that of a medical expert, admissible; firstly, to prove the nature of the injuries which he observed; and secondly, as opinion evidence with respect to the manner in which those injuries were inflicted, and as to the cause of death. A witness who has not seen the body can give nothing but opinion evidence.

Opinion of Experts.

Relevancy of expert opinion.—When the Court has to form an opinion upon a point of foreign law, or of *science or art,* or as to identity of handwriting or finger-impressions, the opinions upon that point, of persons specially skilled in such foreign law, *science or art,* or in questions as to identity of handwriting or finger-impressions, are relevant facts. Such persons are called experts.

Illustrations—(a) The question is, whether the death of A was caused by poison. The opinions of experts as to the symptoms produced by the poison by which A is supposed to have died, are relevant. (b) The question is, whether A, at the time of doing a certain act, was, by reason of unsoundness of mind, incapable of knowing the nature of the act, or that he was doing what was either wrong or contrary to law. The opinions of experts upon the question whether the symptoms exhibited by A commonly show unsoundness of mind, and whether such unsoundness of mind usually renders persons incapable of knowing the

nature of the act which they do, or of knowing that, what they do is either wrong or contrary to law, are relevant.[1]

Facts bearing upon opinions of experts.—Facts, not otherwise relevant if they support or are inconsistent with the opinions of experts, when such opinions are relevant.

Illustrations—The question is, whether A was poisoned by a certain poison. The fact that other persons, who were poisoned by that poison, exhibited certain symptoms which experts affirm or deny to be the symptoms of that poison, is relevant.[2]

Expert opinion is not conclusive—An expert witness, however impartial he may wish to be, is likely to be unconsciously prejudiced in favour of the side which calls him. The mere fact of opposition on the part of the other side is apt to create a spirit of partisanship and rivalry, so that an expert witness is unconsciously impelled to support the view taken by his own side. Besides, it must be remembered that an expert is often called by one side simply and solely because it has been ascertained that he holds views favourable to its interests.[3] There appears to be no reason why a scientific witness should not be a witness of one or more or all of the parties to a legal proceeding. To a professional man, it matters not which party calls him as a witness. What

[1] Section 45 Evidence Act I of 1872.

[2] Section 46, Evidence Act I of 1872.

[3] *Hari Singh* v. *Sardarni Lachman Deri*. 59 Ind. Cas. 220-226 Lah. Shadi Lal C.J. and Leslie Jones J ; *Diwan Singh* v. *Emp.*, 34 Cr. L.J. 735=144 I.C. 331=34 P. L.R. 719=1933 Cr. C. 819=A.I.R. 1233 Lah. 561.

is of concern to a medical witness is the accuracy of the scientific opinion which he expresses, not the party by which such evidence is tendered.[4]

The opinion of an expert by itself may be relevant but would carry little weight with a court unless it is supported by a clear statement of what he noticed and on what he based his opinion. The expert should, if he expects his opinion to be accepted, put before the Court all the materials which induced him to come to his conclusion, so that the Court, although not an expert, may form its own judgment on those materials.[5] Medical experts and others, such as Judges, who have to form opinions and exercise their judgment should have regard primarily to the facts and not draw upon their imaginations. Otherwise the administration of justice would depend upon individual idiosyncrasies and become unstable and unworkable.[6] Where the medical evidence is merely an opinion of an expert on a question which may admit of two explanations it is not always of first importance. But where all that the doctor has done is to lay before the Court certain definite facts, it requires no expert to draw conclusions from those facts. The Judge himself is able to draw conclusions as well as the doctor.[7]

[4] *Lila Sinha* v. *Kumar Bijoy Protap Deo Singh*, 41 C.L.J. 300 (314)=A.I.R. 1925 Cal. 768=87 I.C. 534.

[5] *Mt. Titli v. Alfred Robert Jones*, A.I.R. 1934 All. 273(280)=56 All. 428=1934 A.L.J. 1129=A.L.R. 1934 All. 658=3 A.W.R. 70=153 I. C. 733. See also *Gajrani* v. *Emp.*, 34 Cr., L.J. 754=144 I.C. 357= A.I.R. 1933 All. 394=1933 Cr. C. 664=Ind. Rul. 1933 All. 414.

[6] *King-Emperor* v. *Yunus Ali*, 32 C.W.N. 783 (387).

[7] *Dwarka* v. *Emperor*, 31 Cr. L.J. 181 (183)=120 I.C. 820=6 O. W. N. 270=A.I.R. 1929 Oudh 248=4 Luck. 705.

A judge is not entitled to discard the whole of the direct evidence of credible and unimpeachable witnesses who depose that with their own eyes they saw certain things done, upon the strength of the opinion of a medical witness to the effect that those things could not have been done.[8]

In the well-known case of Mansell Pleydell, after giving the divergent opinions of the medical officers, Zafar Ali J. continued as follows :—

"As regards the intervals between the taking of the meal and assault and death the opinions of Major Bharucha and Major Herper Nelson were at variance with that of Colonel Hallilay and Colonel Davys and corroborated the direct evidence on this point. It is difficult to understand how a layman could choose between the conflicting opinions of these medical officers who were all doctors of great attainments and experience. The reasonable course for the Court to adopt was to accept that opinion which was not in conflict with the direct evidence on the strength of the opinion against it, and not stopping short at that, he evolved a theory of his own to bring the time of these incidents into harmony with that opinion. But an opinion of an expert witness not based on any well-defined inexorable laws of nature cannot be taken as decisive especially where there is direct evidence opposed to it. In Queen *v.* Ahmed Ali [8] (footnote 4) the following remarks occur on the evidential value of medical opinions :

"Dr. Duncan may have given his evidence like an intelligent man, but it is not the proper way to try a case to rely on mere theories of medical men or skilled witnesses of any sort against facts positively proved. . . . . The evidence of a medical man, or other skilled witness, however eminent, as to what he thinks may or may not have taken place under a particular combination of circumstances, however confidentially he may speak, is ordinarily a mere matter of opinion. Human judgment is fallible. Human knowledge is limited

[8] *Queen* v. *Ahmed Ali*, 11 W. R. 25. Norman and Jackson J.J.

and imperfect. New and previously unobserved phenomena, which, till they have been recorded, are supposed to be impossible, are constantly being noticed.

I fully endorse the above and am of opinion that the learned Sessions Judge should not have discredited direct evidence on the strength of the opinion of a medical witness, specially when it was contradicted by the opinion of two other medical witnesses equally competent to form an opinion.[9]

On general principle it can be laid down that the opinion of an expert has a corroborative value only and is useful for ascertaining whether the direct evidence is true or not. It is absolutely unsafe to base a connection on that opinion only, when there is no other evidence in the case.[10]

Opinion evidence.—The general rule as to opinion evidence is that the question must be put to the witness *hypothetically* in this way : assuming such and such facts to be true, what is your opinion on the matter ? assuming such and such an injury of such and such kind to have been inflicted, what is your opinion as to the nature of the weapon by which it was possibly or probably inflicted. The facts suggested to the witness must be facts suggested by the evidence legally admitted.[11]

It may also be noted, where an expert witness has been examined on a scientific subject in support of the prosecution, passages in scientific treatises cannot be used by the defence in refutation of the expert's opinion, unless those passages have been put to the prosecution expert and unless notice has been given to him by cross-examination

[9] H. Mansel Pleydell, 27 Cr. L.J. 977=98 Ind. Cas 641 = A.I.R. Lah. 1926, 313, Zafar Ali.

[10] *Mir Abbas* v. *Emperor*, A.I.R. 1937 Pesh. 99 (101).

[11] See *Queen-Empress* v. *Meher Ali Mullick*, 15 Cal. 589.

of the deduction which the defence seek to draw from them, so that he may give an answer if he can.[12] Where the general condition and state of the health of a person is in issue, isolated extracts from medical works ought not to be preferred to evidence of a medical man, who should be examined with reference to the symptoms deposed to by the witnesses and to whom extracts might be put.[13]

Medico-legal knowledge does not consist so much in the acquisition of facts, as in the power of arranging them, and in applying to the purposes of the law the conclusions to which they lead. Any man with ordinary common sense, and the talent of arranging facts, may after mastering the rudiments of medical jurisprudence, be able to prosecute or defend a case with success. *A witness can give his evidence only in answer to questions put to him.* It follows, therefore, that in order to be able to examine or cross-examine a witness properly, the lawyer must have a knowledge of the questions to be asked, and it will depend upon the questions that he puts, whether he will be successful in eliciting from the witness all the facts that bear upon the case. If the Public Prosecutor fails to put to the doctor a question which is considered necessary, the Court should itself put it.[14]

[12] *Raghuni*, 9 Cal. 455 (461), See also *Grande Venkata Ratnam* v. *Corporation of Calcutta*, 22 C.W.N. 745=19 Cr. L.J. 753=46 I.C. 593=28 C.L.J. 32.

[13] *Sheo Bahadur Singh* v. *Beni Bahadur Singh*, 51 I.C. 419=6 O.L.J. 178.

[14] *Emperor* v. *Haria Dhobi*, A.I.R. 1937 Pat. 662(664)=18 P.L.T. 857=39 Cr. L.J. 156=172 I.C. 780.

The examination of a medical witness in this country is only too often of a most perfunctory character, and there is frequently no cross-examination at all. If advocates and pleaders acquired even an elementary knowledge of medical jurisprudence they might *possibly save many an innocent man from punishment, or obtain the conviction of the guilty.* I hope, therefore, that this little book will appeal not only to the medical practitioner but to the legal practitioner as well.

In the examination of an expert witness, it is a common practice with counsel to produce a book by a well-known author, and to ask the witness if he is acquainted with it as an authority. If the answer is in the affirmative, counsel may read an extract, and ask witness if he agrees with the opinion expressed in it. The extract read may have been selected by counsel because it supports his contention, but it may not always represent the author's views, and if the witness has any doubt on this point, he should ask to see the book. A witness who, deliberately, by study and by his own experience, has formed an opinion on a subject, should not allow himself to be overawed by eminent authors. If it happens that he does not agree with them, he should say so, and give his reasons for the opinion he holds.

It is not uncommon to be requested to answer *yes* or *no* to a question. If the question is one which witness considers cannot be correctly answered in this way, he should inform the court. *Never attempt to answer a question you do not understand*; always ask to have it made clear. Lawyers being unfamiliar with medical science often ask unmeaning questions.

Opinions should only be given after careful consideration.

A medical man when he sees a dead body, should notice everything.

An eminent judge observed thus :—"I think it also right to observe that justice ran the same risk of miscarriage in this trial by reason of the very unsatisfactory and insufficient medical investigation. It appears that the remains of the deceased was submitted for examination to the native doctor and that he made a very superficial enquiry considering that death had been brought about by cholera as reported by the police. It seems to me that the circumstance, that the deceased person came by his death while in the hands of the police and after having been under restraint, and that anything like minute inspection must have shown that there was ground for suspecting ill-usage, the Magistrate would have been right in directing a careful enquiry by a properly qualified medical officer and ought not to have been satisfied by the report of the native doctor.[15]

MEDICO-LEGAL REPORTS.

A medical man is frequently required, in the first instance before giving evidence to furnish a written report of the result of his examination of a case, and to give his opinion on various points connected with it. In a case of assault, for example, he is asked to examine the injured person and submit a report in the form supplied by the

[15] *Grande Venkata Ratan* v. *Corporation of Calcutta*, 28 C. L. J. 32=19 Cr. L. J. 753 at 762 F. B.=56 Ind. Cas. 593=22 Cal. W. N. 745.

police. The form provides for a full description of the injuries, and for the opinion as to their probable consequences and manner of causation. He may be required to examine and report on an alleged insane. If he makes a post mortem examination, he is required to furnish a report in the prescribed form and to give his opinion as to the cause of death. It probably would be useful that he should also be required to record the length of time which in his opinion has elapsed since death took place.[16] It is most essential that the time of the post mortem should be recorded, as in many cases it assists the Court in determining whether the death took place at the time alleged or not.[17] Considering the important nature of the evidence generally furnished by the results of a *post mortem* examination, the results of the observation should be carefully recorded.[18]

A medico-legal report *is a document of great importance* ; in suspicious cases the police are guided by this report ; an inquiry may be taken up or abandoned according to the opinion given in this report. Therefore every care should be taken in making out so important a document. The report should be divided into two parts ; the

[16] *Emp.* v. *Debendra Narayan Chakravarty*, 33 C.W.N. 632 (637) 56 Cal. 566=50 C. L. J. 1=119 I. C. 378=A. I. R. 1929 Cal. 244=30 Cr. L. J. 103 ; *Mehr Singh* v. *Emp.* A. I. R. 1935 Lah. 805 (806)=1935 Cr. C. 1165=160 I. C. 187=38 P. L. R. 138=37 Cr. L. J. 250.

[17] *Dwarka* v. *Emp.*, 32 Cr. L. J. 697 (698)=131 I. C. 439=8 C. W. N. 107=A. I. R. 1931 Oudh 119=Ind. Rul. 1931 Oudh 199=1931 Cr. C. 241.

[18] *Pachudayan* v. *Emperor*, 12 Cr. L. J. 124=9 I. C. 730=9 M. L. T. 321=1911 M. W. N. 138.

first to contain a statement of facts, the second, opinions or inferences drawn from the facts.

The drawing up of the first part will, as a rule, present no difficulty ; it requires care and method, so that no fact may be omitted. The description of appearances should be full, in simple language, avoiding all technical terms as much as possible ; where these have to be used an explanation of them should be added. The second part deals only with deductions drawn from the facts. It is the expert and more important part of the report, and also the more difficult. This part should be as brief as possible and expressed in the simplest words, avoiding exaggeration, and only those inferences which are justified by the statement of facts.

In many cases great difficulty is experienced in giving an opinion ; the post mortem appearances may be indefinite, no lesion sufficient to account for death may be found.

The body may be in an advanced stage of decompostion. In India it is rare to find a dead body free from traces of putrefaction after twenty-four hours of death. [19]

For example, it is well known that death may result from a blow on certain parts of the body and no sign of injury be discoverable after death. It is manifest that, in such cases, no opinion as to the cause of death is possible from an examination of the body, and in order to come to a conclusion, the examiner must be informed of the fact that the deceased received a blow on a certain part of the body. With this information, and the absence of all

[19] 3 Lah. L. J. 147.

lesions in the body, he is justified in giving the opinion, that death was due to shock or cardio-respiratory inhibition caused by the blow.

There exists in the minds of many persons, the erroneous belief that a post mortem examination must necessarily, and in all cases, reveal the cause of death. It is not so. A post mortem examination generally reveals the *mode* of death, but often not the *cause*, and in a considerable number of cases, a knowledge of the circumstances attending the death is absolutely necessary to enable a medical expert to give an opinion. The diagnosis of shock as the cause of death can only be inferential. Fatal concussion of the brain from a blow cannot be diagnosed by a post mortem examination; it can only be inferred from the history and absence of lesions.

When the examiner makes use of the history of the case supplied to him by the police or by others, in arriving at an opinion as to the cause of death, he must be careful to mention it in wording his opinion, thus:—"From the history of the case and the post mortem appearances I am of opinion, deceased died from shock caused by a blow." It is advisable that the history of the case should be obtained *in writing*. If a statement is made to the examiner, he should reduce it to writing, and enter it in the first part of the report, giving the name of his informant.

If a medical witness is able to do so, he should always make a sketch of the injuries found on examination. It conveys more to the trying judge or magistrate than a lengthy description in words.

Post mortem report is not evidence.—A post mortem report cannot be used as evidence at the trial, except by way of refreshing the memory of the person who made it or to contradict him.[20] Therefore when another medical expert is being asked his opinion on facts hypothetically stated, the facts can be taken only from admissible evidence from the record and not from the post mortem report which is not evidence. The report is, however, admissible to contradict the officer who made it.[21]

Medical certificate is no evidence.—The certificate of a medical officer as to the cause of death of a deceased person is no evidence. The facts contained therein must be proved by examining such officer as a witness. It is not sufficient to ask him merely to test the accuracy of the statements made in the certificate.[22] In the absence

[20] *Queen* v. *Meeajan Rohiman*. 11 W. R. 8; *Empress* v. *Jadab Das*, 4 C.W.N. 129 (143)=27 Cal. 295 (303); *Ram Sarup Rai* v. *Emp.*, 6 C. W. N. 98 (101); *Mohammed Yusuf* v. *Emperor*, 31 Cr. L. J. 1026 (1038)=126 I. C. 449=A. I. R. 1930 Sind. 225; *In re Rangappa Goundan*, 37 Cr. L. J. 471 (472)=161 I. C. 663=1936 M. W. N. 110=43 M. L. W. 307=70 M L. J. 447=59 Mad. 349=A. I. R. 1936 Mad. 426=1936 Cr. C. 509; *Mohammad Salabat* v. *Emp.*, 38 Cr. L. J. 869 (870)=170 I. C. 253=39 P. L. R. 290=A. I. R. 1937 Lah. 475; *In re Ramaswami*, A. I. R. 1938 Mad. 336 (337).

[21] *Raghuni* v. *Empress*, 9 Cal. 455 (460). Sec. 159, Evidence Act.

[22] See *Rampear Rai* v. *Bhogia*, 8 I. C. 713 (Cal.); *Ahila Manaji* v. *Emp.*, 26 Cr. L. J. 339 (340)=47 Bom. 74=24 Bom. L.R. 83=A I.R. 1923 Bom. 183, *Madhawa* v. *Jai Kishan Das*, A. I. R. 1928 Lah. 427=106 I. C. 493=29 P. L. R. 195.

of the sworn testimony of a doctor his letter containing his opinion is inadmissible in evidence. [23]

Medical witness.—Medical officers, like other persons, are bound to attend Court on receipt of summons and to give evidence if required by the Court. They cannot refuse to give evidence for reasons which they may consider to be sufficient, but they should represent to the Court as regards fees payable to them. Any dictation of terms on which they would give evidence is unnecessary and should be avoided. [24] A medical witness, like any other witness in a case, must give his evidence orally in the presence of the accused. Where he is allowed to prove statements made at the trial of other accused persons in the absence of the accused under trial, such mode of giving evidence is illegal. [25] No consent or admission by the prisoner's Advocate to dispense with the medical witness can relieve the prosecution of proving by evidence the nature of the injuries received by the deceased and that the injuries were the cause of death. [26] Expert

[23] *Bechan Prasad* v. *Jhuri*, A. I. R. 1936 All. 363 (364)=1936 Cr. C. 427=37 Cr. L. J. 424=161 I. C. 49=A. L. R. 1936 All. 248=1936 A. L. J. 189=1936 A. W. R. 188; *In the matter of the petition of Samiruddin* 8 Cal. 211 (212) See also *Budhu Koiri* v. *The King Emp.*, 40 C. L. J. 563=A. I. R. 1925 Cal. 538.

[24] *Chauthi Singh* v. *Emp.*, A. I. R. 1937 All. 768=1937 A. L. J. 972=39 Cr. L. J. 113=172 I. C. 31.

[25] *Sardara* v. *Emperor*, 27 Cr. L. J. 571=94 I. C. 139=26 P.L.R 80.

[26] In re *Rangappa Gaundan*, 37 Cr. L. J. 471 (472)=161 I. C. 663=1936 M. W. N. 110=43 M. L. W. 307=70 M. L. J. 447=59 Mad. 349=A. I. R. 1936 Mad. 426=1936 Cr. C. 509.

medical opinion of a Surgeon who conducted post mortem examination is relevant. [27]

When, however, the deposition of a Civil Surgeon or other medical witness, is taken and attested by a magistrate in the presence of the accused, or taken on commission under Chapter XL. Cr. P. C., it may be given in evidence in any inquiry, trial or other proceeding under the Cr. P. Code, although the deponent is not called as a witness. The Court may, if it thinks fit, summon and examine such deponent as to the subject matter of his deposition.[26] The above procedure is, however, not intended to be applied where the medical witness is present in Court.[28] Ordinarily it is, however, the practice to call the doctor as a witness in the Sessions Court when the death of a person is involved. In cases of murder or of manslaughter it is unreasonable to expect the jury to convict if a proper exposition and explanation of the medical evidence is not given *viva voce* by a doctor who can deal with the matter and satisfy the jury. [29]

No doubt sec. 509 Cr. P. C., permits the deposition of a medical witness taken in the Commitment Court to be given in evidence at the Session trial but that is subject to the condition that the accused should have been given

[27] *Mehr Iyahi* v. *Emperor*, 12 I. C. 93=26 P. W. R. (Cr.) 1911==12 Cr. L. J. 485.

[28] Sec. 509 Cr. P. Code.

[29] *Emperor* v. *Debendra Narayan Chakrararty*, 33 C. W. N. 622 (637, 636)=56 Cal. 566=50 C. L. J. 1=119 I. C. 378=A. I. R. 1929 Cal. 244=30 Cr. L. J. 1031; *Bahadur Singh* v. *Emperor*, A. I. R. 1938 Lah. 176.

full opportunity to cross-examine the witness and the Court may, if it thinks fit, summon and examine such a witness as to the subject matter of his deposition. Where, therefore, the accused reserved the cross-examination of the medical witness in the Commitment Court which apparently was allowed and the witness was summoned by the Sessions Court to give evidence on behalf of the prosecution, the Sessions Court was apparently in error in refusing to re-summon the witness when he did not attend and in admitting the evidence of the witness given in the Commitment Court.[30]

Deposition not admissible without certificate.—The following certificate should be appended at the foot of the deposition, and signed by the magistrate, otherwise the deposition would not be admissible :—

The foregoing deposition was taken in the presence of the accused who had an opportunity of cross-examining the witness. The deposition was explained to the accused and was attested by me in his presence.

It does not, however, imply that failure to append a certificate in the prescribed form, has the effect of making the evidence of the medical witness recorded by the Committing Magistrate inadmissible if it otherwise appears that the statement was recorded and attested by the Magistrate in the presence of the accused.[31]

[30] *Shivadhin* v. *King Emperor*, A. I. R. 1923 Pat. 116 (118)=3 P. L. T. 32=60 I. C. 662.

[31] *Nawab* v. *Emperor*, 34 Cr. L. J. 443 (444)=142 I. C. 577=A. I. R. 1933 Lah. 131=1933 Cr. C. 247=Ind. Rul. 1933 Lah. 213, *distinguishing Kachali Hari* v. *Queen Empress*, 18 Cal. 129.

Chemical Examiner's Report.—In many cases an opinion as to the cause of death can only be given after the result of the chemical analysis of the viscera is known. The examiner states in his report that he defers giving an opinion until hearing the result of the chemical analysis. When a report is received from the Chemical Examiner containing a quantitative analysis, it should be shown to the medical officer who conducted the post mortem examination so that he will be in a position to state before the Committing Magistrate what are the medico-legal inferences to be drawn from the report.[32]

Any document purporting to be a report under the hand of any Chemical Examiner or Assistant Chemical Examiner to Government, upon any matter or thing duly submitted to him for examination or analysis and report in the course of any proceeding under the Cr. P. Code, may be used as evidence in any inquiry, trial or other proceeding under that Code. The original report and not a copy of the report should be put in evidence.[33] A report of the Chemical Examiner made before the institution of proceedings is not admissible without his examination in person.[34]

The report of a Chemical Examiner is a piece of evidence that does not require any formal proof, but at the same time it must be tendered as evidence and used as such

[32] *Happu* v. *Emperor*, A. I. R. 1933 All. 837 (841)=1933 Cr. C. 1463=146 I. C. 1089=35 Cr. L. J. 280=1934 A. L. J. 106.

[33] Sec. 510 Cr. P. Code ; *Bishamber Doss*, 15 W. R. 49.

[34] *Cauth Mull* v. *Emperor*, 20 Cr. L. J. 266=50 I. C. 26 (Pat.).

so that the accused may have a chance of questioning it.[35] It is the bounden duty of the Public Prosecutor to tender in evidence the reports of the Chemical Examiner and of Imperial Serologist. The accused is perfectly right in requesting that these reports which really ought to be tendered on behalf of the prosecution should be tendered as evidence on his behalf.[36]

It is not enough for the Chemical Examiner to merely state his opinion. He must state the grounds on which he arrives at that opinion. In this connection reference may be made to section 51 of the Indian Evidence Act which states that whenever the opinion of an expert is relevant, the grounds on which such opinion is based are also relevant. The expert may give an account of experiments performed by him for the purpose of forming his opinion. In India the Chemical Examiner merely tenders a report and he does not appear and give evidence. It is extremely desirable that his report should be full and complete and take the place of evidence which he would give if he were called to Court as a witness.[37] It is to be expected that whenever a Magistrate or a Court of Session finds that the report of the Chemical Examiner is inadequate he should not admit it in evidence unless that officer concerned submits a full and satisfactory report or

[35] *Wali Muhammed* v. *Emperor*, 26 Cr. L. J. 200 (201)=83 I. C. 904=21 A. L. J. 869=A. I. R. 1924 All. 193.

[36] *Ghirrao* v. *Emperor*, 34 Cr. L. J. 100 (1012)=145 I. C. 470=1933 Cr. C. 592=A. I. R. 1933 Oudh 265=10 O. W. N. 1108.

[37] *Gajrani* v. *Emperor*, 34 Cr. L. J. 754 (759)=144 I. C. 357=Ind. Rul. 1933 All. 414=1933 Cr. C. 664=A. I. R. 1933 All. 394=1933 A. L. J. 1617.

has been examined in support of it. A meagre and cryptic report is hardly of any value.[38]

Regarding the value of the Chemical Examiner's report Young, J.[39] observed : "A very important question of law arises in this case, namely : What is the weight, as evidence, to be attached to the written report of the Chemical Examiner ? In my opinion, it has no weight. It has long been held as a general rule both in England and India, that evidence which cannot be adequately tested must be rejected. There are two methods of testing evidence. The first by the administration of an oath, the second by cross-examination. This is the reason why Courts reject hearsay evidence ; it is not on oath, and cannot be tested by cross-examination. Evidence on *oath* is of little or no value unless sifted by cross-examination.....If this be the law, as it undoubtedly is, in civil actions of however trivial nature, it applies much more forcibly to a criminal case where death may be the result. It has undoubtedly been the practice in India to rely upon such a report, even where there is no quantitative analysis, to prove death by arsenic poison, and on this evidence many persons have been connected. The origin of this dangerous practice is found in S. 510, Criminal P. C.....It is to be noted that under this remarkable provision of law the document need only "purport" to be that of the Chemical Examiner. No proof that it is in truth is apparently necessary, and in practice the signatures on reports are not proved. Courts have construed this section to mean that Chemical Examiners need not be called as witnesses—in practice they never are in this province—and, further, that whatever the report says must be taken at its face value and given all the weight of evidence on oath subject to the test of cross-examination. Whatever may be said of the wisdom of this enactment—

[38] *Mt. Gaya Kunwar* v. *Emperor*, A. I. R. 1934 Oudh 62 (63)= 35 Cr. L. J. 700 (702)=148 I. C. 600=112 O. W. N. 31=1934 Cr. C. 231=1934 O. L. R. 341.

[39] *Happu* v. *Emperor*, A. I. R. 1933 All. 837 (839)=1933 Cr. C. 1463=146 I. C. 1089=35 Cr. L. J. 280=1934 A. L. J. 106.

contrary as it is to the accumulated legal experience of centuries of what is necessary for the protection of accused persons—nothing is more certain than that S. 510, fortunately for accused persons, says nothing as to the weight to be attached to the report. There is no reason therefore why the ordinary rule of law should not be strictly enforced if any weight is sought to be attached to a report on the chemical examination of suspect material.

It is notorious in this country that any document may be forged or substituted by a forged document. Substitution has been known even after the document has come into the custody of a Court. The Chemical Examiner and his Assistant, both being human, are liable to err, especially in such a delicate operation as the Marsh-Berzelius process. There is not in this case the slightest allegation against the Chemical Examiner but it is equally possible that these privileged persons might be half blind, incompetent, or even corrupt. I take judicial notice of the fact that an enquiry is now taking place in India as to whether a Chemical Examiner has made a false report. No person therefore ought to be put in peril of capital, or any punishment on a written report not given on oath and untested by cross-examination. To accept such a report—whatever it may contain—as proof of death by arsenic poisoning, or of anything, appears to me to be an impossible proposition in law. I would certainly have in this case wished to see both the Chemical Examiner and his report subjected to a searching examination on oath before I would have agreed to confirm the sentence of death.

.....To sum up therefore: In any trial for murder by arsenic poisoning the prosecution must prove: (a) That the deceased died of arsenic poisoning. (b) That the accused administered arsenic to the deceased with intent to murder.

If the prosecution wishes to establish (a) by means of the Chemical Examiner, and weight is to be attached to his evidence, he must be called, sworn and offered for cross-examination."[80]

Rangi Lal, J., commented on the above view of law as follows: "There is no doubt that the provision of law contained in S. 510,

Criminal P. C., is of an exceptional nature. It was however deliberately enacted by the Legislature and the Courts are in my opinion bound to give effect to it so long as it remains on the Statute Book whatever may be said of the wisdom of the policy underlying it. It can be hardly open to the Courts to render this enactment nugatory by refusing to attach any weight to the reports in question. If they are not to have any weight, there would be no object in making them admissible in evidence. To my mind, the intention of Legislature is that they should have the same value as they would have if they were formally proved by sworn testimony. It is always open to the Courts to call the Chemical Examiner when this course is deemed to be necessary in the interests of justice. He does not as a rule give any opinion as to the cause of death, but merely reports the result of the Chemical Examination of the substance sent to him. It is for the Court to determine the cause of death after a consideration of such report together with the post mortem appearances as deposed to by the officer who conducts the autopsy and of other evidence in the case."[40]

Thom and Collister, JJ., dissenting from the view of Young, J, quoted above, observed : "The case in question was a case of murder by arsenic : and we agree that cases may arise particularly in a matter of arsenic poisoning in which it may be necessary in the interests of justice that the Chemical Examiner be called and examined as a witness and be subjected to cross-examination. But we do not accept the proposition that the Chemical Examiner must be called in all cases in which a Chemical Analysis has been made and in which the result of such analysis is a determining factor in the case." [41]

[40] *Mt. Aishan Bibi* v. *Emperor*, A. I. R. 1934 Lah. 150 (153)=15 Lah. 310=1934 Cr. C. 330=152 I. C. 206=A. L. R. 1934 Lah. 573=37 P. L. R. 67=36 Cr. L. J. 14.

[41] *Emperor* v. *Bachcha*, 36 Cr. L. J. 362 (363)=153 I. C. 472= A. I. R. 1934 All. 873=1934 Cr. C. 1082=A. L. R. 1935 All. 19=57 All. 256.

The negative effect of the Chemical Examiner's report is not sufficient to rebut the strong direct evidence as to the place of occurrence although no blood was detected in earth, leaves and grass taken from that place.[42]

Imperial Serologist.—The Imperial Serologist is a highly responsible officer and a duly qualified scientist who would never venture to give any definite opinion on a question unless he has the fullest scientific *data* in support of his conclusion. His opinion is entitled to great weight.[43]

Professor of Anatomy.—The certificate of a Professor of Anatomy is not *per se* admissible in evidence apart from special authority like Sec. 510 of the Cr. P. Code.[44]

[42] *Hassenulla Sheikh* v. *King-Emperor*, 28 C. W. N. 561 (565)=26 Cr. L. J. 5 (8)=83 I. C. 485=A. I. R. 1924 Cal. 625.

[43] *Ghirrao* v. *Emperor*, 34 Cr. L. J. 1009 (1011)=145 I. C. 470=1933 Cr. C. 592=A. I. R. 1933 Oudh 265=10 O. W. N. 1108.

[44] *Ahila Manaji* v. *Emperor*, 26 Cr. L. J. 339 (340)=47 Bom. 74=24 Bom. L. R. 83=A. I. R. 1923 Bom. 183.

CHAPTER I

ASSAULTS, WOUNDS, INJURIES, DEATH BY VIOLENCE

"It is a well known psychological fact that when a person is on the point of committing an act of critical importance to his whole life, and is impelled by the deepest passions of his nature, everything else but the object of these passions is usually set aside and even the firmest, best balanced and under ordinary circumstances, most conscientious mind becomes astonishingly blind or indifferent to anything except the immediate object in view."

Most medico-legal cases fall under this head.

For medico-legal purposes, it is unnecessary to determine whether a certain injury is or is not a wound; injuries of every kind come within the sections of the Indian Penal Code dealing with offences affecting the human body.

Section 319 I. P. C. Hurt.—Whoever causes bodily pain, disease or infirmity to any person is said to cause hurt.

The pain must be bodily not mental; severe bodily pain, whatever may be its duration falls within this definition. Pulling a woman by the hair is held to be this offence[1]—Disease—A person communicating a specific disease (syphilis, gonorrhœa) to another would be guilty of hurt. It must be done, however, by contact;—Or infirmity to any person—Any infirmity, may be disease or weakness, the result of poison or other deleterious substance.

[1] Weir 3rd Edn. 196.

The administering of an injurious drug or potion to a person to induce love, in ignorance of its nature or effect and without care and caution as to its properties, which causes serious illness to such person, does not constitute murder or grievous hurt, but only hurt by a negligent act which endangers human life (S. 337 I. P. C.).[2]

An act neither intended nor likely to cause death is "hurt" even though death results in consequence.[3]

Section 320 I. P. C. Grievous Hurt.—The following kinds of hurt only are designated as "grievous" :—

First.—Emasculation.

The term means the depriving of a person of masculine vigor—castration ;[4] the impotency caused must be permanent.

Secondly.—Permanent privation of the sight of either eye. See Part III. (Simulated blindness), vide infra.

Thirdly.—Permanent privation of the hearing of either ear. See Part III. (Simulated deafness), vide infra.

Fourthly.—Privation of any member or joint, must be permanent, the joint must be permanently stiff.

Fifthly.—Destruction or permanent impairing of the powers of any member or joint. Any permanent decrease in their utility would constitute grievous hurt ; but if only

[2] *Bhagava Guiyappa*, 18 Cr. L. J. 443 B. Batchelor and Shah J.J.

[3] *Mohd. Ali*, 157 P. L. R. 1913, s.c., 5 P.W.R. 1913. Bunbury J.C. *Agra*, 37 P. R. 1914 ; Scott-Smith J.

[4] *Madho Singh*, 22 P. R. 1878.

temporary, may nevertheless be grievous if it falls under the terms of clause 8.

Sixthly.—Permanent disfiguration of head or face. To disfigure, is to do a person some external injury which detracts from his or her personal appearance but does not weaken him, or her, *e.g.* cutting off a person's nose or ear or the branding of a girl's cheek with a red-hot iron.

Seventhly.—Fracture or dislocation of a bone or tooth, may or may not be attended by permanent disability. It is a question for the medical witness to say whether, what has been done amounts to a fracture or dislocation. Fracture or dislocation of a bone or tooth, as it causes suffering and great pain to the injured person, it is immaterial if the fractured bone has united or the dislocated joint has been reduced. But it will not be grievous if the sufferer dies before the period of twenty days has expired.[5]

Eighthly.—Any hurt which endangers life, or which causes the sufferer to be, during the space of twenty days, in severe bodily pain, or unable to follow his ordinary pursuits.

Injuries which endanger life are those inflicted on some vital part—head, chest, abdomen. The question whether a given injury was dangerous to life, is one upon which the testimony of a medical witness is material.

To say that a person injured, suffered severe bodily pain for twenty days, regard must be had to the nature and

[5] *Mahinder Singh*, 26 Cr. L. J. 294 Lah., 84 Ind. Cas. 438, A. I. R. 1925 Lah. 297. Martineau, J.

severity of the injury. The mere fact that he did not attend to his duties for twenty days, or that he was kept in hospital for that period is no indication of his inability to do so. The opinion of the attending medical officer is relevant but not conclusive.[6]

Section 321 I. P. C. deals with voluntarily causing hurt.

Section 322 I. P. C. deals with voluntarily causing grievous hurt.

Section 324 I. P. C. deals with voluntarily causing hurt by dangerous weapons or means.

Section 326 I. P. C. deals with voluntarily causing grievous hurt by dangerous weapons or means.

The healing of a simple wound is sometimes delayed or prevented, to bring it under the head of grievous hurt. But, if during the period of twenty days he could have followed his ordinary pursuits it must fall under the head of simple hurt.

As all wounds must be caused by some weapon or thing striking the body or the body striking against something, wounds may be divided into classes according to the weapon or thing by which they were inflicted, thus :—

1. Abrasions
2. Contusions or bruises
3. Incised wounds

[6] *Queen* v. *Vastachela & others,* 19 B. 247. *Khair Din* v. *Emp.,* 32 Cr. L. J. 1254=134 I. C. 829=A. I. R. 1931 Lah. 280=1931 Cr. C. 536=Ind. Rul. 1931 Lah. 1021.

4. Punctured or stab wounds
5. Lacerated wounds
6. Gunshot wounds

1. An **abrasion** is the simplest type of wound. It may be, however, of great importance, especially with reference to its situation. Abrasions discovered in the region of the front of the throat, would suggest throttling; in the vicinity of the mouth or the nose (especially in infants), suffocation; on the genitals and near about, rape or sodomy.

Abrasions, wherever situated, most often indicate a struggle. Bleeding is always slight and healing rapid, without leaving a permanent scar.

It is important that abrasions resulting after death be distinguished from those caused during life. They may be caused during handling of the body, when being removed to the mortuary or in the act of taking down a body after hanging. These post mortem abrasions are not noticeable at the time but as soon as the bared cuticle dries, they show up as brown, dry, hard, parchment-like patches. This appearance stimulates the effects of violence during life. Sylvester's method of artificial respiration was employed on a man found collapsed and who eventually died. When the efforts of resuscitation ceased nothing was noticed and the body was removed to the mortuary, but next day both sides of the chest displayed extensive bruising and some abrasions. Post mortem abrasions are distinguished by the absence of any signs of bleeding, and on incising them no escaped blood is found beneath the patches.

Abrasion produced at the time of death or even immediately before may not become apparent until some considerable time after death.

2. A *contusion* or bruise is a wound beneath the skin; a crushing, pulping or tearing of the tissues, the result of violence that ruptures the smaller vessels of the part with escape of blood into the surrounding tissues. Bruises vary in size from the small pin-head blood specks to large collections of blood. As a rule, the greater the violence inflicted, the more extensive will be the bruise. However, much will depend on the part injured, looseness of the cellular tissue, the general state of the health of the victim and the sex.

A bruise is more easily produced in certain parts of the body than in others. Where the tissues are loose and contain many blood vessels, such as, the lips of the female genitals, slight violence may cause a very large bruise or even a blood tumour. The tissues of the scalp, though containing many blood vessels can stand a great degree of violence without showing a large collection of blood. In certain situations great violence may be applied without giving rise to any bruising of the surface, such as, the abdomen, where the force of the blow is expended on the internal organs.

Women and children are more easily bruised than men. In some women slight pressure with the fingers on any part of the body, results in a definite bruise. On the other hand, a trained athlete can withstand severe blows without showing any signs of bruising, as in boxers.

Should the vessels be diseased, and in the aged, bruising might easily result from coughing or slight exertion.

Among bleeders, and in the diseases known as scurvy, and purpura (a disease characterized by formation of purple patches on the skin and mucous membranes), small bruises may appear spontaneously. The violent coughing of whooping cough may also give rise to small bruises, especially about the eyes.

Sometimes the discolouration due to bruising does not appear at the site of the injury but at some distance from it, for example, a blow on the head may show a bruise of the tissues of the eye. Bruising may be deep seated, and weeks may elapse before the bruise shows itself superficially. In such a case it will not present the usual blue colour but will be of a greenish or yellow hue.

Bruising may be the result of a sudden and powerful contraction of a muscle or group of muscles.

Bruising shows itself as a dark, dull, reddish-blue discolouration of the skin (immediately, if superficial), which, in about twenty-four hours begins to change colour, becoming lighter. During the first three days, the colour is blue, bluish-black or black ; on the fifth or sixth day, greenish ; from the seventh to twelfth, yellow and disappears gradually in about a fortnight or three weeks. In a healthy person, a bruise may disappear in two or three days. Slight superficial bruises become yellow in about three days.

Can the appearance of a bruise be produced after death?

Violence inflicted immediately after death results in bruising that is *indistinguishable* from that inflicted during life, but, for such result, the injury must be inflicted within two minutes of death. After an interval of two minutes no appreciable effect is produced.

During the harvest of 1909, in the Lyallpur district, a quarrel occurred between a farmer and one of his servants. After an exchange of much abuse, the servant attacked the farmer and struck him over the region of the spleen with a heavy wooden peg. The latter fell to the ground and collapsed. His assailant, tearing the clothing from the lower part of his victim's body, thrust the pointed end of the peg into the anus. At the post mortem examination, I found the spleen—which was greatly enlarged—extensively ruptured and the abdominal cavity distended with blood. There was an extensive tear in the lower part of the rectum. I was asked, in the course of my evidence whether the injury to the rectum occurred before or after death. There was a quantity of coagulated blood found within the rectum, and the injury to the gut presented the appearance of an injury caused during life: yet I could not offer a definite opinion as to whether this injury occurred during life or within a couple of minutes after death. Although the latter assault suggested intention to kill, the accused was sentenced to three months rigorous imprisonment.

However, it is possible that the appearance of a bruise, the result of violence inflicted during life may be produced within two hours after death but the bruising would be limited in extent. Nevertheless, where a well-marked bruise is found, it ought to be inferred that it was made before death.

The following points will assist in distinguishing ante mortem and post mortem bruising :—

Ante Mortem	Post Mortem
1. Swelling of the part.	1. No swelling.
2. Firmly coagulated blood is found at the site and blood has escaped into the surrounding tissues.	2. No such appearance unless there is a rupture of a large vessel in the neighbourhood of loose cellular tissue.
3. Incorporation of blood with the whole thickness of the true skin, rendering it black instead of white.	No such appearance produced by a blow after death.

Extensive collection of blood may occur without affecting the skin, but when the skin is affected it is decisive of ante mortem injury.

Hypostasis, or after death staining, caused by the gravitation of the blood in the vessels after death, is liable to be mistaken for bruising the result of injury inflicted during life. How is it to be distinguished from the latter ?

If a cut is made into a true bruise, however small, coagulated blood will be found, whereas, a few bloody points are alone seen if the discolouration is due to hypostasis. Hypostatic blood can be washed away by a little water, but such washing will have no effect on a true bruise. Post mortem stains are never raised above

the surface as bruises sometimes are. A bruise may be situated on any part of the body, whereas, *a post mortem stain must be on a dependent part.*

In decomposed bodies the distinction in small bruises is *almost impossible* although blood that has escaped from vessels, if present in any quantity may still be readily recognized.

3. **Incised wounds** are made by cutting weapons. They are as a rule, spindle-shaped due to the contraction of the skin after it is cut; the edges are clean cut and slightly everted and not bruised; the deeper tissues are cleanly and evenly divided. Bleeding is usually free. Owing to the elasticity of the skin and retraction of fibrous tissue, these wounds "*gape.*" If the wound be parallel with the muscle fibres, the gaping will not be so marked as when the wound is directly or obliquely across the fibres of the muscle. In certain parts of the body, *e.g.* the front of the throat, an incised wound may present a crescentic form, due to either the elasticity of the skin or contraction of the muscles. Blood escapes into the cellular tissues and blood clots are found within the wound.

Where the skin is loose, *e.g.* the front of the throat as in old people, or the knife is blunt, the edges of the wound may be irregular owing to a fold or folds being rolled up in front of the weapon or several small cuts may be made by one sweep of the knife. The commencement of an incised wound, that is, the end where the weapon entered is usually more abrupt and deeply divided than at its termination where as a rule, the incision tails

off to a superficial skin wound. However, both ends of the wound may be alike.

Wounds caused by hatchets, chhavis, gandasas, tokas, kasis, and such like weapons are usually accompanied by considerable bruising. A wound caused by a datri (grass sickle) usually shows jagged edges and may present a punctured wound caused by its distant extremity in addition to the wound caused by the blade. Sometimes a portion of the skin between the puncture and the large wound escapes injury.

Wounds from broken glass and pottery resemble incised wounds but are usually irregular. As a rule, in such cases there is slight bruising of the edges owing to the object being forced through the skin ; yet in some cases an incised wound caused by a sharp knife may be indistinguishable from one caused by broken glass, *e.g.* the bursting of a soda water bottle.

It is important to remember that in parts of the body where the skin is stretched and separated from the underlying bone by a layer of tissue comparatively thin and of uniform structure, the blow of a blunt smooth object or a fall, may result in a wound presenting an appearance closely simulating an incision. Such wounds are very common and must not be attributed to the use of a sharp instrument. The wound is really due to the splitting of the skin from compression against the underlying bone. The parts of the body where such wounds are likely to occur are :—scalp, eyebrows, over cheek bones, point of chin, shins, prominences of the ankles and the inner surface of the outer lips of the female genitals from the lip being forced against the edge of the pubic bone.

The distinction is easily made by careful observation. If seen soon after production before inflammatory changes have taken place, examination shows that the edges are irregular and the floor uneven, bridged by bands of fibrous tissue and small blood vessels; furthermore, small fragments of foreign substances may be found in or about the wound such as, dirt, sand, gravel glass, pottery etc. Therefore, *all wounds resembling incised wounds must always be examined with the aid of a lens.*

When the clothing hangs in loose folds, cuts in it do not always coincide with the wounds on the body.

4. Punctured wounds or stabs are those in which the depth is much greater than the breadth and are produced by any form of narrow pointed instrument or a comparatively blunt weapon when sufficient force is used. The aperture in the skin is generally a little smaller than the width of the object which produced it as the skin is elastic and in a living healthy state slightly on the stretch. Thus, it yields by stretching without tearing.

Stab wounds do not always indicate by their shape the kind of weapon which produced them. A stab with a round weapon such as a butcher's steel will cause *a slit-like wound and not a round hole.* A square shaped instrument causes a wound in the *shape of a cross.*

A stab wound may not at all correspond with the shape of the weapon used, and the same weapon may produce different shaped wounds in different parts of the body. Much depends on the movement of the instrument in the act of stabbing. The size of the wound may not correspond with the width of the weapon causing it, as

the incision may be enlarged as the weapon is being withdrawn.

In the majority of cases of stabbing the medical witness is not justified in being dogmatic as to the particular weapon having produced the wound, since the size and shape of the wound varies according as the cutting edge is sharp or blunt and whether it has passed through a fold of skin as well as whether it has been withdrawn in the same axis or not.

Punctured wounds are always more dangerous than incised. They cause little if any external bleeding unless a large artery is injured. The danger lies in internal bleeding, injury to vital organs and owing to insufficient drainage, such wounds readily suppurate.

Where the total depth of the injury from the point of entry into the body was not less than 5 inches, it is obvious that the blow with which the wound was inflicted must have been delivered with great force. The injury is necessarily fatal, and the presumption arises that the person who inflicted it intended to cause death, and, therefore, *prima facie* that that person is guilty of the offences of murder.[7]

5. Lacerated wounds are characterized by tearing or splitting rather than cutting of the tissues. The majority of wounds met with in medico-legal practice are of this nature.

They are produced by blows with blunt objects, or falls. The edges of these wounds are never smooth and generally do not correspond at all with the weapon causing them. The wound is usually irregular in shape and

[7] *Nga Po Htwe* v. *Emp.*, A. I. R. 1936 Rang. 474=1936 Cr. C. 964=38 Cr. L. J. 183=166 I. C. 419.

depth and the margins are jagged and contused. Portions of tissue may be torn out and further loss may be subsequently occasioned by sloughing. Owing to the irregular tearing of the arteries there may be little bleeding. Suppuration is usually the rule. It is internal injury and septic complications that make such wounds dangerous to life.

I have already mentioned that a blow with a blunt instrument over a bony prominence may produce a splitting of the tissues resembling an incised wound. However, close and careful examination of the edges of such a wound will show that they are finely serrated and that there are irregularities of the tissues in the deeper parts and there may be bruising of the margins.

A point of considerable interest may arise in connection with lacerated wounds. The defence may declare that the injury was the result of a fall and not of a blow. The history of the case ; the position and arrangement of the injuries ; the presence of a bruise where no theory of a fall can explain its existence ; the condition of the garments (torn or cut) will often afford the only solution. (See Ahmed Ally, 11 W.R. 25. Norman and Jackson J.J. and Raghuni Singh and others v. Emp. 11 C. L. R. 569. Field and Mitter J.J.)

6. Gunshot wounds. The character of a gunshot wound varies with :—

1. The kind of weapon employed
2. The nature of the projectile
3. The nature of the powder used
4. The velocity of the projectile

5. The distance from which the weapon is fired

6. The angle at which the projectile strikes the body.

7. The part of the body struck

There are several varieties of firearms in common use.

(a) In many parts of India the ancient muzzle-loader smooth bore gun is still used by local shikaris and others. Black powder is used, and when loading, it is rammed and compressed by old pieces of rag or paper; the projectile being either a spherical leaden bullet, small shot, roughly cut slugs, or even small stones.

(b) The modern breech loading shotgun, firing smokeless powder and spherical bullets or small shot. If it is fitted with two barrels one is usually choked, that is, the barrel at the muzzle is smaller in diameter than behind the muzzle except the cartridge chamber. The barrel may be full choke, half choke, or quarter choke. The scattering of the shot will depend on the amount of choking in the barrel.

(c) The ordinary revolver, firing black powder and lead bullets of low velocity—640 feet a second being the maximum. However, revolver ammunition is sometimes loaded with smokeless powder.

(d) The automatic pistol, so convenient in present day organised crime, is a very different weapon to the revolver. Its cartridges are loaded with smokeless powder and fire a bullet jacketed with copper or cupro-nickel, of high velocity, attaining a speed of 1,200 feet a second.

(e) The smooth bore converted rifle as supplied to the jail and police departments, firing black powder with ball or buckshot.

(f) Last of all there is the high velocity military or sporting rifle firing smokeless powder and jacketed conical bullets. The speed attained is from 2,000 to 3,000 feet a second.

Black powder does not explode ; it burns and for this reason when a shotgun is discharged close to the body, the evidences of a *near* discharge are very obvious. The entrance wound is the result of the projectile, the wad, the powder gas and the flame, the combined effect of which may result in a wound out of all proportion to the calibre of the weapon and sometimes of enormous size.

The wound is a large irregular laceration with undermined inverted edges, especially so, when the wound is situated over bone. The powder gas carried in through the opening is confined between the bone and skin, undermines the latter and tears the margins of the hole made by the bullet. The powder of flame singes the hair and burns the skin and clothing. The subsequent drying of the burnt surface results in the production of a zone of parchment-like consistency around the wound. Since black powder burns and gives rise to much smoke, the area round about the wound is blackened, and unconsumed particles of powder are driven into the skin and recognized as black specks close together near the margin of the wound but becoming more scattered further away. With a sponge the blackening of the smoke and any blood can be wiped off but the brown parchment-like appearance of the zone of scorched skin and embedded specks of unburnt powder are permanent. *These are the unmistakable signs of a "near" discharge of such a weapon.* With smokeless

powder there is much less blackening and tattooing, the powder stains being greyish in colour.

When such a firearm is discharged from a distance, there will be total absence of the characteristics of a "near" discharge. Ingraining of unburnt particles of powder is absent if fired from beyond ten feet.

If discharged at a distance of three feet the shot will enter *en masse*; though the wound will be lacerated, its outline will be more regular and about one inch in diameter. The burning of the clothes at this distance is frequent.

At a distance of six or nine feet, the wound is still ragged, the shot entering *en masse*, at the same time the pellets show a tendency to scatter, for in wounds at this distance shot holes may be found above the main wound, due to the upward jerk of the muzzle caused by the recoil kick of the weapon. Blackening and burning are absent, but a certain amount of tattooing is found.

At a distance of twelve to fifteen feet, there is an absence of a main wound as all the pellets enter individually covering an area of about ten inches in diameter. At this distance the pattern formed by the entering shot will consist of small groups.

At a distance of thirty feet all the shot enter as individual pellets without any grouping and cover an area of about twenty inches in diameter.

The foregoing examples must of course be considered as a general guide in determining the distance at which the weapon was discharged. There are so many circumstances to be considered such as, length of barrel, choke

or cylinder, black or smokeless powder, size of shot, etc., that a series of experiments must first be carried out with the *same* weapon and *loading* as were used in the case under investigation before a definite opinion can be given.

The exit wound caused by the discharge of a shotgun may consist of a ragged wound surrounded by individual pellet holes, or a few pellet wounds only, because it is rare even at close range for shot to pass through the body.

Revolvers usually shoot soft lead bullets of low velocity, the maximum speed being 640 feet a second. Black or smokeless powder may be used in the ammunition. Unlike black powder smokeless powder will not cause blackening of the skin. Smokeless powder explodes, increases the velocity of the bullet and does not smoke or foul the barrel.

If a revolver is discharged while the muzzle is pressed tightly against the skin there may be absence of marks around the wound, which will be represented by a large torn black hole with a charred interior. Any protective clothing will present a cross-shaped tear and is likely to take fire and give rise to an area of burning of the underlying skin. If the bullet completely traverses the body without encountering bone the exit wound will be a round hole about the size of the diameter of the bullet with everted edges.

If the muzzle is held up close to the skin and discharged, the wound will be larger than the diameter of the bullet. Frequently it is a lacerated, star-shaped or cross-shaped wound not at all resembling a bullet wound, due to the fact that the gases from the explosion are forced

into the wound, tearing the skin wound and undermining the subcutaneous tissues and producing a large blackened excavation. There may be slight burning about the wound. Blackening and slight tattooing may occur around the wound.

If a revolver is discharged at a distance of one to six inches from the body, the wound will be round or slightly oval (if discharged at an angle to the skin) and about the size of the diameter of the bullet. The wound will be surrounded by an area of burning from exploding gases and such burning may be concentrated in an oval area on one side of the wound caused by the upward jerk of the weapon at the moment of discharge—the kick. This area of burning will therefore indicate that the trigger was in a position opposite this area. Tattooing, sometimes extensive, may also be seen around the wound, more marked in the case of black powder. In the case of smokeless powder very little tattooing or blackening may occur which will call for greater scrutiny.

If discharged at a distance of six to twelve inches from the body, the wound will usually be a round hole the size of the bullet, the margins, often slightly discoloured from the lead or grease of the bullet, are bruised with slight inversion. If the weapon is fired at an angle bruising will be only on one side. Burning of the skin is either very slight or absent. Slight blackening is usually present and there may be slight tattooing. The flame of the discharge has no effect on the clothing at this distance.

If discharged at a distance of two to three feet or more, the wound is a round hole the size of the diameter of the

bullet often slightly discoloured around the margins from the lead or grease of the bullet, the edges slightly inverted. There will be a narrow margin of bruising forming a collar round the wound. If fired from an angle the wound may be oval with bruising more marked on one side indicating the direction of fire. At these distances, blackening, burning and tattooing are entirely absent.

Exit Wounds—In low velocity projectiles the usual rule is, as the depth of the wound increases, it becomes larger. The bullet is in reality a small crushing force with very great power behind it so to speak. It must therefore have a tendency to force in front of it a core of tissue which increases in diameter. The exit wound must therefore be larger than that of entrance except in cases of near discharge when the gases from the explosion enter the wound. Further the skin of the wound of exit is unsupported and yields with a tearing force.

SHOTGUN WOUNDS



Distance a few inches :—

Lacerated ragged hole; burning, blackening & tattooing; wad may be found in wound.



Distance 3 feet :—

Ragged hole an inch or more in size; with burning blackening & tattooing.



Distance 6 to 9 feet :—

Ragged hole but smaller stray shot holes around main wound; a little tattooing; no burning, no blackening.

Distance 12 to 15 feet :—

Small groups of individual shot holes scattered over area about 8 inches in diameter.



Distance 10 to 12 yards :—

Scattered individual shot holes in area 20 inches in diameter.

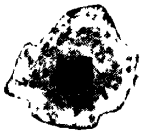
With choke barrels dispersion will be half of the above.

REVOLVER WOUNDS



Contact or nearly so :—

Wound cruciform, similar condition of clothing; slight burning around wound zone of blackening & tattooing; burning of clothes.



Distance 6 to 12 inches :—

Wound a round hole; slight tearing of edges; margins inverted & bruised; burning if any very slight; tattooing; blackening around wound.

Distance 2 to 3 feet :—



Wound a round hole ; margins abraded and bruised ; absence of burning, blackening, and tattooing.

In bullets fired from low velocity weapons i.e. revolver, the skin offers greater resistance and more stretch, thus leaving at the entrance wound a minute fringe of skin which becomes inverted. The inversion is not always seen and if there is a large deposit of fat beneath the skin the former tends to bulge outwards and give the appearance of eversion. However, the exit wound will be found irregular, much lacerated and probably with everted edges and will be free under any circumstance from burning and powder particles and as a rule more bleeding takes place from the exit than from the entrance wound because of the increasing dimensions of the internal wound or track from the entrance to the exit.

Wounds caused by *Automatic Pistols* do not possess all the characters of wounds caused by the revolver and are not so simple to interpret. In "near" discharge the burning and discolouration may be entirely absent. In other respects, the wounds are the same as revolver wounds. Here we have a weapon possessing a higher velocity, *viz.* : 1,200 feet a second as compared with the 640 feet a second of the revolver ; further, the bullet is a jacketed one propelled by smokeless powder ; hence the penetrating power is immensely increased. The revolver bullet rarely passes through the head or even the body if bone is struck when fired from as close a range as ten yards. This is not the case with the automatic pistol.

A shot fired from a converted rifle such as is supplied to the police and jail departments, discharging a spherical bullet with black-powder, will present a circular wound with inverted edges. Tattooing will occur around the wound if discharged within a distance of ten feet of the body, and there will be blackening around the wound if discharged within four feet.

Practically all *High Velocity Rifles* discharge conical jacketed bullets with smokeless powder at a velocity of from 2,000 to 3,000 feet a second, and wounds caused by them are similar to those caused by automatic pistols but exaggerated, owing to the heavier charge of powder; nevertheless, in some instances there may be no more injury than that caused by an ordinary service revolver.

If the wound is the result of a "near" discharge of one of these rifles, the appearance will resemble somewhat that caused by a muzzle loading weapon using black powder especially if the H. V. Rifle be placed close to the skin. The gases of the explosion will enter along with the bullet and tear the tissues asunder. There will be no blackening or singeing of the surface of the skin, but there will be blackening in the wound from the smoke and particles of unconsumed powder. With cordite a fine brown-grey powdery dust around the wound is all that may be seen in place of blackening as the result of explosion in "near" discharges. Scorching of woollen clothing might be so slight as to be removed by slight rubbing.

On the 18th of July 1926, two men Follen and Albert, broke into a garage. A struggle took place between them and the proprietor and his assistant Taylor, with the result that Albert was shot dead.

The question involved was whether there was any culpability connected with the death of deceased.

The story was, that hearing the smashing of glass, the proprietor and his assistant went down into the garage, and in the dark a shot was fired. The burglars ran out and were chased. Taylor caught Albert as he was climbing over the fence. In the struggle Albert got hold of the rifle barrel and wrenched it away, and the weapon went off. As Albert fell he pulled Taylor on top of him.

To Colonel Meyler who appeared at the inquest on behalf of Albert's family, Taylor stated that he could not see whether he or Albert, with whom he struggled, pulled the trigger. He thought the rifle muzzle was close to the man's chest. Colonel Meyler pointed out that *there was no charring on Albert's clothing.* "I put it to you" the Colonel remarked, "that you were a good deal further off when that shot was fired." "No," Taylor replied: "we were struggling together."

The Coroner emphasised, it was of importance to Albert, when it was fired, and suggested the desirability of having demonstration to see when the cloth would be singed by the bullet. The Coroner and Jury accordingly adjourned to a yard at the rear of the premises, and Albert's coat was placed on the ground. Colonel Meyler fired three shots into it, with the muzzle, first, touching the cloth, and two others a little distance away. *None of the holes showed marks of scorching after slight rubbing.* The Coroner recorded a verdict that, "death was caused by gunshot wound due to accidental causes."

At close range, up to three hundred yards, the rifling in the barrel causes the bullet to spin on its long axis at the rate of 2,500 revolutions a second and up to this distance there occurs an eccentric whirling of the base of the bullet. This latter movement largely disappears after three hundred yards. The terrific speed in conjunction with the rapid whirl of the base of the bullet produces extensive bruising and laceration of the deeper tissues and tremendous shattering of bones struck.

In wounds caused by these rifles the entrance is frequently smaller than the diameter of the bullet. The edges are slightly depressed with a reddish zone around the circumference which becomes brown on drying. If the projectile strikes at an angle the skin may be split or torn up.

At medium ranges, from three hundred to a thousand yards, the tissues are cleanly cut and a clean hole is made in the bone. The eccentric whirling of the base of the bullet has largely disappeared at these ranges.

Beyond one thousand yards range the velocity of the bullet is diminished to such an extent that extensive wounds of exist may result.

Conical bullets of high velocity are seldom deflected from their course even when striking bone; they usually travel in a straight line. In such circumstances the entry and exit wound may be so much alike in appearance as to make it almost impossible to distinguish one from the other. If however, bone is struck the exit will be larger than the entry. Usually the entrance wound has inverted edges, the exit everted. If there should be any protective clothing, the fibres of the cloth will be turned inwards at the entrance wound and outwards at the exist.

In passing through the skull a bullet often makes an entrance wound consisting of a clean cut round hole bevelled on the inner table and a larger exit hole bevelled externally. This is characteristic and may settle a question months or years after death.

Experiments were carried out by Major Newcomb at Madras, with various weapons at various ranges.

As in the majority of shooting cases the shot passes through the clothing, pieces of cotton cloth were hung over sand bags and used as targets. The ranges were from nothing to ten feet. The weapons used were :—

1. 303 Service rifle firing service ammunition (cordite).

2. 375 Mannlicher, high velocity, sporting rifle firing axite and an expanding nickel-cased lead bullet.

3. 400-450 high velocity sporting rifle firing 60 grains of axite and a 400 grain nickel-cased lead bullet.

4. 450 Service revolver firing service ammunition (cordite).

5. 476 Martini-Henry smooth bore gun, firing black powder and a spherical lead bullet.

6. 12 bore shot gun firing smokeless powder (K. S. G.) and No. 5½ shot.

The black powder gun could easily be distinguished from all the others by the grains of unburnt black powder which were left embedded in the cloth, all round the injury. The grains were apparent at all ranges up to 10 feet. *Their presence is a certain sign that the injury was caused by a black powder weapon,* and their absence makes it probable that either a smokeless powder weapon was used or that the range was well over ten feet.

The shot gun could be distinguished from the others by the large ragged hole the shot made.

The revolver could be distinguished from all others from ranges below 5 feet, by the presence of grains of unburnt cordite all round the bullet hole. This was not the case in the long barrelled rifles firing smokeless powder.

For each of the above weapons there was a definite range below which the cloth round the shot hole was blackened as follows :—

Weapon.	Blackening begins to show.	Blackening is very definite.	Scattered grains of unburnt powder up to	
1	6 inches	2 inches	.....	.....
2	no blackening	.....	.....	see note 1
3	no blackening	.....	.....	see note 1
4	1 foot	6 inches	5 feet	.....
5	4 feet	3 feet	over 10 feet	see note 2
6	3 feet	2 feet	.....	.....

Notes :—

1. The cloth was set on fire at ranges below one foot.

2. Although in these cases there was no blackening, at ranges below six inches the map of the cloth was blown off by the blast of the gases. (Indian Medl. Gazette, June, 1924.

In wounds from firearms, the point to be determined is, whether it is murder, suicide or accident. To enable one to form an opinion, the following circumstances must be considered.

1. The position of the wound.
2. The direction of the wound.
3. The position of the weapon.
4. Signs of a struggle.

A suicide can only discharge a weapon at a distance, to the extent to which he can reach, except when he uses some sort of mechanical contrivance. Any wound which

he can produce with the weapon must bear the characters of a "near" discharge. Of course, a murderer may discharge his weapon close to his victim. Therefore other circumstances must be taken into account in deciding the question of suicide.

Suicides generally select one of the following three situations ; the right temple ; left breast ; (if right handed) within the mouth.

It is rare for a female to commit suicide by shooting herself.

The direction of the wound must be consistent with self infliction, but, as Taylor has stated : "There is no wound which a suicide can inflict on himself which cannot be simulated by a murderer but there are many wounds which a murderer can inflict, which, from their situation and other circumstances could not be suicidal."

In suicide the weapon will be found near the body, and if it is found clenched in the hand with a firm grip it is the strongest presumptive evidence of suicide, for, though a murderer may place the weapon in his victim's hand to simulate suicide, the hand would not grasp it tightly. The absence of a weapon would not be conclusive evidence of murder.

In accident or suicide there is usually one wound ; multiple wounds would suggest homicide. Nevertheless, many suicides inflict more than one mortal wound. Professor Littlejohn relates the following case.

"Two revolver shots were heard, and on entering the room the deceased was found dead with a revolver lying on the floor close to the body. Both bullets had penetrated the skull and brain and

were found in the posterior part of the left occipital lobe. There was great effusion of blood at the base of the brain and in both lateral ventricles."

Finally I must reiterate, that before a reliable opinion can be given, a series of experiments must be carried out with the *same* weapon and *loading* as were used in the case, if the weapon is forthcoming.

When was the wound inflicted ?

Like other wounds, a gunshot wound undergoes no change for eight or ten hours after its infliction. If it is not rapidly fatal the victim may survive for several days or even recover. If the wound be ten or twelve hours old, then the time of infliction will be judged on general surgical principles, but exact determination of age of a wound is impossible.

Sometimes an empty cartridge is recovered near the body of the deceased and the question arises, whether the cartridge was fired by a particular weapon.

The breech shield of a revolver, rifle or gun is polished in the factory by hand filing and the files leave definite and distinct marks which are revealed by the microscope or by microscopic photography. No single workman even though using the same file can produce the same marks and no two breech shields have the same marks. It is, so to speak, the same with the revolver or other firearm breech shield as with finger prints. No marking is ever reproduced. When a Webley revolver is fired, the cartridge case is pressed back against the breech shield with a pressure of about five and a half tons and the markings on the shield are indelibly imprinted upon the base of the cartridge.

The empty shell found may bear the markings of the breech shield of the weapon found in the vicinity or in the possession of the accused.

So also with the bullet. If one is found, it should be carefully examined. The number, direction, width and depth of the grooves on its surface, and any special marks between these grooves must be noted. If it is desired to ascertain whether a certain bullet had been discharged from a suspected firearm, several similar bullets are fired from this weapon into a sack full of soft rags ; they are then compared with the original one. The character of the markings may show a slight variation but in the main they will correspond if the same weapon had been used for all.

WOUNDS IN GENERAL

Whether the victim of an assault is dead or alive, the examination of all wounds discovered requires the most meticulous observation, *always aided by a good magnifying glass*, which is essential in differentiating an incised from an incised-looking lacerated wound in certain parts of the body. Counsel should invariably ask whether a lens has been used by the examiner to enable him to arrive at the conclusion he has. If he has not, there is just the possibility of his having mistaken one for the other.

A sketch of the injury will convey more to the judge or magistrate than any verbal description.

Here I would draw the attention of lawyers to the fact that it is customary in the lower Indian law courts for medical witnesses to read out all details of injuries (refreshing the memory, as it is termed), verbatim from his

register. This register is an official one and known as "Medico-legal Register" and all details of injuries observed by the examiner are required to be entered in it at the time of his examination. I have never known a magistrate or counsel to examine the register. I stress this point for obvious reasons and I think it ought to be done in all doubtful cases and the entries carefully compared with those made by the same witness in his police report.

In carrying out the examination of a wounded person, the *whole body* should be examined in a good light and the following points noted :—

1. Number, position and direction of wounds.
2. Their length, width and depth.
3. Type of wound (incised, lacerated etc.).
4. Condition of their edges.
5. Condition of their ends.
6. Presence of foreign bodies (dirt, sand etc.).
7. Presence of blood clots or liquid blood.
8. Signs of inflammatory reaction (swelling, pus etc.).
9. Age of the wound, if possible.
10. Simple or grievous in nature.
11. How inflicted.
12. Nature of the weapon.

Each and all of these points may be of vital importance in helping the examiner to arrive at a definite conclusion.

All inferences must be separated from facts.

The important questions regarding wounds on the living are.

1. Is the wound dangerous to life ?

Section 320 I. P. C. clause 8 states "Any hurt which endangers life etc., is grievous hurt. In cross examination, this point should always be elicited. Since murder is not a bailable offence, the fact that a wound is dangerous to life (for death may follow), it must be considered when application for bail is submitted.

To answer the above question is not easy. The medical witness cannot and should not definitely assert that a wound is not dangerous to life, for it must be remembered that even the smallest wound may become infected and cause death by tetanus etc. However, some wounds, owing to their extent, depth, accompanying bleeding, injury to a vital organ and shock may definitely be accounted dangerous to life.

A wound on the right side of the neck about 2½" by ¾" in dimension inflicted with a sharp-edged weapon must be at least considered to be 'dangerous to life' within the meaning of Cl. 8 of sec. 320 I.P.C., and therefore 'grievous'.[8]

2. How was the wound inflicted ?

This question can only be answered by consideration of all the circumstances. Speaking generally, the character of a wound corresponds with the weapon employed.

For instance, a person is found lying in the roadway : there may or may not be wheel tracks on either side of him. On examination no external injury is discovered.

[8] *Muhammad Rafi* v. *Emp.*, 31 Cr. L. J. 77=120 I. C. 431=A.I.R. 1930 Lah. 305=11 Lah. L. J. 519=31 P. L. R. 289.

Internally, the liver is found to be extensively ruptured. It is obvious in such a case that death was caused by the passage of a heavy vehicle over the body of deceased.

Incised wounds accompanied by fracture of the skull are usually the result of the use of such weapons as hatches, drats, chhavis etc. A contused scalp wound with a circular circumscribed depressed fracture of the skull would suggest the use of a hammer or some instrument resembling one. An ordinary fall from a standing position will not cause fracture of the skull unless the bones are abnormally thin.

The prisoners have been convicted by the Judge of Chittagong concurring with the Assessors, of giving false evidence on the trial of one Sufur Ali for the murder of his brother Shamshere Ali.

The first prisoner is charged with having falsely stated that he heard the deceased say in Bengalee: "Something that caused my head to swim, threw me over the steps." The three other prisoners are charged with having falsely stated that they saw the deceased man fall, and hurt himself while going up the steps to Sufur Ali's doorway.

Shufa, the widow of Shamshere Ali deposed that Shamshere Ali and his brother Sufur Ali were sitting in their respective apartments disputing about certain batta to be paid to the zamindar. Sufur Ali came out of his room into the courtyard, on which Shamshere Ali also went out into the courtyard, and they continued abusing each other. Shufa, heard the brothers call each other *salah*, after which her attention was for a time diverted to her children who began to cry and she heard no more. Having quieted her children, she went outside to the courtyard to see what the brothers were about, and found her husband lying on his side apparently insensible in the courtyard about nine feet from the steps leading to the door of Sufur Ali's apartment.

It was afterwards found that the skull of Shamshere Ali had been fractured apparently by a blow *on the top of the head* slightly on the left side of the middle line. A portion of the skull, from two to three inches in length measuring from the back of the head forward, and from one and a half to two inches in width, was driven in and broken up into three fragments. The Civil Surgeon, Dr. Duncan, says that such a fracture could not have been produced by a fall on the steps, while in the act of going up or being about to go up them. By a fall going up the steps Shamshere Ali could not have struck the part of the skull that was fractured against the steps, and he could not have so fallen in this case because the antetrior edge of the front fragment was raised above the sound portion of the skull immediately in front, and this could only have been the result of a blow delivered either vertically or with a slight inclination from behind. Moreover, had Shamshere Ali fallen with his face forward on the steps, which are not cross-wise, and so caused a fracture, the longest end of the fracture would have been cross-wise and not in the direction it was.

Shamshere Ali lived for six or seven days after sustaining this injury.

Dr. Duncan adds: Shamshere Ali could not possibly have spoken a word after he had received the blow that fractured his skull, for the effect of the pressure of the bone driven into the brain was to produce instant insensibility and paralysis of the tongue.

Shamshere Ali was in a state of total insensibility throughout the time he was in the Charitable Dispensary under my treatment, which was nearly four days.

The direct evidence that Shamshere Ali met his death at the hands of his brother consisted of statements alleged by four or five witnesses to have been made by him after removal by his wife and the neighbours, who came up, on hearing her cries, into his room.

On the trial of Sufur Ali for murder, the judge says: This portion of the evidence for the prosecution must be put aside because the Civil Surgeon has declared that after the blow which caused the fracture, the man could not possibly have spoken.

Dr. Duncan may have given his evidence like an intelligent man, but it is not the way to try a case to rely on mere theories of medical men or skilled witnesses of any sort against facts positively proved. I may observe, too, that Dr. Duncan's theory that Shamshere Ali could not have spoken after having received the injury is apparently opposed to that in Taylor's Medical Jurisprudence, page 26. It is there said : "There is one remarkable circumstance connected with fractures (of the skull) accompanied by depression of the bone which here requires to be mentioned, namely, that the person has been sensible so long as the foreign substance which produced the fractured depression remains lodged in the brain, and that insensibility and other fatal symptoms begin to manifest themselves only after its removal. Again, a man may fall from a height and produce a severe compound fracture of the skull ; he may nevertheless be able to rise and walk some distance before he falls dead.

I do not understand what the Judge means by putting aside or rejecting this part of the evidence. If it was true, it was not the less true because opposed to Dr. Duncan's theory.[9]

ANOTHER CASE. Field, J., "The second objection is, that the Sessions Judge was wrong in calling Dr. Shaw, the Civil Surgeon, to contradict the deposition of the Assistant Surgeon, Maulvi Asder Ali Khan. It is further said that, even if Dr. Shaw's evidence could have been admissible, it ought not to have been admitted without calling the Assistant Surgeon, and giving him an opportunity of explaining more fully the reasons for the opinions expressed in his deposition. The essential part of the deposition of the Assistant Surgeon is as follows :—"The skull was fractured from the left temporal bone across the parietal bone, and the fracture was terminated at the end of the sagittal suture. The fracture was about 4 inches long. There was also a superficial wound a little above the left temporal region about 2 inches above the ear. Underneath this wound there was no fracture. This was a slight superficial wound. There was also an abrasion below the right ear. This was very slight and superficial. Neither of the ears were hurt. On removal of the

[9] *Ahmed Ally*, 11 W. R. 25. Norman & Jackson JJ.

scalp. I found a patch of extravasated blood about 4 inches long and 2½ to 3 inches broad just above the fracture." And further on : "In my opinion, one blow caused the fracture. Any flat hard substance would have caused that fracture. Under no circumstance would a lati cause such a fracture, because a lati would have cut open the scalp, and would not have caused such a widespread extravasation of blood. Neither of these two latis in Court would have caused the fracture. I examined the body thoroughly, but found no other hurt. The hurt above the left temporal region and the abrasion below the right ear could not have been caused by these latis in Court, or any other lati. The abrasion below the right ear may have been due to a fall. No lati whatever would have caused it."

Dr. Shaw was called as a witness, and the following question was put to him by the Sessions Judge :—

Question—"The Assistant Surgeon of Barh has stated in his evidence that the skull was fractured from the left temporal bone across the parietal bone, and the fracture was terminated at the end of the sagittal suture. The fracture was about 4 inches long. He has also said that no lati could produce the said fracture, because a lati would have cut open the scalp, and would not have caused such a wide-spread extravasation of blood. Can you state if, in your judgment, this opinion of the Assistant Surgeon is correct ?

Answer—"In my opinion, the opinion of the Assistant Surgeon is not correct. A blow from a lati might be given with sufficient force not to wound the scalp at all. Besides, the superficial wound described by the Assistant Surgeon in his report as half an inch long and a little above the left temporal region corresponds with the fracture, for he goes on to say that, on removing the scalp, the skull was found cracked, running from about 2 inches above the left meatus across the temporal bone, the parietal backwards and upwards, terminating at the sagittal suture. Judging from this, the superficial wound corresponded to the upper third of the fracture. A fracture may extend further than the external wound. The Assistant Surgeon is also not correct in stating that there could not be an extravasation of blood, 4 inches long and 2½ inches broad, caused by

a round lati. Unless the wound has a particular appearance, you cannot tell from a fracture whether it was caused by a flat board or a round lati. The latis in Court could have produced a wound like that described by the Assistant Surgeon."

There can be no doubt that Dr. Shaw has, in his deposition, based his opinion, in many important respects, not upon the facts which the Assistant Surgeon stated, but upon facts somewhat and in one respect essentially, different. The Assistant Surgeon stated in his evidence that underneath the wound, that is, the superficial wound above the left temporal region, there was no fracture. Dr. Shaw, by a course of reasoning, arrived at a different fact, namely that the superficial wound corresponds to the upper third of the fracture, and, upon this different fact in part, bases his opinion. Then Dr. Shaw refers to the "report," that is, the report of the post mortem written in the form usually filled up by Civil Surgeons at the time of making the post mortem examination. Now this report was not evidence, and therefore no facts could have been taken therefrom. The Assistant Surgeon might have used this report to refresh his memory when giving evidence, but the report itself was not admissible in evidence.

But there is a still further and a more important consideration. The Assistant Surgeon had actually seen the dead body, and had performed the post mortem examination, and his evidence, as that of a medical expert, was therefore admissible, first, to prove the nature of the injuries which he observed on the dead body, and, secondly, as opinion evidence with respect to the manner in which those injuries were inflicted, and the cause of death. Now, Dr. Shaw had not seen the dead body, and had not made the post mortem examination. And the difficulty in which he felt himself placed appears from what he says in a subsequent part of his deposition, namely, "It is difficult for me, without having seen the fracture, to form any definite conclusion about it. Reading a description would not help me so much as actually seeing the thing." Dr. Shaw was in the position of an expert witness who could give nothing but opinion evidence. The general rule as to evidence of this kind is, that the questions must be put to the witness **hypothetically** in this

way: "Assuming such and such facts to be true, what is your opinion on the matter"? "Assuming such and such an injury, an injury of such and such a kind, to have been inflicted, what is your opinion as to the nature of the weapon by which it was possibly or probably inflicted"? The facts thus hypothetically stated to the witness would of course be the facts which the evidence of the other witnesses in the case attempted to prove, and as to which it was for the jury to find whether they had been proved or not. If, in this particular case, the Session Judge of Patna had put the question to Dr. Shaw, assuming the injuries deposed by the Assistant Surgeon, and asking Dr. Shaw his opinion as to the weapon by which these injuries might or could have been inflicted, there might perhaps have been no valid objection to the evidence. But, even if this course had been pursued, I think that, having regard to the great importance of the question at issue, it would have been only fair to the prisoners to put the Assistant Surgeon into the witness box, and give him an opportunity of stating his reasons for the positive assertions contained in his deposition.

I may observe that, although Sec. 323 of the Code of Criminal Procedure allows the examination of a Civil Surgeon taken and duly attested by a Magistrate to be given in evidence in the Court of Sessions, it does not in any way preclude the Sessions Judge from calling the Civil Surgeon, and examining him; and this course ought to be pursued in every case in which the deposition taken by the Magistrate is essentially deficient, or requires further explanation or elucidation. Unfortunately, however, Dr. Shaw was not questioned in the manner just indicated; and he was asked to sit in judgment upon the Assistant Surgeon, asked substantially to exercise the functions of the jury in forming an opinion upon the credibility of the Assistant Surgeon's evidence. I think this course was essentially an erroneous one. If the Assistant Surgeon had been placed in the witness-box, and allowed to give his reasons for the views contained in his deposition, he might have stated further facts observed upon the post mortem, which would strongly support the correctness of his views, or, under further examination he might himself have seen reason to modify the positive opinion expressed by him before the Magistrate. And, if Dr. Shaw had been questioned, assuming the facts to be as stated

by the Assistant Surgeon, this gentleman also might have stated the reasons for his views. If, as the result, there was any substantial difference of opinion between the Civil Surgeon and the Assistant Surgeon, the jury would have been in a position to judge for themselves which view appeared to them most likely to be correct..... I think that, having regard to the great materiality of the question as to the weapon used, it is impossible to say otherwise than that the prisoners have been prejudiced by the manner in which the medical evidence was dealt with by the judge, and placed before the jury. Under these circumstances I think that this conviction must be set aside. [10]

Fracture by contre-coup requires the whole weight of the body as when precipitated head foremost from a fast moving vehicle. I have already stated that a blow with a rounded object, such as a lathi may cause a wound closely resembling an incised one. A medical witness cannot therefore be dogmatic.

3. Will permanent injury or disfigurement be caused by the wound ?

This is an important question because an obviously simple injury at the time of the examination may eventually prove to be a grievous one. Thus a wound opening into the knee joint might eventually end in ankylosis, that is, permanent fixation. A needle thrust into the eyeball may end in total loss of the eye.

A lacerated wound of the face is sure to cause scarring and may be, contraction.

4. Was the wound self-inflicted without suicidal intent ?

[10] *Raghuni Singh & others* v. *Emp.*, 11 C.L.R. 569. Field & Mitter, J.J.

In India self wounding is quite common and the reasons for doing so are many.

Self-inflicted wounds have the following special characteristics :—

1. They are either cuts or stabs, never contused wounds.

2. They are in accessible positions.

3. They are generally superficial in character.

4. They are generally found on the front of the body.

5. They are generally multiple and sometimes parallel.

6. They generally have a particular direction, while non-self-inflicted wounds may have any direction.

7. The hands are seldom wounded.

8. They are not usually found on vital parts.

9. If situated on the upper half of the body, their direction is from above downwards or transverse; if on the lower half of the body, from below upwards or transverse, and they always tail off towards the anterior middle line of the body.

10. The direction of self-inflicted revolver, pistol and stab wounds in right handed persons run from right to left and vice versa in left handed persons.

11. There may be want of correspondence between the wounds and the cuts on the clothing ; blood stains on the cuts in the clothing may be erratic in distribution, some being on the inner layer only, some on the outer and rarely soaking through all, indicating artificiality.

5. When was the wound inflicted ?

A person may assert that a wound was caused in an innocent way on a date different with the theory presented by the prosecution as to how or when it occurred.

The exact determination of the age of a wound is impossible. A clear cut wound, if kept clean should heal in about 5 to 8 days. Such a wound, if examined after an interval of, from 12 to 18 hours, will be found to exhibit a moist, glossy appearance. At the end of 48 hours the surfaces are greyish in colour. If the surfaces are exactly opposite each other, they become weakly adherent in 3 days and if the wound remains clean, healing will be complete in 5 to 8 days.

If the wound is not kept clean, signs of inflammation will appear within 48 hours after infliction ; after this limit of time pus will appear.

In wounds that have suppurated (discharging pus), granulation tissue (small round fleshy granules) will be recognised in from 5 to 8 days and when once suppuration is established, suppuration without healing may continue indefinitely and a determination of its age will be impossible.

In small wounds and abrasions, scabing will form in about 48 hours. If on removal of the scab, granulations be found, then the wound is at least 4 or 5 days old.

In elderly and debilitated persons a wound may show no trace of healing for several weeks. Yet rapid healing may occur in old people while the reverse may be met with in healthy people. Healing is usually more rapid in the young and healthy.

A recent scar looks red or bluish and is tender ; after about 2 months it becomes firm, white and shiny and when once in this condition, it will be impossible to, even approximately, say how old it is.

When a bruise is inflicted, the spot is of a dark blue colour ; in about 18 to 24 hours, the edge of the bruise becomes lighter in colour, changing through green to yellow in about 4 to 8 days. In a healthy person, absorption is rapid and in a superficial bruise all signs may disappear in 2 or 3 days. If the bruise is large, a longer time is required for absorption and may take days or weeks. It is impossible to state definitely the duration of a bruise.

WOUNDS ON THE DEAD

6. Were the wounds inflicted before or after death ?

The distinction is as a rule easy. The edges of a wound inflicted during life, gape. This gaping is caused by the retraction of living skin ; (in very fat people, post mortem wounds gape and gaping may be caused by the gases of decomposition), the fresh blood forms clots, which may be found on the edges and within the wound, if examined with a magnifying glass. Blood poured out after death is easily washed away by a gentle stream of water, but the tiny blood clots of an ante-mortem wound, resist such treatment. There may be signs of inflammatory reaction and repair. Marks of arterial spirting or a collection of blood with clots in hollow viscera (pleura, peritoneum etc.) would indicate ante-mortem injury.

After death the arteries empty themselves into the veins, hence if a small artery be divided just after death,

it may bleed freely for about an hour, but there will be no spirting.

Wounds inflicted some time after death are characteristic. There is no gaping and very little bleeding unless a large vein has been opened.

Before Death	After Death
(1) Retraction of skin	(1) No retraction
(2) Hæmorrhage always arterial, edges injected	(2) Venous hæmorrhage, edges not injected
(3) Edges everted	(3) No eversion except from decomposition in fat people.
(4) Blood clots large.	(4) Small clots, if any.

7. Are the wounds homicidal, suicidal or accidental ?

An insane may inflict any description of wound on himself, from a ripping open of the abdomen and cutting away many feet of intestine or stabbing himself with a red hot iron rod, to cutting his throat and tearing out his gullet.

The points to be considered in answer to this question

1. **The position of the body** when found and **the condition of the clothes.**—If the features and limbs are much contorted and the clothes torn and disarranged, a struggle will be indicated and will be evidence of homicide. The finding of foot prints and bloody finger marks other than those of the deceased, will be presumptive evidence of homicide, so also will signs that attempts have been made to wash away blood.

The position of a weapon might help materially. A revolver or knife found firmly grasped, will be very strong evidence of suicide because this condition cannot be artificially induced. The absence of any weapon points to homicide, yet, it must be remembered that a suicide after inflicting fatal injury may throw the weapon into a well, tank or river.

2. **The number of wounds.**—Multiple slight wounds often indicate suicide. Multiple wounds of the hands may be inflicted during attempts at protection and are suggestive always of homicide, specially if they are situated on the palmar aspect. Multiple severe wounds are strongly presumptive of homicide. A single fatal wound may be either suicidal or homicidal.

When two wounds, either of which is mortal, are found, homicide is probable, yet such wounds have been inflicted by suicides. Whatever be the number of wounds or their character, if a quantity of poison be found in the stomach, the case may be considered one of suicide.

3. **The position of the wound.**—Taylor says—"There is no wound which a suicide can inflict on himself which cannot be simulated by a murderer, but there are many wounds which a murderer can inflict which, from their situation and other circumstances, could not be suicidal."

There are certain parts of the body that the suicide selects. If the weapon is a revolver, the parts selected are, right temple, the region of the heart (left breast) and within the mouth. If the weapon is a knife or razor, the throat is selected. If a dagger, the heart is selected. There is hardly any situation in which an insane may not contrive to wound himself. Among the insane, mutilation

of the genitals is usually suicidal among the sane homicidal, so are mutilations of the female genitals. Wounds of the head (excluding accident) are presumptive of homicide. Stabs or incised wounds of the back, especially if the wound runs upwards, are not likely to be suicidal. Incised wounds of the throat are practically never accidental, they are usually suicidal or homicidal.

A person, plunging a dangerous weapon like a knife into a vital part of the body, is deemed to have intended to cause such injury as he knew was likely to cause death and is guilty of murder.[11] A person delivering a violent blow with a lethal weapon like a *dang* on a vulnerable part of the body such as the head must bo deemed to have intended to cause such bodily injury as he knew was likely to cause the death of the person to whom the injury was caused.[12] But where the accused gave only one blow, and the blow was given on a non-vital part of the body, the intention to be attributed to him was that he never intended to cause either death or a wound sufficient in the ordinary course of nature to cause death. He was found guilty of an offence under sec. 304, first part, of the Penal Code and not of murder.[13] Thus a man who directs a blow low down near the ankle as a general result would be a man who did not intend to cause injury sufficient in the ordinary course of nature to cause

[11] *Mohammad* v. *Emp.*, 33 Cr. L. J. 375=137 I. C. 65=A. I. R. 1932 Lah. 254=Ind. Rul. 1932 Lah. 273=1932 Cr. C. 278=33 P. L. R. 145.

[12] *Preman* v. *Emp.*, 28 Cr. L. J. 966=105 I. C. 678=26 P. L. R. 363=A. I. R. 1928 Lah. 93.

[13] *Nga Tin Maung* v. *Emp.*, 37 Cr. L. J. 473=161 I. C. 515=A. I. R. 1936 Rang. 112=1936 Cr. C. 192=8 Rang. 482; See also *Basanta* v. *Emp.*, 28 Cr. L. J. 763=103 I. C. 843=A. I. R. 1927 Lah. 654=8 A. I. Cr. R. 562 and *Parmeshri Das* v. *Emp.*, 35 Cr. . LJ. 1319=151 I. C. 469=1934 Cr. C. 559=A. I. R. 1934 Lah. 332; *Bharat Singh* v. *Emp.*, 34 Cr. L. J. 99=140 I. C. 106=9 O. W. N. 655=A. I. R. 1932 Oudh 279=1932 Cr. C. 697=Ind. Rul. 1933:Oudh 20.

death, because most cuts on the leg are not injuries sufficient in the ordinary course of nature to cause death.[14]

Where injuries, though numerous, were nearly all bruises and abrasions, mostly on the legs and arms and no bones were broken and not a single one of the injuries individually amounted to more than simple hurt, the offence committed is not murder but is culpable homicide not amounting to murder.[15]

4. **The nature of the wound.**—Contused wounds and bruises are very rarely suicidal. They are either homicidal or accidental. Stab wounds are rarely accidental. If the weapon be a large one and the depth of the stab small, the infliction of the wound may have been an accident.

Incised wounds are either homicidal or suicidal.

5. **The direction, extent and shape of the wound.**—As a rule, an incised wound is deepest where the weapon enters and becomes shallower towards the end from which it is withdrawn. From this feature it is possible to determine whether a wound was made from right to left or *vice versa,* but a murderer passing his hand from behind acts like one's own starting in front. In cut

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[14] *Abar Ahmed* v. *The King.,* A. I. R. 1938 Rang. 17=39 Cr. L. J. 244=173 I. C. 87=1937 Rang. 393. But see *Kra Chan U* v. *Emp.,* 25 Cr. L. J. 207=76 I. C. 575=A. I. R. 1923 Rang. 247=2 Bur. L. J. 103.

[15] *Beli* v. *Emp.,* 25 Cr. L. J. 29=91 I. C. 61=2 Lah. Cas. 111=7 Lah. L. J. 524=A. I. R. 1925 Lah. 621, distinguishing *Allah Ditta* v. *Emp.,* 81 I. C. 35=25 Cr. L. J. 547=4 Lah. L. J. 276=A. I. R. 1922 Lah. 260 and *Samand Singh* v. *Emp.,* 49 I. C. 349=3 P. R. 1919 Cr.=5 P. W. R. 1919 Cr.=20 Cr. L. J. 157. See also *Inder Singh* v. *Emp.,* 30 Cr. L. J. 141=113 I. C. 333=Ind. Rul. 1929 Lah. 159=A. I. R. 1929 Lah. 15·7=10 Lah. 477=30 P. L. R. 674.

throat wounds, when suicidal, in the right handed, are generally from left to right, oblique in direction, beginning higher up than they end, cross the neck at the thyroid cartilage (the larger vessels may escape if the head is thrown back at the time of making the incision), and gradually tails off to a superficial wound on the right side. As a rule the large vessels of the left side of the neck are divided. If the incision is made below the thyroid cartilage, it is generally smaller and more horizontal. However, cases of suicidal cut-throat have been known in which all structures have been severed down to the spinal column and even the latter has been notched. These incisions usually slope downwards and backwards, that is, if the skin incision is opposite the 4th cervical vertebra, the lowest depth of the incision may end in front of the 6th cervical vertebra. Homicidal wounds are usually the reverse, that is, the plane of the incision tends to be upwards, the skin being divided at a lower level than the deep structures.

A stab inflicted by a suicide if right handed, is usually over the left breast and its direction from above downwards. Homicidal stabs on the other hand may take any direction, depending on the relative positions of victim and assailant. There may be multiple stabs, more than one being mortal.

INJURIES TO DIFFERENT PARTS OF THE BODY

HEAD—Wounds of the scalp rarely produce serious results. These wounds, when of great extent, may be dangerous in consequence of the inability of ensuring

thorough surgical cleansing and so may be followed by erysipelas.

When suppuration occurs in scalp wounds, it may extend to the coverings of the brain and end fatally. Bad treatment or no treatment at all may lead to death from a wound not serious in the first instance.

A bruised swelling of the scalp may impart a sensation of crepitation to the finger, and may thus be mistaken for a fracture of the skull.

From the tenseness of the scalp over the skull, it sometimes happens that a blunt weapon, such as a lathi, will cause a wound nearly as cleanly cut as if it had been made with a sharp instrument. The wound is really due to a splitting of the skin from compression against the underlying bone. The distinction is easily made by observation (especially with the aid of a lens) of the irregularity of the edges and the bruised condition of the subcutaneous tissues. There is also frequently swelling and bruising of the adjacent parts.

Contusions of the bones of the skull apart from fracture may lead to serious results, because many inflammatory conditions of the bone may follow, such as, acute inflammation of the bone-marrow, or overgrowth of the bone, or syphilitic or tuberculous manifestations may be lighted up, if the victim is subject to either of these diseases. Furthermore, pus may form between the skull and the outer covering membrane of the brain. The dura mater may be detached and give rise to bleeding. For this reason, contusions of the scalp must obviously never be treated lightly, even when associated with unbroken skin.

It is sometimes difficult to determine the extent of an injury to the head, either from the history or from the symptoms, and on this account many medical witnesses have a tendency to treat all scalp wound as trifling injuries.

The discovery of a fracture of the skull would, obviously, alter the gravity of the injury and bring it within the scope of Section 320 I. P. C. For this reason it is incumbent on all medical witnesses to carefully and thoroughly explore and examine the depths of every scalp wound for evidence of fracture.

The procedure usually adopted is to pass the point of a metallic probe into the depth of the wound, simply to ascertain whether the bone is bare or not.

It is very necessary to examine any bare bone in a good light, especially in cases where it is alleged that a sharp edged weapon has been used, for, since it is the bone that has resisted further progress of the weapon, there is sure to be more or less injury to the surface of it, even though it has not been fractured. An incision into the surface of the bone, however slight would confirm the allegation that a sharp edged weapon had been used. Counsel should make it a point to question the medical witness as to exactly what steps he had taken to discover whether the skull was injured or fractured.

A girl fell backwards down some stone steps striking her head on the edge of one of them. Blood flowed freely from a wound in the scalp and she walked to the hospital to have it dressed. There was no shock, nor any other symptom indicating that she had suffered serious injury and yet, by well drawing aside the edges of the wound, it was discovered there was a compound depressed fracture of the skull.

Wounds of the head are dangerous in proportion as they affect the brain. It is unusual for a severe contused wound not to be accompanied by some injury to this organ.

It is impossible to predict from external appearances what degree of injury has been produced within. On one hand, the slightest contusion may be followed by death, and on the other, a depressed fracture with injury to the brain may be followed by perfect recovery. Again, a person may recover from the first effects of an injury and after a period of days or weeks, suddenly die.

From the close attachment of the dura mater (the outer covering membrane of the brain) to the skull, bleeding from a torn vessel slowly takes place, and at first all symptoms may be absent. Gradually the bleeding enlarges and perhaps many hours may elapse before the person becomes unconscious and dies. In the intervening period he may appear quite well and go about his ordinary business. Such a person may be found dead in bed, having been in apparent good health and owing to absence of marks of violence or history of injury, his death may excite no suspicion of violence.

A young man, returning home from a picnic, was thrown from a trap on to his head in the roadway. He quickly got up and regained his seat and drove on home. He dined in the evening and seemed apparently quite well. After his meal he became drowsy and retired to bed; the drowsiness lapsed into profound coma and death. Fracture of the skull was discovered post mortem.

Inflammation of the brain following head injury, does not, as a rule, supervene for about a week after the accident and a victim is really not safe from danger till

after two or three weeks. In some cases the inflammation may proceed insidiously for some months without showing any symptoms till close upon a fatal termination.

An external injury co-existing with an out-pouring of blood into the brain substance does not necessarily imply cause and effect. The previous condition of the brain, or the out-pouring of blood from diseased vessels may, in fact, have been the cause of the accident.

When, however, blood is found effused on the surface of the brain, especially between the skull and dura mater, either beneath or opposite to an external wound, we may reasonably infer that the bleeding is due to a direct blow.

In all cases of bleeding within the skull, an examination of the arteries of the brain must be made as well as of the other parts of the arterial system for evidence of disease. A medical witness must be prepared to say whether the blood vessels were diseased or otherwise, and to state what steps he took to ascertain their condition.

In chronic disease of the arteries, the inner surface of the vessel shows greyish-white, slightly raised patches which may be soft and gelatinous or hard. In later stages there may be semi-cartilaginous thickening, that is, like gristle, mainly of the inner coat. The same changes involve also the middle coat destroying the muscular and elastic elements, and the outer coat causing fibrous thickening of the tissues.

Arteries have three coats. The outer contains tissue having small spaces scattered in it and a network of elastic fibres. The middle coat is composed of muscular and elastic tissue. The internal coat is formed by a layer

of elastic tissue covered by cells which make it smooth so that the blood may flow with the smallest possible resistance. When disease destroys the muscular and elastic elements the vessel degenerates and dilitations (aneurysms) take place in which condition rupture easily occurs.

The situation of the bleeding within the skull must be considered. Blood may be extravasated within the cavity of the skull in four situations, namely: (a) Between the outer covering membrane called the dura mater and the bone: (b) In the arachnoid cavity (the arachnoid cavity is the space between the dura mater and the middle membrane called the arachnoid membrane); (c) In the substance of the brain; (d) In the ventricles or cavities of the brain.

Bleeding between the dura mater and the bone is generally the result of injury and is usually accompanied by fractured skull and rupture of the middle meningeal artery, which vessel lies between the dura mater and the skull. This artery is, however, sometimes ruptured by a blow on the side of the head sufficiently severe to detach the dura mater from the bone without causing any injury to the latter. The dura mater always carries the vessel with it and if it emerges from a bony canal just at that spot, as so often happens, the artery is torn across by the projecting inner lip of the canal.

Bleeding from the membranes covering the brain, due to violence, will be found either immediately beneath the spot struck or at the opposite side of the skull or at a point in the course of the fracture caused by the violence.

If the bleeding is beneath the spot struck, there will be either bruising of the scalp or fracture of the skull. If it is on the opposite side to the part struck, then there is sure to be a bruising of the brain at the site of the bleeding. Bruising of the brain is never the result of disease only unless such diseases as kidney disease, scurvy, purpura, disease of the arteries, are manifest at the post mortem examination.

Bleeding in the arachnoid cavity may result from bleeding into the brain bursting into it, but true cases of arachnoid bleeding occur in whooping cough; in infants, the result of difficult labour; in adults, the result of chronic bronchitis. The blood is supposed to come from ruptured vessels passing between the outermost and the innermost membrane.

Bleeding into the substance of the brain is usually the result of disease. It occurs more frequently in men than in women and more in advance life than in youth. It occurs, but is very infrequent below the age of 30, but something like four-fifths of the cases occur after the age of 40. A large proportion, have large hearts and kidney disease, the arteries are generally thickened and dilated. It might occur in young people with heart disease.

A definite bleeding with evident clot in the substance of the brain or in its cavities is never the result of violence only unless the violence has been sufficiently severe to leave manifest evidence of its infliction, but it is a very frequent result of disease alone or of disease plus excitement. The younger the person, the rarer it is to find definite bleeding in the substance of the brain without

evident violence ; yet it may occur at times, due to violent coughing or for no special cause.

Bleeding from the membranes are far and away more commonly the result of injury than of disease, but they do occur occasionally from disease.

In a recent bleeding within the cavity of the skull, the blood is of a red colour, after some days the colour changes to chocolate or brown and this passes gradually into a dirty yellowish tint which may be met with in from 12 to 25 days after the violence. The colour will thus offer a clue as to the time the bleeding took place.

In cases of death following fracture of the skull a question often asked is :—**Could deceased have had power of voluntary movement and speech, after infliction of the injury.**

As a rule, a blow resulting in splintering and depression of the skull with serious laceration of the brain produces immediate unconsciousness and death follows without recovery of consciousness. In other cases of fracture with intercranial bleeding, there is immediate unconsciousness due to concussion. The victim may regain consciousness and exercise voluntary movement and speech till pressure symptoms supervene. This is usually the case in extra-dural bleeding, that is, bleeding between the dura mater and the skull. Such bleeding may follow a blow on the side of the head or a heavy fall against some hard object. There is usually a fissured fracture of the temporal or parietal bone. Yet there may be no fracture at all. The bleeding is caused by one of the branches of the middle meningeal arteries which lie

in grooves in the bone and are torn when the fracture runs across one of the grooves.

Owing to the very close attachment of this membrane to the skull the bleeding takes place very slowly and for some considerable time there may be a total absence of symptoms. Gradually after several hours, as the bleeding increases, symptoms commence, the victim becomes drowsy then unconscious and finally dies. In the intervening period between the infliction of the injury and the onset of the secondary symptoms he may act quite normally. Further, speech and voluntary acts may be carried out even after extensive fracture of the skull and laceration of the brain.

During a faction fight at Gurdaspur in 1925 an old man received a lathi blow on the head. He fell, and remained insensible for a short time. He got up and walked home with much difficulty, and at once took to bed. He died after ten days without receiving any medical aid. At the post mortem examination I found an oval shaped comminuted depressed fracture of the frontal bone, just anterior to the coronal suture, covering an area of about three inches by two inches. There was a large blood clot beneath the fracture, and the dura mater was lacerated, and there was contusion of the brain. There was nothing in the appearance of the scalp wound to indicate the extensive injury beneath it.

In July 1927 a soldier, Francis Steirn, at Dorchester, shot his sweetheart and then turned the revolver on himself. A policeman when called to the spot, found the man and girl lying on their sides facing each other. The girl had two bullet wounds, one in the chest and one in the head. She was dead. The man had one bullet wound in the head and was still alive. He struggled and attempted to get up. He tried to get his arms round the girl's body and lift her up. In the hospital he was questioned by the doctor, and his

answers recorded by the police. The following conversation took place :—

Q. Why did you kill her ?

A. I don't know, but I hope so.

Q. Why ?

A. Because I love her.

Q. It is a peculiar way of showing your love ; why did you do it ?

A. We quarrelled.

Q. Why ?

A. Doing what I didn't like.

Q. Where did you get your revolver ?

A. It is a Service revolver belonging to the company.

Dr. F. W. Sumner, who put the questions, told the Coroner that afterwards he opened Steirn's scalp and found that the brain *was smashed to a pulp.*

Another question frequently asked is :—**What amount of violence would be required to produce the injury** ?

The question can only be answered in general terms. Consideration must be given to the effect of situation ; the protective action of head covering, the strength of bone and the general condition of health of the individual.

There will be greater shock and more chance of a fatality following injury to a person in broken health than in a robust and healthy one.

The strength of a bone depends on its thickness and on its quality. A blow that would crush in the skull of an European, would only be a source of annoyance to a Negro.

The proper way in which to decide whether an offence has or has not been committed under sec. 300 read with sec. 302 I. P. C., is to apply the words of the section to the facts and to see how the facts satisfy the essentials of the section. But it is obvious that the nature of the material object used and the force used must be useful guides to the trial Court in arriving at a decision as to whether the intention and knowledge referred to in sec. 300 I.P.C., can be attributed to the accused.[16]

A man, who strikes another on the head with *dah* with such force as to divide the skull right through and expose the brain, must be held to know that he will inflict injury that may be sufficient in the ordinary course of nature to cause death and, therefore, must be held to intend the natural consequences of his act. The offence in such a case is murder.[17] It is not only an intention to kill that constitutes an offence of murder or of culpable homicide. If a person does an act with the knowledge that his act is likely to cause death or such bodily injury as it is likely to cause death, he can be guilty of culpable homicide or even of murder in that case also. It cannot be said that the person or persons who inflicted incised wounds with the edge of a spear on the head of the deceased could not have known that the injuries they were inflicting were likely to cause his death and so they cannot escape liability at least under sec. 304 I. P. C.[18]

[16] *Public Prosecutor* v. *Venkata Nari*, A. I. R. 1937 Mad. 634(637) =1937 M. W. N. 456=15 M. L. W. 698=1937-1 M. L. J. 743=1937 M. Cr. C. 153=I. L. R. 1937 Mad. 684.

[17] *Nga Ba U.* v. *Emp.*, 39 Cr. L. J. 217(219)=172 I.C. 926=A.I.R. 1937 Rang. 429 ; *Nga Ohn Pe* v. *Emp.*, 38 Cr. L. J. 52=165 I. C. 762 =A. I. R. 1936 Rang. 477=1936 Cr. C. 967 ; *Bahawal* v. *Emp.*, 33 Cr. L. J. 184 (186)=135 I. C. 670=32 P. L. R. 810=A. I. R. 1932 Lah 5= Ind. Rul. 1932 Lah. 126=1932 Cr. C. 15 ; *Balai Bauri* v. *Emp.*, 36 Cr. L. J. 184(186)=152 I. C. 636=A. I. R. 1934 Pat. 603=1934 Cr. C. 1255 ; *Bhojo* v. *Emp.*, 36 Cr. L. J. 223(227)=152 I. C. 1032=A. I. R. 1934 Sind 172=1934 Cr. C. 1274=29 S. L. R. I.

[18] *Dildar Khan* v. *Emp.*, A. I. R. 1938 Oudh 88=1932 O. L. R. 108=1938 O. W. N. 184.

A man who delivers two blows in quick succession on or in the neighbourhood of the head with a heavy weapon must be regarded, in the absence of any extenuating circumstance, to intend to cause injury sufficient in the ordinary course of nature to cause death and is guilty of murder.[19] If one man hits another on the head with a heavy iron rod, even if it is only a comparatively gentle tap, he must be held to know that death would be a natural and probable result of his action, if that tap does in fact cause the death of the person injured.[20] The fact that death took place a month and four days after the commission of the offence is quite immaterial.[21]

Where a concerted attack was directed against the head of the victim which was smashed, the attack was made with the knowledge that the injury inflicted was sufficient in the ordinary course of nature to cause death, and the offence is murder. This is an established principle, and, whether the attack is an attack by an individual or a concerted attack by more than one person, each person is presumed to know the consequence of his act. It is not necessary that the common action should be the result of a premeditated plan, but the precise intention of the assailants acting in concert is a matter of inference from their conduct."[22]

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[19] *Nya Mye* v. *Emp.*, 37 Cr. L. J. 181=159 I. C. 902=A. I. R. 1935 Rang. 427=1935 Cr. C. 1201 ; *Aung Than* v. *The King*, 39 Cr. L.J. 255 =173 I. C. 92=A. I. R. 1937 Rang. 540 ; *Kesar Singh* v. *Emp.*, 26 Cr. L. J. 398=84 I. C. 942=6 Lah. L. J. 527=A. I. R. 1925 Lah. 244 ; *Kesava Chetti* v. *Emp.*, 32 Cr. L. J. 623=130 I. C. 847=1931 M.W.N. 266=A. I. R. 1931 Mad. 420=1931 Cr. C. 468=34 M. L. W. 631 ; *Bishna* v. *Emp.*, 38 Cr. L. J. 378=137 I. 86=33 P. L. R. 130=A. I. R. 1832 Lah. 244=Ind. Rule. 1932 Lah. 283=1932 Cr. C. 256.

[20] *Nya Sit Tun* v. *Emp.*, 39 Cr. L. J. 79=172 I. C. 131=A. I. R. 1937 Rang. 401.

[21] *Inayat Khan* v. *Emp.*, A. I. R. 1935 Lah. 94=1935 Cr. C. 92= 16 Lah. 589=158 I. C. 336=37 P. L. R. 705=36 Cr. L. J. 1335.

[22] *Lati* v. *Emp.*, 39 Cr. L. J. 131=172 I.C. 367=I.L.R. 1937 Nag. 388=A.I.R. 1937 Nag. 335, following *Emp.* v. *Ram Niwas*, 35 All. 506 =21 I. C. 663=11 A. L. J. 804, *Emp.* v. *Siphali Singh*, 45 All. 130=

A blow on the head with a *lathi* is certainly likely to cause death and the person who inflicts *lathi* blow on the head of another person must be presumed to have the intention of causing such bodily injury as is likely to cause death. But it does not necessarily follow that a *lathi* blow on the head is always sufficient in the ordinary course of nature to cause death and to bring a case within the purview of Sec. 302 I. P. C.[23] The use of *lathis* is certainly dangerous but it is not so dangerous that one would suppose that anybody would in the ordinary course think that death is a probable cause of the use of a *lathi*. It is a common experience that *lathis* are frequently used and result in nothing more than injuries which are simple hurts or at the most grievous hurts.[24] But if weapons like *lathis* or the blunt side of axes are used in order to break every limb of a man's body it is just as surely a murder as if the head had been smashed. Injuries on the head are deliberately avoided in most cases in order to support such a defence.[25] The argument that the accused, who had not touched the head of the deceased, could not be guilty under Sec. 302 I. P. C., cannot be considered. It is wholly unnecessary to injure the head of any person in order to kill him. One of the methods of killing in this country with a sharp weapon is to attack the stomach.[26]

71 I. C. 234=20 A. L. J. 900=A. I. R. 1923 All. 88=24 Cr. L. J. 106 and *Queen* v. *Gour Chandra Das*, 24 W. R. 5 Cr.; *Nga Thein Maung* v. *Emp.*, 37 Cr. L. J. 290=160 I. C. 459=A. I. R. 1936 Rang. 46=1936 Cr. C. 45; *Ilam Din* v. *Emp.*, 32 Cr. L. J. 1127=134 I. C. 205=52 P. L. R. 401=Ind. Rul. 1931 Lah. 909.

[23] *Gabhar Pande* v. *Emp.*, 29 Cr. L. J. 17 (19)=106 I. C. 433=A. I. R. 1928 Pat. 169=9 P. L. T. 286=9 A. I. Cr. R. 300=7 Pat. 638.

[24] *Perana* v. *Emp.*, 37 Cr. L. J. 1020 (1021)=164 I. C. 662=1936 A. L. J. 333=1936 A. L. R. 813.

[25] *Dilawar* v. *Emp.*, 37 Cr. L. J. 751 (752)=163 I. C. 143=A.I.R. 1936 Lah. 233=1936 Cr. C. 199=38 P. L. R. 695.

[26] *Jagar Beg Jat* v. *Emp.*, 38 Cr. L. J. 1057=171 I. C. 314=A. I. R. 1937 Lah. 692=39 P. L. R. 479.

Where in a sudden quarrel, the accused deals a single blow with a *dang* on the head of the deceased, an old man, whose weakness and enlarged spleen might have hastened his death which ensues, the accused is guilty not of murder but of culpable homicide not amounting to murder under Sec. 304, Part 2, I. P. C.[27]

The Civil Surgeon says: "There were two severe contused wounds on the scalp, over a little above the forehead on the left side, and the other on the crown of the head, each about one and a half inches long. On raising the scalp, much blood was found extravasated but there was no fracture of the skull, or laceration of the brain, or effusion of blood within the skull; there was a contused wound over the upper part of the right shoulder blade, and that bone had been fractured.

The ulna, one of the bones of the forearm, was fractured in both forearms. There was blood on both hands and several abrasions. The second phalanx of the ring finger of the left hand was fractured. On the right hand there was a contused wound between the index and middle fingers, and on the knuckle of the little finger. There were abrasions on the right and left forearms, on the right arm, inside the right knee and on the right shin. The above injuries may have been caused by blows from heavy lathis Death may have been due to concussion of the brain or to the shock to the system, caused by the above numerous injuries, the woman being weakly, and evidently ill-nourished. I examined her internal organs, they were in a healthy state, but all the mucous membranes were very pale, probably caused by want of nourishment. The woman was very thin, and her bones were small and slight. It would require a very severe blow to break the bone of her shoulder blade, as it was protected by flesh and muscle, etc.".....

[27] *Gurcharan Singh* v. *Emp.*, 36 Cr. L. J. 629=155 I. C. 77=A. I. R. 1934 Lah. 467=35 P. L. R. 371=1934 Cr. C. 762; *Ghulam Hyder* v. *Emp.*, A. I. R. 1938 Sind. 63=31 S. L. R. 480; *Ibrahim* v. *Emp.*, A. I. R. 1938 Pesh. 10; *Lal Singh* v. *Emp.*, 25 Cr. L. J. 655=81 I. C. 143=5 Lah. L. J. 180=A. I. R. 1925 Lah 111; *Har Prasad Singh* v. *Emp.*, 26 Cr. L. J. 1160=88 I. C. 520=2 O. W. N. 465=A. I. R. 1925 Oudh 482.

Again, independent of knowledge, if the blows intentionally inflicted were not only dangerous, but more than that, were sufficient, in the ordinary course of nature, to cause death, the offence would be murder. Here I have considerable doubt upon the medical evidence. It is clear that none of the wounds were what would be called "mortal wounds," and the medical evidence leads me to doubt whether, combined, they would have been mortal to a man or woman inordinary health ; for the medical officer explains that he believes death to have resulted from shock to the system of a person in a peculiarly weak and ill-nourished condition in which he describes the deceased—a condition which the prisoner, in the moment of catching a thief, could not know.[28]

The head injury or rather the injuries, since there were two, had the effect of fracturing both the right temporal and the right parietal bones and were evidently caused by violent blows of a blunt weapon. A person who struck another on the head such blows must ordinarily accept the onus of proving that his intention was not to cause such bodily injury as would in all probability cause death or that he did not know that the injury inflicted by him would in all probability cause death.[29]

Whoever strikes another person on the head with a heavy billet of wood must know that he is likely to fracture that person's skull and to cause his death and is, therefore, guilty of murder.[30]

Accused gave his syce a push or a blow with his open hand on the cheek or shoulder, which caused deceased to fall down ; the fall fractured his skull and caused death. The evidence of the Civil Surgeon showed that the deceased's skull was abnormally weak, his bones and nervous system were diseased, and a blow or fall, which would have caused no serious injury to an ordinary man, caused his death. There was no reason whatever to suppose that the accused

[28] 1. W. R. 33.

[29] *Bahaduri* v. *Cr.*, 28 Cr. L. J. 43=99 I. C. 77=A. I. R. 1927 Lah. 63.

[30] *Kesar Singh* v. *Cr.*, 26 Cr. L. J. 398 L. LeRossignol, J.

had any reason for believing that deceased was in the state of health described. The accused was held guilty of causing simple hurt.[31]

It must be remembered that injuries, the result of violence to the head may at a later period be followed by meningitis, abscess, permanent paralysis, epilepsy or insanity.

Blows upon the eye may be followed by an accumulation of blood beneath the conjunctiva, either of the eyeball or of the eyelid. The conjunctiva is the membrane covering the white portion of the eyeball and the inner surfaces of the eyelids.

A black eye is not always the result of direct violence to it but may follow after an interval, a blow on the head. A blow on the eye will cause bruising and swelling of both lids, the bruising appearing at once, but in fracture of the base of the skull, through the anterior fossa, the blood escapes into the areolar tissue of the cavity of the eyeball. The bruising shows itself as a gradually developing subcutaneous swelling, involving the lower lid, bluish-purple in colour at first but later passing through the other stages of a bruise. There is no contusion of the skin as in the ordinary black eye which is at first reddish-purple, the conjunctiva of the eyeball is considerably involved, but the effusion rarely extends above the cornea.

An injury to the eyeball may be followed by serious results, ending in complete loss of the eye. Punctured wounds in the neighbourhood of the eye may become septic and lead to secondary meningitis.

[31] *C. Kelley* v. *Cr.*, 11 P.R. (1897) Roe C. J. and Frizelle, J.

Blood beneath the conjunctiva of the eyeball is so freely supplied with oxygen that it remains bright red.

A blow upon the ear may give rise to bleeding beneath the membrane which covers the surface of the cartilage, causing a rounded, fluctuating tumour, which may stretch the ear far beyond its normal size and completely change its appearance. It is more often situated in front than behind. Absorption of the out poured blood is extremely slow. The ear may shrivel up into a shapeless ball ; a condition frequently seen in wrestlers. Such result from a blow upon the ear would bring the injury within the scope of Section 320 I. P. C. clause 6, permanent disfigurement of the head.

A blow or slap on the ear may cause rupture of the drum with consequent impairment of hearing or deafness of the affected ear. Such an injury may show no signs of external violence.

Continuous watery bleeding from the canal of the ear following injury to the head will suggest fracture of the base of the skull.

Bleeding from the nose may follow a blow either with or without fracture of the nasal bones. It is one of the signs of fracture of the base of the skull.

Abrasions of the face are important because they may contain sand, coal dust, etc. which remain embedded in the wound and subsequently cause permanent disfigurement, especially in a fair-skinned female.

Neck—Wounds of the neck are of great importance. A man using a knife and stabbing another man in the

throat with that knife must be taken to have known and intended that the blow should be fatal.[32]

Cut-throat is a common mode of suicide and also of murder. It is difficult to differentiate between a suicidal and a homicidal cut-throat wound, as the distinction cannot be made from the wound alone. The situation, number, direction and severity of the wounds are not in themselves sufficient to decide the question.

As the following case, reported by Dr. E. G. Russel, Police Surgeon, Calcutta, in the I. M. G. 1889 page 33, is one of the most remarkable on record in which a fabric of false evidence was completely shattered and a brutal murder brought to light. I record it in full detail :—

A native girl, aged 11 years, was found dead in her bed with her throat cut, and a blood stained razor in her right hand. She and her husband had retired to their bedroom at 10 P.M. on the 12 of September 1888 ; the husband left the house at 4 A.M. on the 13th ; information of the girl's death was given to the police at about 1-30 P.M. on the 13th. Post mortem examination was held at 7-30 A.M. on the 14th. **Appearances**—Body of a native girl, aged about 11 years ; immature, well-nourished, not decomposed ; fat, not muscular. Except the wounds of throat (hereafter described) there were no marks of injury on any part of the body, either on skin surface or in the tissues beneath it. The subcutaneous tissues of every part were dissected into to ascertain this. No mark of deceased having been held, tied, or otherwise restrained ; no mark of compression of lips, nose, throat, etc. There was no sign of ecchymosis of lips or nostrils, nor were the former wounded or dented by the teeth ; no mark of bloody fingers on any part of body or clothes.

[32] *Judgai Mallah* v. *Emp.*, 31 Cr. L. J. 243 (245)=121 I. C. 452=8 Pat. 911=A. I. R. 1930 Pat. 168=1930 Cr. C. 264.

The points worthy of special notice were :—

1. Absence of all signs of a struggle, such as cuts on hands, bruises (either on, or beneath skin), marks of ligature, compression of nose, or mouth ; hair not disarranged or cut ; clothes not torn or cut.

2. Face calm, eyes half open.

3. Trachea divided between 4th and 5th rings (i.e. near sternum), while the wounds of spine were one and a half inches or more higher up.

4. Three wounds of spine and of gullet, although tissues of right side of neck marked by one incision only like those on left side ; tracheal wound also single.

5. Plane of wound upwards ; direction transverse, crescent-shaped ; both ends equally high.

6. Stomach empty ; chyme in duodonum, and upper jejunum.

7. Rigor mortis well marked and universal ; both hands in identically same attitude as regards fingers, and firmly fixed so by rigor mortis.

8. Razor loose in right hand, not clasped or even touched by the fingers.

The case went before the Coroner's Court, and for some days occupied the High Court. In each Court, the jury returned a unanimous verdict of guilty against the husband, who was sentenced to death.

All the appearances when taken together seem to point to deceased having had the great and disabling incision of the throat inflicted while she was lying on her back asleep, by some person standing behind the head of her bed ; the absence of cries and of signs of any struggle, the direction of flow of the whole of the effused blood ; the direction, shape, and upward plane of the wounds being on this theory completely accounted for. The points involved may be conveniently divided into those establishing homicide (as against suicide), and those tending to fix the crime on the prisoner.

Points establishing homicide.

I. Wounds.—

(a) Severity

(b) Order

(c) Direction

(d) Redundancy

(e) Plane

(f) Lowness on neck

(g) Regularity

II. The bleeding.—

(a) Direction

(b) Nature of stains on right hand and arm and on clothes.

III. Razor in right hand—value of this fact.

IV. Death almost instantaneous.

V. Wounds were inflicted during life, and were the cause of death.

VI. Absence of cries and of signs of struggle.

Each of those points deserves separate consideration.

1. Wounds—(a) The severity. The head was nearly cut off; both common carotid arteries, both internal jugular veins, the pneumogastric and phrenic nerves on both sides, all the muscles of front and sides of the neck were divided, as were the trachea and œsophagus; the cervical spine was cut. In addition to this wound, there were two others, each reaching to and wounding the spine. It will be shown (b) that the upper and great wound, which divided every structure of front and both sides of the neck, was probably the first inflicted. After infliction of such a wound, could deceased have inflicted two others, each penetrating to and wounding the spine, and each involving a distinct and determined act of volition? Taking the wounds in any other order, could a suicide have inflicted the two other after any one of them? It is true that authorities

on legal medicine have stated that severe and extensive wounds of the throat have been inflicted by suicides (Guy, 3rd Ed., p. 298). Taylor (3rd Ed., 1883, Vol. I., p. 513) also says, "there is no ground for the assertion that extensive wounds of the throat are incompatible with self-destruction." This is, however, qualified by a further opinion expressed by Taylor (idem, p. 519) peculiarly applicable to the present case, which will be quoted later on (in the case Reg. v. Edmunds). The extensive nature of the wounds must, moreover, in the present case, be considered in relation to the age, sex, and state of mind of deceased, the race tendencies, and the nature of the weapon used. Deceased was an immature, non-muscular girl of 11 years. The tendency of female suicides in India, especially of those of tender years, is to destroy themselves by means (poison, hanging etc.) other than the use of cutting weapons. Moreover, although, as is well known, insanes will inflict on themselves injuries extreme in severity, and showing astonishing persistence and determination (see Taylor, 3rd Ed., 1883, Vol. I. p. 512), yet there was no allegation or question of insanity in the case of deceased—the evidence, in fact, indirectly establishing the reverse. With regard to the weapon found in the right hand, and with which the wounds must have been inflicted had they been suicidal, this was a razor of ordinary pattern. Deceased can have had no skill in the use of such a weapon; could have had no occasion probably ever to have handled one. Yet to have inflicted wounds in any way approaching in severity those found on deceased, a suicide would require some knowledge of the use of a razor, and must certainly have exerted a degree of muscular strength which the deceased, an immature, non-muscular girl of 11, did not in my opinion possess. In most of the cases in which exceptionally severe injuries have been self-inflicted—more especially by women—the weapon has been a knife with a fixed handle, lending itself readily to a firm grip—not a razor with a loose blade. (See below). It will be instructive to compare with the present case, certain others which are collected by Taylor as typical of exceptionally severe injury in cut-throat cases. The first, the cases are held to be suicidal, whilst in the last two the severity of the wounds is held to rebut the theory of suicide.

Suicidal Cut-throat—Women ; spine wounded in two places, **but** through muscles of back and of side of the neck ; left internal jugular vein opened ; all other large vessels escaped, and **all** the large nerves ; other incisions. (Taylor, 3rd Ed., 1883, Vol. I., p. 528). **Note.**—Person, an adult ; maniacal ; weapon, a table knife, i.e. with a firmly fixed handle easy to grip ; all large vessels and nerves escaped injury —except left internal jugular vein ; the spine was reached (and wounded) through the back parts of neck, not through the **front**, where the important structures lie. Taylor says of this case that it "**might** be suicidal" ; but the verdict was one of murder. Compare present case :—All large vessels and nerves of neck divided, spine cut in three places, girl of 11, weapon (razor) with loosely jointed handle, no grip ; no suspicion of lunacy.

Ryan's Case.—Man ; three cuts on spine of neck ; **but** both carotids and jugulars escaped, and therefore, almost necessarily, all large nerves. (Ibid, p. 512). Quoted as a case of exceptionally severe injuries for a suicide—even for an adult male, probably accustomed to use of a razor.

Marc's Case.—All muscles of front of neck, the windpipe, gullet, both jugulars, both carotid arteries divided : and the weapon had "even grazed the anterior ligaments of the spine." Taylor adds (Ibid, p. 513). A wound so extensive as this is rarely seen in a case of suicide..... Compare present case :—All great arteries and veins and nerves of neck divided and not merely anterior ligaments of spine "**even** grazed" **but** three inches into spine of neck. Although the above three cases are placed on record as of exceptional severity for suicide, yet in no one of them is there an approach to the severity of injury found in the present case ; even though in the former, all the conditions favoured exceptional severity, viz : adult age, male sex, or if a woman, the presence of mania and the use of a knife with fixed handle.

Reg. v. Edmunds.—Three incisions, front of neck ; all the great vessels and nerves divided ; also trachea and gullet ; two wounds of spine, deep ones. This greatly resembles the present case (K. Manini Debi). Held (although deceased was an **adult**) that it was impossible for any person to inflict such injuries on himself." Taylor adds :

"The hacking of the spinal column in two distinct places.....after the carotid arteries and jugular veins had been cut through was alone sufficient to justify this opinion." He also expresses the opinion :— "Suicide may graze the ligaments in front of the spinal column, but that they should make deep incisions into the bones.....is a proposition contrary to all experience and probability."—Ibid., p. 518.

Case of Earl of Essex.—To the effect that repeated wounds of the front of spine could not have been self-inflicted, because the division of vessels and nerves, which must have first been cut, would have rendered the person powerless. When, in these cases, the injuries were held to have been impossible of self-infliction, even by adults, can it, for a moment, be accepted that injuries of as great severity, could, in the present case, have been self-inflicted by an immature girl of 11 years of age ? I maintain the improbability—nay, impossibility— a view which the jury unanimously endorsed. His Lordship, in summing up, observed : "On this point, there was not a doubt in the world the wounds were homicidal and not suicidal."

(b) and (c).—Direction and order of infliction of the three wounds of the neck. The great wound had the appearance of having been inflicted from left to right ; for its left extremity was shallow for two-thirds of an inch, and then rapidly deepened, while its right extremity ended in a shallow tail one and a half inches long, the skin being alone injured at its termination. This great wound had apparently been caused by a single sweeping incision ; for its upper margin was entire and clean-cut ; neither skin nor tissues showing any sign of two incisions having run into one another ; no notch or tag anywhere. Now, although the spine and gullet had three incisions in them, the windpipe and divided tissues of the right side of the neck had only a single incision through (or touching) them, just as those of the left side had. How was this to be accounted for ? It seems clear that the two lower wounds which showed superficially a little to left of median line of neck for half an inch, and then disappeared into the great wound, must have found a gaping opening and dropped into it straight to the spine, which each wounded. A previous incision must have existed, and the tissues have been gaping from its retraction.

If it be assumed that either of these lower wounds was the first inflicted, then the tissues of the right side of neck must have been divided by it; these had only one incision; therefore in that case, the great upper incision which began on the left side of neck, cannot have cut the tissues of right side, and therefore must have joined in, towards the median line, with the pre-existing one of right side. Had this been so, it is scarcely possible that there should have been no sign of the junction. There was none. The upper margin of the great wound was clean-cut and entire throughout its whole length. The great incision round both sides of neck was then the first one inflicted. This being granted, the improbability of deceased having been able to inflict the other two wounds, is far greater than if either of the lower ones had been the first; as the former divided the structure on both sides of the neck, the latter could only have divided those of the right side. Not only the great upper wound, but also the two lower ones must have been inflicted from left to right. For, had they been inflicted in reverse direction, what could have caused them to leap up almost vertically from the spine (which they cut) nearly one and a half inches to become superficial almost at once? It was not contact with inner end of left clavicle, for this was untouched; nor mere contact with the spine, for the great incision wounded the spine equally, and still kept on its deep path.

The appearances were only capable of explanation on the supposition of the two lower incisions having begun as the shallow incisions described on the right side of median line, and, therefore, having been inflicted from **left** to **right**—had no great practical bearing in the question of homicide v. suicide, for deceased, a right-handed person, would herself have cut in that direction. The direction is that in which a right-handed person inflicting the wounds, homicidally, from behind deceased, would have made them; this fact supports the theory advanced as to the method of commission of the homicide.

(d).—Redundancy and severity of the wounds were marked and far in excess of what was necessary to take life. That redundancy is far more frequent in homicidal than in suicidal wounds is well known. The frequency of cases of "attempt to commit suicide" in

the Police Courts and Hospitals is confirmatory of this question. Dr. K. McLeod has shown that Indian records firmly establish this fact (Med. Leg. Ret. Beng. 1869; *also* Dr. Harvey, for years 1870-71-72, p. 126). "A homicidal wound is generally very severe, while a suicidal wound, if fatal, is balery sufficient to destroy life; there is never any evidence of redundant vigour."

(e).—Plane of wounds, upwards. This is rare in suicidal wounds; more common in homicidal ones; most common when the latter have been inflicted, from behind, on a person lying down. In the latter case, the plane of the wound is almost necessarily upwards. Proofs that the plane was, in this case, upwards:—

1. Skin and soft parts.—Although retraction had greatly altered the relative position of the parts; yet, taking the upper margin of the great wound, its ends were from one and a half to two inches higher than its middle.

2. Tracheal wound. This was. in front, between the 4th and 5th rings; posteriorly, it divided, obliquely upwards, the ends of 4th ring.

3. Incision of spine.—Plane upwards.

4. The difference in level between the wound of the trachea and those of the spine (behind it) was about one and a half to two inches. The tracheal wound, between the 4th and 5th rings, was on a height with lower third of body of 7th cervical vertebra. (My dissections at Campbell Hospital on 23rd and 24th September 1888): The lower wound of spine was at upper part of body of 6th cervical vertebra; the higher was on lower part of body of 5th. The wound had, in passing from windpipe backwards to spine, risen about one and a half to two inches. If the head of deceased had been drawn backwards at a time of infliction of the wounds, this would no doubt, account for much of the difference of level; but not, I think, for all. For, in my experiments (on the dead subject), I could not raise the level of the 5th ring of the trachea more than one inch, even by traction of the head backwards which sufficed to draw the body along the table.

(f).—Lowness in the neck of the wounds. Suicidal wounds are

rarely low in the neck ; they are usually high up, in region of hyoid bone of larynx. Homicidal wounds are frequently low down. General experience confirms this (see also Taylor, 3rd Ed., 1883. Vol. I, p, 512).

(g).—Regularity of the wound has been held to indicate suicide by some, homicide by others. In the case of a struggle, it is probable that a homicidal wound would be irregular. But, on the other hand, "a murder by surprising his victim from behind.....by directing his attack against one who is asleep.....may easily produce a regular and clean incision of the throat,"—Ibid. p. 513. A suicide requires a steady nerve to make a regular, clean-cut wound, especially when a large one. Could a girl of 11 years of age be credited with the amount of nerve required to nearly decapitate herself with steadiness and regularity ?

II.—The Bleeding.—(a) Direction of the blood effused. All the blood effused from the wounds of the neck had run directly backwards, towards the back, sopping with blood the posterior parts of the body and trunk. There were no marks of any stream of blood having run down the neck, chest, shoulders or clothes, *i.e.* in direction from head to feet. This shows that deceased must have been lying on her back during the whole time that bleeding was going on, *i.e.* from infliction of wound till death. This fact was of the highest practical importance in the case. For I gave it as my opinion that it was impossible for deceased, while lying on her back, to carry a razor so far round the throat as the wound extended (*i.e.* all around, except for one and a half inches behind) and at the same time keep the cutting edge against the throat ; on the right side (the right-hand being used), the hand could not be got round so far unless the head were raised to enable it to get beneath. That deceased's head was not so raised is almost certain, for had it been, even for a moment, the blood would have streamed down the neck and chest or shoulders, and told the tale ; for bleeding was at that time going on, the vessels having been severed. There were no marks of any such streams. Moreover, it is rare for a suicide to cut the throat in a recumbent posture. (Taylor, Vol. I. p. 545). See also cases *Reg.* v. *Courvoisier*, *Reg.* v. *Constance Kent*, and *Reg.* v. *Gardner*.

(b).—Nature of the blood-stains on right hand and arm. The right hand had blood-stains over every part, as if dipped in blood. The right forearm was free from blood, except along its lower and inner edge, where it had lain in contact with the blood-sopped clothes. There was no mark of a jet or spurt of blood, nor of any individual drops, on this hand or arm or on clothes of deceased. If the case had been one of suicide, the right hand (containing the razor) must, at the moment of severing the vessels have been in close contiguity with them. The arteries, especially the smaller ones, would have at once jetted out blood on being cut. Could the hand and forearm, if naked, or the clothes, if covering them, have completely escaped being marked by such jets ? They had entirely escaped.

III.—Razor in right hand—value of this fact. At the time of post mortem examination, the razor was found loosely supported in the right hand between the upper phalanx of thumb and the palm ; the fingers did not touch. The case was, however, complicated by the razor having been removed while the body was being conveyed to the dead-house, and afterwards replaced before I saw it. The Inspector, who saw the body in situ on the bed before removal, deposed that the razor was at that time not tightly clenched, that he removed it easily without any force, his object being to prevent it falling out and getting lost on the way. The defence strongly contested the point whether the razor could not at some earlier period than that at which I examined the body have been firmly grasped by cadaveric spasm, it would have been telling evidence in favour of suicide.

Taylor notes (Vol. I. p. 65): "Razors and pistols are thus **frequently** found in the hands of suicides." Had it ever been so grasped, in the present case, it could scarcely have arisen from any cause other than the fixation by cadaveric spasm, at the moment of death, of a voluntary grip of the weapon during life. For this condition cannot be artificially induced after death. I maintained that there was proof that the weapon had never been fixed in a tight grasp by cadaveric spasm. For, had it ever been so clenched, the razor could only have come into the loose state found by me owing to one of two causes, viz. either by the fingers having been opened

by some one, or by the subsidence of cadaveric spasm. That neither of these causes had come into play was clear from the fact that rigor mortis was still present and well marked in the fingers of the right hand, as elsewhere, at the time of my examination. Had the fingers been unclasped, by any person, from a grasp of the knife, cadaveric rigidity (rigor mortis) would have, to that extent, been destroyed so far as these fingers were concerned, and, once destroyed, could not have been restored. Yet I found it strongly present ; the fingers were rigid and resisted flexion. The hand had, therefore, never been unclasped, and, therefore, can never have had a tight grasp of the razor fixed by cadaveric spasm.

It was suggested by the defence that a tight grasp of the razor may have been fixed by cadaveric spasm at the moment of death but that a supervening stage of general relaxation may have loosened it, and this loosened stage have been found and fixed by supervening rigor mortis ; and that this would explain the condition found. The answer is plain : that cadaveric spasm is rigor mortis (early in setting in), and that, when relaxation ensued, there would be no further (or second) rigor mortis. There were two other points indicating that the position of the fingers of the right hand had not been altered by any person, namely, that the position of the fingers of both hands was identical, finger for finger, joint for joint, and that the members of both hands were in the position commonly found in death, from whatever cause, *i.e.* thumb close to palm, its last phalanx and the two lower ones of each finger semi-flexed. It would have been a remarkable coincidence if the right hand had, after having been opened, been recomposed into such identity of position with the left. The absence of tight grasp on the razor is however, no direct proof of homicide ; it merely destroys **one** proof of suicide. For razor may be found loosely held in the hand of a suicide owing to cadaveric spasm not having occurred, the weapon having continued to lie in the hand during the ordinary after-death stage of relaxation, and this relaxed state of the hand having become fixed by rigor mortis eventually. On the other hand, a razor put into the hand of deceased after death would have been found in precisely the condition in which I found the weapon in the present case.

(For cases illustrating this, see Taylor, 3rd Ed., 1883, pp. 67 and 519 ; the Saville case, the Gardner case, also Tidy. Part I, pp. 121 et seq.).

IV.—Death almost instantaneous. This naturally follows from the whole of the large vessels and nerves of the neck having been severed. That death was not quite immediate is shown by the presence of blood-stained froth in the larynx, below its severance and in the bronchi : deceased must have breathed after the division of the trachea and blood-vessels.

V.—The wounds were inflicted during life. For the defence it was argued that the wounds of the neck might have been inflicted **after death** from some other (natural) cause ; and that wounds, caused immediately or soon after death, were not distinguishable with certainty from those inflicted during life, that therefore I was not warranted in giving a definite opinion that they were actually inflicted during life and were the cause of death. So far as the appearance merely of an incised wound is concerned, Taylor and Aston Key found that one inflicted within two or three minutes after death showed considerable resemblance to one inflicted during life. In the present case, however, the extreme retraction of the skin and muscles, and the free ecchymosis into margins of tissues bounding the wound, show this to have been inflicted during life. But it was not necessary to look to the wounds alone for evidence on this point ; the amount of blood lost, every part of the body being drained of blood, even parts so remote from the wounds as the kidneys, vagina, etc., the empty and contracted condition of the heart cavities, all confirmed the conclusion that the large vessels were opened by the wounds during life. Division of these vessels, after the heart had ceased beating, could not have emptied the body of blood to anything approaching the degree found in the present case.

VI.—Absence of cries and of signs of struggle. This was prima facie evidence in favour of suicide. This absence can, on the other hand, be accounted for, on the supposition that deceased was taken unawares and a disabling wound at once inflicted. There is much other evidence to support the theory that this really occurred.

Ecchymosis might reasonably have been absent, even had deceased struggled, if restraint had been applied with the interposition of some soft medium, such as the prisoner's own clothes. If such a medium had been used over head and face, it would probably have been stained with jets of blood. It should be noted that the clothes which the prisoner is believed to have worn at the time of the alleged murder, were not forthcoming for examination. There may have been marks of jets of blood on them. I further expressed the opinion that even had (say) the face, mouth, hands, etc., been subjected to firm holding or compression, such as would ordinarily have left bruise marks, yet in the case of deceased, the hæmorrhage must have been (from the great size and numbers of the vessels divided) so rapid and copious, that it is quite conceivable that no blood would be left to effuse and ecchymose at the region compressed. Deceased was not drugged into helplessness; the stomach was found healthy, empty, and free from anything which could excite suspicion.

Points tending to fix the crime on the prisoner.

1. The period at which death of deceased occurred.
2. Could the wounds have been caused by the razor found in the right hand of deceased?
3. Were the wounds inflicted on the deceased while asleep?
4. Rigor mortis, as a test of the time dead.

1. Hour of the death of deceased. This point was of the gravest importance to the prisoner; and, as such, the opinion expressed was subjected, by the defence, to prolonged and searching criticism. The following were the facts involved:—Deceased had taken a meal of chuppatties, curry, and rice a little before retiring to rest at 10 P.M. with her husband (the prisoner); she was not again seen alive; prisoner left the house at 4 A.M.; deceased was found dead with her throat cut before he returned. The question to be determined was—did death occur during the period 10 P.M. to 4 A.M. during which the prisoner was in her room, or did it occur after his leaving the house? If the murder was not committed before his leaving the house, then the prisoner was not guilty. The

degree to which digestion had advanced was the factor employed to determine whether or not death occurred between the hours mentioned. At the post mortem examination the stomach was found quite empty ; food, thick and fluid, which had recently undergone gastric digestion, was preent in the upper small intestines, duodenum, and jejunum. From the fact of this food being present in the duodenum, it was clear that the stomach had but quite recently become empty. The period of the ingestion of the meal was known, and the nature of the food taken. The question remained—in how many hours would the gastric digestion of such a meal be completed and the stomach left empty ? If this had taken more than six hours (*i.e.* from 10 P.M. to 4 A.M.), then deceased died after the prisoner left the house, and during his absence. Dr. Beaumont (in experiments on Alexis St. Martin) found that rice was digested in one hour ; barley, milk, fish in two hours. He refers to gastric digestion. His conclusions have never been disputed by any authority (see Appendix V Lyon's Medical Jurisprudence for India 4th Ed. for Indian observations). Other authorities have given periods from 2 to 5 hours as those required for the stomach to become empty after an ordinary meal (McKendrick, Pavy, M. Foster, Todd and Bowman, Carpenter, etc.). By an ordinary meal they mean, an ordinary European meal, consisting of meat, vegetables, bread etc. Meat and other highly nitrogenized foods take longer to undergo gastric digestion than such starchy foods as rice, wheat, etc. For a meal of rice and chuppatties, then, a shorter time must be allowed for gastric digestion. Sleep retards digestion, though it is impossible to express this retardation definitely in hours. Digestion is more active in the young. Deceased was 11 years of age, and was, presumably, asleep during all, or some part of, the time she was in bed, between 10 P.M. and 4 A.M. It will be seen that it was not possible to state, in hours, the exact time occupied in digesting her last meal ; so many modifying circumstances, including those above noted, being present. Taking everything into account, I gave the opinion that the period required to bring her last meal into the condition found on post mortem examination would be, at the outside 6 hours—more probably some hours less. Dr. K. McLeod, speaking as medical expert, gave the period as from 3 to 6 hours—nearer the

former than latter. The death was thus shown to have occurred before the prisoner left the house—in all probability.

2. Could the razor found in the hand of deceased have been the weapon with which the wounds were inflicted? I held that it could. The question was raised by the defence, in the interest of the prisoner: this razor having been proved to be the property of the prisoner. To have caused the clean-cut, even, upper margin of the first and great incision, the razor must at that time have been sharp-edged. The soft tissues in front of spine must necessarily have been divided before the razor could have cut the bone of the spine and have thereby become notched. The edge would, therefore, have remained uninjured during the incision through the tissues of the left side of the neck; that part of the razor—the point—which penetrated to the spine may then have become notched on its edge, but the remaining part of the incision through the tissues in front of spine (*i.e.*, on right side of neck) would be made (even and clean-cut) by the heel of the razor which, being less deep in the wound, would impinge on the less deep tissues, and which would not have engaged the deep-lying spinal bones, and so not have lost its keen edge. The second and third wounds scarcely touched the tissues of the neck; they fell almost immediately, through the gaping first wound, on to the spine; so that the whole length of razor probably impinged on the bone, and became notched on its fine edge. Could a sharp razor have had its edge turned, and finely notched (as was that found in hand of deceased) by contact with the bones of the spine (these three wounds of the spine)? It probably could. On this point, see case of Earl of Essex (Taylor 3rd Ed. 1883, Vol. I. p. 519); in discussing which, Taylor does not dispute the fact that the edge of a sharp razor could be notched by wounding the bones of the spine—he merely affirms that deceased could not have himself done this.

3. Was deceased murdered while asleep? There are a number of reasons for thinking so:—

(1) The placid appearance of the face was eminently consistent with the taking of life during sleep.

(2) The character of the wound of the neck. Its crescentic shape, the ends being one and a half inches higher than the middle, its plane being sharply upwards, points to the great wound having been inflicted from behind while deceased was lying on her back; its clean-cut regular margin points to its having been caused by a steady stroke while deceased was quiet and unresisting, probably asleep. (See case Lord W. Russell, Reg. v. Courvoisier, Taylor, 3rd Ed. p. 513).

(3) The direction taken by the effused blood, shows her to have been lying on her back when the great wound was inflicted, and to have been so disabled by it as to have not moved afterwards.

(4) The absence of marks of a struggle, although deceased was not drugged nor apparently forcibly held.

4. Rigor mortis as test of time dead. The defence made an attempt to fix the death by this means at a period subsequent to the prisoner having left the house, and thus to clear him of the murder. As the body after death had to cool through one degree of temperature only, the existence of rigour mortis at the time of the post mortem examination was in keeping with death occurring before the prisoner left the house. The accused was convicted.

Chevers quotes a case in which a man, with the carotid artery divided, survived until the following day. The Civil Surgeon's evidence was :—I found an irregular deep wound on the neck, apparently caused by a sharp, pointed instrument; the wound, in my opinion, was not caused by the man's own hand; the carotid artery was divided.

Taylor (Ed. of 1905, Vol. I. p. 466) says :—There are several cases on record which show that wounds involving the common carotid artery and its branches, as well as the internal jugular vein, do not prevent a person from exercising voluntary power, and even running a certain distance.

A homicidal cut-throat wound varies in its direction, according to whether it is done from behind or in front

and also with the hand employed. A homicidal cut-throat wound, when made from the front with the right hand, commences on the right side and is carried to the left; they are often deep incisions to the spinal column and the tissues "undercut" at the ends. A homicidal cut-throat wound when made from behind the victim resembles a suicidal one.

In cases of cut-throat, if the fingers are cut, especially on their palmar aspect, it furnishes most convincing evidence of homicide but if the fingers are not cut it does not prove the reverse.

Regularity or irregularity in a cut-throat wound furnishes no presumptive evidence either of homicide or suicide. Oblique wounds passing from above downwards are common to homicide and suicide, but those which take an oblique course from below upwards are generally indicative of homicide. Multiplicity of wounds is considered to furnish presumptive evidence of homicide, but many incisions have been made by suicides before they have succeeded in killing themselves.

If the windpipe is divided the power of speech is destroyed and the victim will be unable to call out for help. In the case of a wound of the larynx, speech is possible if the wound is above the vocal cords even if it is gaping. But in wounds of the larynx below the vocal cords, and in those of the trachea no speech is possible.[33]

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[33] Quoted with approval from Dr. J. P. Modi's Medical Jurisprudence (4th Edition 1932, p. 336) in *Muhammad Anis* v. *Emp.*, 37 Cr. L. J. 955 (962)=164 I. C. 482=1936 O. W. N. 691=1936 O. L. R. 459=A. I. R. 1936 Oudh 405=1936 Cr. C. 1086.

In a case where the windpipe is divided and in consequence the victim is unable to speak, *questions and signs taken together are regarded as verbal statements.*

In a trial upon a charge of murder, it appeared that the deceased, shortly before her death, was questioned by various persons as to the circumstances in which the injuries had been inflicted on her, that she was at that time unable to speak, but was conscious and able to make signs. Evidence was offered by the prosecution, and admitted by the Sessions Judge to prove the questions put to the deceased, and the signs made by her in answer to such questions.

Held by the Full Bench (Mahmood, J. dissenting) that the questions and the signs taken together might properly be regarded as "verbal statements" made by a person as to the cause of her death within the meaning of Sec. 32 of the Evidence Act and were therefore, admissible in evidence under that section.[34]

In cases of death following cut-throat a question frequently asked is :—

Could the deceased have exercised voluntary power to enable him to do such and such or to have travelled such and such distances after division of the main vessels on one side of the neck ?

The answer is, yes. The distance which a person may travel or the amount of other voluntary exertion that may be accomplished, the person being in full possession of his senses at the time, must in chief measure depend upon the rapidity of loss of blood from the vessels severed. Where the large blood vessels on one side of the neck and more especially on both sides, have been severed, it is clear that the rapid and large loss of blood will quickly

[34] *Queen* v. *Abdulla*, 7 All. 385 F.B. Comar Petheram, C. J. and Straight, Oldfield, Brodhurst and Mahmud, J.J.

induce fainting and thus the possible distance traversed after the infliction of the wound must be short.

Wounds of the carotid vessels are not necessarily immediately fatal, nor are wounds of the gullet and windpipe fatal if the large blood vessels escape injury.

At Chatham, Harry Ernest Frampton, a steward in the Royal Navy, was charged with the murder of his wife.

About 9 A.M. on April the 23rd 1928, they left their house, Mrs. Frampton was carrying her nine-months-old baby. The first indication of a tragedy was when a man, who was passing the bottom of the street, saw a young woman staggering towards him with blood streaming from a gash in her throat. Her upper garments were saturated, and the child's face and head were bathed in blood. The infant was handed to a woman who appeared on the scene, and the man pressed his thumbs to Mrs. Frampton's arteries in a vain effort to stop the bleeding. While the woman was being attended to, the husband walked up to a policeman at the opposite end of the street and told him that he was wanted down the street, as there had been an accident. The policeman ran to the spot indicated, rendered first aid, and telephoned for the ambulance. A few moments later a passing taxicab was requisitioned and the woman was quickly conveyed to St. Bartholomew's Hospital, Rochester. *Mrs. Frampton died half an hour* after admission.

Dr. Thomas Isaac Williams, resident surgical officer at the hospital, related that he found a wound two and a half inches long on Mrs. Frampton's neck. He stopped the bleeding and sewed up the wound but the woman died shortly afterwards. Death was due to haemorrhage. *The carotid artery was completely severed.*

"As I returned within the "baree" I went to the door of the southern house, and saw the prisoner strike my brother Infanoola with the sen-dao (a sharp cutting instrument produced in Court) on the neck. The prisoner then threw down the weapon, and ran away towards the north into a "pat" field. My brother was asleep when the prisoner struck him. My brother after receiving the blow,

rushed out into the courtyard, screaming out "Father ! Mother ! He fell down, remained speechless and died after a short interval."

The medical officer deposes that there was an incised wound 2 inches long, ¾ of an inch broad and from ¼ to 1 inch deep, on the neck. The wound swept down by the larynx, and cut through the sheath of the internal jugular vein and the common carotid artery. Death was caused by this wound. The wound could have been inflicted by such force as a girl of the prisoner's age could easily use. (She was ten years old.).[35]

In 1863, a man committed suicide by cutting his throat. The external carotid artery and the internal jugular vein on the right side were cut through, and a large quantity of blood was lost. The wound extended from the front of the angle of the right jaw to near the windpipe, which was not wounded. The man survived half an hour, but was speechless and insensible. Taylor Med. Jur. page 446.

The following table is an attempt to differentiate between homicidal and suicidal cut-throat wounds :—

Suicidal	Homicidal.
1. Direction—Oblique, from below left ear, downwards across front of neck just above Adam's apple, then slightly upwards on right side. May be horizontal or even from below upwards.	1. Usually horizontal or from below upwards through or below Adam's apple.
2. Severity varies. One or all large vessels on left side are usually completely severed. All structures down to spinal column and even the cartilages of the discs may be divided or only the windpipe may be divided.	2. They may be of any depth but seldom show any hacking or cuts in the bones or cartilages of the spine.
3. There may be several small cuts at the commencement of the large wound.	3. Practically never seen in homicide there may be several superficial cuts but in other situations, the result of struggling on the part of the victim.

[35] *Queen* v. *Mt. Aimona*, 1. W. R. 43, Kemp & Glover J.J.

Suicidal	Homicidal.
4. Position of body—May be found in front of shaving mirror with mirror bespattered with blood.	4. Features and limbs may be contorted, clothes torn and disarranged, cuts on palmer aspect of hands, lying on a bed etc.
5. Position of weapon—May be firmly grasped by the hand (cadaveric spasm) or lying near it.	5. Cadaveric spasm cannot be artificially induced. Weapon may be absent.
6. Distribution of blood—Blood flows down front of body ; hands generally covered with blood ; absence of any bloody foot or finger marks of other person.	6 If victim is lying down the blood flows backwards, there will be little on the front. Hands may be clean except from cuts received in trying to avoid knife. There may be bloody foot or finger marks of another person.
7. History of mental depression or financial worries or threat of suicide, alcoholism etc.	7. Absence of such a history.
8. Presence of other injuries anywhere on body except face, not inconsistent with suicide.	8. May or may not be other injuries. Such injuries may be inconsistent with suicide.

In Lyon's Medical Jurisprudence for India (Edn. 9th, p. 230 onwards) attention is directed to the methods by which homicidal and suicidal throat-wounds are ordinarily distinguished. It is said that if more than one severe wound is present, the case is usually one of murder ; a suicide may make more than one wound but only one of these will be severe, the remainder will be tentative cuts made while he was screwing up his determination to the point of making the final fatal wound. Again self-inflicted wounds are usually less severe and deep, and inference can sometimes be drawn from the position in which the body is found. It is said that an intending suicide seldom cuts his throat while lying in bed : he usually does so in the erect or sitting position, and on the

supervention of unconsciousness, he collapses to the floor and probably turns over on his face. A body stretched out in bed with a wound on the throat suggests murder during sleep; one on its back on the floor makes one think of the possibility of homicide in which more than one person has had a hand; a body, face downwards, is almost certainly of a suicide. The position of the body is not of course an absolute indication of the nature of the case but must be considered along with other circumstances. Where, therefore, the body was found lying on its face and there was a single incised wound about 5″ × 2″ × muscle deep on the right side of the neck cutting the trachea, larynx, œsophagus and the right cornea of the hyoid bone, grazing up to the vertebrae, and cutting the intervening muscles and the external carotid artery, everything was held consistent with the injury which caused death being suicidal.[36]

Contusions of the larynx may be caused by a blow or by compression. A violent blow on the Adam's apple may cause immediate death from shock or spasm of the glottis. Fracture of the cartilages of the Adam's apple may be produced by forcible compression by the hand in an attempt at throttling. Fracture of the hyoid bone (situated just above the Adam's apple and at the root of the tongue) may be produced in a similar manner.

These injuries are dangerous owing to the risk of spasm of the glottis (the little flap at the entrance to the air passage), swelling of the mucous membrane which

[36] *Emp.* v. *Sheo Chandra Prasad*, A. I. R. 1937 Pat. 652 (653): 18 P. L. T. 683 = 39 Cr. L. J. 66 = 172 I. C. 171.

causes obstruction to respiration, or suffocation may result from the entrance of blood into the air passage.

An Abbe was compelled to part with his mistress ; they were both greatly depressed. He said to her, we should be happier if we were dead. "Yes," said she, "if we could die together." The Abbe said, jokingly. "Could you bear me to cause you much pain." "Try," she replied. He took hold of her neck. it was intended as a harmless piece of fun, and she showed by a smile that she regarded it as such. All at once she made a sign of pain and shook her hands, but without uttering any cry. He relaxed the pressure and she fell down dead.

The medical jurists called at the trial neither accepted nor rejected the account given by the Abbe. During the hearing of the case an officer made the following statement. "Some officers were in a room together, one in a playful manner said to another, "Now, old fellow, I am going to put you out of the way," and seized him by the neck. The officer whose neck was seized, staggered and fell in a state of unconsciousness ; under skillful treatment he soon recovered.

Spine—Fracture of the spinal column may be the result of direct violence, such as a fall or heavy blow on the back or neck, or indirect violence as in a fall on the head, for instance, diving into shallow water and striking the bottom. In severe injuries to the spinal column fracture is generally accompanied by compression or laceration of the spinal cord. Dislocation without fracture can only occur in the region of the neck. The effects of damage to the spinal cord vary with the situation. If the injury occurs above the third bone from the head death will be immediate from paralysis of the muscles of respiration. Immediate death may result from concussion, by a blow inflicted over the spinal bones of the neck. Dislocation or fracture of the bones of the spinal column causes paralysis of the whole of the body below the seat

of injury. A sprain of the spine may occur as the result of a severe blow on the head as in diving. After the injury, the head and neck are immovable and rigid, with often considerable loss of power.

In cases where death is alleged to have been caused by violence and no traces of it are perceptible, the trouble may be in the spinal column and in such cases you must ascertain from the medical witness if he, in the course of the post mortem examination, examined the spinal cord, and how the examination was carried out.

Sprain of the spine in the lumbar or loin region may be the result of railway injury, when it is often associated with nervous symptoms. The reason why railway accidents are so often responsible for this state is, that the forces concerned are very great and the collision is unexpected, so that, the muscles and ligaments being off their guard are taken at a disadvantage, whilst the shock, terror and mental disturbance are also important factors. In these cases it is important to know whether the symptoms complained of are real or are kept in the mind of the person by an unexpected suit for damages. This doubt has earned for this type of injury the name "railway spine."

A person presenting such a complaint is examined in the following manner :—

The back is first carefully examined by the sense of touch from the skull to the end of the tail bone. Then the functions of the spine are tested in the following manner. He is stripped and made to stand erect with his back toward the examiner. He is now made to bend

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forwards and backwards several times, keeping the knees straight. The flexibility of the different portions of the spine are noted. If any portion has been injured the muscles will hold it rigid while the other parts are bending. This is especially striking if one side is involved more than the other. This contraction of a part of the muscles of the back is something which cannot be imitated, and if present, represents real injury. Next, the person stands erect as before and then, without flexing the knees, he bends his body towards the right and then towards the left while the range of motion of the spine and possible irregular muscular action is noted as before. The person, without moving his feet on the floor, twists his shoulders around to the right as far as possible and then around to the left. The limit of motion in these various directions and any other points observed are recorded for future comparison.

Side.—Where a man kicks a prostrate woman on the side with a tremendous force so as to cause her death, he must be credited with the knowledge that he is likely thereby to cause her death, even if he be exonerated from the more definite intention or knowledge required by Sec. 302 I. P. C., and must be held guilty under Sec. 304 (2nd part) I. P. C.[37]

Chest.—Contusions may be produced by any sort of violence applied to the chest, and may be attended with laceration or rupture of the muscles, or with bleeding into the tissues, which again, may be followed by suppuration and abscess. Contusions may be complicated

[37] *In re Marimathu*, A. I. R. 1924 Mad. 41=24 Cr. L. J. 721.

by serious injury to the internal organs, such as contusion or laceration of the pleura, lung, heart sac or heart, or rupture of a large blood vessel. In some cases of severe contusion, in which death has occurred immediately or soon after the injury, without any lesion being found, the fatal result may have been due to direct pressure on the heart, or large nerves, or to anæmia of the brain following upon a sudden fall of blood pressure.

Compression of the chest.—Constriction or crushing of the chest may cause suffusion of the head and neck, which become unrecognisable, due to over-distension of the veins. There is marked shock. A young person is more likely to survive.

Fracture of the ribs.—Fracture is generally caused by external violence, rarely by muscular action. The external violence may be direct such as a kick or a fall upon the edge of some hard object. The fracture then occurs **at the seat of injury,** the fragments being driven inwards, occasionally injuring the thoracic or more rarely the abdominal organs especially the liver or the diaphragm. The fracture may be caused by indirect violence as the severe compression of the chest in a crowd or between the buffers of railway carriages. The fracture then generally occurs about the **angles of the ribs**, their most convex part, and several bones are usually broken. The ribs are sometimes fractured by **muscular action** during violent coughing, or from straining during child-birth. Ribs are more easily fractured in the old than in the young. Rupture of thoracic organs may be produced by falls, blows, and compression of the chest, **without any external sign of injury and without fra cture of the rib.**

Wounds which penetrate the chest **are always dangerous.** Wounds of the lungs may cause distension of the tissues with air (spoken of as emphysema), sometimes over very large areas. Incised and penetrating wounds of the chest cause expectoration of blood whether the lungs are involved or not. Pneumonia following contusion of the thorax usually appears **within the first four days.**

Where a person stabs another in the chest with sufficient force to penetrate the chest cavity, it must be held that he intented to cause injury sufficient in the ordinary course of nature to cause death and was guilty of the offence of murder, and it matters not that the immediate cause of death was an abscess set up by the wound.[38]

Hæmorrhage from the lung is bright and forthy.

In wounds of the lung **no single symptom** is sufficient to make it certain that it has been wounded ; but where several of the following are present, the diagnosis becomes fairly certain : Marked shock, severe pain, abdominal breathing, coughing and spitting of frothy blood-stained mucous or even of pure blood. If there is an external wound, there will be escape of air intimately mixed with blood, and accompanied by a peculiar hissing noise, or if there is no external wound there will be escape of air into the tissues in the region of the fractured rib.

[38] *Emp.* v. *Naga San Pai*, A. I. R. 1936 Rang. 442 (444)=1936 Cr. C. 866=14 Rang. 643=165 I. C. 245=37 Cr. L. J. 1119 ; *Naga Kan* v. *Emp.*, A. I. R. 1936 Rang. 71 (74)=37 Cr. L. J. 463=161 I. C. 574=1936 Cr. C. 76 ; *Chand Singh* v. *Emp.*, 36 Cr. L. J. 696=155 I. C. 275=35 P. L. R. 715=A. I. R. 1934 Lah. 741=1934 Cr. C. 1093 ; *Abdul Aziz* v. *Emp.*, A. I. R. 1933 Pat. 508 (510)=14 P. L. T. 464=1933 Cr. C. 1079.

Wounds of the heart.—These may be non-penetrating or penetrating. The former are due to crushes to the chest wall and fragments of the over-lying bones may be driven into the heart substance. In penetrating wounds of the heart, the right ventricle is most often injured, the left auricle least frequently. Wounds of the auricles are more dangerous than those of the ventricles, as the thicker and more muscular walls of the latter may suffice to check the bleeding. The outlook depends largely on the nature of the wound; those due to small penetrating bodies being the most favourable. Death may be immediate from cessation of the heart's action, or from pressure of the out-poured blood in the heart sac, or from hæmorrhage, internal or external, according to whether or not the blood can escape. If the person does not die at once, he suffers from intense shock and prostration. Wounds of the heart are not **necessarily instantaneously** fatal. Even when death occurs rapidly, considerable power of locomotion may remain after receipt of the injury. The rapidity with which death occurs, depends on the rapidity with which the bleeding takes place.

A farmer, named Briggs, was arrested for killing a man named Woods employed on his farm. Briggs, having had his suspicions aroused concerning the relations of his wife and Woods, determined to investigate, and made it known that he was leaving the farm for a few days. He returned secretly in the night, and entered the living room by means of a window. Off this room, opposite the window by which he climbed in, were two small rooms, one of which was occupied by Mrs. Biggs. The door of this room was open, and was also the nearer to the door leading into the front hall. The weather being warm, this hall was only closed at the house front by a sash-door fastened by an ordinary cast-iron bolt, one inch wide by one-eighth of an inch thick. Briggs advanced to about the centre

of the living-room, from where he could command a view of the bed in his wife's room. Some slight noise made by him caused a movement by an occupant of the bed, and Briggs, his suspicions now converted into certainties, raised his pistol and fired. Woods sprang from the bed and the room, turning into the front hall. Briggs fired another shot, and then changing his position by advancing so as to command the hall, fired again. Woods had by this time reached the sash-door, and not waiting to draw the bolt he threw himself against the door, braking the bolt squarely in two and continued his flight down the slight hill on which the house stood, to the nearest cottage, about a quarter of a mile away where he fell at the door groaning. His fall and groans aroused the inmates who got up, opened the door, and were considerably surprised to find a man without a stitch of clothing on him lying on their door-step. Woods was carried into the cottage and put to bed. **On the third day he died.**

The post mortem disclosed the gun-shot wounds, one through the fleshy part of the inside of the right arm, another grazing the right side, about on a level with the wound in the arm. Both of these were clearly made from behind forward and neither was a dangerous wound. A third wound of entrance, oval in shape was found on the left chest in the third intercostal space, penetrating the cavity. On opening the chest, the right cavity was found full of blood, right lung compressed to its smallest extent, left lung normal.

The track of the ball was clearly marked by a red line, and led to the pericardial sac, into and out of the right auricle, across the lower edge of the right pleural cavity at its internal angle, through the diaphragm into the liver, which it traversed, and was found lying in the fat and areolar tissue near the gall-bladder. Brain and other organs were healthy, and no other cause of death except the pistol wound was found.

The evidences here presented by the wounds alone were most important. The prisoner claimed he had shot Woods as he was in the act of rising from the body of Mrs. Briggs, and as Woods ran down the hall he had fired at him twice. The wounds in the right arm and side were probably these last two shots, they showed clearly the bullets had passed from behind forward. The fatal wound could

only have been received in two ways, either as claimed by the prisoner, he standing, Woods nearly horizontal, or from above, the wounded man being erect. Of this there was no evidence, there being no doubt that Briggs entered the room from the window and that he fired from about its centre. The ball nowhere touched bone, was not upset, showed marks of the "lands and grooves" in the rifling of the barrel, had made a straight line in the body, and gone as far as it had the power. It was a ·36 inches calibre, the pistol being a large one. Briggs was convicted of manslaughter.

If a man stabs another over the heart deliberately with a knife capable of penetrating into the heart, the law would presume that he intended to cause his death, and therefore the offence would be murder.[39]

Where death is due more to the abnormally enlarged heart of the deceased than to the nature of the injuries inflicted on him, the accused is guilty of an offence under Sec. 325 I. P. C., and not of an offence under Sec. 304 I. P. C.[40]

Abdomen.—In almost all cases of abdominal contusion, shock is an early symptom, but in the absence of injury to the internal organs it is neither severe nor prolonged. Penetrating wounds of the abdominal wall may occur with or without injury or protrusion of the abdominal viscera. In all cases there is bleeding and shock, which is marked when the viscera are injured. Protrusion without injury may cause little effect. Cases are on record

[39] *Faqir Mohammad* v. *Emp.*, 33 Cr. L. J. 570=138 I. C. 217=33 P. L. R. 281=Ind. Rul. 1932 Lah. 431.

[40] *Bharat Singh* v. *Emp.*, 34 Cr. L. J. 99=140 I.C. 706=9 O.W.N. 655=A. I. R. 1932 Oudh 279=Ind. Rul. 1933 Oudh 20=1932 Cr. C. 697.

where a person has walked a considerable distance for treatment supporting the protruding intestines in his hands. The danger here is that of peritonitis. The liability to visceral injury varies with the character of the violence and with the condition of the abdominal wall and of the subjacent viscera. If the blow is slight, the effects are probably not serious. If the blow is expected and the muscles are rigid little harm may follow even when the violence is great ; but when the abdominal wall is relaxed and the blow unexpected a slight injury may do much mischief. The stomach, intestines or bladder may be torn, especially if they are distended. The liver, spleen and kidneys may be bruised or torn and serious hæmorrhage may result.

Any sudden sharp concussion especially directed to the epigastrium is likely to cause death by syncope due to irritation of the solar plexus without the appearance of any evident lesion and the post mortem examination may be entirely negative.

The medical witness, an hospital assistant, "inferred" that death was the result of peritonitis caused by a single blow across the abdomen with a stick.

"From the cases and facts given at pages 560 and 645-6 of the 2nd Edition of Taylor's Medical Jurisprudence (to which work we refer under the provisions of the penultimate paragraph of Section 57, and the 1st proviso of Section 60 of the Evidence Act, it is clear that death is often the result of a sudden blow on the abdomen." Convicted under Sec. 304 I. P. C. Seven years. [41]

Chevers quotes a case in which a man who was said to have been struck with a thick pole on the right loin died immediately. No trace

[41] 12 C. L. R. 86 Cal. *Hatim* v. *Cr.*, McDonell and Field, J.J.

of injury or of grave disease could be discovered on the most careful examination. "I therefore stated that, as blows inflicted on the front of the abdomen had been known in several instances, to cause death by shock to the nervous system, it was probable that in this case like force applied to the side of the belly, had acted in a similar manner.

The abdomen is a most delicate and vulnerable part of the human body, and a kick on the abdomen with such violence, as to cause fracture of two ribs and rupture of the spleen, which was normal would make the offender guilty of culpable homicide not amounting to murder.[42]

In such case of sudden death, the result is due to cardio-respiratory inhibition or shock. **Simultaneous stoppage of respiration and circulation is known as cardio-respiratory inhibition, shock or syncope.** It may be caused by violence or mental emotion. It has been produced by the passage of an instrument into the womb, bladder or nose. People have died of fright. The opinion as to the cause of death can only be inferential, based on the absence of lesions, ascertained by a complete post mortem examination, and the history of the case. A violent blow, kick or the passage of the wheel of a heavy vehicle over the abdomen may leave no mark of injury and no bruising of the abdominal wall, although the violence caused rupture of the viscera.

A boy aged five years, playing in the street in Calcutta fell, and the wheel of a conservancy cart passed over his body. He was taken to hospital but his mother refused to keep him there and brought him back to her hut where he died eight and a half hours after the accident. On post mortem examination, no sign of injury and no mark of the cart wheel were visible on the body ; in the subcutaneous tissues over the right rectus muscle, there was a small bruise. The

27 Cr. L. J. 977, *H. Mansell Playdell* v. *Cr.* Zafar Ali, J.

abdomen contained sixteen ounces of blood. There was a laceration filled with blood clot on the anterior edge of the left lobe of the liver ; it was about one inch deep. On the under surface of the liver there was a small tear, also filled with clot ; no other injury in the body. Doubtless the clotting of the blood in the lacerations stopped further bleeding and accounts for the long survival.

It appeared that a female child 8 or 9 years of age, who had not arrived at puberty, was the wife of the prisoner. She was brought by her father to the prisoner's house for the purpose of being left there. But in consequence of her distress, her father remained for the night. At night the child and the accused went inside the house ; the fathers of both the child and the accused remained outside in the veranda. After midnight, the child leaving the house, apparently with the intention of going home to her father's house, got into a canoe, which sank, and left her in the water, from which she was rescued by the prisoner's father, and brought back to the house by the prisoner. The prisoner, having pulled her into the house, kicked her on the back with his bare foot, from which kick the child fell down and died almost immediately.

From the medical evidence it appeared that the girl was quite healthy, and that she had died from rupture of the anterior coat of the stomach caused by external violence, which might have resulted from a violent kick with the bare foot ; there was also a slight wound on the head, and a bruise on the back on the neck ; and it was stated by the medical officer that the child had not connection with a man. The prisoner was committed on a charge of culpable homicide. The Sessions Judge was of opinion that the case did not amount to culpable homicide, inasmuch as the prisoner had no intention to cause death, and had not the knowledge that the act was likely to cause death. He therefore convicted the prisoner under Sec. 304A, and sentenced him to one year's rigorous imprisonment, because the prisoner, in carrying out his intention to cause hurt, committed a rash act, which, even if he did not know it to be likely to cause death, was of a nature not altogether unlikely to lead to that result.

The opinion of the High Court was given by Ainslie, J. (Broughton J. concurring). Section 304A does not apply to a case

in which there has been a voluntary commission of an offence against the person.

If a man intentionally commits an offence, and consequences beyond his immediate purpose result, it is for the Court to determine how far he can be held to have the knowledge that he was likely, by such act, to cause the actual result; and if such knowledge can be imputed, the result is not to be attributed to mere rashness; if it cannot be imputed, still the wilful offence does not take the character of rashness because its consequences have been unfortunate. Acts probably or possibly involving danger to others, but which in themselves are not offences under Section 336, 337, 338, or 304A if done without due care to guard against the dangerous consequences. Acts which are offences in themselves must be judged with regard to the knowledge, and placed in their appropriate place in the class of offences of the same character.

There is a judgment of the Madras High Court (7 Mad. H.C.R. 119) in which Mr. Justice Holloway explains the use of the words "rashness" and "negligence" in the Penal Code, and this judgment has been recently approved by the Chief Court of the Punjab, and reproduced in a Circular issued by it to all Civil Courts.

Mr. Justice Holloway says: "Culpable rashness is acting with the consciousness that mischievous and illegal consequences may follow, but with the hope that they will not, and often with the belief that the actor has taken sufficient precaution to prevent their happening.

"The imputability arises from acting despite of the consciousness.

"Culpable negligence is acting without the consciousness that illegal or mischievous effects will follow, but in circumstances which show that the actor has not exercised the caution incumbent on him, and that, if he had, he would have had the consciousness.

"The imputability arises from the neglect of the civil duty of circumspection.

"It is manifest that personal injury, consciously and intentionally caused, cannot fall within either of these categories, which are wholly

inapplicable to the case of an act or series of acts themselves intended which are the producers of death."

We therefore set aside the conviction under Section 304A.

In judging of knowledge had by the accused, we must consider the circumstances: the blow that to one person, or under ordinary circumstances, may not, in the ordinary course of nature, be likely to cause death, may yet be imminently dangerous to another, or under special circumstances.

To kick a girl of tender age with such force as to produce rupture of the abdomen in a healthy subject appears to us to be an act of such a character that no reasonable man could be ignorant of the likelihood of its causing death.

We therefore convict the prisoner Ketabdi under the latter part of Section 304, Indian Penal Code, and sentence him to five year's rigorous imprisonment, to run from the date of his original sentence. [43]

Penetrating wounds of the abdomen are **always dangerous**, especially those involving viscera. Death may result from shock, or bleeding or later from peritonitis.

If a person stabs another in the abdomen with sufficient force to penetrate such structures he must clearly be held to have intended to cause such bodily injury as is sufficient in the ordinary course of nature to cause death and the killing would therefore *prima facie* amount to murder.[44]

[43] 4 Cal. 764, *Ketabdi Mundul*, Ainsile and Broughton, J.J., see also 20 Cr. L. J. 517, *Kure*, A. Piggot, J.

[44] *Abdul Aziz* v. *Emp.*, A. I. R. 1933 Pat. 508 (510)=14 P. L. T. 464=1933 Cr. C. 1079; *Bhagwana* v. *Emp.*, 34 Cr. L. J. 711=144 I. C. 292=A. I. R. 1933 Lah. 434=34 P. L. R. 255=Ind. Rul. 1933 Lah. 445=1933 Cr. C. 675; *Maung Pyan* v. *Emp.*, 37 Cr. L. J. 214=159 I. C. 1058=A. I. R. 1935 Rang. 408=1935 Cr. C. 1172=8 Rang. 320; *U. Zawana* v. *Emp.*, 37 Cr. L. J. 418=161 I. C. 113=A. I. R. 1936 Rang. 60=1936 Cr. C. 88=8 Rang. 452; *Nathu* v. *Emp.*, 29 Cr. L. J.

Rupture of the Spleen.—This is of frequent occurrence in India. In almost all cases of rupture of the organ, it is enlarged, usually greatly, the capsule thin and tense, and its substance soft and friable. Sometimes a slight blow over the abdomen, even a push, may cause rupture and death in twenty-four hours.

Under extreme provocation by his wife, prisoner pushed her with both arms so as to throw her with violence to the ground, and after she was down, slapped her with his open hand and sat upon her. The woman died, and on examination it was proved that there was a certain degree of disease of the spleen. There were no external marks of violence whatever. She was a healthy woman, and the disease of the spleen had not proceeded far, it was in fact, an early stage of disease. Conviction under Sec. 323 I. P. C.[45]

Prisoner struck his wife a blow on the face, and gave her a kick in the spleen, so that she died immediately. Medical evidence goes to show that prisoner was not likely to know that the spleen was diseased. There is evidence that deceased gave provocation. Conviction under Section 323 I. P. C.[46]

It is proved, and admitted by the Sessions Judge, that the prisoner received provocation at the hands of the deceased, and that the weapon he used, in retaliating, was a light bamboo stick not more

369=108 I. C. 268=10 A. I. Cr. R. 37; *On Shwe* v. *Emp.*, 76 I. C. 711 =1 Rang. 436 (444)=A. I. R. 1924 Rang. 93=25 Cr. L.J. 247; *Haxrat Gul Khan* v. *Emp.*, 29 Cr. L. J. 546=109 I. C. 482=47 C. L. J. 240= 32 C. W. N. 345=A. I. R. 1928 Cal. 430=10 A. I. Cr. R. 259; *Mohammad* v. *Emp.*, 33 Cr. L. J. 375=137 I. C. 65=A. I. R. 1932 Lah. 254=Ind. Rul. 1932 Lah. 273=1932 Cr. C. 278=33 P. L. R. 145. But see *Alahadin* v. *Cr.*, 24 Cr. L. J. 663 where the accused was held guilty of having caused grievous hurt.

[45] *Punchanun Tantea*, 5 W.R. 97 Cal., Norman and Campbell, J.J.

[46] *Bysagoo Nashyo*, 8 W. R. 29 Cal., Seton-Karr and Hobhouse, J.J.

than an in inch in diameter, and that the blow was aimed, not at the head but at the side. It unfortunately happened that deceased was suffering from a diseased spleen, and a very slight blow on the region of that organ would have been, in the opinion of the medical officer, sufficient to cause death. Conviction under Section 323 I. P. C.[47]

Where death is caused by a blow on an enlarged spleen and it is not shown that accused had knowledge of this fact he can be convicted of causing only simple hurt.[48]

Simple palpation through the abdominal wall may cause rupture. Spontaneous rupture sometimes occurs. In such cases the organ is enlarged and extremely soft and friable.

Rapidity of death will depend on the size of the rupture and accompanying hæmorrhage.

A Mahomedan lad, 15 years of age, said to have been beaten with lathis on the 20th of July 1897, was admitted to hospital on the same day and died there on the 6th of August. A post mortem examination was held on the following day. The following injuries were found: An oblique longitudinal mark, five inches long, across the left side of the back, with fracture of four ribs, (eighth to eleventh), spleen much enlarged; it weighted one pound, there was a rupture on its inner aspect three quarters of an inch long. This boy had altogether, fracture of three bones of the skull, four ribs and rupture of two of the internal organs, yet he survived for no less than seventeen days; and in the end, the immediate cause of death appears to have been inflammation of the membranes of the brain—Ind. M. G., 1902, p. 219.

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[47] *Megha Meeah*, 2 W. R. 39 Cal., Kemp and Glover, J.J.

[48] *Bhajan Das*, 24 Cr. L. J. 421 at page 423; 72 Ind. Cas. 533 Lah: 4 I. R. 1924 Lah. 218; *Emp*, v. *Fox*, 2 All. 522; *Emp.*, v. *Randhir Singh*, 3 All. 597; *Saberali Sarker*, 21 Cr. L. J. 666; *Khuda Bakhsh* v. *Feroze Din*, 30 Cr. L. J. 300=114 I. C. 442=A. I. R. 1929 Lah. 531=Ind. Rul. 1929 Lah. 282. But see *Emp.* v. *O'Brien*, 2 All. 766 and *Emp.* v. *Idu Beg*, 3 All. 776 where the accused was convicted of grievous hurt.

A blow or kick over the ribs in the region of the spleen may rupture the organ without fracture of the rib.

If rupture of the spleen is not attended by rapid and severe hæmorrhage, the sufferer is not prevented from exercising muscular power.

No definite rule can be laid down as to how long a person can survive and what exertion he is capable of going through after receiving the injury.

Rupture and wounds of the Liver.—These are produced by violence directed to the abdominal walls, such as, blows, kicks, falls, crushes, or it may be torn by the broken end of a rib. Penetrating injuries also occur, and the organ may be involved in a gunshot wound. The resulting injury varies considerably. It may be merely torn or contused, or broken up and pulped. The amount of injury depends to some extent on the condition of the organ. If it is firm and hard, it may receive little damage from a blow which would otherwise do it considerable harm, whilst if enlarged, and fatty, it is readily torn. If the capsule is torn, then only, bleeding occurs into the abdominal cavity. If the injury is slight the sufferer will manifest the signs characteristic of loss of blood, and may recover. In such cases there is usually jaundice, with the passing of dark, bile-stained urine, fever, and rigidity of the belly walls.

If the liver is severely damaged, then death from hæmorrhage usually follows in a very short time. The organ, however, may be torn to a frightful extent without an immediate fatal result ensuing.

Karan struck Sita Ram a swinging side-ways blow with a lathi on the right side. Sita Ram fell down at once and died very shortly after. The medical evidence showed that Sita Ram's liver was ruptured. Karan was found guilty of murder. But on appeal the High Court converted the offence to one under Section 325 (Grievous Hurt), on the ground that although medical evidence showed that the rupture of the liver was certainly likely in the ordinary course of nature to cause death, but it did not show, nor did any of the other evidence show that Karan intended to rupture Sita Ram's liver.[49] But where a person was killed by a stab wound between the 9th and 10th ribs which punctured the liver and diaphragm, there can be no doubt that, in the absence of extenuating circumstances, the man who inflicted the wound must be guilty of murder.[50].

In injuries to the liver, simple or severe, there may be a **total absence of external marks.**

A drunken native in an altercation pushed another, who fell heavily to the ground and died "very shortly after." Post mortem examination, showed no marks of injury on abdomen or thorax, but a rent in the right lobe of the liver five inches long. The liver was not enlarged. Prisoner was tried under Section 304 I. P. C.—Ind. Med, Gaz. 1889, p. 299.

Rupture may occur by the sudden contraction of the abdominal muscles, or a fall on the feet from a height.

Unless the larger blood vessels are torn, rupture is not attended with any considerable hæmorrhage. If the hæmorrhage is severe, death ensues very speedily. As in injury to the spleen, if blood escapes slowly, death may not occur for several hours.

[49] *Karan Singh* v. *Emp.*, 25 Cr. L. J. 1145=81 I. C. 969=11 O. L. J. 563=A. I. R. 1925 Oudh 135.

[50] *Nga Tin Han* v. *Emp.*, A. I. R. 1933 Rang. 423=1933 Cr. C. 1532=147 I. C. 440.

Rupture may be caused by violence applied to the chest, and there may be no marks in the region of the liver.

A boy, about ten years of age, went to sleep beneath a tree in the backyard of the Gurdaspur railway station. In the dark, a laden bullock cart driven to the station, passed over the sleeping child. Death occurred in a few minutes. At the post mortem examination I found a few small superficial abrasions on the right side of the chest corresponding to the fourth, fifth and sixth ribs. There was slight extravasation of blood into the tissues beneath these abrasions. No rib was fractured. The liver was extensively lacerated, in some places a mere pulp.

Rupture and wounds of the Intestines.—These as a rule follow abdominal injuries of a more severe character, such as, when a cart-wheel passes over the abdomen, or when the abdomen has been tightly squeezed, or kicked or proded with a stick etc. The bowel does not always give way at the point of impact, but occasionally at a distance from it ; under these circumstances the tear is more likely to be irregular and ragged, whilst if it yielded at the point struck, the gut may be cleanly torn across. The parts most frequently affected by this form of injury are, the junction of the movable jejunum with the fixed duodenum, and the lower three feet of the ileum.

Rupture may sometimes occur from disease. If there is no sign of ulceration at the point of rupture, then it must be attributed to violence. Rupture of even a healthy portion of the intestine, is possible from a comparatively slight amount of violence if suddenly applied, even a fall might cause it.

The violence causing a rupture may leave no external marks.

Usually after a rupture of the intestine, the sufferer is capable of considerable muscular exertion.

A boy of thirteen was struck by a cricket ball in the right groin, inspite of which injury he remained on the grounds more than an hour and a half and then walked more than a mile to his home. He died on the fifth day from peritonitis as a result of rupture of the intestines and escape of the contents. (American Jour. Med. Sci. April 1870, p. 435.)

Punctured wounds of the intestines without opening the cavity may end fatally by peritonitis. If the intestines happen to be distended at the moment of rupture, the contents must escape instantaneously into the peritoneal cavity and the germs of inflammation are thus implanted on the peritoneum, which means peritonitis and death; but, if the bowel happens to be empty and collapsed and rupture occurs, then no extravasation will take place into the peritoneal cavity, and if renewed distension could be prevented for a time, the injured bowel would have time to contract adhesions to the neighbouring coils or to the abdominal walls before the bowel could become distended with faeces, and thus recovery might take place.

Rupture and wounds of the Kidney.—Rupture from ordinary applied violence is rare. It is a less fatal injury than rupture of the organs previously considered. Injuries to the organ are usually due to crushes of the body, as when a cart passes over the abdomen etc. Considerable bleeding follows, both into the substance of the kidney or its attached cavity (pelvis as it is called), and into the surrounding fatty tissues, and this even, when the capsule has not been torn. The kidney may be crushed to a pulp

without any external bleeding, and under these circumstances clots might pass down and block the ureter or tube leading from the kidney to the bladder.

In 1864, a man who had been run over was brought to Guy's Hospital. He complained of pain in the back, but there were no symptoms of severe injury, and no marks of violence were seen on the skin of the back. He left the hospital and walked with some assistance to his house. A few hours afterwards he was found dead in bed. On inspection there was a large quantity of blood effused in the abdomen. This had proceeded from one kidney, which had been ruptured transversely through its whole substance. (Taylor's Med. Jur. 5th Ed. Vol. I, p. 384).

When the capsule in front, is torn, the peritoneum may also be involved especially in children; then bleeding takes place into the abdominal cavity. In rupture of the capsule, at the back, the cellular tissue surrounding the kidney becomes infiltrated with blood and urine and suppuration is sure to follow, resulting in blood poisoning (pyæmia), or chronic exhaustion.

Not infrequently rupture of the kidney is accompanied by other severe injuries, such as, fracture of the spine, pelvis, skull, ribs etc. Rupture may occur without any marked symptoms and prove fatal in a few hours.

After severe rupture the sufferer may exercise considerable muscular exertion.

Rupture of the Bladder.—This injury may be due to direct violence applied to the lower part of the abdomen, especially when distended, and in this condition slight violence may cause it, such as a fall. It may accompany other injuries, such as, fracture of the pelvis,

or it may be opened by a penetrating wound. Apart from such causes rupture may occur from simple over-distension, which is however rare.

A person may die suddenly from this injury as a result of shock.

A man, while struggling with another, received a severe kick on the lower part of the abdomen. He fell backwards and died immediately. On inspection the brain was congested, but otherwise healthy ; the heart was free from disease, but much distended with black coagulated blood. The bladder presented, on the left side of the body, a rent of about two inches ; but this organ was in other respects, healthy, as well as the urethra. There was some bloody effusion in the cellular tissue. The peritoneum and viscera of the abdomen were uninjured. There were no marks of violence on the body. (Taylor's Med. Jur.).

Ruptures produced by blows are rarely accompanied by bruising or injury to the skin. Thus there may be no means of distinguishing, by external examination, whether a rupture was really due to violence or to spontaneous causes.

A spontaneous rupture may occur, when there is paralysis, with a want of power to expel the urine ; when the bladder is ulcerated, or otherwise diseased ; when there is an obstruction in the urethra ; even when no cause can be discovered.

If the rupture communicates with the abdominal cavity, there will be severe shock. The sufferer will experience a constant desire to pass water, but nothing is passed except perhaps a little blood. Peritonitis soon follows and proves rapidly fatal. If the rupture is away from the peritoneum, the urine will find its way into the cellular

tissue, and if unhealthy, at once gives rise to a most virulent suppuration, which usually proves fatal from blood poisoning.

Death usually occurs in from two to seven days.

External Genitals.—Rupture of the male urethra may be caused by a fall, blow or kick in the perineum. It may be torn partially or completely through its circumference. When it occurs there is shock, followed by great distension of the scrotum from haemorrhage, whilst blood trickles from the urethral orifice. Whether the rupture is complete or not, a stricture of the canal is almost certain to follow.

Contusion of the Testicles.—This is a common form of injury. It may be caused by a blow, kick or fall, or by a squeeze (a common form of assault in india). Pain is extreme and severe shock accompanies the pain and may be so profound as to cause death.

A woman had been convicted of murdering her husband, and was condemned to death.

The facts of the case are briefly as follows :—

The husband was a postal runner, and lived with the accused his wife on the Estate of a Mr. Beaver at Kallakombe. The wife worked as a cooly on the estate. One day Kalan the husband was seized with violent vomiting and purging which continued for six days. On the morning of the sixth day of his illness a witness heard Kalan cry out "Ey-Eyoh she is biting my testicles" and on running to Kalan's hut saw him lying at the entrance on his back. The accused was sitting on Kalan's chest holding his throat with her right hand and pulling and twisting his testicles with her left hand. Her hair was waving in Kalan's face and he was pulling it, and crying out Ey-Eyoh. The witness called on her to let go her hold of her husband's testicles, but she would not. After she did loosen her hold of his testicles, he stood up with difficulty, and reached the door, where he fell down with a cry of pain, pointing to his testicles, and saying, see, she has bitten me.

The witness looked at the testicles and noticed some bleeding. The witness asked what the cause of the quarrel was, and she replied, "look at my thumb, he has bitten me." He looked at her thumb but could not notice any mark of a bite on it, or any injuries on the woman. Another witness asked her why she had acted in this way to her husband who was already sick, her reply was "Sir he came to cut me with a knife ; it is true I twisted his testicles," and she pointed to the front part of her throat where there was a slight slit which was slightly bleeding. She also showed a knife near the door with which she said Kalan came to stab her.

The medical evidence showed that there was a wound on the front part of the scrotum, probably produced by a wrench or twist. There were no marks of any teeth on the scrotum, but the wound was covered with dried blood. On opening the scrotum, the testicles or glands proper, were found to be "very much bruised and reduced to a pulpy condition." There was no apparent disease of the testicles. Their condition was due, not to disease but to injury, and Dr. Lancaster considered that a prolonged severe squeeze of the testicles, even with the left hand of the accused would have been sufficient to produce the appearances which he saw at the post mortem. He considered that the injury to the testicles was the cause of Kalan's death, and added that, even if the man had been in sound health, the injury would have caused his death.

The accused was convicted under Section 304 I. P. C. (7 years).[51]

Where the accused seized the deceased by the testicles with considerable force and for a considerable time, and where the deceased was in a very unsound bodily condition, and the medical evidence showed that the injury inflicted by the accused upon the deceased would not in normal conditions have endangered his life ; the accused was held to be guilty of causing simple hurt.[52]

Squeezing of testicles can result in death. Where, therefore, the

[51] *Kaliyani*, I. L. R. 19 Mad. 356 F. B. Subramania Ayyar, Davies and Benson, J.J.

[52] *Bai Tiba*, 18 Cr. L. J. 1010 B. Beaman and Shah, J.J.

accused lost control of himself, struck the deceased two blows with a knife and thereby caused his death when the deceased caught hold of the accused's testicles and pressed them hard, it cannot be said that the accused had no apprehension of death or grievous hurt while his testicles were being pressed by the deceased. He was held to have the right of private defence and acquitted.[53]

If recovery after such an injury takes place atrophy of the injured testicle may occur.

The whole of the external genitals may be sliced off as a punishment for adultery and death may result from hæmorrhage.

Wounds of the Penis.—These, especially when the organ is in a state of erection may prove speedily fatal by excessive hæmorrhage. Self mutilation is common among the insane.

Wounds of the Female Genitals.—Wounds, even contused, of the female genitals may cause death by hæmorrhage without the rupture of any large vessel.

A woman aged 36 years, while in a stooping posture, was kicked by her husband in a lower part of the abdomen and died in about an hour from loss of blood. There was no injury to the vagina or uterus. There was a wound about one inch long and half an inch deep at the edge of the genital orifice. (Taylor's Med. Jur. I, page 536).

At Lahore, I was called to attend a lady, who, to avoid an accident had suddenly to dismount from her bicycle, and in doing so received injury to the genitals. The bleeding was extraordinarily severe, so much so, that the whole of her clothing below the hips was saturated in blood. On examination I found a small laceration about an eighth of an inch long and quite superficial, situated above and to the left of the urethral opening. Gentle continuous pressure with a cold compress stopped the bleeding. It is possible, in the absence of medical

[53] *Sardarilal* v. *Emp.*, A. I. R. 1937 Lah. 108.

aid, that the injury could have ended fatally. Such persistent bleeding may attend rupture of the hymen at first intercourse.

Injuries to the female genitals is strong presumptive evidence of malice on the part of an assailant; it may be suicide. Self-multilation among females is rare even among the insane.

In the pregnant state, when large varicose veins are present an injury to the vulva usually proves fatal from excessive hæmorrhage if there is an external wound, or there may result a huge blood tumour which often suppurates, especially if there is a superficial abrasion.

A woman in the eighth month of pregnancy, fell from a chair, which also fell with her. There was hæmorrhage, and she died in a quarter of an hour. The blood had flowed from a wound an inch and a half long, situated between the right lip of the genitals and the urethra. The edges appeared to be cleanly divided, and the wound penetrated into the cellular tissue. (Taylor's Med. Jur. Vol. I. page 535).

It will be difficult to distinguish accidental wounds from those produced by assault. As the bones are not far below the surface, a kick or blow from a blunt weapon might easily simulate an incised wound, hence they should be examined by the aid of a lens.

Were the injuries inflicted before or after death?

As death in these cases is the result of severe hæmorrhage, injuries produced after death would not result in a hæmorrhage that could account for death.

Wounds of the Vagina.—These, in addition to the risk of death from hæmorrhage, may open the peritoneal cavity and set up fatal peritonitis. Laceration of the vagina has

been caused by coitus by full grown adults with immature girls.

No husband has the absolute right to enjoy the person of his wife without regard to the question of her personal safety. Accused had sexual intercourse with his child-wife who had not yet attained puberty, and thereby caused her death. Held, that he was guilty of an offence of causing death by a rash or negligent act punishable under Section 304A.[54]

Injuries to the Womb.—Such injuries may be caused by falls, blows and kicks, and other forms of violence.

Injuries to the gravid (with child) uterus without causing rupture may prove very serious and result in dangerous fatal haemorrhage. A blow over the uterus may cause inflammation of the organ and end in softening and rupture.

Fractures—The primary meaning of the word "fracture" is "breaking," though it is conceded that it is not necessary in the case of a fracture of the skull bone that it be divided into two separate parts because it may consist merely of a crack ; but the point is that if it is a crack it must be a crack which extends from the outer surface of the skull to the inner surface.[55]

Fractures of bones have very important bearings and are the subject of discussion in a very large number of criminal cases.

Fractures constitute the Eldorado of the dishonest

[54] *Shahu*, 18 Cr. L. J. 1003. S. Pratt J. C. Hayward A. J. C.

[55] *Maung Poyi* v. *Ma E. Tin*, 38 Cr. L. J. 960(961)=A.I.R. 1937 Rang. 253.

medical witness and verily, small fortunes can be made, unless the lawyer knows his job.

Let me illustrate what I mean. Suppose A and B have a fight. Later B is medically examined and for a consideration, obtains a certificate to the effect, that a bone has been recently fractured. The limb is put up in splints and B is informed that the splints are not to be disturbed for at least three weeks. May be, after several weeks the case comes up for trial. The medical witness declares that at the time of his examination he discovered the bone was fractured, and as far as my experience goes, such a statement is always accepted by magistrate and counsel.

Now, in all Government and Commercial transactions, all expenditure must be supported by a payee's receipt ; the payer's word is not accepted, whatever his office or position may be. Why then, should not such a declaration be supported by an X-ray photograph of the alleged fractured bone. The loss of a few rupees to the Government or some commercial firm cannot compare with the loss of liberty, pain of mind and humiliation of some innocent bread winner.

In my opinion, it is unfair to one's client to omit to take advantage of such confirmatory evidence, and I prophesy that if my suggestion is accepted, the number of fractures of bones in medico-legal cases will rapidly decline.

The causes of fracture are :—

(a) Injury or traumatism.

(b) Disease.

The exciting causes of traumatic fractures are :

(a) External violence.

(b) Muscular action.

Bones are most resistant to **traction** next to **pressure** ; they are less resistant to **flexion** or bending, and least of all to **torsion** or twisting.

External violence may be **direct** or **indirect.** In a fracture from direct violence, *e.g.* a lathi blow, the bone is broken at or near the spot where the violence is applied. These fractures are usually attended by more serious consequences than fractures from indirect violence, since the soft parts are, as a rule, much injured, and the fragments may be broken, into small pieces or fissured, and perhaps driven into important organs ; the lung in fracture of the ribs ; the brain in fracture of the skull. In indirect violence, the fracture occurs at a distance from the spot where the violence is applied, *e.g.* fracture of the collar bone in a fall upon the shoulder. In such cases the bone breaks at its weakest spot. Fractures from indirect violence are most common in the bones of the extremities and the base of the skull.

The bone most frequently fractured by muscular action is the knee-cap ; occasionally it occurs in the arm, especially when combined with torsion.

All diseases of the bone become predisposing causes to fractures from slight causes.

The force required to fracture a bone varies with its size, shape and texture. In old age the bones become brittle from changes in texture, and fractures occur from

very slight violence. In children the bones are tough and elastic, and may be forcibly bent without breaking.

A boy was run over by a heavy waggon, two wheels of which passed over his chest. He arose apparently not much injured, but on reaching the side of the street fell dead. On dissection the heart was found ruptured. The ribs were not fractured, nor was there any laceration of the walls of the chest. (Taylor's Med. Jur. Vol. I, page 518).

A fracture is a break of bone or cartilage. The bone may be broken at the part where it is struck—**fracture from direct violence**—, or may break in consequence of a strain applied to two levels of the bone at some distance apart—**fracture from indirect violence**—.

A **comminuted fracture** is one in which there is fragmentation of the bone at the site of injury.

A **greenstick fracture,** met with in children, is one that does not extend right across the bone—the bone breaks half way through, like a green stick.

A **simple fracture,** means that the skin over the fracture remains intact.

A **compound fracture** is one in which the skin is broken either by protrusion of the bone through the skin after the break has occurred or by the direct action of the violence which caused it.

When a bone is broken bleeding takes place from the ends of the bone, and from the surrounding tissues that have been lacerated. By the end of a week the broken bone is found embedded in a soft mass of newly formed granulation tissue which is called **"callus."** The quantity of callus varies ; if the fragments are kept at rest, very

little is produced, and only between the broken ends ; if the fragments have been moved, a large mass is formed, which surrounds the broken bone. From the tenth to the fifteenth day, the process of ossification commences. The callus becomes fibrous before it ossifies, and forms a firm union between the broken parts long before ossification is completed, which takes about two months. The process of union as described, is what occurs in a healthy individual; delay and alterations may be caused by constitutional conditions, and in arriving at a conclusion regarding the length of time a bone has been fractured these must be considered.

The signs of fracture are :—

1. Pain, bruising, swelling.
2. Increased movement of the bone.
3. Partial or complete loss of function.
4. Grating or creaking can be felt.
5. Deformity from displacement.

Nasal bones.—Fracture of these bones alone is always the result of direct violence. They may be broken by indirect violence in cases where a fracture of the base in the anterior fossa of the skull extends to them. When great force is used, the fracture may involve the skull. In the young the cartilages alone may be separated. There is usually deformity which may be masked by the swelling and bruising. There may be severe bleeding from the nose.

Malar or cheek bone.—This bone is rarely broken without the other bones of the face being involved. It is always the result of severe direct violence.

Upper Jaw bone.—Fracture of this bone is always the result of direct violence, and almost always compound. Dangerous bleeding may result from the wound.

Lower Jaw bone.—Fracture of this is usually by direct violence applied from the front, such as a fall or blow on the chin ; more rarely the force acts from the side and then the bone may break in the middle line.

Ribs.—These may be broken by direct violence, such as, a kick, or blow, the broken ends being driven inwards, and damage to the lungs, liver, or diaphragm being likely to occur. They may also be broken by indirect violence as when compression of the chest takes place. The break occurs at the most convex part. As a rule more than one rib is broken. The fifth to the eighth ribs are those usually injured, being more prominent, and fixed at both ends. Insanes and elderly women are especially prone to fracture of the ribs. This fracture does not incapacitate the sufferer from exercising muscular exertion.

Sternum or Chest bone.—Owing to its elasticity and that of the ribs, fracture is rare. Fracture of the chest bone is almost always due to direct violence, but may occasionally be caused by forcible flexion of the body, and is then generally associated with fracture of the spine. The break is usually transverse. It may cause great difficulty in breathing. The underlying organs may be injured. It does not incapacitate the sufferer from exercising muscular exertion.

Clavicle or Collar bone.—This bone is sometimes broken by direct violence, but is usually broken by force

directed to the hand or shoulder, as, in a heavy fall. In children it is often of a green stick nature. When direct violence is the cause, the adjacent large vessels and nerves and even the lung may be damaged, and gangrene of the arm may result. The arm affected is limp and powerless.

Muscular action has been known to break this bone, as in using a whip ; in this case the fracture is at about the middle of the bone.

Scapula or shoulder blade.—The mobility of this bone and the extensive muscular covering it possesses, protects it greatly from the effects of violence. Fractures of the body of the bone are rare. They are due to extreme violence and are generally transverse. The arm on that side hangs limp and powerless.

Bones of the arm.—Fractures of the arm bones may arise from any form of violence. The upper arm bone may be fractured by muscular violence. Direct violence is the usual cause of fracture of the upper end of the humerus. When this bone is broken the arm hangs limp and powerless ; not so in the forearm unless both bones are broken at the same spot. Fracture of the smaller bones *i.e.* those of the hand, usually result from direct violence, blows, crushes etc.

Bones of the Pelvis.—Fracture of the pelvic bones is almost always the result of direct injury, such as, falls, blows, gunshot wounds or crushes ; there may co-exist injuries to the urethra, bladder, womb or rectum.

Bones of the Leg.—Fractures of the thigh bone are extremely common in spite of the strength of the bone.

It may be broken by direct or indirect violence. Except in impacted fractures, a sufferer from a broken leg is incapacitated from moving except to short distances.

Fractures of the shin bones are usually due to direct violence but fracture may occur by a sudden forcible twisting motion. If both bones of the shin are broken near the same spot locomotion is not possible.

Bones of the Skull.—Fissured fractures of the skull are always due to external violence, direct or indirect. In the former case the skull first yields at the injured spot, but the fissure may extend from it for some distance; in the latter the fracture results from the yielding of the skull when compressed beyond its natural limits of elasticity.

Depressed or punctured fractures usually involve the vault of the skull, and are due to direct violence, either from a blow or fall, causing a simple or compound fracture, or from a penetrating injury occasioning a punctured fracture. In both cases there is often a considerable amount of breaking up of the bone.

It is quite possible for the outer table to be broken and depressed, without any injury to the inner, where an air cavity exists in the bone, or if the cellular bony tissue between the two tables is very thick. The inner table has been broken, and fragments even separated, as a result of a simple depression without fracture of the outer table; this rarely occurs in the adult, but is not uncommon in children. It is also possible in the case of children for a considerable depression to exists without any fracture of the inner table.

More usually both inner and outer tables are involved, and when such is due to force reaching it from without, the inner table is always more damaged than the outer especially in punctured fractures. When, however, the force is applied from within, as by a bullet, the outer table suffers more than the inner. The greater the velocity of the bullet, the more cleanly it cuts, a lower velocity breaking or splintering rather than cutting.

Fractures of the base of the skull, are almost always fissured.

The causes of fracture of the base of the skull are :—

(a) Violence directed to the top or to some part of the convexity of the skull. The skull in such a case actually bursts open, as it is at the moment compressed between two forces.

(b) Direct or indirect injury to the base of the skull. The fracture may be depressed and not fissured. Thus the point of an umbrella or stick may be thurst into the orbit or up the nose etc.

(c) The impact or resistance of the vertebral column against the base of the skull. Falling from a height on the buttocks or heels may cause such a fracture.

Effusion of blood under the conjunctiva often accompanies an ordinary "blackeye." The effusion of fracture of the base, however, comes on much more slowly and very often takes a fan-shaped form. There is, as a rule, little or no ecchymosis of the lid and skin in the

neighbourhood, and the blood is definitely *under* the conjunctiva, which can be moved over it.

Fractures, excepting those of the skull, are not dangerous to life, unless when of a compound nature ; they occur in an old person ; or in those who are debilitated by disease or dissipated habits. They may then cause death by irritative fever, gangrene, tetanus, pyæmia or delirium tremens being set up.

Any condition which lowers the vitality and consequent power of repair or healing of the tissues has a tendency to delay union of broken bones.

Unless the broken ends of a fracture are in absolute apposition (which is rare), signs pointing to the bone having been fractured at this spot will remain in the form of a hard prominence or node.

Dislocations.—In children, dislocations are rare, since any violence directed to a joint or its neighbourhood is more likely to cause separation of the end of the bone. In the aged, on account of the brittleness of the bones, fractures, rather than dislocations, are produced.

Dislocations may be caused by external violence and muscular force. The violence may be direct or indirect ; more commonly it is indirect, the violence being directed at a distance from the joint. Dislocations by muscular action can only occur to certain joints and the bones most often affected in this way are, the humerus or arm bone, the knee-cap, the ends of the lower jaw.

Dislocations are not dangerous to life unless of a compound nature (where a wound communicates with the joint). After dislocation, a power of locomotion

may exist, except when the injury is in the lower limbs. For some time after the dislocation of the hip, considerable power over the limb remains; it is only after a few hours that the limb becomes fixed in one position. Exertion with the dislocated member is out of the question.

A blow over a joint, if slight, causes a subserous (beneath the lining membrane) bleeding attended with pain and limitation of movement; if severe, a bleeding into the joint, distending its capsule, and producing a swelling.

The results of a contusion may be a painful, weak joint, with a limitation of movement, adhesions within the joint, and eventually fixation of the joint. Such an injury in a young person may form a place of lowered resistance where tuberculous disease may supervene. In older persons the joint may become the feat of arthritis deformans. A wound of a large joint should always be regarded as serious, because septic inflammation is very liable to be set up, followed by suppuration and disorganisation of the joint, or may end in death by general blood poisoning.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. Was it a contused or incised wound ?

2. Q. When making your examination, did you make use of a magnifying glass as an aid ?

3. Q. (If not) Then there is a possibility of your having mistaken one for the other ?

4. Q. Could a wound, inflicted with a blunt weapon over a bony prominence resemble one inflicted with a sharp edged weapon ?

A. Sometimes a sudden blow with a blunt weapon over a bony prominence produces a splitting of the tissues resembling a wound made by a sharp weapon. Close examination of the edges of the wound will show that they are finely serrated and there are irregularities of the tissues in the deeper parts, there may be bruising along the margins. All wounds resembling incised wounds should be carefully examined with a lens. If this is not done, an opinion becomes doubtful.

5. Q. What are the definite characters of an incised wound?

A. The edges are clean cut; the deeper tissue cleanly and evenly divided and surrounding parts free from contusion. It gapes, especially if transverse to the axis of the body. If the wound is inflicted over a bony prominence the incision will be carried more or less into the bone, which will be apparent on careful inspection with a lens. At the commencement of the cut the tissues are divided more deeply than the termination where it tails off to a very superficial wound (knife wounds).

6. Q. If a person had fallen upon something sharp edged such as, a piece of broken glass bottle, could you definitely say that the wound caused was not inflicted by a sharp edged weapon ?

A. Wounds inflicted by broken glass resemble incised wounds inflicted by sharp edged weapons but the former are usually irregular. As a rule, there is a slight bruising of the edges owing to the object being forced through his skin. Similar bruising occurs in wounds caused by chhavis, hatchets, tokas, etc., only more pronouced. In some cases an incised wound inflicted by a sharp edged piece of glass may be indistinguishable from one inflicted by a knife.

Q. 7. Is the wound likely to be followed by deformity ?

A. All incised and lacerated wounds of the face leave scare that cause more or less disfigurement. If suppuration occurs, the scars will be larger and deeper and more disfiguring.

Q. 8. Is the wound dangerous to life ?

A. The smallest wound may become infected and cause death by tetanus or other poisonous organism. Injury to a vital organ may be definitely accounted dangerous to life.

Q. 9. When was the wound inflicted ?

A. The exact determination of the age of a wound is impossible. (Refer to "Wounds in General").

Q. 10. Were the abrasions you have described caused before death. What difference would there be if they had been caused after death ?

A. Abrasions caused after death are distinguished by the absence of any signs of bleeding, and on incision, no extravasated blood is found beneath the patches.

Q. 11. Can a bruise be caused after death ?

A. Violence inflicted immediately after death results in bruising that is indistinguishable from that inflicted during life, but for such result, the injury must be inflicted within two minutes of death. After an interval of two minutes no appreciable effect is produced. However, it is possible that a bruise simulating one inflicted during life may be produced within two hours after death but the bruising would be very limited in extent.

Q. 12. Can post mortem staining be mistaken for bruising the result of injury inflicted during life ?

A. If an incision is made into a true bruise, however small, effused or coagulated blood will be found, whereas, a few bloody points are alone seen if the discolouration is due to post mortem staining. The blood in post mortem staining can be washed away by a little water, but such washing will have no effect on a true bruise. Post mortem stains are never raised above the surface as bruises sometimes are. A bruise may be situated in any part of the body, whereas, a post mortem stain must be on a dependent part.

Q. 13. Will this distinction hold good in decomposed bodies ?

A. In decomposed bodies the distinction in small bruises is almost impossible, although extravasated blood, if present in any quantity may still be readily distinguished.

Q. 14. Were there any signs of disease ?

Q. 15. Do you consider that the wounds have proved fatal even in the absence of disease ?

Q. 16. Did the disease lessen the chance of his recovery ? In what manner ?

Q. 17. Could the deceased have walked, or spoken, etc., after the injury was inflicted ?

A. Instant death is more likely to be met with in injury to the brain, heart and carotid vessels, yet, extensive damage to the brain, division of the carotid artery or a wound of the heart are not necessarily instantaneously fatal. A man has discharged a revolver twice, both bullets traversing the brain ; several cases are recorded where, after division of the carotid artery persons have run a considerable distance, and a man shot through the heart has run a quarter of a mile.

Q. 18. Is it possible that the wound was inflicted after death ?

A. The edges of a wound inflicted during life gape ; clotted blood is found on the edges and within the wound. Blood poured out after death is easily washed away but the blood clots of an ante-mortem wound resist such treatment. An ante-mortem wound may show signs of inflammatory reaction or marks of arterial spirting not found in post-mortem wounds. Wounds inflicted some time after death will not gape and there will be very little bleeding, unless a large vein has been cut across.

Q. 19. Could the wound be self-inflicted?

A. There is no wound which a person can inflict on himself which cannot be inflicted by another, but there are many wounds which another person can inflict which, from their situation and other circumstances could not be self-inflicted.

Q. 20. Can a self-inflicted wound be distinguished with certainty?

A. Self-inflicted wounds are generally incised and never contused or lacerated. They are usually slight. Nevertheless such wounds could easily be inflicted by another. Self-inflicted wounds cannot be distinguished with certainty.

Q. 21. Does bruising necessarily mean infliction of violence?

A. No. In conditions where the blood vessels are diseased and in scurvy, purpura and in bleeders, whooping cough and in the aged extravasation of blood may take place without the infliction of violence.

Q. 22. What sort of wound would you expect to find if inflicted by a pointed cylindrical weapon such as a rod or bamboo?

A. A stab with such a weapon will cause a slit-like wound and *not a round hole as one would imagine.*

Q. 23. What sort of wound would you expect to find if inflicted with a rod-like weapon having four flat surface?

A. A stab wound does not always correspond with the shape of the weapon used. In this case the wound will have the shape of cross.

Q. 24. Must a stab wound necessarily be no longer than the width of the blade of the weapon alleged to have been used?

A. A stab wound may be longer than the width of the blade as much depends on the movement of the weapon in the act of stabbing. The wound may be enlarged as the weapon is withdrawn.

Q. 25. You say that deceased died from the effects of gunshot wound. Can you say what sort of weapon was used and from what distance it was discharged?

A. Tattooing of surrounding skin will indicate black powder and probably an old type of gun or rifle. If paper or cloth is found in

the depths of the wound an old muzzle loader will be indicated. A small wound without tattooing will indicate a modern rifle. (As regards the distance at which it was discharged, see Chapter I, Gunshot wounds.)

Q. 26. Given a gunshot wound, what inference would you draw from the absence of deposit of grains of unburnt powder around the wound?

A. Firstly, that a powder or cordite had been used; if it be the result of a "near" discharge, that a modern weapon was used. Secondly, if caused by a weapon using black powder, it must have been discharged from a distance beyond ten feet.

Q. 27. Can you say whether the deceased was shot while standing, lying down, or running from or approaching the assailant?

A. If the entrance and exit wounds are on the same plane at the shoulders or head or the plane of the exit is lower than that of the entrance below these parts, the weapon was certainly fired from the shoulder whilst the deceased was standing. If he was lying down, the assailant would have to stand immediately above him; in such a case the entrance wound would present signs of "near" discharge. As to whether deceased was facing his assailant or turned away from him would be indicated by the characters of the entrance and exit wounds.

Q. 28. Is it possible to mistake the wound of exit for that of entrance or *vice versa*?

A. In gunshot by high velocity weapons the entrance and exit wounds are frequently of the same size and the latter may closely simulate the wound of entrance and sometimes it may be quite difficult to determine a wound of exit from one of entrance especially if the person has lived a few days.

One must resort to a careful examination of the clothing to distinguish between the wounds which often settles the question. Burning of the clothes without the underlying skin being affected may show the wound to be one of entrance. Strands of clothing may project externally around a hole in a garment signifying exit.

Q. 29. If the weapon was discharged at very close quarters, what characters would you expect to find ?

Since black powder burns and gives rise to much smoke, if used, the area surrounding the wound will be blackened and grains of unburnt powder will be embedded in the skin of this area, and if the part be washed, a brown parchment-like appearance will be seen. These are unmistakable signs of a "near" discharge when black powder is used. A "near" discharge from a weapon firing cordite or nitro powder will show no blackening within the wound from smoke. With cordite a fine grey powdery dust around the wound is all that may be seen. The wound will be larger than the entering missile, and the entrance will be larger than the exit wound.

Q. 30. In the case of a high velocity weapon discharged from a distance, what characters of entrance and exit wounds would you expect to find ?

A. The entrance wound is sometimes round and sometimes a slit similar to a stab. The skin stretches before the bullet and like a stab from a cylindrical butcher's steel, the result is a slit shaped wound. There is no inversion of its edges. The bullet has a tendency to push the soft tissues to one side, causing the exit wound to closely resemble the entrance, but if bone is struck the exit wound will be much larger than the entrance and its edges will be everted.

Q. 31. In the case of a low velocity weapon discharged from a distance what character of entrance and exit wounds would you expect to find ?

A. A bullet fired from a low velocity weapon is a distinctly crushing force with much power behind it. It therefore has a tendency to bruise and invert the edges of the entrance wound and forces before it a core of tissues which increases in diameter causing the exit wound to be irregularly torn with everted edges and much larger than the entrance wound. If there is a large deposit of fat the edges of the entrance wound has a tendency to bulge outwards giving the appearance of eversion.

Q. 32. What are the characters of a wound inflicted by a shotgun discharged at a distance of one yard, and when fired from beyond distance ?

A. A charge of shot fired from a distance of one yard will enter the body as one mass, making a large irregular hole surrounded by a zone of burnt, blackened and tattooed skin. At from six to nine feet the ragged hole is surrounded by a few scattered shot holes and very little tattooing only. At from twelve to fifteen feet the pellets enter in small groups or separately. Much will depend on the bore of the weapon-choke or otherwise.

Q. 33. Can you say approximately when the wound was inflicted and how long the deceased survived ?

A. Like all wounds, a gunshot wound undergoes no change for eight or ten hours. If a vital organ or vessel is injured, rapid or instantaneous death must be inferred, otherwise deceased may have lived for some considerable time.

Q. 34. Could the wound be self-inflicted ?

A. A suicide can only discharge a weapon at a distance to the extent to which he can reach unless some mechanical contrivance is used. Any wound which he can produce with the weapon must bear the characters of a "near" discharge and if these characters are absent, it cannot have been self-inflicted. The reverse is not the case as a homicidal wound may also bear the characters of "near" discharge.

Q. 35. Can you definitely say how the skull was fractured, if it was caused by a weapon what type of weapon was it ?

Q. 36. Was the skull of normal thickness ?

Q. 37. What amount of violence would be necessary to cause the fracture ?

A. The strength of a bone depends on its thickness and quality ; a blow that would smash to pieces an abnormally thin skull would probably only result in a contusion of the scalp in the case of an abnormally thick skull. An opinion, therefore, as to the amount of violence inflicted will depend on the thickness and quality of the bones, and the character of the weapon alleged to have been used.

Q. 38. Was the bleeding within the skull the result of the blow inflicted ?

A. Bleeding may be the result of a blow, but at the same time, the blood vessels may be in a diseased condition and the blow may have aggravated the condition.

Q. 39. Excluding violence, what are the causes of bleeding within the skull ?

A. Whooping cough in infants ; the result of difficult labour ; the result of chronic bronchitis in adults ; slight exertion in old age ; emotion ; anger ; excitement when the vessels of the brain are diseased. These bleedings usually occur into the arachnoid cavity (between the middle and outer covering of the brain) or into the substance of the brain.

Q. 40. Could the bleeding you have described, have resulted from any of these causes ?

A. Bleeding the result of violence generally takes place between the bones of the skull and the outer covering membrane of the brain. A definite bleeding in the substance of the brain or in its cavities is never the result of violence only unless the violence has been sufficiently severe to leave manifest evidence of its infliction but it is a very frequent result of disease alone or of disease plus excitement. Bleeding from the membranes of the brain is more commonly the result of injury than of disease, but it does occur occasionally from disease. If the bleeding is accompanied by fracture then violence as its cause is practically overwhelming.

Q. 41. Did you examine the vessels to ascertain if they were in a diseased condition ?

Q. 42. What would you expect to find if the vessels were diseased to such an extent as to be likely to result in bleeding following exertion or excitement ?

A. See Chapter I, Injuries to the Head.

Q. 43. What are your reasons for concluding that death was caused by concussion of the brain ?

Q. 44. Could the deceased have spoken or exercised voluntary power after the injury ?

A. A person may recover from the first effects of an injury, move

about and occupy himself, and after several days or longer he will suddenly be seized with fatal symptoms and die. Very severe wounds of the brain, accompanied even by loss of substance may not cause immediate death or even immediate insensibility ; recovery may even take place. In all cases where the bleeding is between the skull and the outer covering membrane of the brain, a longer or shorter interval may occur before the onset of symptoms, during which the victim may appear quite well. The interval will depend on the rate of bleeding within the skull.

Q. 45. Was meningitis the result of the injury ?

Q. 46. Can meningitis be caused in other ways ?

Q. 47. Can meningitis, the result of injury, be distinguished from that due to other causes ?

A. Meningitis may be caused by middle ear disease, the inflammation reaching the brain through the lateral sinus. The inflammation may extend inwards from the scalp, face, nose or neck by way of the veins. It may develop as a complication of septic infection due to absorption of pus forming germs, pneumonia, scarlet fever, small-pox and other general infective diseases. In the absence of these affections, it must be the result of injury or tuberculosis. The latter is usually seen in children and except in very rare cases affects the base of the brain, and the base only. Meningitis from injury almost always affects the vertex or crown.

Q. 48. Supposing the bleeding had occurred before the assault, could it be distinguished from that caused by the assault ?

A. Yes, if it had occurred some days before. In a recent bleeding within the cavity of the skull the blood is red in colour, after some days the colour changes to chocolate or brown and this passes gradually into a dirty yellowish tint, which may be met with in from twelve to twenty-five days after the bleeding had occurred.

Q. 49. What signs in a cut-throat wound would favour the theory of suicide ?

A. Direction, from below left ear downwards across the front of the neck just above the Adam's apple then slightly upwards on right side ; division of the tissues on one side or only the windpipe ;

several small cuts at the commencement of the wound; a bloody hand; a history of mental depression or worry; absence of wounds on other parts of the body.

Q. 50. Could the deceased have spoken after the injury was inflicted?

A. If the windpipe is divided the power of speech is destroyed. If the windpipe escapes division and only the great vessels on one side are divided the victim will retain the power of speech till unconsciousness.

Q. 51. Could the deceased have exercised voluntary power after division of the great vessels on one side of the neck?

A. Yes. The amount of voluntary power that may be exercised in such a case will depend upon the rapidity of loss of blood from the vessels severed (See case of Mrs. Frampton, under cut-throat wounds).

Q. 52. Was death instantaneous?

A. Cut-throat wounds and even those involving the great vessels on one side are not necessarily immediately fatal. Death would be instantaneous if the incision included all the structures down to the spine (See Dr. Rusell's case under cut-throat wounds).

Q. 53. Is it possible for any organ within the chest to be injured without there being any external sign of injury?

A. Yes, rupture of such an organ may be produced by falls, blows, and compression of the chest without showing any external sign of injury and even without fracture of the ribs. This is more likely to be the case in the young when the ribs are extremely resilient.

Q. 54. Is not a wound of the heart instantaneously fatal?

A. Wounds of the heart are not necessarily fatal, in fact, sometimes recovery follows. The rapidity with which death occurs depends on the rapidity with which the bleeding takes place. After a wound it may be possible for the victim to walk a considerable distance, or to perform certain acts since the bleeding into the heart

sac leaks out of the wounds in the sac into the pleural cavity and prevents obstruction to the heart's action. (See case of Farmer Briggs under wounds of the heart).

Q. 55. Is it possible for a blow on the abdomen to cause death and yet no injury be discoverable post mortem ?

A. Any sudden sharp concussion especially directed to the epigastrium (abdominal surface in front of the stomach just below the arch formed by the extremities of the ribs) is likely to cause death by syncope due to irritation of the solar plexus (nerves and masses of nervous substance for the abdominal viscera without the appearance of any evident injury and the post mortem examination will be entirely negative. It is an accident met with in boxing.

Q. 56. Is it possible for a blow to rupture one or more of the abdominal organs without leaving any external marks ?

A. In such a case, the abdominal walls being off their guard and in a lax condition, are not so to speak, "nipped" between the object inflicting the injury and a resistent body ; they yield before the blow and thus escape injury, the force of the blow being expended on the subjacent viscera. If the blow is expected and the abdominal walls become rigidly contracted, it may leave an external mark. In such circumstances the viscera would probably escape injury.

Q. 57. Is it likely that the spleen could be ruptured by a gentle prod or push ?

A. Enlargement of the spleen is exceedingly common and in this condition if the capsule is thin and tense and its substance soft and friable—which is frequently the case—the slightest violence such as a gentle prod with the fingers, a push, or the act of vomiting or even during the act of examining the spleen by palpation (the act of feeling with the hand) is likely to rupture it. It may even rupture spontaneously.

Q. 58. Could rupture of the bowel be caused by mere flatulent distension.

A. Yes, in cases of ulceration of the bowel. It is occasionally met with in cases known as "ambulatory typhoid" (cases of typhoid that can walk about and carry on their usual business). It is common in cases of typhoid fever.

Q. 59. Can the healthy bowel be ruptured by a fall ?

A. Yes, rupture of a healthy intestine is possible from a comparatively slight amount of violence if suddenly applied as a prod with a thumb or elbow or a fall against a prominence.

Q. 60. Would such an injury incapacitate a person from exercising muscular power ?

A. No, unless there is sudden severe internal bleeding. Immediately after rupture of the bowel a person is capable of considerable muscular exertion. Pain, shock and inflammation are the factors tending to decrease muscular exertion and the onset of such conditions depends on whether there is abundant escape of intestinal contents or not.

Q. 61. Can death be caused by squeezing the testicles ?

A. Yes. Squeezing of the testicles is associated with immediate pain of a most sickening and intense character. Severe shock accompanies this pain which may be so profound as to lead to a fatal issue.

Q. 62. What signs would indicate death by squeezing of the testicles ?

A. If the person has survived sufficiently long, a well marked inflammation and swelling of the injured testicle will be found with bleeding into the organs and sacs covering them. If death should occur before inflammatory action takes place then only bleeding into the spermatic cord, the testicles and sacs covering them, will be found.

Q. 63. Is it possible to say whether a bone had been fractured after union is alleged to have taken place ?

A. Yes, almost invariably. Unless the broken ends of a fractured bone are in absolute apposition (which is rare) a sign of fracture at this spot will remain in the form of a hard prominence or lump, caused by the formation of callus in the process of union. The mark of union becomes visible under X-rays.

Q. 64. If no prominence is perceptible, what inference would you draw from it ?

A. In the absence of an X-ray photograph I would say the bone

had not been fractured. Callus is for a considerable time pervious to the X rays, so that, although the fracture is firmly united it will be visible in the X-ray photograph. When absorption of the superfluous definite callus has taken place, that left, will be sufficiently dense to show a dark shadow in the X ray photograph. The production of an X ray photograph should always be insisted on.

Q. 65. How long does it take for a fracture to unite.

A. It is generally assumed that the period required for the union of a simple fracture in a healthy person is: for the thigh bone, six weeks; the shin bone, five weeks; the arm bone or humerus, four weeks, ; the fore-arm bones or ulna and radius, three weeks ; rib three weeks. These periods may be more or less prolonged according to the state of health of the individual and the bone being kept at rest or otherwise.

Q. 66. Can you say how old this fracture is ?

A. If there are swelling, inflammation, pain, tenderness with difficulty of movement, a yielding sensation on applying pressure to the cementing material (callus) thrown out between the broken ends of the bone, we can say the fracture is recent. Even with the aid of the X rays it would be sheer guess work to offer an opinion as to the date of the fracture ; and once complete bony union has taken place it is impossible to determine the age of a fracture.

Q. 67. Could the fracture have resulted from causes other than violence ?

The knee-cap, collar bone, humerus or arm bone, and the thigh bone have been known to fracture by sudden muscular action and the shin bone has been fractured by a sudden forcible twisting motion. There are certain diseases in which bones fracture with great ease, especially so in the disease or condition known as fragilitas ossium. Brittleness is also met with in dementia, rickets, cancer, syphilis and in women suffering from osteomalacia (softening of bones). Hence a broken bone need not indicate criminal violence. It must be judged with the other evidence.

Q. 68. What amount of violence caused this fracture ?

A. The strength of a bone depends on its thickness and quality.

In syphilis, cancer, rickets, osteomalacia, locomotor ataxia and chronic insanity the bones are unduly fragile. The bones are also very fragile in old age. In such conditions a simple fall may result in fracture.

Q. 69. What inference would you draw from a localised fracture of the skull ?

A. A localised fracture of the skull would indicate great force and that it was caused by an instrument of striking area closely corresponding to the size of the fracture.

Q. 70. Would you expect to find any injury to a bone other than fracture if the weapon used was a hatchet or similar weapon.

A. Blows from more or less sharp weapons produce cuts in the bone similar to those produced in soft tissues. A cut in a bone would be confirmatory evidence that the wound was inflicted by a sharp edged weapon.

Q. 71. Could a dislocation be caused by muscular action ?

A. Dislocation of certain joints may be caused by muscular action and by muscular spasm during epilepsy and eclampsia. The joints likely to be affected are the shoulder (head of the humerus), the knee (knee-cap) and the lower jaw. In some persons dislocation of the lower jaw happens with the greatest ease, and constantly recurs. Similarly recurring dislocation at the shoulder joint might occur upon slight muscular exertion. Such recurring dislocations are unaccompanied by inflammation.

CHAPTER II

DEATHS BY VIOLENCE SUICIDAL AND HOMICIDAL

"Why seekest thou vengence Oh man? With what purpose is it that thou pursuest it? Can the death of thine adversary satiate thy hatred? Can the setting him at rest restore thy peace? Knowest thou, that he that seeketh his enemies' hurt, oftentimes procureth his own destruction. While he aimeth at one of the eyes of his adversary, lo! he putteth out both his own."

Section 299 I. P. C. Culpable Homicide.—Whoever causes death by doing an act with the intention of causing death, or with the intention of causing such bodily injury as is likely to cause death, or with the knowledge that he is likely by such act to cause death, commits the offence of culpable homicide.

Knowledge is essentially subjective, not objective, and if a man really believes that a certain result will not follow, he cannot be held to know that it is likely to follow.[1]

Accused, the parents of a child, offered the child to the crocodiles in a tank, in the belief that though the child would be taken away it would be returned unharmed, and thereafter would lead a charmed life, and attain to a good old age: *Held*, that as accused were possessed by a superstitious belief, there was no intention of causing death to the child, but inasmuch as what they did with knowledge that either act would result in the death of the child, they were guilty of culpable homicide not amounting to murder.[2]

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[1] *Nag Batu*, 23 Cr. L. J. 59=64 Ind. Cas. 843. L. B. Heald. J.

[2] *Emp.* v. *Bharat Bipari*, 22 Cr. L. J. 526=62 Ind. Cas. 414=25 C. W. N. 676=33 C. L. J. 179; C. Teunon and Pearson, J. J.

Explanation 1.—A person who causes bodily injury to another who is labouring under a disorder, disease or bodily infirmity, and thereby accelerates the death of that other, shall be deemed to have caused his death.

This explanation assumes that the bodily injury was inflicted with the intention of causing death or the knowledge that it would be likely to cause death. It was intended to repeat the English rule that an injury which accelerates the death of a dying man is deemed to be the cause of it, and where death has been caused, it is no defence that the deceased was suffering from a complaint which would have caused his death in any event. Section 300 (2) makes it clear that the offender is not responsible for death in such a case unless he knew that the condition of the deceased was such that his act was likely to cause death.[3]

If a person was suffering from an injury which would render injuries which would not have a fatal effect to one ordinary man, fatal to that person, it does not necessarily follow, as it would in the case of a healthy man, that the person inflicting those injuries knew it to be likely that death would be caused thereby.[4]

Explanation 2.—Where death is caused by bodily injury, the person who causes such bodily injury shall be deemed to have caused the death, although by resorting to proper remedies and skilful treatment the death might have been prevented.

Though by resorting to proper remedies and qualified treatment the death of the deceased might have been prevented, this fact cannot

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[3] *Emp.* v. *Ishmail*, 19 Cr L.J. 319=44 Ind. Cas. 335. S. Pratt J.C. and Hayward A. J. C.

[4] *Ainuddi Chomkidar* v. *King-Emp.*, 34 C.L.J. 515 (516)=A. I. R. 1921 Cal. 64=66 I. C. 1000. See also *Emp.* v. *Khubi*, 25 Cr. L. J. 703 =81 I. C. 191=A. I. R. 1923 All. 545.

be taken into consideration under the aforesaid Explanation.[5] Where a person is seriously injured by the accused, and as a result of the injuries a gangrene sets in and becomes the immediate cause of death of the victim, the accused is guilty of an offence of murder.[6] When the disease which actually causes death is meningitis, peritonitis, tetanus, pneumonia, etc., and it is natural and probable result of the injury which the person inflicting the injury has caused the person who inflicts the injury must be held responsible for the disease arising from the injury.[7]

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[5] *Bharat Singh* v. *Emp.*, 31 Cr. L. J. 99=140 I. C. 706=9 O. W. N. 655=A. I. R. 1932 Oudh 279=1932 Cr. C. 697=Ind. Rul. 1933 Oudh 20; *Emp.* v. *Nga San Pai*, A. I. R. 1936 Rang. 442=37 Cr. L. J. 1119 =165 I. C. 245=1936 Cr. C. 866=14 Rang. 643.

[6] *Lal Singh* v. *Emp.*, 39 Cr. L. J. 265=173 I. C. 30=A. I. R. 1938 Lah. 31; *Nay Paw* v. *Emp.*, 38 Cr. L. J. 103=165 I. C. 911=A. I. R. 1936 Rang. 526; *Emp.* v. *Nga San Pai*, A. I. R. 1936 Rang. 442=37 Cr. L. J. 1119=165 I. C. 245=1936 Cr. C. 866=14 Rang. 643; *Fazla* v. *Emp.*, 29 Cr. L. J. 678=110 I. C. 230=A. I. R. 1928 Lah. 851=A. I. Cr. R. 517. *For Contra see Nga Ba Min* v. *Emp.*, 37 Cr. L. J. 205=159 I. C. 1032=A. I. R. 1935 Rang. 418=1935 Cr. C. 1205=8 Rang. 309; *Sobha* v. *Emp.*, 36 Cr. L. J. 1262=157 I. C. 667=1935 O. W. N. 940= 1935 O. L. R. 504=A. I. R. 1935 Oudh 446=1935 Cr. C. 1094; *Chanan Das* v. *Emp.*, 35 Cr. L. J. 1283=151 I.C. 238=1934 Cr. C. 617=A. I. R. 1934 Lah. 368; *Rana Singh* v. *Emp.*, 42 All. 302=58 I. C. 463=21 Cr. L. J. 783=18 A. L. J. 224=A. I. R. 1920 All. 110; *Gajjan Singh* v. *Emp.*, A. I. R. 1931 Lah. 103=1931 Cr. C. 167=135 I. C. 668; *Zora Singh* v. *Emp.*, 31 Cr. L.J. 44=120 I. C. 183=11 Lah L. J. 44=A.I.R. 1929 Lah. 433; *Shanmuga Kodumban* v. *Emp.*, 31 Cr. L. J. 477=123 I. C. 43=1930 M. W. N. 74; *Nga Po Chet* v. *Emp.*, 25 Cr. L. J. 489= 77 I. C. 889=2 Bur. L. J. 239=A. I. R. 1924 Rang. 212.

[7] *Nay Ba U* v. *Emp.*, 39 Cr.L.J. 217 (219)=172 I. C. 926=A. I. R. 1937 Rang. 429, following *Nga Dwe* v. *Emp.*, 10 Bur. L. J. 171, *Hamid* v. *Emp.*, 2 L. B. R. 63. *On Shwe* v. *Emp.*, 1 Rang. 436=76 I. C. 711= A. I. R. 1924 Rang. 93=25 Cr. L. J. 247, *Nathu* v. *Emp.*, 29 Cr. L. 369 =108 I. C. 268=10 A. I. Cr. R. 37 and dissenting from *Po Sein* v. *Emp.*, 10 Cr. L. J. 359=3 I. C. 710=5 L. P. R. 80.

Explanation 3.—The causing of the death of a child in the mother's womb is not homicide. But it may amount to culpable homicide to cause the death of a living child, if any part of that child has been brought forth, though the child may not have breathed or been completely born.

Section 300 I. P. C.—Except in the cases hereinafter excepted culpable homicide is murder, if the act by which the death is caused is done with the intention of causing death, or

Secondly.—If it is done with the intention of causing such bodily injury as the offender knows to be likely to cause the death of the person to whom the harm is caused, or

Thirdly.—If it is done with the intention of causing bodily injury to any person and the bodily injury intended to be inflicted is sufficient in the ordinary course of nature to cause death, or

Fourthly.—If the person committing the act knows that it is so imminently dangerous that it must in all probability cause death, and commits such act without any excuse for incurring the risk of causing death or such injury as aforesaid.

If there was an intention to cause death and death was caused by a wound or wounds inflicted in pursuance of that intention, the case would be one of murder, even though none of the wounds which the accused inflicted were of a character which would, within the knowledge of the accused or in the ordinary course of nature, have proved fatal.[8]

The second para is only intended to be invoked when some injury

[8] *Ram Asri*, 24 Cr. L. J. 513=73 Ind. Cas. 49 ; O. Ashworth J. C. and Simpson A. J. C.

which would not in the ordinary course of nature cause death was known to be likely to cause death by the offender in consequence of the latter being aware of some abnormal condition of the deceased.[9]

The fourth para can never be invoked in a case where there was an intention of causing specific bodily injury to a particular person. As this is the most difficult para in the section it is very undesirable to invoke it where it is not applicable.

The words "or with the knowledge that he is likely by such act to cause death" in Section 299 must be read in the light of the language of Section 300, and so read they are not applicable to a case where specific bodily injury is intentionally caused to a particular person.

In the absence of any evidence to indicate a blow on a more vital part it must be held that the offender inflicted the blow where he intended.

The expression "I shall kill you" used by an assailant does not necessarily show an intention to commit murder.[10]

Exception 1.—Culpable homicide is not murder if the offender, whilst deprived of the power of self-control by grave and sudden provocation, causes the death of the person who gave the provocation, or causes the death of any other person by mistake or accident.

The above exception is subject to the following provisos :—

First.—That the provocation is not sought or voluntarily provoked by the offender as an excuse for killing or doing harm to any person.

Secondly.—That the provocation is not given by anything done in obedience to the law or by a public servant in the lawful exercise of the powers of such public servant.

[9] *Ibid.*
[10] *Ibid.*

Thirdly.—That the provocation is not given by anything done in the lawful exercise of the right of private defence.

Explanation.—Whether the provocation was grave and sudden enough to prevent the offence from amounting to murder is a question of fact.

Exception 2.—Culpable homicide is not murder if the offender in the exercise, in good faith, of the right of private defence of person or property, exceeds the power given to him by law and causes the death of the person against whom he is exercising such right of defence without premeditation, and without any intention of doing more harm than is necessary for the purpose of such defence.

Exception 3.—Culpable homicide is not murder if the offender being a public servant or aiding a public servant for the advancement of public justice, exceeds the powers given to him by law, and causes death by doing an act which he, in good faith, believes to be lawful and necessary for the due discharge of his duty as such public servant and without ill-will towards the person whose death is caused.

Exception 4.—Culpable homicide is not murder if it is committed without premeditation in a sudden fight in the heat of passion upon a sudden quarrel and without the offender having taken undue advantage or acted in a cruel or unusual manner.

Explanation.—It is immaterial in such cases which party offers the provocation or commits the first assault.

Exception 5.—Culpable homicide is not murder when the person whose death is caused, being above the age of

eighteen years, suffers death or takes the risk of death with his own consent.

In the conditions about to be described, death as a rule, is due to asphyxia or suffocation, though in some comparatively rare cases the post mortem appearances indicate that it resulted from shock or cardio-respiratory inhibition (simultaneous stoppage of respiration and circulation).

Asphyxia is the commonest mode of dying ; it is seen in most deaths from disease, poisons and injuries. Asphyxia consists primarily and essentially of interference with the respiratory function, which is brought to a stand-still, before the heart ceases to beat.

It is a condition in which the supply of oxygen to the blood or to the tissues or to both has been reduced below the irreducible minimum necessary for the continuance of life.

The respiratory function may be interfered with, by mechanical hindrance to the entrance of air into the lungs by :—

(a) Closure of the orifices of the air passage which may be effected by the application of the hand, a cloth, or some other substance over the mouth and nostrils, a not infrequent method of infanticide.

(b) Closure of the air passage, by the introduction of solid or fluid substances which prevent the passage of air. New born children are sometimes killed by a plug of cloth pushed into the pharynx (back of the mouth) or by the introduction of the finger, etc.

(c) Closure of the air passage, by compression of the neck, as in hanging, throttling, strangulation.

(d) The movements of the chest which are essential to respiration, may be prevented by pressure, as when a person is buried under fallen earth, or, as in homicide, by sitting on the chest in the case of adults, or merely grasping the thorax in infants.

(e) The movements of the lungs may be prevented by the pressure of air or fluid on their surfaces, as in cases of, traumatic pneumothorax (air pressure between the lung and chest wall due to injury) and pleural effusions (water on the chest).

In most diseases, death occurs by gradual failure of respiration and circulation, but as a rule, the heart beats a few times after respiration has ceased, and death is due to asphyxia. In poisoning by opium and other narcotics, the symptoms during life, and the post mortem appearances are typically those of asphyxia, due in the case of opium to its paralysing action on the respiratory centre in the medulla. In poisoning by strychnine, death often occurs by asphyxia, produced by the condition of tetanic spasm of the respiratory muscles. Changes in the blood may cause death by asphyxia. Asphyxia may be caused by changes in the tissues whereby they are unable to use the oxygen brought to them by the blood. Therefore if a post mortem examination shows that death occurred by asphyxia, you would not be justified in concluding that the person was, let us say, drowned, unless some of the distinctive signs of drowning were present, such as, mud or muddy fluid in the windpipe etc.

The post mortem appearances in asphyxia are essentially the same whatever may have been the cause.

POST MORTEM APPEARANCES IN ASPHYXIA

External.—The face may show lividity, more marked about the lips and ears; the face may be normal in appearance. The face may be calm and placid in expression or it may be distorted; the eyes may be prominent and the whites of the eyes bloodshot. Blood-stained froth is occasionally found about the nostrils and mouth and the tongue may be partially protruded. The finger and toe nails are blue in colour especially in infants and young children. There may be large livid markings about the body. These patches are more marked after rapid than after slow asphyxia. All these signs may rapidly disappear.

Internal.—The lungs are laden with dark blood, and on section, dark coloured, frothy, bloody fluid pours from them. This is so in cases of slow asphyxia; on the other hand, if asphyxia has been rapid, the lungs may be pale and anæmic. When this is the case the right ventricle of the heart is distended with blood. Either condition of the lung—congested or anæmic is compatible with death from asphyxia. Minute blood spots may be seen on the inside of the chest wall, or the pulmonary or pericardial pleura. They are not always found but when present, death has almost certainly taken place from asphyxia if the person had not been suffering from a disease such as, purpura or scurvy and unless similar bleedings are present on the skin, such diseases may be ruled out. They are most constantly found in young children. The mucous membrane inside the windpipe is usually of a cinnabar red

colour, which may vary in extent from branch-like patches to uniform colouration of the whole membrane. These minute bleedings are due to rupture of tiny blood vessels by the high blood pressure.

The cavities of the right side of the heart are distended with dark coloured, imperfectly clotted blood. The large entering veins are likewise distended, in fact, so is the whole of the venous system. The cavities of the left side of the heart are empty, as is also the arterial system.

The abdominal viscera shows venous congestion, particularly the kidneys. The brain is very often congested, although not so markedly as in death from coma. Bloody points, however, may be seen on section of the brain substance, and there may be a collection of fluid in its cavities or ventricles. The covering membranes are usually normal in appearance but sometimes they are congested and sometimes anæmic.

Blood.—The blood, generally, is dark in colour and is most fluid in the large veins ; clots may be met with in the heat but they are not firm in consistence.

From the foregoing signs, therefore, it will be apparent that death by asphyxia resolves itself into death from excess to carbon dioxide in the blood. Interference with the due æration of that fluid prevents its oxygenation ; hence carbon dioxide accumulates in the minute arteries. This increase of carbon dioxide in the minute arteries causes contraction of these vessels and in consequence increased action upon the heart, and by reflex action, an increased action on the breathing muscles through the respiratory centre in the brain. As the carbon dioxide still accumulates the breathing centre becomes deadened,

breathing becomes weakened and fitful and ultimately ceases after gradually increasing intervals between the respirations; the heart, however, continues to beat for some minutes after the breathing has finally ceased.

HANGING

In hanging the body suspended by the neck, and the constricting force is the **weight of the body**; the constriction of the neck closes the air passage, and compresses the vessels and nerves. The occlusion of the air passage is not due to direct pressure on the larynx or sound box and trachea, but to the root of the tongue being forced upwards and backwards against the post pharyngeal wall. This is due to the fact that the ligature assumes the highest position which the anatomical relations will permit. This is why the constriction mark will be found immediately under the chin and passing obliquely upwards and backwards under the angles of the lower jaw and behind the ears.

Consciousness is lost almost immediately, a most important point, because, to this rapid loss of consciousness must be attributed most cases of accidental hanging. This rapidity may be shown by the hand of the victim occasionally being found in the noose or again, he may be found in a position in which he could have saved himself by merely straightening his legs, but the rapid loss of consciousness deprived him of the chance. A comparatively slight weight acting on the ligature compressing the throat is sufficient to produce rapid unconsciousness and death, as in the following case :—

In May 1927, one Henry George Dailey, a boatman of Deal, aged 20 years, was "larking" with his sister and a girl friend who was

spending the week end with the Dailey family. After playing pranks with a hat belonging to one of the girls, Dailey went up-stairs, possibly, his mother told the coroner, planning to scare the girls who he knew would be coming upstairs to get ready to go out. He took a sheet from his bed, rolled it up, and, making both ends fast to the ceiling of the landing, placed his head through the folds with his chin resting on the loop. But something went wrong with his scheme. When the girls went upstairs they found him dead, his body being kept from falling by his throat resting against the loop in the rolled sheet. Evidence was given that Dailey was in the habit of playing practical joke on his friends.

Three factors play a part in producing death in hanging *viz*..

1. **Occlusion of the air passages**—asphyxia.

2. **Closure of the carotid arteries**—partial or complete occlusion of the great vessels of the neck, interfering with the cerebral supply of blood causing anæmia of the brain and rapid unconsciousness.

3. **Pressure on the vagus nerves**—compression causing cardiac inhibition.

Death by hanging therefore, is not a pure asphyxia.

Post Mortem appearance

External.—Apart from the constriction mark on the neck, there are, perhaps, with the exception of a copious dribbling of saliva, no external signs by which death by hanging can be diagnosed.

The constriction mark, seen some time after death is a brown colour and parchment-like in consistence. This appearance is a post mortem effect due to the ligature scraping the skin and the drying of the inner skin. The harder and rougher the ligature is, the more marked will

this post mortem effect be. If a soft ligature is used such as a twisted chaddar, then the skin is not injured and no brown parchment-like mark will result. When such a soft ligature is used there may be little or no evidence of hanging having occurred.

If the quantity of saliva that has dribbled is fairly large, the point is important, if small, not of much value, for it may have been mechanically squeezed out of the salivary glands. The secretion of saliva is a vital act and proves local life in the glands, and therefore proves that suspension took place shortly after, if not, at the moment of death. This flow of saliva cannot occur in a body hung up after death.

Small bleedings under the skin are frequently seen in the face and whites of the eyes, and their presence is looked upon as strong evidence of hanging while alive for they are caused by the mechanical increase of pressure in the tiny veins and arteries from occlusion of veins while the circulation through the arteries is not yet stopped; but such findings occur in all forms of death from violent asphyxia as a result of increase in blood pressure. They may also be present in death from other causes, especially where there exists disease of the small vessels.

Internal.—The most important of these is the state of the tissues of the neck beneath the mark. There may be an anæmic furrow with dryness of the tissues and sometimes some small bruises adjoining the constriction. These bruises are strong evidence of life at the hanging; if the deeper vessels are torn and have produced much escape of blood it will be still stronger proof, and if some artery has caused a large bleeding it is certain that life was not

extinct at the time of hanging. Sometimes there is fracture of the hyoid bone, the cartilages of Adam's apple and even bones of the spine and point to considerable violence.

The general internal appearances associated with death from asphyxia are not always well marked because death depends upon the part played by each of the three factors already referred to and death is rarely due solely to asphyxia.

There may be injury to viscera and other signs of violence.

Was death due to hanging or was the body suspended after death ?

A ligature mark round the neck of a corpse does not necessarily indicate suspension of the body, but when it has been caused by suspension of the body, it is, as a rule, high up on the neck, oblique, and non-continuous ; a similar mark, however could be made by the dragging of a body along the ground during life or after death by a ligature round the neck. The ligature mark may be caused by suspension of a body after death.

Absence of a ligature mark round the neck does not absolutely negative hanging. A sheet or other soft material used may leave no mark at all.

Proof of the hanging may be afforded by the general post mortem appearances and careful consideration of the circumstances of the case. In no cases are a reliable history and absence of putrefaction of greater importance than in cases of alleged hanging. If the body is fresh,

the appearances of asphyxia well marked, and no other cause for them discovered, the ligature mark on the neck justifies the conclusion that death was due to hanging.

Was the body suspended after death ?

This is sometimes carried out by a murderer in order to suggest suicide. Suspicion will arise when injuries likely to be rapidly fatal are found on the body, especially if the signs of asphyxia are absent. Endeavour must be made to discover whether any wounds present are self-inflicted or inflicted by another. Analysis of the stomach contents may discover poison. Yet it must be remembered that a suicide may resort to other means of self destruction before ultimately hanging himself.

The ligature mark is of no assistance since all the marks found in the case of hanging of a living person may also be found on a body hanged after death, so it is not possible in all cases to distinguish one from the other.

The accused struck his wife a blow on the head with a plough-share, which rendered her senseless. He believed her to be dead and in order to lay the foundation for a false defence of suicide by hanging, which he afterwards set up, proceeded to hang her from a beam by a rope, which resulted in her death by asphyxiation. The medical evidence showed that the woman had received a serve blow on the side of her head which had probably rendered her unconscious and it also showed that she died of strangulation which may have been the effect of hanging. That she hanged herself is impossible, because, as pointed out by the medical officer, the blow on the head must have produced unconsciousness, and therefore, she could not have hanged herself. Held, that the accused could not be convicted of culpable homicide or murder, though he was guilty of causing grievous hurt. The expression "causing death" in Section 299, I. P. C. means putting an end to a human life, and all the three intentions mentioned in the section must be directed either deliber-

ately to putting an end to a human life or to some act which to the knowledge of the accused, is likely to eventuate in the putting an end to a human life. The knowledge must have reference to the particular circumstances in which an accused is placed. The intention of the accused must be judged, not in the light of actual circumstances, but in the light of what he supposed to be the circumstances. A man is not guilty of culpable homicide if his intention was directed to what he supposed to be a lifeless body.[11]

Accused assaulted his wife and gave her kicks, blows and slaps. The kicks were given below the navel. The woman fell down and became unconscious. In order to create an appearance that the woman had committed suicide, the accused took up the unconscious body of his wife, thinking it to be a dead body and hung it by a rope. The post mortem examination showed that death was due to hanging. Held, that the accused could not have intended to kill his wife, if he thought that she was already dead, and he could not be convicted of murder. The offence that the accused committed was an offence under Section 325 I. P. C.[12]

Accidental hanging is extremely rare; *suicide is common*; homicidal hanging is also rare.

In cases of death from hanging, the presumption is always in **favour of suicide,** even if the body is found only partly suspended. In homicidal cases in which the corpse has been suspended, death may be due to asphyxia the result of strangulation, pressure on the chest or closure of the mouth and nostrils, consequently the general internal appearances may be the same as those found in death by hanging and the nature of the case will only be revealed by a careful and minute examination. In dealing with a

[11] *Palani Goundan*, 20 Cr. L. J. 404=42 Mad. 547=51 Ind. Cas. 164=(F. B. Mad.) Wallis C. J. Sadasiva Aiyar, Coutts- Trotter J.J.

[12] *Emp.* v. *Dalu Sardar*, 18 Cal. W. N. 1279=15 Cr. L. J. 709= 26 Ind. Cas. 157 (C.) Sharafuddin and Teunon J.J.

case of alleged hanging, remember that, as a rule, in suicide, the tissues of the neck show no signs of injury, and therefore where injuries are found, the case should be viewed with suspicion and subjected to close scrutiny. The murderer has not the knowledge, nor the calm deliberation to avoid using unnecessary violence, consequently marks of injury are found on the body which declare the character of the act. Therefore examine and carefully consider the position, character and probable effects of injuries on the body, also whether they are of ante or post mortem origin.

SUFFOCATION

The term *suffocation* is applied to death occurring from :—

1. Closure of the orifices of the air passage
2. The presence of foreign bodies in the air passage
3. Compression of the chest walls, preventing respiration

The cause of death in suffocation may be either asphyxia or reflex violent shock to the brain or heart, or both, killing by cardio-respiratory inhibition.

1. Closure of the orifices of the air passage.

This is easily effected in the cases of infants and of persons in an unconscious condition. This is a common method of infanticide. If the closure is effected with the naked hand, bruises and finger marks will be found on the face, and about the nose and mouth. The tissues of an infant are so delicate that even slight violence will produce bruising. Similar injuries may result from attempts to assist delivery.

If suffocation is effected by a cloth pressed over the mouth and nostrils, the pattern may be impressed on the skin. A soft thick cloth or a light pillow placed over the face of an infant will suffocate it without causing any local injury.

The *post mortem signs* of suffocation vary within wide limits and sometimes in infants and others, indications of asphyxia are absent. Occasionally lividity and congestion, externally, are present, while internally, nothing abnormal is found. Small blood points and splashes beneath the pleura are present in most cases.

Homicidal suffocation of adults is rare. It is difficult to effect without a great struggle, except on very feeble old people or persons under the influence of alcohol or narcotics. Cases, however, do occur when there are several assailants, as when attacked by a gang of dacoits.

Where, in committing dacoity, the accused stuffed a cloth into the deceased's mouth in order to silence him and not with any idea of killing him, the accused was held guilty of culpable homicide not amounting to murder. [13]

(Edema of the glottis, observed during life may be undetectable after death, though the signs of asphyxia may be very pronounced. This indicates the importance of the history during life.

2. **The presence of foreign bodies in the air passages,**

This is a frequent cause of death which may occur with extreme suddenness. It is not necessary that the foreign body should be of such a size as to block the air

[13] *Sendoga Gounden*, 16 Cr. L. J. 614=30 Ind. Cas. 438=18 M.L.T. 103=1915 M.W.N. 621. Ayling and Tyabji, J.J.

passage. A small particle of material, insufficient in itself to block the larynx, may nevertheless cause death by setting up a laryngeal spasm if it lodges on or between the vocal cords. Professor J. F. Smith has recorded the following case :—

A man knocked a bit of skin off his knuckle, put the knuckle in his mouth to suck it and instantly fell back dead, the loose piece of skin was found blocking the glottis.

In this case death was caused by cardio-respiratory inhibition. A small piece of potato or tomato skin, or the husk of wheat may act in like manner, and be quite overlooked at the post mortem examination. In cases of this description the usual signs of asphyxia will be absent.

At the inquest on the body of Margaret Annie Hodder, aged 5 months, who died while sleeping in a perambutator at Lambton Road, Highgate, Sir Bernard Spilsbury said that the child did not die from suffocation. Near the larynx he found a feather, and in his opinion the feather was inhaled into the larynx and caused a shock from which the child died. The Coroner recorded a verdict of "Death by misadventure."

Homicide by the introduction of foreign bodies into the air passage is a common method of infanticide, and the introduction may be effected as soon as the head is born, before respiration has taken place.

The presence of food in the air passages does not imply that the deceased died of suffocation. Unless the corpse is fresh and free from putrefaction, it is the result of the emptying of the stomach which occurs from the pressure of gases developed in the abdomen by putrefaction. When suffocation is due to vomit, the latter is found drawn into the small bronchi. Vomiting is often

a terminal act in fatal syncope (heart failure), drowning asphyxia and carbon monoxide poisoning and food masses may be found in the air passage which may have nothing to do with the cause of death.

3. Suffocation by preventing the movements of the chest.

This method of suffocation may be effected in the course of torture, by one or more persons sitting on the chest or by the application of heavy weights. Accidental death from this cause are fairly common, such as burial under fallen earth etc. It is not an uncommon method of infanticide; the chest being firmly grasped by the hands, or pressure made on the front of it. Finger marks and bruises are found on the chest; internally signs of asphyxia.

In India cases of overlying are rare. Overlying may be responsible for death in infants. Overlying may be defined as death of an infant from suffocation by pressure against another person while in bed. A mother may offer the breast to the infant and fall asleep during the act of feeding. The weight of the breast presses the organ down over the child's mouth, completely blocking the air passages and as the infant is unable to offer resistance it dies of suffocation.

There is yet another and very important cause of suffocation, viz: that of breathing non-respirable gases, such as, coal gas, fumes from charcoal burners and brick kilns, sewer gas and smoke in conflagrations.

Not infrequently a person has been throttled or strangled and the place set on fire in the hope that all

evidence of the crime will be destroyed or that death will be attributed to suffocation by smoke and carbon monoxide poisoning if the body should escape destruction by fire. If the victim is alive while the room is filled with smoke, *particles of carbon or soot will be found deposited on the lining of the air passages* and the blood will be found to contain carbon monoxide. Absence of these indications is positive proof that the deceased was dead before the fire occurred.

The outstanding post mortem feature of poisoning by carbon monoxide is the bright pink colour of the blood.

STRANGULATION

Strangulation is produced by *compression of the neck by means of a ligature*, which is tightened by a force other than the weight of the body. Usually the ligature is drawn tight by pulling on the ends crossed on the back of the neck, or several folds of the ligature may be wound round the neck tightly and the ends knotted, or a loop is thrown over the head, a stick inserted beneath it and twisted till the noose is drawn tight. Usually the mark encircles the neck and is lower and more horizontal than in hanging. It presents the same parchment-like appearance sometime after death as in hanging.

Death is due to closure of the air passage and compression of the vessels and nerves as in hanging and the loss of consciousness is almost immediate.

Post mortem appearances in strangulation.

External—As the ligature is not so suddenly applied as in hanging, the large veins of the neck are compressed before the arteries and the face is frequently of a blue or black hue, swollen, with prominent eyes the whites of which are bloodshot; small subcutaneous bleedings over the eyelids, skin of the face scalp and neck above the ligature mark ; the tongue is protruded often bitten by the teeth and there is a blood stained froth from the mouth and nostrils. If the victim was an adult, marks of a struggle and signs of injury may be found on the body but not in the case of children, or if the person was taken unwares.

Internal—The internal appearances are those of asphyxia and frequently silvery looking spots under the surface of the pleura, due to rupture of the air cells. These are characteristic of violent death from asphyxia.

The most important sign of strangulation is the mark on the neck. It varies greatly. The soft skin and delicate structures of a child exhibit far greater signs of injury than the tougher tissues of an adult. It also depends upon the kind of ligature used and especially upon the amount of force applied. If a soft thick fold of cloth is used and removed immediately after death no sign of the strangulation will be perceptible at the time of the post mortem examination, though at first a faint impression may have been present.

Having concluded that death was due to strangulation, the question to determine is, whether it was the result of accident suicide or homicide.

Most cases of strangulation are homicidal.—When a corpse is discovered with a strangulation mark on the neck, the presumption of murder is strong.

Where the original intention of the accused was to maltreat the deceased, but in the excitement, passions got the better of them and they strangled him, either before they dragged him along or in this process; eight of the accused took an active part in the assault which ended fatally. It was found that death was due to strangulation caused by ligature on the neck. Held, that the act of strangulation was murder, because the persons engaged in committing it must either have intended to cause death or they must have known that it was so imminently dangerous that it would in all probability have caused death. [14]

Suicide by strangulation is rare. As a rule, if a cord is used, several turns are made and then a knot is tied. In spite of the fact that unconsciousness supervenes almost immediately, the suicide ties a firm knot. A loop and a stick for twisting it tightly may be used. In a case of suicide the ligature should be found on the neck and there should be absence of all signs of violence or a struggle. The knot is usually situated at the front or side of the neck.

On the 9th of March 1903 the body of a Parsee student was discovered in the ladies retiring room at the Royal Botanic Gardens, Sibpur. When the sub-inspector arrived he found the deceased lying on the floor on his face, the body was partly on the left side, the arms under the chest. On the floor beneath the face there was blood, forming a patch about four inches in diameter, there was blood about the nostrils. The left side of the face, which was dependent was of a darker colour than the right; the eyes and mouth were closed. The tongue was not protruding. Round the neck there was a portion of a handkerchief, twisted into rope shape, forming noose

[14] *Azim*, 23 P. R. 1890. Benton and Rivaz, J.J.

tied in front by a single simple knot, one end of the noose was touching the blood on the floor. The noose was drawn tightly, and when removed a furrow was seen on the neck.

The room was about twelve feet square, and contained a table and two commodes; there was a hat on the table, and a razor case on one of the commodes ; in the other commode there were fæces and a portion of handkerchief, which, when compared with the noose, was found to correspond. On the floor, near the body, on the left side, there was an open razor. Post mortem examination was held the next day. Putrefaction was commencing, the face was swollen, and of a dark colour. Round the neck there was a noose mark, it encircled the neck completely; behind at the margin of the hair, it was one and a quarter inches broad, passing forwards it narrowed gradually and in front was half an inch wide. The mark was slightly depressed, surface pale and soft, except in front at the site of the knot, where there was a patch of parchment-like consistence. The tissues beneath were condensed; there were no extravasations in any of the tissues of the neck, nor signs of injury.

Close to the noose-mark on the front of the neck, over the thyroid cartilage there was a small bruise in the skin three quarters of an inch in diameter, and immediately above it, two short transverse cuts into but not through the skin; they were about one inch long and parallel to each other.

The internal appearances showed that death was due to asphyxia. There were no petechial hæmorrhages or extravasations in the lungs larynx or elsewhere.

Deceased, a day or two before his death, had been arrested in one of the disreputable streets of Calcutta at night, for riding a bicyle without a light, and fined by the Police Magistrate. Gibbons. Med. Jur. page 92.

Accidental strangulation does occasionally occur, but usually the attendant circumstances clearly indicate what has happened.

Absence of signs of a struggle does not negative murder.

Murder by strangulation is as common as murder by hanging is rare. In cases of murder, the murderer at the time is in a state of great excitement and uses a great deal more violence than is necessary with the result that the deep structures (cartilages and muscles) are more severely injured than in hanging. These severe local injuries indicate murder as they are seldom or never found in cases of suicide. In addition there may be signs of a struggle and injuries to other parts of the body. The position of the knot is of little importance as the murderer may tie it anywhere, but more than one knot especially if they are in different positions will denote murder. [15]

A victim may be murdered by strangulation and then suspended to simulate suicide. In such a case there would be two ligature marks, one horizontal the other slanting. The injuries to the deep structures would be pronounced beneath the horizontal mark and insignificant under the slanting one.

The ligature should always be retained as it may prove a most valuable clue to ownership. When removing it from the neck the knots should not be disturbed the cord being divided on the opposite side to the knots.

THROTTLING

Throttling is strangulation effected *by compression of the throat with the hand.* Death is due to closure of the air passage, and compression of the vessels and nerves.

[15] *Raghunath* v. *Emp.*, 26 Cr. L.J. 1380=89 I.C. 516=A.I.R. 1926 *Nag.* 119.

Death may be instantaneous in throttling, due to cardio-respiratory inhibition. If called upon to examine and give an opinion in such a case, a medical witness can only place before the Court the fact that cases of a similar kind are recorded. However, such cases are very rare.

An Abbe was compelled to part with his mistress ; they were both greatly depressed. He said to her, "we should be happier if we were dead." "Yes" said she, "if we could die together." The Abbe said jockingly, "could you bear me to cause you much pain." "Try," she replied. He took hold of her neck ; it was intended as a harmless piece of fun, and she showed by a smile that she regarded it as such. All at once she made a sign of pain, and shook her hands, but without uttering any cry. He relaxad the pressure and she fell down dead.

A theory should succeed and not precede the collection of evidence ; otherwise it is a matter of common knowledge that the evidence may be made to fit in with the theory.[16]

Throttling is homicidal and the victims are generally women and children.

It is a common form of assault especially in rape and in many of these cases there is no intention to kill, but to prevent the victim crying out.

Comparatively slight compression of the throat may result in death by inhibition, but the assailant as a rule, uses considerable force, so much so, that frequently the larynx is fractured and usually the surrounding parts are bruised. Fortunately, in the interests of justice, this display of violence leaves well marked indications of the crime in the presence of abrasions or bruises of the skin

[16] *Emperor* v. *Gyanath Das*, 13 C.W.N. 622=10 Cr.L.J. 548=4 I.C. 286.

of the neck, sometimes crescentic in shape corresponding to the thumb and finger nails.

The marks left on the throat in throttling are dark brown in colour and correspond to the shape of fingers. When strangulation by manual pressure on the neck is used for committing murder, the marks of the thumb and fingers are always invariably found on the neck and sometimes these marks of violence are visible on dissection [17].

The impression of the thumb and fingers upon the throat have very characteristic marks. They are as a rule seen on both sides of the throat; the mark of the thumb on one side and that of the fingers separated from one another or bunched together, on the other, the thumb mark being on a higher plane than the marks left by the fingers. When the grasp is made from in front by the right hand, the thumb mark will be on the right side of the throat. If the throat is grasped by the two hands at the same time, the thumb marks will be found on the same side, or marks may be most distinct at the back and front of the neck or even encircle it. If the assailant be left-handed, the thumb mark will be on the left side. The marks of the fingers are one above the other.

The hyoid bone may be fractured. This bone is difficult to fracture in any other way than by throttling and if the bone is found fractured after all other evidence is destroyed by putrefaction, it is strong presumptive evidence of throttling. It is important not to mistake the normal joints between the body and great horns of the

[17] *Subkaran* v. *Emperor*, 35 Cr.L.J. 992=149 I.C. 473=11 O.W.N. 722=A.I.R. 1934 Oudh 286=1934 Cr. C. 779.

bone for fractures. The whole bone should be cleaned and carefully examined.

If the parts are examined soon after death in cases of throttling, the marks may appear as bruises ; if later, they may appear and feel like parchment and of a brownish colour. In the subcutaneous tissues beneath the marks, bruising is found, also between the muscles, in the sheaths of the vessels, and in the mucous membrane of the larynx, fractures of the thyroid cartilage or of the hyoid bone are frequently met with. The injury to the deeper structures may be very great.

Finger nail marks on the neck might be self-inflicted in a struggle which again suggests homicide, though it must be remembered that an epileptic or indeed any one might thus injure the throat in an attempt to escape accidental strangulation from a collar.[18]

In addition to the marks on the neck, signs of violence are commonly present in other parts of the body. The face is usually swollen and cyanosed, and there may be bleeding from the eyes, ears and nose. The eyes are protruding and ecchymosed ; the tongue may be protruding and bitten by the teeth. The chest may be bruised and the ribs fractured.

In most cases of throttling, hanging and strangulation the protrusion of the tongue out of the mouth is the first thing to be noticed. Where the condition of the mouth and of the nose is found normal, it is also a factor which negatives the idea of the deceased having been throttled to death.[17]

Nevertheless, even in the case of a strong adult, all

[18] Taylor's Medical Jurisprudence, 5th Edn., Vol. I, page 736, quoted in *Emperor* v. *Gyanath Das*, 13 C.W.N. 622 (627)=10 Cr.L.J. 548=4 I.C. 286.

signs of a struggle may be absent, by his having been surprised and quickly rendered unconscious by the firm grasp of the murderer on the throat. In children the marks are usually far back, but the tissues being delicate the whole of the front of the throat may be bruised by the pressure of the palm. In some cases of throttling the signs may be slight and ill-defined and even absent.

The internal appearances are those of asphyxia.

DROWNING

When the entrance of air into the air passage in prevented or hindered by the *presence of fluid*, so that asphyxia results death is said to be due to drowning. It is not necessary, in a case of drowning, that the whole body be submerged ; fluid, sufficient to cover the mouth and nostrils is all that is required.

In most cases following immersion in any fluid, death is due to asphyxia, but in certain circumstances, to syncope. However, syncope never occurs in the drowned without leaving some signs of asphyxia. Death may occur immediately from shock or heart disease.

Asphyxia supervenes in the course of one or two minutes. Few, if any, persons recover, who have been submerged for four minutes.

Post-mortem appearances in the recently drowned— The definite diagnosis of death from drowning is not always a simple matter. The body should be examined as soon as possible after its recovery from the water because the external and internal appearances vary much

according to the length of time during which the body has remained in the water, or the period that has elapsed after its removal and before it is examined.

As a rule, it is not difficult to determine the cause of death in a fresh body, but the case is very different when the body is in a state of advanced decomposition and what is more, the history seldom goes beyond the statement that the body was found floating in the water.

The typical signs of death from drowning are found only in fresh bodies recently recovered from the water. As putrefaction advances these signs become masked or entirely obliterated.

External appearances—The external appearances of greatest value, indicating death from drowning are :— (1.) The presence of a fine froth or foam in the mouth and nostrils. Its colour is white, rarely bloodstained and is like froth made with soap and water ; it is not viscid, thus differing from bronchitic exudation. If wiped away it reappears. This sign is seen in death from supra acute œdema of the lungs, but in this case it is rose coloured. This fine foam is more prominent and constant in drowning, and when found in a body recently recovered from the water, it is strongly suggestive of death from drowning. It disappears naturally in from one to three days. (2.) The presence of objects in the firmly clenched hands, as weeds, sand, etc.

These conditions conclusively indicate that at least the person was alive when he was immersed. "A drowning man clutches at a straw."

Other signs are : —The skin of the hands and feet are

bleached and wrinkled. Although this is no sign of death from drowning it affords information of the approximate time the body was in the water.

The surface of the body generally shows the appearance of "goose skin". This feature is seen also in death from cold or fright and may be caused after death by rigor mortis, so that it possesses little diagnostic significance.

Internal appearances—The lungs are distended and voluminous, overlap the heart, and when the chest is opened they bulge out of the chest; they are œdematous, indented by the ribs, pit on pressure and have a peculiar spongy feeling. When cut into, they exude a frothy, bloodstained fluid which cannot be produced in a dead-body, as it is the result of the violent efforts made by the individual to breathe when dying. The presence of a similar froth in the larynx, trachea and bronchi is a very characteristic sign of drowning and may be found when no foam or froth has been observed externally.

The heart exhibits the appearances usually found in death from asphyxia. The right side of the heart, (auricle and ventricle) is distended with dark fluid blood while the left is comparatively empty.

Water in the stomach is an important indication of death from drowning, particularly if it contains mud, or aquatic plants. Water cannot enter the stomach of a person already dead. It is important to remember the possibility of water having been drunk immediately before death. Water is not necessarily present in an undoubted case of drowning, for death may have been the result of shock or syncope.

Water in the intestines is still more important, it having been passed on by peristaltic action from the stomach.

The blood is dark in colour and usually fluid from dilution.

From the foregoing signs drowning may be diagnosed but it must be remembered that these appearances may not be present owing to the deceased being affected by shock or heart disease and dying before passing through all the stages of drowning, or again, soon after removal from the water the frothy exudate may disappear, while the water from the lungs and stomach may transude into the pleural and peritoneal cavities due to advancing decomposition.

When putrefaction is moderately advanced the diagnosis of death from drowning is difficult, the only evidence being the presence of water in the pleural cavities and froth in the fine air vesicles of the lungs. At the end of even two or three days in the summer time when decomposition is so rapid it may be quite impossible from the post-mortem examination to decide that drowning was the cause of death.

When a body is found in water, the following questions present themselves for determination :—

1. Was death due to drowning ?
2. Was death due to accident, suicide or homicide ?
3. Was the body thrown in after death ?

1. **Was death due to drowning ?**—*When the signs already enumerated, particularly those exhibited by the lungs, air passages and stomach are present, the presumption of death from drowning amounts to a practical certainty.*

In case of death from inhibition, etc., in which the ordinary signs are absent a complete examination will either show some other cause of death or will at least be able to exclude death from violence.

Chevers gives the following remarkable case of mistaken post-mortem signs which show how cautious a medical man should be before committing himself to an opinion. Dr. Woodford, at Calcutta, made a post-mortem examination of the body of an European sailor at the police dead house. He found the clothes saturated with water. Blood stained froth was round the nostrils, the hands were somewhat soddened, but the boots, which were wet, had preserved the feet. It was twenty-four hours after death, and decomposition was rapidly advancing. There were blebs on the skin, and the body covered with particles of sand The blood vessels of the brain and the right side of the heart were filled with blood. The lungs and other organs were highly congested. He certified that deceased died from submersion in water. The coroner returned the certificate for explanation, as the police reported that the deceased had died in the police lock-up from apoplexy. The clear explanation was, that the body had been carried from the lock-up to the dead house, a very small godown, with open windows, only three feet from the ground. It was placed on a table under a window on the west side, rain had fallen in torrents all night, and the wind blow from the west. Dr. Woodford found the body on a table in the centre of the room. The clothes were, as we have seen, saturated, and the body was covered with particles of sand. Dr. Woodford observes that in Bengal, drowned bodies, which have not been distributed, are invariably covered with particles of fine sand. The sand had been driven on to the body by the rain, from the loose plaster at the upper part of the window cornice. Chevers remarks : "Thus all the useful external appearances

of drowning presented themselves, and the internal morbid appearances were simulated by those of apoplectic death." It seems, however, in this case two important internal symptoms were wanting which should have led Dr. Woodford to make further enquiries, *viz.* the absence of any water in the stomach or lungs, and the absence of mucous froth in the lungs or air vessels. If a person had been drowned and had presented the internal symptoms recorded, it is exceedingly improbable, though not impossible, that there should have been no water in the stomach and lungs and no mucous froth in the air vessels. The fact of mucous froth round the nostrils should have shown that the water could not have escaped from the stomach, and cleared the air vessels, by rough handling of the body. The case is very interesting as showing what care is needed in a post-mortem examination of bodies found drowned and how little confidence can be placed upon the superficial signs. Chevers Med. Jur.

2. **Was death due to accident, suicide or homicide?** This question must be decided from the circumstances. While in accident or suicide marks of violence are usually absent, yet they may be present from injury received at the time of the immersion or even before, or they may have been produced after death in a variety of ways—body striking against objects, the action of fish, turtles, etc.

In a body which has been immersed, it is often a difficult matter to determine whether the injuries found were inflicted before or after death, for the water washes away the blood and modifies the appearance of the wounds. However, bruises are not altered by immersion.

If the body shows nothing but the signs of drowning it will be impossible to decide whether death was due to accident, suicide or murder. If the body was found in shallow water it would suggest suicide, if it be a case of

murder the victim will be a child or there will be obvious signs of a struggle. The deceased may have attempted to prevent changing his mind by tying his hands or feet or both together, or by attaching heavy weights. Of course the manner in which the limbs and weights are tied is of importance.

Drowning is a very common form of self-destruction.

Homicidal drowning is very rare unless the victim is a child.

3. Was the body thrown in after death ? This is very commonly the case. The body will present none of the signs of drowning. Injuries or other evidence of the cause of death may be expected.

QUESTIONS THAT MAY BE PUT TO MEDICAL WITNESS

1. Q. Will the signs of asphyxia in strangulation differ in any way from those due to drowning, hanging etc. ?

A. The post mortem appearances in death by asphyxia are essentially the same, whatever may have been the cause.

2. Q. Is it possible for a person, without suicidal intent, to accidentally hang himself ?

A. When pressure of a noose is applied to the neck, unconciousness supervenes so rapidly that a person situated in such circumstances becomes absolutely powerless to extricate himself.

3. Q. What post-mortem signs would influence you in forming an opinion that death was due to hanging ?

A. The presence of a ligature mark high up in the neck, oblique and non-continuous ; streaks of dried saliva extending from the angles of the mouth down the front of the body ; cyanosis and

perhaps protrusion of the tongue; and the internal signs of asphyxia.

4. Q. Are there any signs by which you could distinguish suicidal from homicidal hanging?

A. There is no sign in hanging which distinguishes a suicidal from a homicidal case; the distinction if any must be made by a consideration of the marks of injury found on the body.

5. Q. Is it necessary for the noose to completely encircle the neck to cause death by hanging?

A. No. All that is necessary is to close the air passage. The pressure of the noose against the upper part of the front of the neck caused by the weight of the body, compresses the base of the tongue against the spinal column, completely shutting off the air passage. The vessels in the neck are at the same time compressed, and unconsciousness supervenes immediately, followed by death.

6. Q. Can a person be murdered by hanging and yet no other signs of violence be discovered?

A. Yes. This may occur with children, adults in a feeble or exhausted condition, an unconscious or intoxicated person.

7. Q. If marks of violence be discovered on a body found hanged, must it necessarily be a case of homicide?

A. Marks of violence discovered on the body of a person found hanged are not always to be regarded as furnishing unequivocal proof of murder; they may have been self-inflicted or accidentally inflicted prior to the hanging. However, the position of the injuries is of the utmost importance.

8. Q. Is there any difference between a ligature mark found on a body suspended during life, and one after death?

A. The depression caused by the ligature presents the same characters whether the hanging has taken place during life or soon after death, that is, the appearances may be similar in the two cases. The changes in the skin beneath the mark are also devoid of any distinctive characters.

9. Q. Were the contents of the stomach examined for the presence of poison ?

10. Q. Could this rope have supported the weight of deceased ?

11. Q. Did you test the breaking strain of this rope ?

12. Q. Could the injuries be self-inflicted ?

13. Q. Must the signs of asphyxia be necessarily found in all cases of suffocation ?

A. Post mortem signs of suffocation vary within wide limits. In infants particularly, indications of asphyxia may be absent. Occasionally lividity and congestion are present, while the internal organs show nothing abnormal. The body of a person suffocated presents so little that is peculiar that, unless your suspicions have been aroused you would say that death was due to natural causes. There is no anatomical appearance in any of the organs which can be considered as characteristic of suffocation.

14. Q. Is there any sign then, from which you could infer that death was probably due to suffocation ?

A. The presence of blood splashes on the surface of the lungs may justify a strong opinion of death by suffocation where no other cause is apparent, or the discovery of a foreign body so small that it is likely to be overlooked, such as a husk of wheat, etc. Professor Smith records the following case : "A man knocked a bit of skin off his knuckle, put the knuckle in his mouth to suck it and instantly fell back dead ; the loose piece of skin was found blocking the glottis." Death here was probably due to shock.

15. Q. Could the signs of suffocation be mistaken for anything else ?

A. Death, the result of disease may represent all the signs of death from suffocation and the cause of death may not be suspected from the post-mortem appearances, especially if putrefaction is advancing.

16. Q. Can death occur from throttling and yet no signs of asphyxia be apparent ?

A. Yes, for death may be instantaneous, due to cardio-respiratory inhibition or shock.

17. Q. Could death by throttling occur and yet no external signs of this particular method of asphyxia be apparent ?

A. As a rule the signs are well marked, that is, bruises on either side of the larynx or on one side, for the reason that murderers almost invariably inflict more violence than is necessary, yet cases have been recorded of the greatest violence being used and yet no external signs have been left.

18. Q. Could a fracture of the cartilages of the Adam's apple (alleged to be homicidal) possibly be due to an accidental fall ?

A. Ordinary falls on the Adam's apple are not apparently capable of fracturing these cartilages and even falls from a height with superadded force appear to be unlikely to do so.

19. Q. Then what manner of violence can cause fracture of these cartilages ?

A. Very forcible pressure of the Adam's apple against the spinal column or violent blows with a heavy weapon are likely to cause fracture. The fracture in such a case will be more marked on the internal surface and usually in the middle line. Forcible compression by the thumb and fingers as in throttling is the most likely to produce fracture which will be more marked and extensive on the external surface of the larynx.

20. Q. Is it easy to distinguish post-mortem stains from bruises in the air passage in cases of alleged throttling ?

A. No body could so distinguish by merely looking at them. A witness is not justified in saying what appears to be a bruise is a bruise until it is proved to be a bruise.

21. Q. How far has your opinion as to the cause of death been influenced by the body having been found in or near the water ?

22. Q. How long had deceased been dead when you examined the body ?

23. Q. Do you agree that the post mortem signs of drowning soon become so indefinite that little or no reliance can be placed on them ?

A. When putrefaction is moderately advanced the diagnosis of death by drowning is difficult, the only evidence being water in the pleural cavities and froth in the fine air vessels. When putrefaction is well advanced it is impossible to give an opinion.

24. Q. Did you find any foreign matter entangled in the hair, or clenched in the hands, or in the air passages, or attached to the body ?

25. Q. Please describe the knots as you found them and say whether they could have been so tied by the deceased before entering the water ?

26. Q. Did you find water in the stomach ?

27. Q. Were the stomach contents submitted for chemical analysis ?

CHAPTER III

INJURY AND DEATH BY BURNING

Burns are injuries caused by the local application of dry heat in the form of flame, hot solid substances, or radiant heat. Injuries caused by molten substances and corrosive fluids are also spoken of as burns.

Scalds are injuries caused by the local application of hot liquids or steam. They are distinguished from the effects of burns by the bleaching and sodden appearance of the skin, the absence of singeing of the hairs of the part affected.

The medico-legal interest in death from burning is chiefly concerned in distinguishing burns caused before and after death, in determining the cause of death and in distinguishing injuries that may have been inflicted during life from those resulting from the burning itself or injuries caused by falling structures.

The danger to life from a burn or scald depends on the extent of surface, the situation of the affected area and the age of the victim.

The extent of the superficial area of the burn is of more importance than its depth. A burn affecting one third of the entire surface of the body, though only superficial, is usually fatal, whereas complete incineration of a portion of a limb may end in recovery. Burns of the head, chest and abdomen are more dangerous than burns of the back or limbs. Infants and young children are

much more susceptible to the effects of burns than adults. A comparatively small superficial burn may cause fatal collapse in a child.

When an individual sustains an extensive burn, he is thrown into a state of collapse which may end fatally within a few hours or more gradually after 24 or 48 hours. If he survives, reaction sets in accompanied by inflammatory fever, and death may follow in 3 or 4 days from inflammation of some organ. If the burn has caused destruction of tissues, death may occur after some considerable time from septic absorption or exhaustion. Death may occur by shock immediately the injury is inflicted.

Post-mortem appearances.—If death has been immediate and the body has been badly burnt the phenomenon known as *heat stiffening* is observed. This heat stiffening is greater than that of rigor mortis ; the body assumes a general state of flexion. If death has occurred after an interval, there will be indications of inflammatory reaction in the neighbourhood of the burns.

It does not necessarily follow that death was due to burning in all bodies found burnt. Death may have been the result of asphyxia from smoke or the inhalation of the gasses of combustion, heart syncope, injuries from fallen structures, homicidal injuries before death.

In most fires the victims, if not actually asphyxiated by smoke or gas, are at least unconscious before the flames actually reach them and this fact is some consolation to the relatives to know that the deceased was not actually conscious of being roasted alive because the almost constant post-mortem finding is that of asphyxia.

If death has been the result of asphyxia, the heart and lungs will exhibit the signs of asphyxia, the blood may be cherry red in colour due to the presence of carbon monoxide, or it may be redder than usual or dark red due to the presence of carbon dioxide ; the air passages will be found to contain particles of carbon.

Bodies recovered from fire may show various injuries which may raise suspicion of foul play and an attempt to destroy evidence of the crime by fire. Therefore all injuries require very careful scrutiny, because in burning the body contracts and the skin splits leaving wounds very like those caused by a sharp edged weapon, but the wound due to the burn can be distinguished from the later by the blood vessels and nerves which may be seen running across the wound from side to side. The skull likewise may show extensive fracturing and even a hæmorrhage may be found beneath the bone, caused solely by the heat of the fire.

Was the burn inflicted before or after death ?

The answer to this question depends upon consideration of the evidence afforded by the post-mortem examination and upon the presence or absence of vital reaction in the injured parts.

If before death, except when the surface of the body is charred and destroyed, redness and blistering will be present. This condition cannot be produced after death. If marks of blistering, the blisters containing serum or a line of redness or both are found about a burnt part of a body, one is justified in stating that the burn occurred during life. Blisters due to burning may be produced in

a few minutes or after several hours, hence death may take place before the blisters have formed and their absence does not warrant an opinion that the burn could not have taken place during life.

Blisters may be produced by burns both on the living and dead body. They are produced at a lower temperature in the living than in the dead. In the living a burn produces great capillary congestion with collection of serum in the blisters. This serum when heated or treated with nitric acid sets into nearly solid coagulum. Blisters produced in a dead body, even a few minutes after death, contain a thin watery serum which is rendered milky by heat or nitric acid, which means that they contain very little albumen.

If particles of carbon (soot) are found in the air passages it indicates that the victim was alive in the midst of the fire to have inhaled them.

The blood of persons who have been exposed to the action of carbon monoxide is of a cherry-red colour and fluid, all the organs and tissues partake of the colour of the blood which is permanent. The poison acts by displacing oxygen from hæmoglobin and forming with the latter a more stable compound—carbon monoxide hæmoglobin. The blood is no longer able to take oxygen to the tissues. The escape of blood in a wound or bruise inflicted before the victim was exposed to the carbon monoxide gas will not partake of the cherry-red colour.

If on examination of the blood carbon monoxide hæmoglobin is detected, it indicates that the person in

whose body it is found was alive during the progress of the fire.

Blisters produced during life in which vital reaction has taken place, present the following characteristics :—

1. They contain serious fluid in which albumen and chlorides can be detected.

2. An inflammatory areola bounding the circumference of the blister.

3. The base or floor is inflamed and the palpillæ of the skin are swollen and red.

4. The presence of pus. This would indicate that the person had lived at least 36 hours after infliction of the burn.

Blisters produced after death present the following characteristics :—

1. They are small and their contents are scanty.

2. The contained fluid is free from albumen and chlorides.

3. They contain air.

4. Signs of inflammatory reaction are absent.

Burns from corrosive fluids are not frequent in India. Occasionally cases occur where sulphuric acid (vitriol) is thrown upon a person with intent to cause disfigurement. Disfigurement so caused is very pronounced and permanent. Vitriol throwing rarely causes death.

Blisters are never produced by corrosive fluids.

Sulphuric acid colours the skin brown and destroys cotton clothing rapidly ; nitric acid stains the skin yellow ; carbolic acid stains it white.

QUESTIONS THAT MAY BE PUT TO A *MEDICAL WITNESS*

1. Q. How was the burn caused ?

A. In scalding there can be no charring. If the scald is from superheated steam the appearance of the skin is a dirty white-like boiled fat. In burns produced by chemicals, no blisters are produced. Nitric acid stains the skin yellow ; carbolic acid, white ; and sulphuric acid, brown.

2. Q. Were the burns produced before or after death ?

A. If blisters are present and they contain serum rich in albumen or are surrounded by a line of redness, or both, the burn was inflicted during life. If these appearances are not met with, it by no means follows that the burns had not been produced during life because death may have occurred immediately from shock and before vital reaction had time to occur. In burns of great degree, search of the margins with the aid of a magnifying glass may reveal traces of vital reaction. When the tissues are completely charred there are no means of distinguishing between ante and post mortem burning. Blisters, the result of burns after death, may contain a thin watery serum very deficient in albumen, or they may contain only air, and the margins will not be reddened.

3. Q. Was death the result of burning or suffocation ?

A. If the death was the result of suffocation, the heart and lungs will exhibit signs of asphyxia, the blood may be cherry-red in colour due to the presence of carbon monoxide, and minute particles of carbon (soot) will be found deposited on the lining membrane of the air passages. Absence of the latter sign indicates that respiration had ceased before the advent of smoke.

4. Q. Is it possible for a person after extensive burning to die as the result of absorption of poison from the dressings applied ?

A. Yes, many deaths have occurred after the application of dressings, some were due to consequent shock following the burns, others to the rapid absorption of such dressings as carbolic acid, picric acid, etc.

5. Q. How would you decide that death was due to shock ?

A. Death from shock due to burns must occur either instantaneously or within twenty-four hours.

6. Q. Were the wounds caused by a weapon before death or by fire after death ?

A. Fissures resembling wounds may be caused by fire. The skin becomes corrugated, loses its elasticity and bursts open resulting in an irregular fissure. These fissures can be distinguished from wounds otherwise caused by the exposed fat escaping the charring action of the fire, the absence of any trace of effusion of blood and perhaps the presence of small vessels containing blood running transversely across the fissure.

7. Q. How long did deceased survive the burns ?

A. Inferences may be drawn from the appearances presented by the burns. Thus—death may have been so rapid that there was no time for inflammatory reaction to become established. Suppuration follows blistering but the time of its occurrence is uncertain. If it is present, then the deceased survived at least thirty-six hours. Inflammation is a vital process and, if present, indicates that the deceased survived some time, i.e. sufficiently long to permit inflammatory reaction to take place.

CHAPTER IV

COLD AND STARVATION

Exposure to cold is a common method of infanticide.

New-born infants, young children and aged people are very susceptible to cold.

At low temperatures the hæmoglobin parts with its oxygen to the tissues with difficulty, in consequence, the chemical processes necessary to maintain vitality become less active, including a numbing of all the faculties, with an overpowering desire to sleep, this sleep deepens into coma, and death occurs from profound depression of the nervous system owing to the inadequate supply of oxygen.

Anything which tends to lessen the power of resistance, renders the effect of cold more deadly. This is why infants and aged people, drunkards, those that are deprived of food and those affected with chronic disease so readily die when exposed to severe cold.

Post-Mortem Appearances—The skin is pale and waxy-looking owing to the blood having been driven internally by contraction of the peripheral arterioles, that is, the surface blood vessels. Over the exposed parts of the body are irregular-shaped, dusky-red patches produced by oxygenation of the blood through the skin and retention of the hæmoglobin owing to the low temperature. These patches differ from post-mortem stains by not being confined to the dependent parts of the body. The production of these coloured areas is a very characteristic effect

of exposure to cold, but does not necessarily indicate death by cold as they may be found in bodies exposed to cold after death. Similar patches are found after poisoning by carbon monoxide.

Internally—The principle appearances are :—An arterial hue of the blood throughout the body. An unusual accumulation of blood in the centres of circulation *i.e.,* the cavities of the heart and the large blood vessels will be abnormally full of blood owing to the blood of the peripheral circulation being driven into the centres of circulation. Punctiform extravasations of blood under the epithelium of the mucous membrane of the stomach.

In arriving at a conclusion in any given case that death was due to exposure to cold, it is essential that not only the post-mortem signs upon and in the body should be taken into account but also the accompanyiug circumstances.

STARVATION

Deaths from starvation are divisible into two classes viz :—

(a) **Acute starvation,** when the well nourished are suddenly deprived of food. Death within 14 days of deprivation.

(b) **Chronic starvation,** when death takes place beyond that number of days.

In acute starvation death generally occurs before extreme emaciation has taken place. Body may appear fairly

plump, with considerable quantity of fat beneath the skin, in the omentum and other situations. Generally speaking, it is not compatible with the maintenance of life that a body should lose more than one quarter of its original weight. Stomach and small intestines are empty or contain some mucus ; scybalous fæces may be found in the colon.

In some acute cases emaciation may be rapid and extreme before death. In the acute form death generally takes place in eight or ten days. All bodies which are the subject of death from this cause give off a "peculiar" odour.

In chronic starvation the following signs may be noted :—

Sunken eyes, wild and glistening expression from the dilated pupils, prominent bony projections of facial features ; pale and parched lips ; red, hard and dry tongue; weak, whispering (cholera) voice ; sunken abdomen ; prominent bony framework of body ; wasted extremities ; constipatsd bowels ; dry, hard, ball-like fæces ; scanty, turbid, dark-coloured urine.

Post Mortem Appearances—Considerable emaciation ; skin wrinkled or shrivelled and dry ; muscles flabby, wasted, devoid of fat ; abdomen greatly sunken ; eyes sunken ; temples hollow ; peculiar odour from body.

Lungs, heart, and great vessels, comparatively bloodless and collapsed ; liver, kidneys, spleen etc., small, shrunken, devoid of enveloping or interstitial fat; omentum and mesentery either clear and without fat or have practi-

cally disappeared ; gall-bladder full of dark bile ; urinery bladder empty, or nearly so.

Stomach collapsed, thinned and empty ; intestines in like condition, food may be seen and recognised through their walls.

In all cases of starvation note the presence or absence of disease.

After complete privation of food, death follows after an average period of from 7 to 10 days.

Where water is freely obtainable, life may be prolonged to the 58th day.

CHAPTER V

POST-MORTEM CONDITIONS

COOLING OF THE BODY—RIGOR MORTIS HYPOSTASIS—PUTREFACTION

Cooling of the Body—During life there is constant production of heat within the body and while the body remains in good health this heat is maintained at a constant height, *viz.* : 98.4 F., whatever may be the temperature of the surrounding air.

After this generation and maintenance of heat ceases and the body gradually cools to the level of the surrounding air.

Generally speaking, cooling of the body takes place but the surrounding air in different parts of India at certain seasons may be higher than the normal temperature of the body.

Again the temperature may rise, or continue to rise if rising just before death. If the temperature immediately after death begins to fall it will continue to fall till it reaches the level of the surrounding objects, but if it should rise after death, it will continue to do so to a variable point and then commence to fall steadily to the level of the surrounding air. Once it begins to fall after death it can never rise again.

What may be an important question in criminal cases is :

How long does it take for the body to cool after death ?

So much depends upon circumstances that averages are almost useless for the purpose of elucidating the time of death.

Cooling may be delayed by circumstances connected with the body itself, such as :—

1. Where death has resulted from disease with high temperature—Heatstroke, smallpox, tetanus.
2. Sudden death—Lightning etc,.
3. Middle age—Muscularity, subcutaneous fat and superficial area are in a proportion to bulk most favourable to cooling by radiation.
4. Death by asphyxia.
5. Obesity—Owing to bad conduction of heat by fat.

Cooling may be delayed by circumstances connected with the surroundings of the body, such as :—

1. Clothing—being a bad conductor of heat.
2. Want of access of air especially in motion—heat is rapidly carried off by breeze.
3. Smallness of the space or room in which the body is lying—means less air.
4. Material against or on which the body rests—such as a bed or anything which prevents access of air.
5. The temperature of the air—the warmer the air, the slower the cooling.

Cooling of the body may be hastened by circumstances connected with the body itself, such as :—

1. Chronic wasting diseases.
2. Lingering death.
3. Emaciation—absence of non-conducting fat.
4. Infancy and old age—infants lose heat rapidly owing to the large surface area in proportion to the weight of the body. In old people, owing to the absence of fat and the feeble nourishment of the tissues.

Cooling of the body may be hastened by circumstances connected with the surroundings of the body, such as :—

1. Nakedness of the body.
2. Access of cool draughts of air.
3. Coldness of surrounding air.
4. Largeness of space or room in which the body is lying—means more air to be heated.
5. Material against or on which the body rests—cold earth, stone, floor etc.
6. Immersion in water, especially running water.

Under ordinary circumstances a body loses about 2° or 3° per hour for the first few hours and thereafter about 1° per hour, but the last few degrees of heat are retained for a longer period.

In Europe the body is quite cold to the touch in from 7 to 10 hours after death.

In India, much less time is needed, as the body has to

cool through fewer degrees of temperature to reach that of its surroundings.

Hypostasis or post mortem discolouration or staining is due to the fluid blood sinking to the most dependent parts of the body under gravity.

This is a constant post mortem occurrence, even after death from haemorrhage, though of course in the latter, it will take a longer time to develop and be less marked.

When once the blood has coagulated this staining cannot take place until decomposition has once more rendered it fluid. The stains may change their positions if the body is turned over.

External hypostasis—After an interval, usually about 3 to 12 hours after death, dusky red or reddish-blue stains (each patch nearly uniform in tint), make their appearance upon the most dependent parts of the body not subject to pressure. Their margins are abrupt and they are never elevated above the general level of the skin. They increase in size till decomposition sets in.

The stains are produced by the filling of the relaxed capillaries with fluid blood. If the body has been lying on the back on some hard flat surface, hypostasis will be found about the lobes of the ears, the back of the neck, the lateral parts of the back and the under surface of the limbs. Those parts in actual contact with the hard surface on which the body lies are not stained as the pressure prevents the blood from filling the cappillaries. Large pale patches will consequently be observed about the shoulders, buttocks and heels. The effect of pressure is well seen when a body has been lying on an irregular

surface such as a munj strung charpoy. The ridges of the munj string are marked on the skin as pale coloured lines between which the skin is stained, leaving a perfect pattern of the stringing.

Very frequently, careless examiners have mistaken these stains for bruises. This should not be, as the distinction between bruises and hypostases is easily made.

Effused or coagulated blood is found when an incision is made in a bruise, however small, whereas a few bloody points are alone seen on a slight or deep incision into a post mortem stain. Post mortem stains are never raised above the general level of the skin as bruises sometimes are.

Internal hypostasis is found in the internal organs, brain, spinal cord, heart, lungs, stomach and intestines.

In the brain and spinal cord, post mortem staining must be distinguished from the marks of inflammation. Inflammation of these two organs is almost always accompanied by either extravasation or suppuration.

Where mistakes are likely to occur is in hypostasis of the lung, because hypostasis of this organ really looks like genuine inflammation. If due to inflammation, the finger will penetrate its substance with the greatest of ease ; not so in hypostasis.

In the stomach and intestines, hypostasis may be mistaken for evidence of poisoning. If on stretching the viscus, it is found that the blood in the veins break up into isolated lengths with blank intervals between them, then the condition is due to post mortem staining ; if it remain in unbroken lines, then inflammation is present.

Inflammation of the stomach is also more patchy and not so regularly uniform.

In the heart and aorta, hypostasis shows itself as large masses of blood clot consisting of two sharply defined layers, the lower, consisting of red blood cells that have sunk to the lowest part; the upper consisting of white cells and serum.

What information can be gleaned from the presence of post-mortem stains in a dead body ?

1. They are a sign of death.
2. They can be differentiated from bruises suggesting violence.
3. They can inform us as to the position in which the body lay for some hours after death.

Ante Versus Post-Mortem Staining

	Post-Mortem	Ante-Mortem.
Occurrence	4-12 hours after death	Before death
Seat	Dependent parts, except when pressed upon	Anywhere at point of injury.
Shape	Irregular	Irregular, corresponding to agent inflicting injury.
Margin	Well defined	Ill defined, zones of colour round edge.
Colour	Dull red and purple	Variable, purple, violet, green, yellow, lemon.
Extent	May form large areas	Usually more or less limited.
Elevation	None	More or less raised.
Cuticle	Unaffected	Often injured.
Incision	No effused blood, blood in dilated vessels of rete mucosum	Effused blood into true skin and subcutaneous tissues.

Post-mortem staining begins to develop soon after death while the body is cooling and the blood in a fluid state and continues to increase till the body is cold and the blood coagulated when it is arrested until the blood again assumes a fluid state.

Remember that post-mortem staining occurs in the viscera as well as in the skin, such as lungs, stomach, intestines, etc.

In the lungs it might be mistaken for pneumonia. It is not often easy to distinguish a post-mortem staining from a condition due to congestion occurring before death.

When putrefaction has advanced it becomes, proportionately with that advance, difficult to distinguish between a bruise and a post-mortem staining, and an opinion on this point must be given with caution when decomposition is very much advanced.

Rigor Mortis or **cadaveric rigidity**—Immediately following death under ordinary circumstances the muscles of the body retain their vitality and are in consequence flaccid and contractile to electric stimuli. When this vitality ceases, it is due to molecular death, that is, death of all the cells, which usually follows somatic death, that is, death of the body.

The period of flaccidity lasts from no time at all up to about 3 or 4 hours.

When this flaccidity passes away the muscles assume a state of contraction and rigidity, spoken as rigor mortis.

Rigor mortis does not appear over the whole body at

the same time, but affects various muscles or groups of muscles in a more or less definite order. It commences about 1 to 2 hours after death (and takes 1 to 2 hours to develop), in the involuntary muscles, then passing into the voluntary muscles in the following order: back of the neck and lower jaw, muscles of face, front of neck, chest, lower extremities, upper extremities.

In England rigor mortis generally appears in from 8 to 20 hours after death. It has been known, however to supervene within 3 minutes of death, but it may be delayed for 16 or 17 hours.

In India, Mackenzie's observations on the bodies of persons who died of disease, give an average of 1 hour 56 minutes in one series, and 1 hour 10 minutes in another series, between death and the onset of rigor mortis.

The average time of onset in healthy bodies in India is about 4 hours after death and it lasts about 24 hours, but there are exceptions.

The duration of rigor mortis in England is from 1 to 9 days; the average is 16 to 24 hours.

Mackenzie, for India gives an average duration of 19 hours 12 minutes, the longest 40 hours, the shortest 3 hours.

In new born infants the onset occurs early and has a short duration.

The onset of rigor mortis may be modified by circumstances, as shown next page:—

Hastened by	Delayed by
1. Violent exertion, exhaustion, convulsions of poisoning and cholera, which fill the muscles with products of decomposition at the moment of death.	1. Sudden death in perfect health.
Lingering or exhausting death.	
2. Moderate or excessive heat or intense cold.	2. Moderate degrees of cold.
3. Newly born infants.	3. Ordinary adults.

As a rule, the longer the interval between death and the onset of rigor mortis, the longer the condition lasts *vice versa.*

The order of disappearance of rigor mortis follows the course of its accession.

The limbs stiffen practically in the attitudes in which they were at the moment of death but a slight amount of contraction occurs in the muscles which may alter the position slightly.

If the joints are forcibly bent the rigidity is destroyed and cannot return.

Instantaneous rigidity or cadaveric spasm—This condition is an instantaneous stiffening that occurs at the moment when death is preceded by a state of great nervous tension or excitement. The condition is not rigor mortis, but appears to be a vital contraction at the moment of death, which is continued after death and gradually passes into rigor mortis.

Instantaneous rigidity is of great medico-legal importance for the reason that the condition cannot be artificially produced. If a weapon or any other object be grasped in the hand so firmly as not to be removed with ease, we know for a fact that it was so gripped at the moment of death. Inferences may be drawn from this fact. An object retained by rigor mortis is much more easily removed than one held by cadaveric spasm. It is impossible to fix a weapon in the hand of a corpse to imitate cadaveric spasm. If the hand is in a flaccid state prior to the onset of rigor mortis the hand would have to be placed round the weapon and held or tied there till the onset of rigor mortis, which is not likely to be carried out by a murderer. If rigor mortis has already set in, the finger joints would have to be loosened, and once a joint has been forcibly bent or straightened the rigidity is destroyed and cannot return. There is no stronger presumptive evidence of suicide than finding the weapon grasped by cadaveric spasm. If bits of cloth, hair etc., are found firmly grasped and there are signs of a struggle, homicide would be indicated.

Putrefaction or the resolution of the body into its organic constituents is effected by micro-organisms, whose activity is promoted by certain conditions, and retarded or prevented by others. Any condition which favours the growth of micro-organisms will hasten the onset and progress of putrefaction and *vice versa*.

Can the time of death be estimated by the stage of putrefaction ?

So much depends upon circumstances that averages

are useless for the purpose of elucidating the time of death.

Putrefaction may be hastened by circumstances connected with the body itself, such as :—

1. Bodies of infants after feeding has commenced ; fat bodies.
2. In death from dropsy, septic diseases, extensive injuries (giving easy access to micro-organisms).
3. In death from acute asphyxia.
4. In cases of dismemberment, the trunk putrefies quickly (the limbs very slowly) ; the difference may be so marked as to lead one to opine that they are not parts of the same body.

Putrefaction may be retarded by circumstances connected with the body itself, such as :—

1. Bodies of infants before feeding has commenced.
2. Bodies of old people, especially emaciated ones.
3. Healthy persons dying suddenly, other things being equal.
4. In death from *chronic* poisoning by arsenic or mercury.
5. In death from wasting diseases, anæmia and debility.
6. Submersion in water (time is about doubled in complete submersion).
7. The limbs in cases of dismemberment.

Putrefaction may be hastened by circumstances connected with the surroundings of the body, such as :—

1. A temperature of between 90° and 100°F. or its near vicinity.
2. Moisture in medium amount.
3. Access of air.

Putrefaction may be retarded by circumstances connected with the surroundings of the body, such as :—

1. Very low or very high temperature ; (putrefaction ceases at temperatures of 32° or 212°F.)
2. Absence of moisture.
3. Complete submersion in water by cutting off access of air.

The conditions present in most parts of India at various times, are such, that the rate of putrefaction above ground is so rapid as to be hardly conceivable. Putrefaction frequently commence in 24 hours and in about 3 days it is almost unrecognisable.

In temperate climates it would take about 15 or 20 days for a body to reach such a stage of putrefaction.

Other things being equal, putrefaction does not proceed at the same rate in all organs. Casper gives the following as the order in which the viscera undergo putrefaction :—

1. Larynx and trachea
2. Brain in infants
3. Stomach
4. Intestines
5. Spleen
6. Omentum and mesentery
7. Liver
8. Adult brain
9. Heart
10. Lungs
11. Kidneys
12. Bladder

13. *Œsophagus* 15. *Uterus*
14. *Pancreas*

Mummification.—In bodies subjected to a hot dry atmosphere, such as in exposed sandy parts of India, the fluids of the body are rapidly evaporated. The internal organs are represented by a small dry mass while the other soft parts become dessicated, the skin having the appearance of parchment,

Adipocere formation or saponification.—Bodies exposed to the action of water or buried in damp soil are apt to undergo changes known as saponification and the substance formed as adipocere.

Adipocere is an impure ammoniacal soap formed by the union of fatty acids with ammonia usually of a yellow colour, occasionally white, soft, brittle, unctuous, waxy-looking and mixed with fibres and fragments of unsaponified tissue. Its specific gravity is less than water. It has an odour resembling decayed cheese. It is a very permanent substance. Saponified parts remain unchanged for years.

The shortest time recorded for the formation of adipocere is 3 days 22 hours after death.

Order of Putrefaction

Putrefaction begins in abdomen first, where a **green discolouration** appears earliest at 7 hours 10 minutes; latest at 41 hours 30 minutes. The average is 26 hours.

Vesication occurs earliest at 35 hours; latest at 72 hours. The average being 49 hours 39 minutes.

Maggots appear earliest at 24 hours 18 minutes ; latest at 76 hours. The average being 39 hours 43 minutes. (Mackenzie).

In from 4 to 6 hours after death **dirty red patches appear on the posterior wall of the stomach,** sometimes mistaken for effects of corrosive poison.

The **intestines** follow, then **spleen** then **liver** the **brain** follows next, in line of blood vessels.

(In children the brain putrefies first). **Heart** and **lungs** are slow ; **Kidneys** are slower still ; **Bladder** and **Pancreas** still longer ; **Diaphragm** still longer, and **Uterus** longest of all.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. How long does it take for the body to cool after death ?

A. Much depends upon circumstances. Under ordinary circumstances a body loses about two or three degrees an hour for the first few hours and thereafter about one degree an hour, but the last few degrees of heat are retained for a longer period. In Europe the body is quite cold to the touch in from seven to ten hours after death. In India much less time as the body has to cool through fewer degrees of temperature to reach that of the surroundings.

2. Q. How long after death is it usual to find post mortem staining ?

A. The stains begin to show shortly after death, that is, five to six hours, but the period may be as short as three hours or as long as twelve hours. Occasionally they may be seen even before death. (They would not then be post mortem stains).

3. Q. What are the characters of post mortem stains ?

A. After an indefinite interval after death livid stains appear on the dependent parts of the body. These stains vary in colour

from pale blue to dark red or reddish-blue and each stain is uniform in tint. The margin of the stain is abrupt and is not raised above the level of the skin.

4. Q. Is it possible to mistake these stains for bruises ?

A. They have been mistaken for bruises, but should not be, as the distinction is easily made. A bruise in the early stages at least, is raised above the general level of the skin. A post mortem stain is not. A bruise may be deep blue in the centre but the colour fades towards the margin and perhaps exhibits green and yellow tints ; the post mortem stain is uniform in colour and the margin is abrupt. A bruise may be situated on any part of the body, the post mortem stain is found on dependent parts only. On incision a bruise shows extravasation of blood into the tissues ; in the post mortem stain the blood is in the vessels and the tissues are unstained, only minute drops of blood exude from the ends of the cut vessels which can be easily washed off, but extravasated blood into the tissues cannot be so effected.

5. Q. Is it possible to mistake post mortem staining of the internal organs for inflammation ?

A. Yes, it is apt to be mistaken at times. The staining takes place in the internal organs exactly as on the skin. The dependent parts of all the organs will be affected. It is most marked after death from acute septic diseases and in cases of rapid decomposition. It is distinguished from inflammation by the smoothness of the lining membrane of hollow organs, which glistens and is not rough and by the uniform colour. If engorgement of the lung is due to inflammation the finger will penetrate its substance with the greatest ease, not so if due to post mortem staining.

6. Q. How long after death does rigor mortis appear ?

A. Rigor mortis does not appear over the whole body at the same time. It commences about one to two hours after death and takes about the same period to develop. Mackenzie gives an average for India of one hour fifty-six minutes in one series (of persons who have died of disease), and one hour and ten minutes in another series, between death and the onset of rigor mortis. The onset may be

modified by circumstances. The average time in healthy bodies is about four hours after death.

7. Q. How long does rigor mortis usually last ?

A. Mackenzie gives the average duration of nineteen hours twelve minutes ; the longest forty hours, the shortest three hours. The average duration in healthy bodies is about twenty-four hours.

8. Q. If during rigor mortis, a joint is forcibly bent, can it again stiffen ?

A. No, once a joint, fixed by rigor mortis is forcibly bent the rigidity is destroyed and cannot return.

9. Q. What do you mean by instantaneous rigidity or cadaveric spasm ?

A. It is a condition of vital spasm or stiffening of the muscles that occurs at the moment of death when preceded by a state of extreme nervous tension. This condition is not rigor mortis but passes gradually into this condition.

10. Q. Can you estimate the time of death from the stage of putrefaction ?

A. So much depends upon circumstances that it is almost impossible to estimate the time of death by this means alone.

11. Q. Is decomposition after arsenic poisoning retarded by the preservative action of the drug ?

A. It is commonly stated that the body resists putrefaction in arsenic poisoning but this is not the case. Putrefaction is, however, retarded definitely in chronic poisoning by arsenic and also by corrosive sublimate.

12. Q. What inference would you draw from the presence in the body of adipocere ?

A. Simply that the body was immersed in water or buried in damp soil. No reliance can be placed upon its presence as to the length of time since burial or immersion.

CHAPTER VI

IDENTIFICATION

"Presumption is the bane of reason—it is the nurse of error: yet it is congenial with reason in us."

To recognise and to identify are not the same thing. Identification is certain, recognition is always approximate. Very few people realise that this distinction is vital. Strictly speaking, there need be no such thing as mistaken identity, because an individual either can or (occasionally) cannot be identified. There is no element of doubt about the matter. Mistaken identity always means some mistake in recognition.

Finger-prints identify scientifically speaking. Assuming the existence of a print sufficiently perfect to compare with another in twelve to fifteen points the identity of the prints can be demonstrated to be absolutely certain if twelve points of resemblance are shown. The print, said to be one of the most perfect ever discovered on the scene of a crime, was obtained in France, in which ninety-four points of agreement were found in the two finger-prints—one found on the scene of the crime and one taken of the accused.

In practice, however, less complete specimens are found which can be identified with certainty.

Recognition is a quite different, and much more complex question, but in criminal investigation, while it

serves quite a different purpose, it is quite as important as finger-print identification.

Once the suspect is under arrest, he can be identified, but if he cannot first be recognised while he is at large, the knowledge that he can be identified with certainty is not of much use.

In 1910 a person was stabbed by an assailant in sixteen places, in his own house and in the presence of four witnesses. The passage where the crime took place was well lighted. The assailant escaped, and a few days later a suspect was arrested. At the trial his identity was sworn to positively by these four witnesses. The accused established an unshakable alibi and was acquitted. Three months later a second suspect was arrested. Counsel defending did nothing more than have the two men placed side by side in the dock. On being asked to identify the man they had seen, none of the four who had made so confident a declaration at the first trial was prepared to reaffirm the original statement. They could say no more than that the two men were "very alike." The second accused was accordingly acquitted. This is an example of how incredible mistakes in identity can arise.

It is common to find those who cannot affirm with certainty if a person wears a moustache or is clean shaven even after the second or third meeting.

Assume that a witness thinks he has a good general idea of a face. He is, however, uncertain as to the moustache, its shape will also be in doubt, and this—since the moustache may conceal the upper lip—will lead to uncertainty regarding the mouth or a false reconstruction of

it. There are now two mistakes instead of one. In some circumstances the process may be multiplied indefinitely, with the result that an entirely false impression of the face is recorded.

The principle of identifying two things is to be able to show that they have a sufficient number of points of resemblance to make the probability of their identity so great as for it to become for all practical purposes a certainty. This is the method employed in the case of finger-prints.

Identification may be required of :—

1. A living person.
2. A dead body.
3. A mutilated body or fragmentary remains.
4. One or more bones.

The means available for identification are :—

1. Mental power.
2. Memory.
3. Education.
4. Speech.
5. Gait.
6. Handwriting.
7. Complexion.
8. Likeness of features.
9. Occupation marks.
10. Race.
11. Deformities, birth-marks etc.
12. Injuries with permanent results.
13. Clothes, jewllery etc.
14. Bodily measurements.
15. Finger-prints.
16. Stains and smears.
17. Weight and height.
18. Teeth.
19. Scars and tattoo marks.
20. Sex.
21. Hair.
22. Age.

In all cases where an examination of a living person is required, the consent of the person must be obtained, the

nature of the examination explained and that any facts recorded will be used as evidence if required. If the person refuse to be examined then it must not be carried out.

1. Mental power, memory and education is easily ascertained by cross-examination and may be of importance in cases of impersonation or in cases offering the plea of insanity.

4. **Speech**—Stammering, stuttering, and lisping are the most obvious peculiarities, but it would be extremely risky to claim recognition or identification by the voice alone.

5. **Gait**—Ordinarily we think we can recognise a person by his walk, but even in cases where there is an obvious limp, it would be unsafe to depend upon the gait as a means of recognition.

6. **Handwriting**—This subject must be dealt with by experts. They can detect peculiar points in a manuscript that would be overlooked by an ordinary observer. Yet among these experts there is much difference of opinion over details, so much so, that little reliance can be placed upon their evidence.

7. **Complexion**—The complexion of the inhabitants of the Himalayas is very fair when compared with that of the dwellers of the plains of India. Many of the upper classes of Indians of all castes, especially the females, are fair complexioned while the lower classes are dark skinned.

8. **Features**—A great deal of information may be obtained by keen observation of the features.

There are eight types of people in India, *viz* :—

1. The Aboriginal or pre-Dravidian, short in stature, with broad noses and very dark skin, such as the Santals and Bhils, Paniyan, Kadir, Karumba, Irula, Kanihar, etc.
2. The Dravidian, mostly peopling Ceylon and Southern India—the Madrasi type.
3. The Indo-Aryan, peopling Kashmir and parts of the Punjab and Rajputana.
4. The Aryo-Dravidian or Hindustani, peopling the valley of the Ganges—the Purbia type.
5. The Sytho-Dravidian, peopling east of the Indus, down by Gujerat and the Western Bombay Presidency,—the Mahratta type.
6. The Turko-Iranian, peopling the west of the Indus and North West Frontier.
7. The Mongoloid, peopling Burma, Assam and foot hills of the eastern Himalayas,—the Gurkha type.
8. The Mongolo-Dravidian, peopling Bengal.

The following points may be noted :—

Forehead—Is it high, low, prominent, receding ? Does the hair of the scalp encroach on the forehead more than usual ?

Eyebrows—Are they slanting, straight, meet at the middle ?

Eyes—Are they dark or light in colour, large, small, sunken, prominent ?

Eyelids—Are they altered by disease, are the eyelashes incurved or irregalar ?

Nose—Is it short, long, flat and broad ? Are the nostrils narrow or broad ? Is the nose bored ? Hindu women generally wear the nose ring through the left ala (the cartilage forming the outer wall of the nostril), but the same custom is not infrequent among Mahomedan females, who, as a rule, bore the septum (the wall of cartilage between the two nostrils). Hindu women of the Himalayas also bore the septum.

Ears—Are they outstanding or close to the head ? Are the lobules present or absent or attached to the cheeks below ? Are they pierced or torn ? Every Hindu above the age of eleven years has the lobes of both ears pierced. Hindu women pierce the ears irregularly in one or two places, and perhaps, at one spot through the concha (the outer ear). In the Mahomedan female, openings are found extending in a line completely along the helix (margin of the external ear).

Lips—Any distortion by hare-lip, etc. ? Are they thick and everted or otherwise ? Is there a moustache ? If so, what is its character ?

9. **Occupation marks**—The hands of workmen often exhibit signs produced by the nature of the work, such as, needle-pricked fingers in tailors, stained fingers in dyers, photographers, etc.

10. **Race**—Is he Aryan, Mongol, Negro, European or American ?

11. **Deformities and birth-marks,—Congenital or other deformities include**—Hare-lip, cleft palate, squint,

hernia, epi or hypospadias, withered extremity, old tumour, clubbed fingers, club foot, extra fingers and toes, amputated limb, finger or toe, etc. These offer no difficulty. Observation notes on such deformities must be explicit and in detail.

Bodily marks—These consist of moles, warts, birth-marks (pigmented spots on the skin), scars and tattoo marks. As many marks as possible should be recorded, noting carefully their exact positions, size and shape.

Birth-marks are distinctive marks and are very important. One small birth-mark of any particular shape on some part of the body is quite common but to get two of particular shapes on particular parts of the body agreeing with known marks on an individual is very rare and if it were found that a body possessed three such particular marks it would be a certainty that the person was the actual individual who was previously known to have three such particular marks.

Birth-marks, moles and warts may be removed but the result will be a scar. Removal of a birth-mark by electricity, injection or subcutaneous ligature causes a depressed scar, as the true skin is destroyed. Congenital birth-marks usually persist through life unless they are small and superficial.

12. **Injuries with permanent results**—Amputations of limbs or parts thereof, operations on joints, etc., are excellent identifying marks, but since they are so common they would be of small value if considered alone; associated with other marks they would probably acquire

great importance. The history of their occurrence will be very useful as corroborative evidence.

13. **Clothes and jewellery**—Certain classes of people may be identified by the characteristic clothing and jewellery worn. For example, the Parsi hat, the Gandhi cap (Hindu), Western Punjabi scanty turban (Moslem), the woollen costume and hair rope of the shepherd of the Himalayas, the dhoti and loose chadder of the Bengali Hindu, the wide ended and turned up shoe of the Mahratta, the loose cotton trousers and skull cap of the Pathan, the trousers of the Moslem female and the ample skrit of the Hindu female etc., etc. One could fill a volume with a description of the various types of dress worn by the inhabitants of India.

14. **Bodily measurements**—The method used for carrying out such measurements is known as Bertillon's and is based upon certain measurements of the body, the principal of which are :—(a) The length of the head ; (b) The width of the head ; (c) The length of the body ; (d) The length of the trunk while sitting ; (e) The distance between the tips of the middle fingers whilst the arms are outstretched ; (f) The length of the forearm, the left middle finger and the left foot ; (g) The length and width of the right ear ; (h) The colour of the eyes. The system is only used on the continent of Europe.

15. **Finger-points or Thumb-marks**—Identification by means of finger-prints is a matter for the expert in this particular department.

Identification from finger-prints depends upon a peculiarity seen in the human hand. The skin on the pads of

the finger-tips is traversed in all directions by ridges and creases, which are ineradicable and show no change from childhood to extreme old age. They are not entirely alike on any two hands. The persistence of the markings has been proved beyond all question and this universally accepted quality has been the basis of the present system of identification.

The impressions, show that the ridges appear in certain fixed patterns from which a system of notation has been arrived at for convenience of record. Thus a four-fold scheme of classification has been evolved, and the types employed are :—"arches," "whorls," "loops," and "composites." The "loop" is the commonest pattern.

The actual identity of prints is established by a comparison of the ridge characteristics, that is, the points where ridges start or terminate, bifurcations, islands, etc.; and as the chances of two prints having exactly similar characteristics decrease in geometric progression according to the number of consecutive points of agreement, it is considered that twelve such points without any disagreement are sufficient to establish identity without doubt.

A medical witness can help by taking steps to obtain impressions on the post mortem table.

In dead bodies when the tips of the fingers are dry and shrivelled, and in this condition, unfit for taking impressions, their condition may be restored by immersing them in a one per cent solution of caustic potash until they have swollen to their normal state, then washed in water.

Expose a piece of self-toning paper to the daylight until it becomes almost black. Impress the finger on it

for three seconds, then immerse the paper in a solution of permagnate of potash, when immediately the finger print shows up black on a white background. Wash in water for two seconds. Fix in hyposulphite of soda for half a minute. Wash in water and hang it up to dry. The result is clear and permanent.

In advanced decomposition, the skin of the hands may be drawn off like a glove. The ends can be removed, hardened in a solution of formalin and impressions taken from them.

16. **Stains and Smears**—Stains and smears on the person or clothes alone, would be of little help in identification, but when considered with several other reliable points may help considerably in confirming the identity of a person ; such are stains of tobacco on the fingers and moustache, acid stains on the nails and fingers of photographers, variegated stains on the hands of dyers, paint stains on the clothes of painters, etc.

17. **Weight and Height**—These are important points in connection with identification. Exact observations of both height and weight should invariably be made and recorded ; they then become actual facts in connection with a body that has been found.

As a general rule, the height of the body is equal to the distance between the tips of the middle fingers with the arms outstretched. If only an arm be present, its length multiplied by 2, six inches added for each collar bone and one and a half inches for the width of the breast bone, will give the approximate height. The thigh bone (femur) is about 25 per cent of the height and the upper

arm bone (humerus) 18 per cent. If all the bones of the skeleton are present but denuded of tissues, one and a half inches must be added for the missing soft tissues.

The length of the middle finger measured from a point opposite the root of the thumb nail to the tip equals one nineteenth of the height. Place the hand flat on the table and draw a line transversely from the root of the thumb nail. The length of the forearm from the tip of the elbow (elecranon) to the tip of the middle finger equals five nine-tenths of the height. Twice the length of the lower extremity equals the stature.

Do not rely on only one of these measurements ; all, if possible, should be taken and the results compared.

If all, and only the bones are available, place the bones in their anatomical relationship to one another on a bed of soft clay and then measure it. The height thus ascertained with one and a half inches added for the soft parts will approximately equal the height of the person.

When only a limb or long bone or part of a long bone is available it is impossible to give anything but an approximate opinion of the height.

The ratio between the length from the notch of the breast bone (sternal notch) to the symphysis pubis and the total length of the body is as 1 to 3.3.

18. **Teeth**—Teeth offer an excellent means of identification as they are practically indestructible. In this connection most careful observations must be made and recorded. The following points must be considered :—

The number and names of missing teeth ; the number and the names of those present, noting whether tempora-

ry or permanent; peculiarities, such as prominent or incurved; crooked or straight; crowded or otherwise; whether much worn or not; clean or discoloured; the presence of fillings and their nature; crowning, bridge-work and material used for the purpose. In cases of advanced decomposition, the teeth commonly fall out in which case the socket is widely open as compared with the partially or completely closed socket of a previously extracted tooth.

19. **Scars and Tattoo marks**—Scars result from the healing of a wound where loss of substance has been caused. If the true skin has been penetrated, a scar follows never mind how rapid the healing has been. A scar of any depth or size, although it may fade in course of time will never disappear completely but the shape may alter as the result of constant stretching or by artificial interference. Scars formed in childhood increase with the growth of the body.

An elliptical scar is typical of incised wounds, small linear scars may disappear in time. Scars of leech-bites, lancet wounds or of cupping instruments may disappear after a considerable but indefinite time. Large scars never disappear and cannot be artificially removed.

In the early stage of a scar its colour is red, changing later to brown and then to white with a glistening surface.

It is impossible to offer a certain opinion as to the age of a scar. All that can be offered is : a red scar is a recent one and a white scar is not recent. Many old scars have a reddish appearance. Increasing the circulation by rubbing or slapping a suspected place will sometimes

cause the reappearance of an apparent vanished scar. In gun-shot wounds the scars are usually depressed and irregularly circular and more or less adherent in the centre to the underlying tissues, and grains of unburnt powder may be observed buried in the surrounding skin.

Scars from burns are usually very irregular, large, raised and causing deformity.

The application of a mustard plaster may leave a discolouration resembling the shape of the plaster and this discolouration may remain for months.

Tattoo marks are extremely common and may form the principal proof of identification. If thoroughly carried out with a carbonaceous material, it is indelible ; the material must be inserted into the papillary layer of the true skin ; if inserted only in the layers of the cuticle, it disappears as these layers are gradually cast off. If the material used is soluble, the tattooing gradually gets faint and finally disappears. The most permanent marks are made with Indian ink, charcoal, black gunpowder and vermilion. Experiments carried out by Casper, Hutin and Tardieu showed that tattoo marks may disappear completely during life but after death the colouring matter used may be found in the lymphatic glands, especially so, when vermilion has been used. Permanency depends on the material used plus the depth inserted. A permanent tattoo mark may be removed but a scar will remain. A particular design may be altered by incorporating with or by working over it a different design altogether.

20. **Sex**—In hermaphrodites sex may be solved by the appearance of menstruation or the emission of semen.

In the dead, by the demonstration of overies or testicles. Circumcision in the male will indicate a Mahomedan or a Jew.

In cases where only a skeleton or bones are available it is possible to identify the sex. The pubic arch is rounded in the female forming an angle of 90 degrees, as compared with a pointed arch in the male, forming an angle of about 73 degrees. The sacrum in the female is broader, flatter and curved only in the lower part which turns forward abruptly. The wings of the pelvis are more expanding and broader than the shoulders in the female, the reverse in the male. The tail bone is inclined outwards in the female, curved inwards in the male. The great sciatic notch forms almost a right angle in the female ; in the male a more acute angle. Before puberty there is very little difference between the male and female skeleton.

21. **Hair**—Hair resists putrefaction, hence its colour and character will be of importance.

The hair may be dyed ; by peroxide of hydrogen among Europeans, various dyes to render grey hair dark by Indians ; among elderly Moslems the mendhi plant is used to dye the hair red.

This dyeing of the hair can readily be detected by observing different parts of the head or face and of the bases of the hairs. The hair grows upwards from the bottom of the follicle by multiplication of the soft cells which cover the papilla and these become elongated and pigmented to form the fibrous substance of the hair shaft, hence that part of the hair near the root will probably be devoid of dye.

Pubic hair practically never turns grey before 50 to 55 years.

Long hair in the male will suggest a Sikh, and if it be, in addition, shaved on its outer circumference, an Oriyah or Mahratta. Short hair with a tuft on the crown, a Hindu ; long matted hair, a mendicant.

22. **Age.**—Refer to Chapter V for details regarding age.

If all the milk teeth have erupted the child is over two years of age. If all the permanent teeth have erupted, the person is over eighteen years of age. If the pisiform bone of the wrist is ossified, the person is over twelve years of age.

Lastly the contents of the stomach in a corpse may offer great help in the identification of a person. For instance, if a person was known to have partaken of a certain vegetable (peas, beans, etc.,) or fruit (pineapple, guava, etc.,) just prior to his disappearance, the finding of such fruit or vegetable in the stomach would act as a confirmatory indication of identification.

Identity is the most important question of all in criminal procedure. You may have collected a mass of information concerning some person accused. It will avail nothing if you cannot identify him. Even detailed description of an individual cannot in itself identify him unless that description includes some characteristics which are unique ; and then you will have to prove that they really are unique in that particular.

Finger-prints are a hall-mark of identification for ever ; they do not change their form with age. However, two

finger-prints must not be regarded as proved unless at least ten points of resemblance can be shown. Foot-prints are almost equally characteristic. The ridges on the foot are simpler in pattern than those of the finger.

Invisible finger-prints on paper may be developed by means of iodine vapour causing a yellow impression, or painting the paper over with a solution of ink diluted with water.

With iodine vapour it is possible to develop a finger-print three years old.

A body should be identified before a post-mortem examination is undertaken ; it is not necessary that the name of the deceased be known ; the identity required is that the corpse is that to which the request for examination refers. The Officer conducting the post-mortem examination may be called upon to assist in identifying the body. He should therefore make a note of all marks, peculiarities, signs of avocation, characteristics of clothing and any jewellery worn. Mistakes as to the identity of a corpse are not surprising ; at death the face loses its expression, the features are altered, and so very frequently soon after death, rapidity of putrefaction renders identification very difficult or quite impossible, unless the deceased happened to suffer some deformity or some peculiarity of the teeth or bones, by which he could be recognised.

CHAPTER VII

AGE

"How many things have been rejected which are now received as truths? How many now received as truths shall in their turn be despised? Of what then can man be certain?"

The determination of age from the earliest embryo to senility may have far reaching importance in a large number of criminal cases.

Determination of age may be necessary for the proof of the chastity or otherwise of a woman in cases of abortion, viability in relation to infanticide, criminal and civil responsibility, rape, making a will, employment under the factory act, identification, etc.

The law, with reference to age, is as follows :—

1. Nothing is an offence which is done by a child under seven years of age. (Section 82, I.P.C.).

2. Nothing is an offence which is done by a child above seven years of age and under twelve who, has not attained sufficient maturity of understanding to judge of the nature and consequences of his conduct on that occasion. (Section 83, I.P.C.).

3. Consumation of marriage is illegal under the age of twelve years. (Section 375, I.P.C.). This has since been raised to thirteen years.

4. Whoever takes or entices any minor under fourteen years of age if a male, or under sixteen years if a female, etc. (Section 361, I.P.C.)

N.B.—A child under ten years of age is prima facie, subject to guardianship. Omitting to enquire whether a child has a guardian or not, is no defence.

5. Whoever, by any means whatsoever, induces any minor girl under the age of eighteen years to go from any place etc. (366A, I. P. C.)

6. Whoever imports into British India from any country outside India any girl under the age of twenty-one years etc. (366B, I. P. C.)

7. Whoever kidnaps or abducts any child under the age of ten years etc. (Section 369, I.P.C.)

8. Whoever sells, lets to hire, or otherwise disposes of any minor under the age of eighteen years, etc. (Section 372, I.P.C.)

9. Whoever buys, hires, or otherwise obtains possession of any minor under the age of eighteen years, etc. (Section 373, I.P.C.).

10. Sexual intercourse with a girl under fourteen with or without her consent is rape. (Section 375, I.P.C.)

11. Only a person over twelve years of age can give a valid consent to suffer any harm which may result from any act done in good faith and for the sufferer's benefit. (Section 90, I.P.C.)

12. No child who has not completed his twelfth year shall be allowed to work in any factory, (Sec. 50 of the Factories Act of 1934). Children between twelve and fifteen years shall not be allowed to work in a factory for more than five hours in any day (Sec. 54 of the same Act.)

[1] *Emp.* v. *Umsadbaksh*, 3 Bom. 178.

13. A minor cannot make a valid will.

Persons attain their majority on completion of their eighteenth year, except when under a guardian appointed by a Court or under a Court of Wards, when majority is attained on completion of their twenty-first year.

An individual attains a given age on the first minute of the day before his birthday anniversary.

14. *A youthful offender cannot be sent to a reformatory* school if he is over fifteen years and no person can be detained in a reformatory school after having attained the age of eighteen years. (The Reformatory Schools Act, VIII of 1897).

15. The marriage of girls below fourteen years of age and of boys under eighteen years of age is prohibited by the Child Marriage Restraint Act (XIX of 1929).

Determination of Age.—The usual data employed for the determination of age is the following :—

1. The dimensions and changes in the fœtus month by month.

2. The eruption of the teeth.

3. The height and weight of the body.

4. The general development of the body and the growth of hair on certain areas of the body.

5. The progress of ossification.

Value of Medical Evidence.—In the living, age can only be estimated with any degree of certainty in the young. After adult life is reached, it can only be guessed approximately.

Medical evidence can never be conclusive proof of the exact age.[2] The medical evidence cannot throw much light because from its very nature it is based on conjectures only and we cannot possibly look to it for the purpose of determining with precision the exact age of a particular person. It is obvious that in cases when limitation is pleaded in defence, a difference of even a single day settles the fate of the case one way or the other, and no doctor, however conscientious and competent he may be, can give the precise age of a person so as to enable the Court to determine the exact date of that person's birth.[3]

There are, however, various indications known to medical science from which the age of a person can be deduced—some of these indications can be ascertained by an ordinary medical examination, and some of them are only discoverable by an X-ray examination. With or without an X-ray examination, however, it seems that it cannot possibly be said that a doctor's opinion on the point of a person's age is not entitled to any greater weight than that of any other person. Even if the indications from which age can be deduced are known to a layman, a layman is not in a position, as a medical man is, to examine a person, with a view to discovering the presence or absence of those indications.[4]

[2] *Ambica Prasad* v. *Lal Bahadur*, A. I. R. 1924 Oudh 353 (355) =11 O. L. J. 164=83 I. C. 840.

[3] *Zinda* v. *Mt. Roshnai*, A. I. R. 1928 Lah. 250 (252)=10 L. L. J. 183=113 I. C. 53.

[4] *Nasrullah* v. *Emp.*, 35 Cr. L. J. 498 (500)=147 I. C. 759=A. I. R. 1934 Oudh 32=A. I. R. 1934 Oudh 46=10 O. W. N. 1274=1934 Cr. C. 86.

The terms employed in connection with the child in the womb, from conception onwards are :

Ovum.—Signifies the embryo and its membraneous coverings.

Embryo.—This is the body which is afterwards converted into the foetus.

Fœtus.—This is the name employed for the embryo after the third or fourth month of gestation.

Great difficulty is experienced in determining the nature of the supposed ovum or embryo between the second and third months. In such case the medical witness must not have it all his own way. In cases of abortion between the third and fourth month the fœtus may be identified without much difficulty. The ovum may escape first and leave the membranes behind, but it has to be remembered that in some states of the virgin, during menstruation, structures similar to these are shed from the womb, which when examined by the microscope, are like the true membranes. It requires a skilled microscopist to distinguish placental tissue with certainty. The points of differentiation are of such a nature, that while it is easy to decide between extremes, it is quite impossible to draw the line between, say, the second and third and fourth months. A medical witness can only adopt wide limits, and the decision must be left to other evidence.

The characters usually described as belonging to a child at the different stages of gestation, represent the average. They are open to exceptions, for some children at the ninth month are but little more developed than others at the seventh. A seven month's child may at times be in-

distinguishable with certainty from a nine months old child. Twins are generally smaller and less developed than single children. The average weight of twins is not more than five pounds, and yet a single child may only weigh a pound. The only safe way of determining the uterine age of a child would be to rely on the majority of the characters which it represents. That child only can be regarded as mature which presents the greater number of the characters found at the ninth months of gestation. It will be convenient to remember that the length of the child is, during the later stages of pregnancy about double the intra-uterine age in months. Thus: at six months the child will be twelve inches long; at seven months, fourteen inches; at eight months, sixteen inches; at nine months, eighteen inches. Hesse's rule for the estimation of age in the earlier months is: the square of the number of months of gestation equals the length of the foetus in centimetres; thus at three months the length should be nine centimetres, at four months, sixteen centimetres, at five months, twenty-five centimetres.

THE DEVELOPMENT OF THE FŒTUS

At one month.—The ovum measures about $\frac{3}{4}$ of an inch, the surface is covered with chorion villi. The embryo is one third of an inch long, curved, the caudal extremity slender and short, cephalic end thick, two dark spots indicate the eyes. The limb buds are visible, The mouth is a cleft.

At two months.—The ovum is one and three quarters of an inch in diameter. The chorion villi are enlarged at

one spot. The embryo is half an inch in length. The head is becoming distinct from the trunk. The umbilical vesicle is very small. The vessels of the funis are still straight. The nasal and oral openings are distinct.

At three months.—The embryo is about 3 inches long, weighs about one ounce. The neck is distinct. The chest can be distinguished from the abdomen. The fingers and toes are visible. The umbilical vesicle has disappeared within the abdomen. The funis is spiral, about $2\frac{1}{2}$ inches long.

At four months.—The embryo is $5\frac{1}{2}$ inches long. Weighs 3 ounces. The skin is rosy and firm. The sex is distinguishable. The membrana pupillaris is very evident. Funis 7 inches long.

At five months.—Fœtus is 6 inches in length. Weighs 10 ounces. The nails are visible, also hair on the head, and lanugo on the forehead. The eyelids are closed. Funis 12 inches long. Bile stained fluid in the small intestine.

At six months.—Fœtus 12 inches long. Weighs 24 ounces. Vernix caseosa on the skin, which is red and wrinkled, lanugo on all parts of the body. Eyes closed. Eyelashes and eyebrows are appearing. Funis, length 14 inches, is inserted a little above the pubes. Meconium in the large intestine.

At seven months.—Fœtus is 14 inches long. Weighs 2 lbs. Eyes open. Membrana pupillaris disappearing. Finger nails well formed, do not reach the finger tips. Lanugo has gone from the face. The testicles are in the

vaginal process of peritoneum at the internal ring. Funis 17 inches long.

At eight months.—Fœtus 16 inches long. Weighs 3 lbs. Skin is less red, less wrinkled. There is a considerable quantity of subcutaneous fat. The nails have reached the finger tips. The umbilicus is below the centre of the body. At about $8\frac{1}{2}$ months, the centre of ossification in the lower epiphysis of the femur appear.

At nine months.—Fœtus is 18 inches long. Weighs 6 to 7 lbs. The skin is firm and plump. Vernix caseosa is present chiefly on the back and flexor aspect of the limbs. Lanugo on the shoulders. The umbilicus is above the centre of the body. The finger nails extend beyond the finger tips. The toe nails reach to the tips of the toes. There is meconium in the large intestine and rectum. The point of ossification in the upper epiphysis of the tibia is generally present at full term, but sometimes not until after birth.

What will help greatly in arriving at an opinion regarding the age of a child recently born, are the changes in the umbilical cord; changes which are due to vital processes and governed by laws which pursue a fairly regular course.

After division, the cord begins to dry up. The first sign of separation may be apparent from thirty-six to forty-eight hours after birth and consists of a line of inflammation at the point of junction of the cord with the abdomen. The line of separation becomes deeper daily, till the fifth, sixth or eighth or even the ninth day, when separation is complete. Separation in the largest number

of cases is accomplished on the sixth day, in the next largest on the fifth day. The fifth or the sixth day, therefore, is the average. When the cord separates, an ulcer is left which takes from seven to twelve days to completely heal. Hence a child found with well marked inflammation or an ulcer at the navel, a reasonable approximation of its age may be made at the time it lived after birth.

From the time of birth to the commencement of dentition the estimation of age is vary uncertain, as height and weight depend so much on the general health of the infant. Normal new born babies vary greatly in weight from five to nineteen pounds. In one case recorded in the British Medical Journal, the infant at birth weighed twenty-four pounds, two ounces. Seven pounds may be considered the average weight at birth and during the first year it gains approximately one pound a month. During the first and second months a normal infant gains about six to eight ounces a week, during the the third month, four to six ounces a week, and after the third month from three to four ounces a weak. A child should double its weight at six months, and treble it at the end of the first year. A child grows most rapidly during its first year and during this period the height increases by five to six and a half inches. Therefore, no reliance can be placed on the height and weight of an infant in determining its age. Height and weight may be of help when considered with other data.

The eruption of teeth, however, helps considerably in arriving at a very approximate conclusion.

The dates at which the milk teeth are cut are very

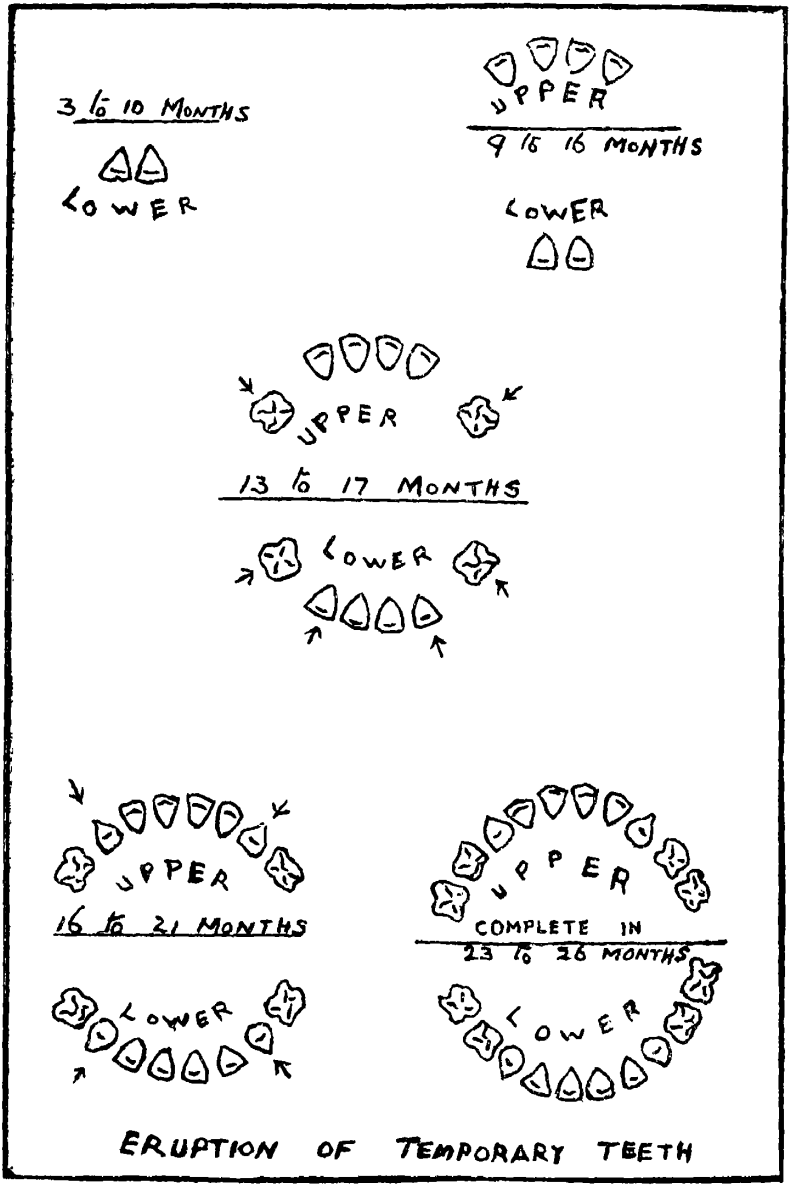
variable. The lower central incisors come first between the sixth and ninth months or even later; then come the central and lateral upper incisors; then the lower lateral incisors followed closely by the first molars. After a rest of four or five months come the canines, while at about the end of the second year the second molars have appeared and the temporary dentition is complete. The milk teeth are cut in batches with resting intervals between.

In a great many children, premature teething occurs. Many children may be born with two or more teeth and a child may not show the sign of a tooth at a year and a half. In most cases of the latter kind the infant will show signs of disease such as, rickets or congenital syphilis.

When all the milk teeth are out there should be twenty, and normally, they are all out by the twenty-first month. Frequently teeth will appear immediately after an acute illness.

The accompanying illustration offers a vivid idea of the order of eruption of the temporary or milk teeth.

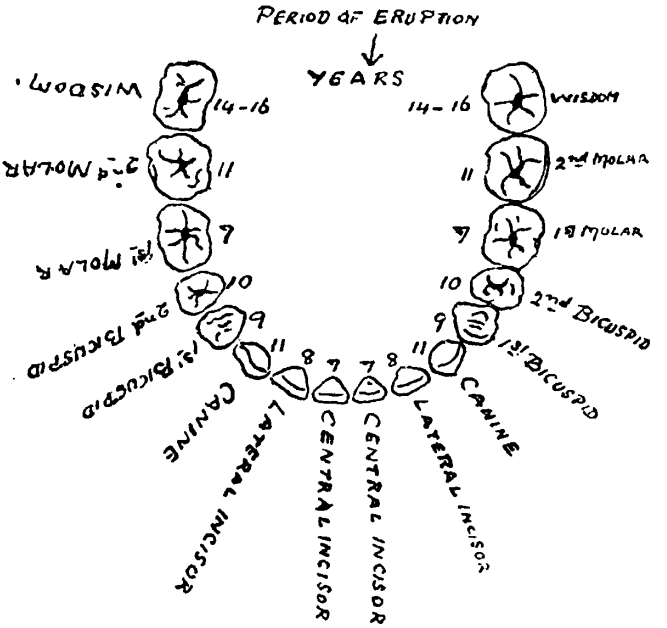
The first permanent tooth to be cut is the first molar and this happens during or soon after the sixth year. It does not displace any of the milk teeth but comes out behind the second temporary molar. During the seventh year the temporary central incisors fall out and their place is taken by the permanent ones. The lateral incisors succeed their temporary predecessors at about the eighth year. The first bicuspids take the place of the first temporary molars at about the ninth year; the second bicuspids that of the second temporary molars about the



ERUPTION OF TEMPORARY TEETH

tenth year ; the canines about tht eleventh year, while the second molars come along behind the first about the eleventh or twelfth year. The wisdom teeth usually appear between the eighteenth and twentieth year, but may appear as early as the fourteenth and as late as the thirtieth year, and indeed they are sometimes never cut at all and when they are, they often do not come to the level of the other teeth. It is believed that man is gradually undergoing a suppression of his wisdom teeth. The presence of four wisdom teeth usually indicates that the person hss passed the age of eighteen years.

The accompanying illustration shows at a glance the period of eruption of the permanent teeth.



The **Milk teeth generally are smaller** than those that replace them. The anterior milk teeth are vertical, the permanent are usually inclined somewhat forward. The crowns of the milk teeth are of a white, china-like colour as compared with the ivory white of the permanent. The junction of the crown with the fang of the milk tooth is often marked by a ridge which is not seen in the permanent.

Permanent teeth—The central upper incisors are very much larger than the upper lateral incisors, but the opposite is the case in the lower jaw. The roots of the upper incisors are rounded and conical ; in the lower jaw they are flattened from side to side. The root of the first upper bicuspid is bifid or nearly so. In the first lower bicuspid, the lingual tubercle and surface are very small.

In **the upper molars** the labial edge of the crown is sharp, and the lingual edge rounded, while in the lower molars, the lingual edge is sharp, and the labial edge is rounded. To determine the side to which an upper molar belongs, note :—their anterior and posterior surfaces are not in transverse but in oblique planes, sloping strongly postero-medially, and converging in that direction. The first upper molar has four tubercles ; the second molar has three or four, but more frequently four ; the third has three much more frequently than four. The upper molars have three roots. In the last molars the three roots are more or less united into a single conical process.

The lower molars—The crowns are more massive than those of the upper molars, and are elongated antero-

posteriorly. A crucial groove separates the four chief tubercles from one another, this bifurcates behind to enclose a fifth, which lies slightly to the labial side of the middle of the tooth. The lower molars have two roots; they are flattened from before backwards and are very wide. To determine the side to which a lower molar belongs, remember that the deep part of the root is generally curved backwards, and the blunter margin of the crown, and the fifth tubercle, if present, is on the labial side.

Height and weight.—These data are too variable to be of any material help.

Menstruation, puberty, hair and body development—

In general, menstruation is earlier in girls of a sanguine lively temperament and of powerful constitution; further other things being equal, it appears earlier in girls of the dark type than in girls of the fair type.

The onset is affected by social circumstances. In the upper well-to-do classes it appears earlier than among the girls of the labouring classes.

Daughters of women who begin to menstruate early, begin themselves to menstruate at an early age. However this is not always the rule.

In India, menstruation usually commences at the age of twelve or thirteen. According to the early Indian physician Susruta, the menstrual discharge begins after the twelfth year. Manu fixed the time of marriage of females at twelve years.

Menstruation at ten is uncommon, and is equally uncommon for it to be delayed beyond the thirteenth year.

The onset is subject to variations depending upon race, occupation, hereditary tendencies and climate. In Europe the average age is fourteen or fifteen ; the extreme limits being twelve to nineteen.

Climate is an important factor. In the torrid zone, the average onset is from eleven to fourteen ; in the temperate zone, thirteen to sixteen, and in the frigid zone, fifteen to eighteen.

Menstruation is hastened by luxury and sexual excitement, and is retarded by hard living and freedom from sexual ideas.

In India, premature sexual stimulation is common, due to the custom of early marriage, when it is customary to send the girl at, perhaps, nine years, occasionally, to the house of her husband.

Menstruation in girls in good circumstances, generally takes place when they are eleven years old, even in some cases at ten. It is rare for girls in indigent circumstances to commence earlier than the age of twelve. In Europeans born in India, there is a tendency to early menstruation, the average being thirteen to fifteen years.

Precocious girls show a comperative high bodyweight, great development of fat, early dentition. They look older than their years, they have genital organs that also develop early, with hair on the pubes and in the armpits. The outer lips of the external genitals and the breasts resemble those of full grown women and the pelvis has the adult

form. The intellectual development lags behind and is not in correspondece with that of the body.

Again, menstruation may be delayed even till after the age of twenty. This delay sometimes occurs in girls who exhibit, at this period of life an extraordinary great general fatty development of the body, or in whom some sudden change in the mode of life has occurred. The genitals exhibit distinct signs of backwardness ; there is little or no covering of hair ; the genitals are flabby and relaxed ; the breasts are small, nipples and areolæ are undeveloped.

Menstruation is **not an invariable sign of maturity,** for it may commence before maturity, and maturity may be attained before menstruation. Sexual maturity before the onset of menstruation is very rare. A girl between eleven and twelve would be immature.

Puberty is not generally attained upon menstruation but subsequently, for the attainment of puberty is not a sudden event. It is a process spread over many months or years. Menstruation is one of the steps, though it may be delayed.

The prodromal signs of menstruation are : swelling and tenderness of the breasts, the greatest increase in size and weight occurs. Among the poorer classes the proper development in size and weight occurs between the ages of thirteen and fifteen, whereas in the upper class females who ultimately attain the same weight show their greatest growth at the ages of twelve, thirteen and fourteen years. The greatest growth of the female always precedes puberty, so that, for example, a girl who

begins to menstruate at the age of twelve will grow most rapidly in the year preceding this, whereas, a girl who begins to menstruate at a more advanced age will not undergo her most rapid phase of growth so early as the age of eleven.

Puberty occurs in the female on an average about two years earlier than the male.

At puberty, important changes occur by which the sexes are strikingly differentiated. Whereas in the growing boy all physical change takes the form of increasing strength and energy, in the development of the girl are noted the appearances of the rounded outlines so characteristic of womanhood.

The soft hairless vulva of the child becomes enlarged at the onset of menstruation, by the deposit of fat. Sometime before puberty, fine hairs make their appearance here and there, but not until puberty does the hairy covering of the pubic region become more or less thick. The growth of the denser pubic hair begins with the appearance of hairs along the middle of the mons veneris (the rounded prominence in front of the pubes) and at the margins of the outer lips. The growth of the hair in the armpits now appears.

The development of the breasts is very vague and liable to be altered by the mode of sexual life. The beginning of prominence of the breasts **is not a sign of puberty** ; when they are more or less developed it is.

The signs of puberty in the male are : development of the penis and testicles, growth of hair on the pubes and scrotum, and a downy growth on the upper lip, the voice

becomes deeper and the body assumes a manly appearance, secretion of semen takes place.

Puberty in the male does not bring about the marked changes by which it is characterised in the female. The boy does not become a man till some years after puberty, but in females menstruation rapidly transforms the girl into a woman.

Progress of ossification is of material help in determining age. The following subjoined tables show the progress of ossification in the various bones according to age :—

Intra-uterine Month	Ossification of	
	Foot	Hand
6	Body of os calcis	
7	Astragalus	Whole hand cartilaginous
9	Cuboid	
Extra-uterian Year		
1	External cuneiform	Os magnum, Uneiform Cuneiform
3	Internal cuneiform	
4	Middle cuneiform	
5	Scaphoid	Trapezium, Semilunar Scaphoid
6		
8		Trapezoid
10	Epiphysis of os calcis	
12		Pisiform

Other points of ossification are :

1st year.....Heads of humerus, femur and tibia.

2nd year.....Lower ends of radius, tibia and fibula.

3rd year.....Patella, great tuberosity of humerus.
4th year.....Upper end of fibula, great trochanter.
5th year.....Lesser tuberosity and internal condyle of humerus.
10th year.....Upper end of ulna.
13th to 14th year.....External condyle of humerus and lesser trochanter.

Refer to Appendix IV

Resort to X-ray photography as evidence of age, especially in important cases should always be the rule, as greater reliance can be placed on the degree of ossification than on the general external appearance of an individual, especially so when considered in conjunction with dentition and general body development.

The opinion expressed by Lyon is "that ossification is perhaps the most accurate method of arriving at age" (Lyon's Medical Jurisprudence, Edition 9, p. 85). Again Modi states that.: "Ossification is an important additional sign for determining the age until ossification is completed, for skigraphy has now made it possible to determine even in living persons the extent of ossification." Taylor while dealing with the question of estimating age from one year to puberty states as follows : "When the teeth commence to erupt they form the most reliable means for the estimation of age of a child from about the age of six months to puberty." Then he adds : "It is possible by X-ray examination to corroborate such evidence from the ossification of the bones (Taylor's

Medical Jurisprudence, Edition 8, p. 167)." These opinions, however, must be read subject to an important qualification. In some books of medical jurisprudence we find tables showing the periods of life at which centres of ossification appear in bones : but these tables have been taken from European authorities and, apart from the fact that no authoritative table has been prepared in India, various authors have taken care to emphasise the fact that the figures in the table must not be taken too rigidly but only as implying an average. Thus on a perusal of these authorities, although it may be recognized that ossification is an important test for determining the age, yet having regard to the practical difficulties which would attend the application of this test, it cannot be said that it would be far wrong in stating that it had not been shown that ossification is an indispensable test for determining the age of a girl.[5]

As the point of ossification appears in the Pisiform bone (one of the small bones composing the wrist) at the age of 12 years, an X-ray photograph would be of material testimony in cases of rape where the question of the age of consent is raised.

In a radiogram or X-ray photograph, cartilage shows a transparent appearance and the small islands of bony tissue, the centres of ossification have increased density and are shown up as shadows within the transparent area ; the density of these shadows depending on the degree of advancement of the ossifying centres. It must be borne

[5] *Samarendra Kumar Chakravarti* v. *Emp.*, 38 Cr. L. J. 673= 169 I. C. 48=15 *Pat.* 817=A. I. R. 1937 *Pat.* 263.

in mind that both sides of the body must always be examined at the time.

After full development has been attained, the indications from which age can be inferred become very slender. Perhaps the most reliable indications of old age are to be seen at the angles of the lower jaw and the upper end of the femur.

In middle life the angle of the lower jaw is nearly a right angle; in old age the angle becomes obtuse, showing a tendency to revert to the infantile type.

In middle life the angle formed between the neck of the femur and its shaft is obtuse; in old age this angle approaches more and more to a right angle, but this is not very apparent.

Little reliance can be placed on the various means of determining age when considered individually but when considered together they offer fairly strong evidence of approximate age; however, after puberty there is no scientific proof of age in the living or dead.

Note. In criminal cases, in which the age of an accused person, complainant or witness, is material to the matter in issue, or is likely to affect the sentence, the Court should record a careful finding as to probable age of such accused person, complainant or witness, and should refer to, and comment on, any discrepancies which there may be in the evidence on the point. In cases of doubt, the opinion of a medical officer should be taken.

A careful statement of the probable age of the accused is especially necessary in murder cases in which the person charged is a youth or is very advanced in years. But in every case in which a charge is framed the accused should, at the opening of his examination, be required to state his age; and in all cases in which

the age of the accused appears to the Court to be under twenty or over fifty years, or to be material for any special reason, the Magistrate should add a note expressing his own opinion as to the probable age of the accused.[1]

It has been brought to the notice of the High Court that, owing to insufficient inquiry into the age of juvenile offenders, youths of too advanced age are not infrequently sent to the Delhi Reformatory School. The Judges, therefore, invite the attention of all Magistrates to the necessity of exercising care in the preliminary inquiry into the age prescribed in section 11 of the Reformatory School Act of 1897 and to the propriety of taking medical advice in doubtful cases.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. What is the age of this person ?

2. Q. On what grounds have you formed this opinion ?

3. Q. Can you definitely determine a person's age to within six months or a year by the means at your disposal ?

A. In the absence of documentary evidence it is impossible to do so, and any such opinion must be a mere guess.

4. Q. At what age is first dentition complete ?

A. The average age is from twenty-four to thirty months.

5. Q. At what age are all the permanent teeth (excluding the wisdom) fully erupted ?

A. A person of thirteen or fourteen years of age should have twenty-eight teeth fully erupted.

6. Q. What age would you say a person was, who possessed four completely erupted wisdom teeth ?

A. The presence of four wisdom teeth indicates that the person is over eighteen years of age (not that he or she is eighteen). Their absence gives no certain indication of age.

[1] Paras 53 and 54 Chapter I. Rules and Orders of the High Court of Judicature at Lahore made under the Criminal Procedure Code.

7. Q. When do the wisdom teeth appear ?

A. The wisdom teeth may appear at any time between the fourteenth and thirtieth year or even later and sometimes they do not appear at all. In such a case it will be found that there is insufficient jaw space for them.

8. Q. Must the permanent teeth necessarily erupt at a constant interval of a time ?

A. No. Nevertheless, all the permanent teeth excluding the wisdoms erupt as a rule fairly regularly at their recognised times. They may. however, sometimes appear a year before or a year after the time they are due, especially the canines and second molars. The eruption of the wisdoms on the other hand is very irregular.

9. Q. What factors influence the eruption of the temporary teeth ?

A. Rickets, a disease of infancy, generally delays dentition, while congenital syphilis has a tendency to hasten dentition and such diseases may be recognised by the appearance of the teeth themselves. Quite apart from any disease, dentition may be delayed or hastened.

10. Q. What factors may hasten or delay the eruption of the permanent teeth ?

A. In addition to the raw materials and to energy, other substances are necessary for growth. These substances fall under two classes :—Vitamins and internal secretions. Vitamins are necessary for growth. The quantity necessary is insignificantly small compared with the amount of growth. These vitamins are supplied in the diet and under certain circumstances may be withheld. resulting in arrest of growth. The internal secretions especially of the (a) thyroid, (b) anterior pituitary, and (c) cortex of the adernal gland, influence growth remarkably. Increased secretion of (b) will result in exaggerated growth of the bones of the limbs, jaw, and to a certain extent a corresponding growth of the teeth. A deficiency will prevent growth. Increase of (c) will stimulate growth powerfully and in such cases children may present the sexual appearances

of adults. So the hastening or delay in the eruption of the permanent teeth may depend largely on the foregoing factors.

11. Q. Can you safely rely on the presence or absence of certain permanent teeth in determining age ?

A. In the absence of documantary evidence, the teeth, from the commencement of temporary dentition till the completion of permanent dentition, that is, from about the seventh month after birth till about the twentieth year, form one of the most valuable (because the most constant) sign of age. The order of appearance is of more value than the period any given tooth erupts and if the presence or absence of any given teeth are considered with other factors, I think an approximate age up to eighteen years or a little over can be safely determined.

12. Q. At what age does menstruation usually commence in girls in India ?

A. The average for menstruation to appear in Indian girls is twelve years and seven months. In European girls born in India, fifteen years.

13. Q. What are the indications of puberty ?

A. In the male ; development of hair on the genital area and armpits, downy growth on the upper lip, enlargement of the sexual organs, deepening of the voice, secretion of semen. In the female ; enlargement of the breasts, development of hair on the genital area and armpits, enlargement of the external genitals, alteration in disposition, becoming shy and reserved, contour of the body becomes fuller with enlargement of the hips, menstruation is usually established.

14. Q. What is the age of puberty ?

A. In girls it commences about the age of twelve or thirteen years ; in boys about fifteen or sixteen years. In girls puberty is not generally attained upon menstruation but subsequently, for the attainment of puberty is not a sudden event.

15. Q. Can the age of a person be determined by any of the

following : teeth, growth of hair, body development, stage of ossification ?

A. Little or no reliance can be placed on these conditions in determining age when considered individually, but when considered together they offer fairly strong evidence of approximate age. After puberty there is no scientific proof of age in the absence of documentary evidence.

16. Q. What definite indications would you expect to find in a girl sixteen years of age or thereabouts ?

A. Fully established menstruation, with its accompanying signs : development of the breasts and external genitals, well grown pubic hair and in the armpits, eruption of all the permanent teeth except the wisdoms. X-ray photographs should show the union of the epiphysis to the shaft of the lower end of the humerus and the union of the olecranon to the ulna.

17. Q. What definite indications would you expect to find in a girl about eighteen or nineteen years of age ?

A. Development of the breasts and external genitals to those of a fully grown adult, eruption of all the permanent teeth, thirty-two in number (wisdom partially or completely). X-ray photographs should show union of the epiphysis with the shaft at the upper end of the radius, the internal epicondyle of the cartilages between the epiphyses of the phalanges, metacarpals and lower ends of the radius and ulna.

CHAPTER VIII

IMPOTENCE

The question of *impotence* may arise in :—nullity of marriage, legitimacy, divorce, rape, pregnancy, inheritance, unnatural sexual offences and adultery.

Impotence in the male may be defined as a lack of ability to permit it.

It is not necessarily associated with sterility, nor is a sterile individual necessarily impotent. A person whose ejaculations are premature and whose erections are feeble or wanting, though not able to perform the sexual act normally, may discharge semen containing immense numbers of living spermatozoa, whilst another, who can vigorously perform the sexual act, may have no emissions or may emit fluid entirely devoid of living spermatozoa.

Impotence is a bar to union or a cause for divorce, sterility is not.

The capacity for sexual intercourse is influenced to a varying degree by age.

The power of erection and coitus may be present long before puberty and in paternity cases, in judging the sexual capacity of a youth, age is of less moment than the degree of physical development.

In India incapacity to procreate at the age of 13 years cannot safely be inferred from the sole fact that Lyon's

Medical Jurisprudence, a work dealing with Indian conditions, accepts as applicable to India Taylor's statement with reference to England where climatic conditions are so different, that 14 is the earliest age at which procreative power has been recorded.[1]

In advanced age the power of erection and coitus may disappear or remain intact to a very advanced age. Many instances are recorded of men over 80 becoming fathers.

It is not impossible for a man of 70 years of age in India to beget children.[2]

Impotence in the male may be :—

Organic

Psychic

Atonic

Organic impotence is the result of any hurt, wound, or degeneration which interfere with the function of the genital organs. The majority of cases depend upon malformation of the genital organs. They may affect the penis, testicles or the surrounding parts.

The penis may be congenitally absent, rudimental, minute, or adherent. If the organ is absent or rudimental the person is obviously impotent.

If the mechanical impediment to the sexual act depends on a *minute penis*, the person *cannot be considered permanently impotent*, since it has been proved that use of the organ has been quickly followed by an increase in growth.

[1] *Bhagwan* v. *Mahesh*, 40 C. W. N. 360 (363) P. C.

[2] *Uttam Das* v. *Chanan Das*, 20 I. C. 462=200 P. W. R. 1913=283 P. L. R. 1913=51 P. R. 1913.

A gentleman aged 26 years, consulted Wilson on the propriety of his entering into marraige. His penis and testicles but little exceeded those of a child of eight years of age, and he had never until this acquaintance with his intended wife, felt the desire for sexual intercourse. He married, and become the father of a family, and at the age of 28 the organs had attained the full development of those of an adult. (Medical Gazette, 40, page 95).

The penis may be adherent to the scrotum, through nearly its whole extent, which will materially interfere with its function. It may be freed by operation, but owing to such a condition having a tendency to arrest development or growth of the organ, it may be found after operation that the penis is of no use in the sexual act.

There are cases where the opening of the urethra is on the upper side of the penis (a condition known as epispadias), and where the opening of the urethra is on the underside of the penis (a condition known hypospadias). In the former, a portion or all of the roof of the urethra is absent, the canal being represented by a furrow along the upper side of the penis. As a rule the penis is short, broad, curved upwards and sometimes twisted. The urethral furrow passes backwards to the urethral orifice deeply sunken at the base of the penis. This orifice is usually large and may sometimes admit a finger without difficulty. Except where the penis is markedly curved, erection and intromission are possible.

In the condition known as hypospadias, the floor of the urethra is absent. The urethra opens at some point

on the under surface of the penis, either near its head, between its head and the scrotum, or under the scrotum. In the first mentioned type, unless there are other deformities, the normal sexual act can be performed. In the second type, the penis is often curved downwards, the erectile columns of the penis slightly developed and the opening may be situated at the point where the organ joins the scrotum. The third type represents the most marked interference with development and function. The scrotum is divided by a cleft, each half representing a female lip and containing a testicle. The penis is stunted, except for its head and is curved downwards and backwards towards the perineum.

The first two mentioned types do not necessarily interfere with the procreative function. Unless the curving of the organ is very marked, copulation is possible but fecundation doubtful. In the last mentioned variety, intromission is impossible owing to the incurving of the penis becoming more exaggerated on erection.

No malformation of the penis can be regarded as an undoubted cause of impotence unless it is of such a nature as to completely prevent a deposition of semen within the vulva.

Sometimes the formation of a fibrous or cartilaginous induration in the sheath of the penis or its erectile tissue will materially interfere with its function, as such an induration will cause distortion during erection and the erectile tissue anterior to the induration will remain flaccid.

Tumours, such as elephantiasis of the scrotum, will

render the act impossible, but such a tumour may be removed by operation.

Men in whom one testicle is absent from the scrotum are not necessarily impotent, nor are those in which both testicles are undescended. Removal or destruction of both testicles renders a man ultimately sterile but not necessarily impotent.

In the **psychical** form of impotence, the sexual organs are normal and erections take place ; but at times erections fail utterly. The cause may be due to early masturbation or to mental impressions produced by failure incident to fright, disgust or other emotions. A man physically capable of copulation may be completely impotent with regard to one woman, his wife. There are cases of wives obtaining divorce on the ground of the impotence of the husband, who has subsequently proved potent with another woman.

Atonic impotence, includes cases of partial or complete impotence due to a weakened condition of the lumbar nervous centres.

The distinctive event in coitus is ejaculation. This function is depended on the genito-spinal nervous centre, which has been shown to be situated at the level of the fourth lumbar vertebra. It is a reflex centre. The stimulus that excites it is the ejection of semen from the seminal vesicles into the membraneous urethra, a reflex effect of stimulation of the head of the penis. As soon as the collection of semen, with ever increasing pleasurable sensation has reached a certain amount to be effectual as a stimulus of the ejaculation centre, the centre acts. The

reflex motor path lies in the fourth and fifth lumbar nerves. The action consists of a convulsive excitation of the bulbo-cavernous muscle, which forces the semen out.

When these centres are in their normal condition erection should be vigorous and coitus should be continued for from three to five minutes before ejaculation, and after ejaculation there should be immediate subsidence of erection.

In this form of impotence, erections may be vigorous, but ejaculations may be premature, occurring on contact or even before, followed by immediate subsidence of erection, or erection may be feeble or entirely absent. The weakened condition of the lumbar centres may be due to anæmia, diabetes, uræmia, jaundice, rheumatism, tuberculosis, lead poisoning, excessive use of tobacco, alcohol, opium, or excessive masturbation.

Impotence in the female may be due to :—

1. Impossibility of the intromission of the male organ.
2. Attempted intromission excites pain and spasm.

Intromission of the male organ may be prevented by congenital or acquired deformity of the vulva or vagina. The lips of the vulva may be adherent. The vagina may be extremely narrowed : it may open in some abnormal position, for example, the rectum : or it may be completely absent. Again, acquired deformities may include contracted scars of the valva, the presence of a large tumour or elephantiasis.

An attempt at intromission may be resisted or entirely prevented by spasms and intense pain which may be the result of any of the following :—acute inflammations about

the vagina, vulva, urethra, womb, ovaries, a tiny painful tumour at the mouth of the urethra, spoken of as urethral caruncle.

The intense pain causes such powerful spasmodic contractions of the perineal muscles that intromission is impossible, and should the spasm be delayed till intromission has taken place, the male organ may be so tightly gripped that its release can only be accomplished by a subsidence of the spasm. This spasmodic condition is spoken of as vaginismus.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. **Q.** Having examined this person, can you tell me if he is impotent ?

2. **Q.** How do you arrive at this conclusion ?

3. **Q.** Does the condition prevent the secretion of semen ?

4. **Q.** Does the condition prevent the conveyance of semen to the vagina ?

5. **Q.** Does a minute penis mean permanent lack of ability to perform the sexual act ?

A. A person with a minute penis cannot be considered permanently impotent, because it may develop to normal dimensions at a later period.

6. **Q.** Must we necessarily regard a person with a deformed penis as being impotent ?

A. No malformation of the penis can be regarded as an undoubted cause of impotence unless it is of such a nature as to completely prevent a deposition of semen within the vulva.

7. **Q.** Is a person suffering from hemiplegia capable of performing the sexual act ?

A. Some are capable and some are not. The same may even be said of paraplegia (paralysis of lower half of body).

CHAPTER IX

RAPE

What win I, if I gain the thing I seek
A dream, a breath, a froth of fleeting joy
What wrong, what shame, what sorrow I shall breed
Reproach, disdain and deadly enmity.

Shakespeare

Section 375 I. P. C.—A man is said to commit rape who, except in the case hereinafter excepted, has sexual intercourse with a woman under circumstances falling under any of the five following descriptions :—

Firstly.—Against her will.

That is, where she is insensible or so mentally deficient that she is incapable of giving a rational consent.

Secondly.—Without her consent.

Submission is not consent. There is a difference between consent and submission, every consent involves a submission ; but it by no means follows that a mere submission involves consent.[1]

It is no defence if the girl consented after the offence.

Consent means a willing mind on the part of the girl to allow the act to be done. If she does not know what is required of her owing to her tender age and inexperience, and she submits without the exercise of any will, it will not amount to consent. Similarly consent given by a person of unsound mind does not amount to consent, nor does consent given by an intoxicated person.

[1] 4 W. N. 91.

Thirdly.—With her consent, when her consent has been obtained by putting her in fear of death or of hurt.

There is evidence that the intercourse took place against the woman's consent in the first instance and the mere fact of her having at last submitted through fear does not take the offence out of the category of rape. The third clause of Section 375 I. P. C., properly includes cases of the present sort, and that, unless the consent given is a free consent obtained without putting a woman in fear of injury, the offence committed would amount to rape, and the Judge should have left the question to the jury and not have directed them to find that the woman's consent, after a considerable struggle rendered the charge of rape nugatory.[2]

The fact that the girl was virgo intacta up to the date of occurrence is very strong proof against the intercourse having taken place with the consent of the girl.[3]

Fourthly.—With her consent, when the man knows that he is not her husband, and that her consent is given because she believes that he is another man to whom she is or believes herself to be lawfully married.

Fifthly.—With or without her consent, when she is under fourteen years of age.

It is only in case consent is pleaded that the question would arise as to whether the girl is of age to give consent, in law, that is of the age of 14 or over, or not.[4]

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[2] *Q.* v. *Akbar Kazee*, 1. W. R. 21, Kemp and Glover J. J.

[3] *Sultan*, 26 Cr. L. J. 1488=89 I. C. 1056=A. I. R. 1925 Lah 613.

[4] *Samuel John* v. *Emp.*, 37 Cr. L. J. 247 (250)=160 I. C. 163 =A. I. R. 1935 All. 935=1935 A. L. J. 1074=1935 Cr. C. 1181= 1936 A. L. R. 59 ; *Hari Har* v. *Emp.*, 36 Cr. L. J. 1095 (1096) =A. I. R. 1935 All. 590=157 I. C. 147=1935 Cr. C. 595=1935 A. L. R. 705 ; *Mohiuddin* v. *Emp.*, 32 Cr. L. J. 455=51 C. L. J. 352=A. I. R. 1930 Cal. 437=1930 Cr. C. 745=Ind. Rul. 1931 Cal. 274. But see *Abdul Khaleque*, 34 Cr. L. J. 1161=145 I. C. 923= A. I. R. 1933 Cal. 606=37 C. W. N. 484=1933 Cr. C. 970.

Explanation.—Penetration is sufficient to constitute the sexual intercourse necessary to the offence of rape.

Vulval penetration only is sufficient to constitute rape.[5]

Where in the case of a girl aged six or seven, it was found that the hymen was not ruptured, but that a partial penetration had taken place as indicated by stains of blood on both the legs, from the vagina down to the ankles, and congestion of the orifice of the vagina, the charge of rape was held established.[5]

Exception.—Sexual intercourse by man with his own wife, the wife not being under thirteen years of age, is not rape.

Sexual intercourse by a man with his own wife is not rape although the wife has not attained the age of thirteen years, if he was married to her before the date on which this Act[6] comes into operation aad she had attained the age of twelve years on that date.

Under no system of law prevalent in India has a husband an absolute right to enjoy the person of his wife without regard to the question of her personal safety. Aceused had sexual intercourse with his child-wife above the age of twelve years but who had not yet attained puberty, and thereby caused her death : Held, that he was guilty of an offence of causing death by a rash or negligent act, punishable under Section 304A, I. P. C.[7]

Section 90 I. P. C.—A consent is not such a consent as is intended by any section of this code, if the consent is given by a person under fear of injury, or under misconception of fact, and if the person doing the act knows,

[5] *Natha*, A.I.R. 1923 Lah. 536=88 Ind. Cas. 705=26 Cr. L.J. 1185, Zafar Ali, J. See also Notes under the heading "Rape on a child"

[6] Act XXIX of 1925 which came into force on September 23, 1925.

[7] *Emp.* v. *Shahu*, 18 Cr. L. J. 1003=42 Ind. Cas. 731. S. Pratt. J. C. and Hayward A. J. C.

or has reason to believe, that the consent was given in consequence of such fear or misconception ; or

If the consent is given by a person who, from unsoundness of mind or intoxication, is unable to understand the nature and consequence of that to which he gives his consent ; or unless the contrary appears from the context, if the consent is given by a person who is under twelve years of age.

The object and effect of sec. 90 I. P. C., as quoted above, obviously was not to lay down that a child under 12 years of age is in fact incapable of expressing or withholding his or her consent to an act, but to provide that where the consent of a person may afford a defence to a criminal charge such consent must be a real consent, not vitiated by immaturity, fear or fraud.[8]

Rape on children is remarkably frequent throughout the world. It is highly improbable that a man morally intact would commit this brutal crime.

The majority of men who commit rape are degenerates, particularly when the crime is done on children or old women. Some cases are the result of mania, satyriasis and epilepsy. The crime may be followed by murder, intentional or unintentional, the former, to destroy the only witness to the crime. If the punishment for rape, was, in every instance, supplemented by a full sentence of whipping in addition, there would be fewer cases.

Whoever—(a) abets, commits or attempts to commit, rape, as defined in section 375 of the I. P. C., may be punished with whipping in lieu of or in addition to any other punishment to which he may, for such offence, abetment or attempt be liable under the said Code. (The Whipping Act. Act IV of 1909).

[8] *Khalilur Rahman* v. *Emp.*, A. I. R. 1933 Rang. 98 (101)=11 Rang 213=143 I. C. 872=1933 Cr. C. 573=34 Cr. L. J. 696 F. B.

The study of the hymen and a perfect acquaintance with it constitutes the key to the whole question of rape. It requires investigation and study under two different circumstances, viz : **before and after coitus.**

Is the hymen always present ?

Every female possesses either an intact hymen or the traces of it, indicating that it formerly existed.

Examination of the hymen.—Make the female lie down crosswise on a bed or table in a good light, her buttocks near the edge. Flex the thighs, separate her legs widely and have the legs held in this position. First separate the outer lips of the genitals widely, then the inner lips. The membrane will then be visible.

The position of the membrane varies according to age and plumpness of the individual. In infants up to two or three years the membrane will be found deeply situated. This situation may persist in later childhood if the child remains plump and in good health. If the infant is thin with thin genital lips. the membrane will be found nearer the entrance to the vaginal canal. With advancing age it appears to approach gradually to the orifice of entrance of the canal, and by the time the girl has reached a nubile age it will be found just behind the inner lips, barring the very entrance to the vagina.

In order to know this membrane well, there are two factors to be considered, viz :—

(*a*) Folds in the membrane.

(*b*) Notches in its free border.

(*a*) **Folds.**—In the very young the membrane is smooth

and on the stretch. In older girls it becomes flaccid and thrown into folds which may number as many as twenty. It appears too large in proportion to the orifice that it surrounds. The resulting appearance may be compared to a circular folding rubber tobacco pouch.

The folds have a very important medico-legal bearing as we shall see later.

A lax hymen of many folds when meeting the pressure of the intromitted male member, will spread out and permit entrance without rupturing, in the same manner as the foreskin yields to the passage of the glans penis.

(*b*) **Notches.**—Not infrequently the free border of the hymen has many natural notches. They may be symetrically or irregularly situated. As a rule they encroach only slightly on the free edge, but may divide the entire width of the membrane, and if there are several such deep divisions, the membrane will easily yield in the act of coitus without offering any resistance.

The orifice of the hymen in children under ten is very small and will rarely admit the tip of the little finger, more if the membrane has many folds and deep notches.

The consistency of the hymen is variable. Sometimes it is thin, transparent and slightly resistant. Occasinally in old spinsters it is fibrous and even cartilaginous (rare).

A prostitute, twenty-two years old, a syphilitic, came to the lying-in clinic, states Dr. Budin, the French obstetrician, she was seven months pregnant (it was her first pregnancy), and the child seemed dead. The examination of the genital organs showed that the vaginal orifice was intact; the hymen formed a complete circle. She was delivered of a dead, macerated fœtus without losing her

hymen, and so returned to her occupations as intact as she had entered the clinic.

As a general rule the hymen yields at the first coitus and is ruptured by the virile member in erection.

The cardinal sign of virginity is an intact hymen.

The cardinal sign of defloration is a ruptured hymen.

There are, however, exceptions, for an intact hymen may be found after one or more acts of intercourse. Further a persistent hymen with a small orifice may offer obstruction in labour, and finally even parturition may sometimes leave the hymen intact.

Intact hymens are found in prostitutes who indulge in multiple daily intercourse.

Partial penetration which does not result in any injury to the hymen is sufficient to constitute the offence of rape.[9]

Though rupture of the hymen is by no means necessary in law to constitute the offence of rape, the Courts are reluctant to believe that there could have been penetration without that which is so very near to the entrance having been ruptured.[10]

What is the cause of non-rupture of the hymen during coitus ?

Probably true penetration has not taken place, the coitus having only been vestibular (just between the inner lips), or the membrane is so tough that the penis is unable to rupture it, or the membrane is lax with multiple folds and a large orifice or the penis is attenuated.

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[9] *Abdul Majid*, 28 Cr. L. J. 241=99 Ind. Cas. 113 Lah. Jai Lal J.

[10] *Mehraj Din*, 28 Cr. L. J. 244=99 Ind. Cas. 116 Lah. Zaffar Ali J.

Hence the presence of an intact hymen is not an absolute sign of virginity. With an intact hymen there are **true virgins** and **false virgins.**

How are they to be differentiated ?

If the membrane is intact, its orifice permits two or more fingers to pass in easily, it is lax and can be pushed back easily ; the owner might be a true or false virgin, because such a membrane could permit the erect male organ to pass in without rupturing.

If the membrane is intact, its edges distinct and regular, orifice small, scarcely permitting a finger to pass, it is taut when the thighs are separated, the presumptions are, that, an erect penis has not passed beyond the membrane.

It will thus be seen that the diagnosis of virginity is a very delicate matter. However, it is usual for the hymen to be ruptured at the first coitus.

A ruptured hymen is the cardinal sign of defloration. The rupture is generally attended by pain and slight bleeding, so slight at times as to escape notice. It may, also, occasionally be so profuse as to demand surgical interference, and may even be fatal.

In Armenia it was customary for parents on the marriage of their son, to prepare the nuptial bed. If, in the morning, the sheets were found blood stained, the bride was accounted a virgin and the marraige contract was accepted as complete. If, however, the sheets were found unstained, the bride was considered a non-virgin and was returned to her parents.

A ruptured hymen exhibits one or several tears, which have the characters of a fresh mucous wound. These

tears heal without reuniting with each other, resulting in a membrane of artificial divisions, still recognisable in its general configuration. Repeated acts of intercourse increasingly separate these divisions. Parturition destroys the hymen, the remnants persisting as isolated protuberances around the vaginal orifice.

The rapture may be **complete** (involving the entire width), or **incomplete** (tear of the free border only). The former is the rule from the age of ten years and upwards, the latter in children below that age.

The edges of the tears are uneven, red, bleeding and sometimes is slight suppuration.

There is a difference of opinion as to how long these wounds take to heal. Devergie says, three or four days. Orfila says, four days. Briand and Choude say, five to six days. Toulmouche says, eight to twelve days, and Tardieu says that in some cases healing cannot be complete until fifteen or twenty days.

Rape on a child.

In all cases of rape where the question arises whether the girl is under or over fourteen years of age, it would be unjust to decide the case without the aid of the X rays. The "pisiform" bone of the wrist in children over twelve shows ossification. The absence of ossification in this bone is strong evidence that the child is under twelve years of age.

The degree of penetration sufficient to constitute rape in law, may take place without necessarily rupturing the hymen, but there must be evidence to show that there was actual penetration—the degree of penetration being

quite immaterial. It cannot be conceived that the complete intromission of the adult male organ into the vagina of a child could be accomplished without rupture and severe laceration of the soft parts. The absence of such marks of violence would not justify a medical witness in denying the commission of the offence since the law does not require proof either of a complete or of a violent intromission. Vulval penetration is sufficient to constitute the crime, i. e., some part of the virile member was within the lips of the external genitals of the girl, no matter how little. In books on Medical Jurisprudence a distinction has been made between vulval penetration and vaginal penetration and it is remarked that vulval penetration with or without violence is as much rape as vaginal penetration. It is not necessary that hymen be raptured in every case. The statute merely requires medical evidence of penetration, and according to Dr. Taylor, this may occur and the hymen may remain intact.[11] But if the hymen is uninjured it is very difficult to prove that any penetration took place. No penetration, no rape.

The signs of rape on a child are :—

1. Rupture of the hymen.
2. Injuries to the genital organs.
3. The presence of ejaculated semen.

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[11] *Jantan* v. *Emp.*, 36 Cr. L. J. 310 (311)=153 I. C. 218=36 P. L. R. 35=A. I. R. 1934 Lah. 797=1934 Cr. C. 1125. See also *Abdul Majid* v. *Emp.*, 28 Cr. L. J. 241=99 I. C. 113=A. I. R. 1927 Lah 735 and *Natha* v. *Emp.*, 26 Cr. L. J. 1185=88 I. C. 705=A. I. R. 1923 Lah 536.

4. Transmission of venereal disease similar to that suffered by the violator.
5. Injuries to other parts of the body.

Rupture of the hymen.

If the hymen is ruptured in a child below the age of ten, it indicates that either the penis is more attenuated than normal or intromission has been accomplished with brute force ; the latter must always be accompanied by severe tearing of the genital organs.

Injuries to the genital organs.

The injuries may be mild or severe. In the former there may be some slight abrasions with a vulvitis. Vulvitis or inflammation of the lips and orifice of the vulva may be caused by injury but is generally of venereal origin. If due to recent gonorrhoea there will be general swelling of the vulva with an enlargement of the glands in the groin. The urethra may be affected as well. Gonococci will be found in the discharge. In the absence of other signs, there is no need to assume that the child has been misused. The infection may have been derived from other little girls, from soiled linen, and sleeping with an affected female.

The graver injuries may consist of rupture of the perineum extending to the anus opening up the posterior wall of the vagina, or even tearing through the sphincter and opening up the rectum. The tearing through the vaginal wall will open up the abdominal cavity and death will be the result either from haemorrhage or peritonitis.

Presence of ejaculated semen.

Rape may be legally committed without the emission of semen and semen may be found without there having been any penetration. If semen is discovered on the clothes or the body of a child, it is strong corroborative proof that an attempt or actual perpetration of rape has been committed.

Infection with venereal disease similar to that suffered by the violater.

A discharge at the vulva may be due to ordinary catarrhal vulvo-vaginitis which may be set up by long contact of irritating urine or fæces, lack of cleanliness, thread worms, decomposing discharges incident to erruptive fevers etc. The inflammation is usually confined to the vulva, the vagina being but slightly involved and **the urethra escaping entirely.** The diagnosis is founded on the absence of gonococci, the presence of vast numbers of other organisms, the mildness of the infection, and absence of the involvement of the urethra and vagina.

The discharge may be due to gonorrhœa. In such case the discharge is free, purulent, often blood stained. It comes from the urethra, vagina and vulva. There is great swelling and redness of the mucous membranes, which bleed when touched, the passage of urine smarts and there is fever. There may be severe abdominal pain and the womb may be tender and swollen. The diagnosis is founded on the presence of gonococci, **the involvement of the uretha** and severity of the symptoms. In all such cases the presence of the gonococcus should always be confirmed by culture on artificial media.

The incubation period of gonorrhœa is from a few hours to two or three weeks, depending upon the virulence of the microbe and vital resistance of the mucous membrane.

Three to five days is the ordinary incubation period. A very short or long incubation period should lead one to doubt the gonorrhœal nature of the discharge.

The **chancroid** or soft chancre has no distinctive period of incubation.

Taylor in his Principles and Practice of Medical Jurisprudence, 7th Edition, Vol II, page 128, says that the probabilities of communication of venereal disease by one person to another are certainly very high, but the facts would seem conclusively to prove that they are not 100 per. cent. Lyon in his Medical Jurisprudence, 6th Edition, page 302, says that the infected individuals do not necessarily by intercourse communicate gonorrhœa. The fact that the girl is not infected with the disease is, therefore, by no means conclusive of the innocence of the accused.[12]

Syphilis.—As a rule, it is safe to assume that any sore which **appears more than ten days after the alleged rape is a syphilitic chancre**. There is first a red spot which in a few hours becomes a superficial papule, it gradually extends in size and depth, loses its epithelial or epidermic covering and in the course of a few days is surrounded by an area of induration. Frequently, however, it first appears as a fine fissure or an abrasion,

[12] Emp. v. *Asadali*, 29 Cr. L. J. 12 (13)=106 I. C. 348=9 P. L. T. 186.

or if situated on the mucous membrane as a superficial ulcer covered by a grayish or yellowish false membrane. They are usually situated on the inner or outer lips of the vulva.

Injuries on other parts of the body.

These are as a rule absent in little children, as they are too terrified to offer any resistance. However, they should always be looked for.

In every examination for rape on a child, note the following :—

1. Is there a rupture of the hymen ?
2. Is the rupture and accompanying injuries, the result of the intromission of the penis, or of some other cause ?
3. The defloration established, at what time did it take place ?

Is there a rupture of the hymen ?

Rupture of the hymen is certain if you find one or several bleeding wounds, or wounds with bright red edges, dividing the membrane completely or in part.

If you find on the other hand, the hymen broadly divided throughout its entire extent at one or several points ; the parts are in contact in the same plane and show no fresh surface, but everywhere a healthy pink membrane. Such can be only a hymen congenitally in shreds, or a hymen that has been ruptured some time before and has healed.

To distinguish between these is a delicate question.

The following are in favour of a *hymen congenitally* in shreds :—

1. The parts are regular in shape and not numerous.
2. They are arranged in a symetrical fashion.
3. They are of a naturally rounded form.

The difficulties are greater where you find a hymen with notched edges. The notches nowhere exhibit the character of a fresh wound, the mucous membrane is a natural colour everywhere. It is either a congenitally notched hymen, or one that at some previous time has been incompletely ruptured at several points, and has healed in the regular way.

Examine the notches closely ; if you perceive a **white linear scar** you can boldly decide that, that notch was due to a rupture. But it is well known that a ruptured hymen rarely heals by a scar of that sort. You must take into consideration the entire configuration of the entire region, the characters of the edges and the corners whose rounded angles will point to a congenital condition.

Is the rupture of the hymen and genital injuries the result of the intromission of the penis, or other cause ?

Coitus does not constitute the only cause of the rupture of the hymen. Many ruptures are due to **traumatic causes,** and to **pathological causes.**

Among the traumatic causes is **masturbation.** Manipulations with the fingers, attended by more or less violence by an individual on a little girl, is one of

the traumatic causes. Others are falls from a horse, tree or other object, falls on the ground after violent jumps, the legs being separated. These traumatic ruptures, have no signs that distinguish them from those produced by the penis.

The pathological causes are the several affections that are destructive to the vulvo-vaginal mucous membrane, such as, ulceration of the vulva, gangrene, aphthæ etc. The diagnosis is never difficult.

We know what frightful injuries of the genital organs, rape may at times leave in its train. But, is rape the only trauma that can rupture the vagina, the perineum etc., in this way ?

Extensive tears of the genital organs, can be due to some other cause, such, for example, as the forcible introduction of the fingers, rather than to the introduction of the penis, for such force cannot be referred to the latter. Nevertheless, the fact does not appear impossible in cases of excessive brutality.

At what time did the crime take place ?

A solution of this problem can never be anything more than approximate. **Defloration is recent** when you find tears that exhibit the characters of a bleeding wound. Recalling that the characteristics of a fresh wound, may persist for, from 4 to 15 days after the rupture, it is not desirable to state precisely or try to determine, from your examination, the exact date of the defloration. **Defloration is not recent** when the tears no longer exhibit the characters of a fresh wound.

Outlines of conclusions in cases of rape on children :—

1. There is present or there is not present, a rupture of the hymen ; or else not proven ;

2. The rupture is complete or incomplete ;

3. It is recent or not ;

4. It is accompained by genital lesions which are.....

5. All these lesions are the result of the intromission of a hard or voluminous body, such, for example, as the penis in erection.

6. I have noted in such and such a place the presence of semen ;

7. There is, or is not evidence of a venereal affection transmitted (syphilis, chancroid, gonorrhœa) :

8. There are present in such and such a part of the body signs of violence characterised by.....

Rape on nubile virgin girls.

Under this term we understand girls over twelve years of age.

The crime of rape on a nubile girl is accomplished under two conditions :—

1. The girl is in full possession of her will power and is in a state of complete consciousness.

2. The girl is deprived of will.

Is it possible to rape an adult girl in full possession of her will and consciousness ?

Rape is easily accomplished when several individuals together attack a girl. Rape on the contrary, by an

individual who is alone and attacks a vigorous girl, who knows clearly what is wanted and does not consent to it, appears an impossibility. All that is necessary, in fact, to prevent any intromission of the penis, is movements of the pelvis executed by the girl.

The final and foremost circumstance that can be looked for in cases of this kind is the evidence of resistence which one would naturally expect from a woman unwilling to yield to sexual intercourse forced upon her. Such a resistance may lead to the tearing of clothes, the infliction of personal injuries and even injuries on her private parts.[1a]

Yet under circumstances, it is possible, for example the following reported by Berndt : A peasant girl having collected a heap of grass and packed it for conveyance, placed herself on the ground with her back against the bundle and passed her arms through the straps to raise the load upon her back. At that very moment an individual appeared upon the scene, who raped her in this position. Her position was such that she was unable to offer any resistance.

It may happen that the girl resists vigorously for a certain length of time ; when tired out and overwhelmed by the force of her assailant, she finally yields. Incapable of maintaining her resistance longer, reduced to helplessness, she submits to the crime which is committed upon her.

There is evidence that the intercourse took place against the woman's consent in the first instance ; and the mere fact of her having at last submitted through fear does not take the offence out of the category of rape. The third clause of Section 375 I. P. C.,

[1a] *Mahla Ram*, 25 Cr. L. J. 74=75 Ind. Cas. 986=A I. R. 1924 Lat 669 Moti Sagar J.

properly includes cases of the present sort, and that, unless the consent given is a free consent obtained without putting a woman in fear of injury, the offence committed would amount to rape, and the Judge should have left the question to the jury and not have directed them to find that the woman's consent, after a considerable struggle rendered the charge of rape nugatory.[14]

Such are the circumstances under which the crime of rape may be accomplished on a vigorous adult girl in a state of complete consciousness. It is otherwise when the girl is young, not vigorous, and knows imperfectly what is wanted of her.

The younger an adult virgin girl, the more artless, the more disproportionate in physical strength to the vigor of the aggressor, so much the easier will it be for a single individual to rape her.

What are the signs of rape on an adult virgin girl ?

1. **Rupture of the hymen** ; ordinarily but not absolutely constant. When ruptured, the rupture is more often complete than incomplete.

2. **Injuries to the genital organs.** There is no vulvitis. As a rule, there is no rupture of the genital organs as in young children. Injuries of the genital passage in the raped nubile girl result more often from the action of the hands than from that of the penis.

3. **Other bodily injuries.** Just as they are rare in children, so they are frequent here. There are three motives for these injuries :—

(a) To overcome the resistance of the victim who defends herself. They are usually found on

[14] *Q.* v. *Akbar Kazee*, 1. W. R. 21 Glover and Kemp J. J.

the arms and wrists, on the lower extremities, above the knees and on the upper portion of the thighs; (the criminal forcibly separates these parts to get at the vulva); about the neck, on the lips and the face (he tries to trifle the cries of the victim). There are cases of rape perpetrated on adult girls which exhibit no trace of extragenital injuries; they are the cases, in which, at the moment of rape, the girl is unable to resist and to struggle.

(b) Some criminals seek, by murder of their victims, to suppress the only witness of their crime.

(c) A third motive is sadism. This leads the criminal to inflict on his victim the most varied injuries, abominable tortures carried out in a scene of savagery that often ends in murder; example; the crimes of "Jack the Ripper."

4. **The presence of semen** on the body of the raped girl or on her garments.

Examine now the problems raised by rape on an adult virigin girl.

Has there been defloration ?

There are two kinds of cases; the hymen is ruptured, or the hymen is intact.

If the hymen is ruptured and freshly ruptured, there is no difficulty. But if it has had time to heal, it is then a question between a hymen torn artificially and a hymen congenitally lobed.

An alleged victim of rape has an intact hymen. Could

coitus have taken place without rupturing this hymen ? There are hymens where the possibility of the intromission of a body of the size of the penis in erection exists, without any harm resulting to this membrance. These are the folded hymens, which have a naturally large orifice. This intromission, however, it will be just as difficult to affirm as to deny in cases of this sort.

Is the defloration the result of coitus ?

Here there are ninety-nine chances out of a hundred that such is the case ; but the hundredth chance, and the possible rupture of the hymen, for example, under the influence of the introduction of the fingers or of some other hard body must always be kept in mind.

Now all the signs that you meet with in a raped woman, all the signs enumerated, do not signify rape. Medically they signify this : That there has been coitus, and that the woman has been the victim of assault. It is perfectly certain that this array of symptoms is found united most often in the case of rape : but they could, by a certain concurrence of circumstances, (rare), be found in a girl who had not been raped.

Outlines of conclusions in rape on an adult virgin girl :—

1. The first of your conclusions should have reference to the defloration, and will be necessarily comprised in one of the four following statement :—

(a) There is no apparent defloration, and it does not seem that a body of the size of the penis in a state of erection could have penetrated without tearing the hymen.

(b) There is no apparent defloration, but it is possible that a body of the size of the penis in erection could have penetrated without tearing the hymen.

(c) There is defloration, and this defloration is old, or recent.

(d) It has not been possible to demonstrate that there has been defloration, but on the other hand, I cannot deny absolutely the possibility of such defloration.

If you find distinct traces of defloration, formulate thus your second conclusion :—

2. The rupture of the hymen is the result of the intromission of a body voluminous and hard, such, for example, as the penis in erection.

3. There exists on the genital organs lesions consistent with the defloration and consisting in..... .....

4. There exists traces of semen at such and such places.

5. There exists venereal affection having such and such characteristics, such and such location, such a probable date.

6. There exists on such and such parts of the body traces of assaults, characterised by.....

7. There exist signs of pregnancy apparently dating from.....

Rape in women or girls already deflowered.

Just as in the case of rape on the adult virgin girl, so

in rape on the already deflowered woman or girl, the act may be accomplished under two conditions :—

1. On a woman having full possession of her will and consciousness.
2. On a woman deprived of her will.

Rape on a deflowered woman is comparatively rare. The cardial sign is absent, viz :—the rupture of the hymen. Here it is impossible to affirm the material fact that coitus has taken place from the appearance of the genital organs.

Genital injuries are very rare. Nevertheless, rape is sometimes accompanied by genital injury. But genital injuries result most often from some sadistic act, and are not produced by the penis, but by the hand, or some foreign body.

Injuries to other parts of the body are produced on adult women under the same circumstances, and exhibit the same characteristics as in the raped adult girl.

Finally, there are traces of semen, the transmission of venereal disease, and pregnancy resulting from the coitus of rape. The picture of rape on an adult woman is based almost solely on the presence of extragenital injuries which are witnesses of a struggle and the force necessary to accomplish the crime on a resisting woman ; on the presence of semen, which is proof of coitus, and finally, on remote signs far from constant, and more or less difficult to attach to the violent coitus alleged.

But the presence of semen on the wearing clothes does not in any way raise a presumption that rape was committed on the complainant who is a grown-up woman used to sexual intercourse. This is

a wholly neutral circumstance which does not help the case of either side.[15]

It cannot be said that where the complainant is a married woman and is actually pregnant at the time, the medical evidence cannot help the case for the prosecution.[16] Whether any such examination would have any value several days after the alleged act in the case of a woman who had borne several children is doubtful.[17]

Outlines of conclusions in rape on women or girls already deflowered—

Your conclusions, necessarily very concise, will state what you have established. They will mention :—

1. The fact of long-standing defloration ;

2. The presence, character, and the location of traumata, if there are any, on the genital organs or elsewhere ;

3. Whether semen has been found and where ;

4. All traces of venereal disease, or of pregnancy, without indicating the author of it.

Rape during natural sleep ; is the act really possible ?

The sleeping person is either a virgin girl, or else a woman already deflowered and accustomed to sexual

[15] *Indar Singh* v. *Emp.*, A. I. R. 1927 Lah. 867 (870)=9 L. L. J. 384 ; *Ghulam Hussain* v. *King Emp.*, A. I. R. 1925 Lah. 94 (95)=6 L. L. J. 474 ; *Jalal* v. *Emp.*, 31 Cr. L. J, 784 (785)=125 I. C. 185=11 L. L. J. 391=30 P. L. R. 662=A. I. R. 1930 Lah. 193=1930 Cr. C. 160.

[16] *Jalal* v. *Emp.*, A. I. R. 1930 Lah. 193=31 Cr. L. J. 784=125 I. C. 185=11 L. L. J. 391=33 P. L. R. 662=1930 Cr. L. 160.

[17] *Local Government* v. *Mt. Guji*, A. I. R. 1935 Nag. 69 (71)= 17 N. L. J. 189=1933 Cr. C. 339.

intercourse. If it is the case of a virgin girl, it is absolutely impossible. If in a woman already deflowered and accustomed to intercourse, it is possible in an extreme case, though rare. Taylor has quoted a celebrated case. I know of a mother of 23 children who being at the end of her term of pregnancy, while standing beside her bed, suddenly felt something moist between her thighs. She threw herself upon the bed, and was astonished to discover that her baby was born. She had felt no pains and obviously no obstruction to the birth of the child had been offered by the material parts. Such a subject might very easily be raped during a sleep of exhaustion, without being conscious of the fact.

Can a woman be chloroformed against her will and raped ?

No, it cannot be done. By several individuals, Yes.

Can a girl be raped under the influence of hypnosis ?

Yes, rape under such influence is possible but very rare.

What is the law in regard to rape ? This may be answered under the following heads :—

What is meant by consent ?

A consent is not such a consent as is intended by any section of this Code, if the consent is given by a person under fear of injury, or under a misconception of fact, and if the person doing the act knows, or has reason to believe, that the consent was given in consequence of such fear or misconception ; or

if the consent is given by a person who, from unsound-

ness of mind or intoxication, is unable to understand the nature and consequence of that to which he gives his consent ; or

unless the contrary appears from the context, if the consent is given by a person who is under twelve years of age.[18]

Can conviction be based on the uncorroborated testimony of the woman ?

In cases of rape, where the prosecution evidence is not sufficiently strong to warrant a conviction, it is unsafe to convict merely on the accusation of the woman who has been raped. The evidence of the prosecution witness in favour of the accused cannot be disregarded simply on the supposition that they have been won over.[19]

Conviction on the uncorroborated testimony of the complainant is dangerous. The question being whether there was consent or not, evidence of resistance on the woman's part should be forthcoming in the form of tearing of clothes, infliction of personal injuries, or even injuries on her private parts.[20]

In cases of rape it has been the practice for many years, for the Judge to warn the jury not to accept the evidence of the girl unless they find that it is corroborated in some material particular implicating the accused. But he ought to tell them that if, in spite of his warning, they come to the conclusion that they believe the girl, and think the accused guilty, they have the right to convict him on her uncorroborated evidence. In such cases, before a jury

[18] Section 90 I. P. C.

[19] 11 P. W. R. 1922 : 67 I. C. 827 : Kanshi Ram, 23 Cr. L. J. 475, Chevis J.

[20] *Mahla Ram*, 1924 Lah. 669, L. Moti Sagar J. : 75 I. C. 986 : 25 Cr. L. J. 74 ; *Baji* v. *Emp.*, 34 Cr. L. J. 496=10 O. W. N. 107= 1933 Cr. C 318=A. I. R. 1933 Oudh 163=143 I. C. 73=Ind. Rul. 1933 Oudh 153 ; *Amar Singh* v. *Emp.*, A. I. R. 1935 Lath 8=36 Cr. L. J. 428=153 I. C. 894=1935 Cr. C. 7=35 P. L. R. 638.

are justified in accepting the testimony of the complainant they must be satisfied that she is a witness of truth, and if they find that she is a person of bad or loose character obviously they will be reluctant to accept her evidence.[21] The Judge should point out to the jury that they are entitled, if they please, to convict the accused upon the uncorroborated testimony of the girl, but that it is dangerous to do so in cases dealing with sexual offences such as rape, abduction and similar cases, and that only in exceptional cases should they convict upon the uncorroborated testimony of the girl. The Judge should direct them as to whether there is evidence corroborrating her statement.[22] It has been often laid down by Criminal Judges that charges brought against a man by one of the opposite sex accusing the male of having committed a sexual offence should be very carefully presented to the jury and as it has been pointed out both in England and in India, a rule has grown up that Judges, when they charge juries in cases of this kind, ought never to omit delivering a serious caution to the jury with regard to accepting the uncorroborated evidence of a woman to support a sexual charge against an accused person. The way the rule has developed now is that the presiding Judge should tell the jury that they ought to scrutinise the uncorroborated evidence of a woman or girl with the greatest possible care, because it has been found by experience extending over many years that it is often dangerous that a man should be convicted on such uncorroborated testimony. At the same time, it is not for

[21] *Surendra Nath Das* v. *Emp.*, 35 Cr. L. J. 508 (590)=147 I. C. 999=62 Cal. 534=A. I. R. 1933 Cal. 833=1933 Cr. C. 1493=38 C. W. N. 52 ; *Emp.* v. *Nur Ahmed,* 36 Cr. L. J. 796 (798)=155 I. C. 581= A. I. R. 1934 Cal. 7=1934 Cr. C. 23=38 C. W. N. 108=62 Cal. 527 ; *Multani Ram* v. *Emp.*, A. I. R. 1927 Lah. 836=9 L. L. J. 111=28 P. L. R. 235.

[22] *Chamuddin Sardar* v. *Emp.*, 37 Cr. L. J. 359 (360)=A. I. R. 1936 Cal. 18=160 I. C. 1028=1936 Cr. C. 110. See also *Abdul Axiz Musalman* v. *Emp.*, 35 Cr. L. J. 957=149 I. C. 447=A. I. R. 1934 Nag. 94=1934 Cr. C. 377 and *Wahid Ali* v. *Emp.*, 33 Cr. L. J. 604= 138 I. C. 373=A. I. R. 1932 Cal. 523=36 C. W. N. 356=1932 Cr. C. 498=Ind. Rul. 1932 Cal. 454.

the Judge to substitute his view of the facts entirely and take away from the jury their privilege of being judges of facts alone ; so that now-a-days after giving the warning the Judge generally adds a rider to the effect that nevertheless if after proper scrutiny and considering the caution delivered by the Judge they are satisfied with the uncorroborated evidence, they may accept it.[23]. In the case of rape, corroboration is required in fact, but not as a matter of law. In Archibold's Criminal Pleadings, 28th Edition, at p. 1047, the rule is stated thus : Corroboration of the story of the prosecutrix is not essential, but it is the practice to warn the jury against the danger of acting upon her uncorroborated testimony, particularly where the issue is consent or no consent.[24]

Nature of corroboration required.

The kind of corroboration required is described in Archibold, the same edition at p. 473 as follows, when dealing with the evidence of accomplices :

"The kind of corroboration required is not confirmation by independent evidence of everything the accomplice relates, as his evidence would be unnecessary if that were so. What is required is some independent testimony which affects the accused by tending to connect him with the crime, that is, evidence, direct or circumstantial, which implicates the accused, which confirms in some material particular not only the evidence given by the accomplice that the crime has been committed, but also the evidence that the accused committed it."

What exactly amounts to corroboration of the main evidence in cases of this kind is always a difficult question. It need not be the

[23] *Sikandar Mian* v. *Emp.*, A. I, R. 1937 Cal. 321=41 C. W. N. 641=I. L. R. 1937-2 Cal. 345 ; *Sarat Chandra Chakravarty* v. *Emp.*, 65 C. L. J. 83 ; *Amar Singh* v. *Emp.*, A. I. R. 1935 Lah. 8=36 Cr. L. J. 428=153 I. C. 894=1935 Cr. C. 7=35 P. L. R. 638 See also *Maung Ba Tin* v. *Emp.*, 98 I. C. 180=5 Bur. L. J. 112=27 Cr. L. J. 1284= A. I. R. 1927 Rang. 67.

[24] *Russel on Crimes, Edn.* 8, at p. 2138.

direct oral evidence of another person. It may be only independent evidence of such a character that it connects the accused directly or indirectly with the crime that he was said to have committed.[25] It is clear that the kind of corroboration required by the rule must be independent evidence that is to say, the evidence of some witness other than the girl herself. If there were any dout about this, it was made clear in the case of Job v. Whitehead, 21 Cr. App. Cas. 23, the headnote of which is that "the witness cannot be corroborated by himself". The Lord Chief Justice Lord Hewart in that case said that, "corroboration should come from another person altogether." Therefore the evidence of statements made by the girl to others is not the kind of corroboration required by law.[26] The blood found upon the girl's cloth, and the complaint which she made to others, are not corroborative evidence such as is required by the rule because the girl cannot he allowed to corroborate herself. The corroborative evidence must be that of an independent witness.[27]

Is the statement, made by the complainant immediately after the occurrence, admissible ?

In a case of rape the statement made by the complainant immediately after the occurrence to another woman is admissible, not as

[25] *Sikandar Mian* v. *Emp.*, A. I. R. 1937 Cal. 321 (322)=41 C. W. N. 641=I. L. R. 1337-2 Cal. 345, following *Rex* v. *Baskerville*, (1916) 2 K. B. 658=86 L. J. K. B. 28=115 L. T. 453=80 J. P. 446=25 Cox C. C. 524=60 S. J. 696 ; *Surendra Nath Das* v. *Emp.*, 35 Cr. L. J. 508 (510)=147 I. C. 999=62 Cal. 534=A. I. R. 1933 Cal. 833=1933 Cr. C. 1493=38 C. W. N. 52.

[26] *Emp.* v. *Nur Ahmed*, 36 Cr. L. J. 796 (798)=155 I. C. 584=A. I. R. 1934 Cal. 7=1934 Cr. C. 23=38 C. W. N. 108=62 Cal. 527 ; *Chamuddin Sardar* v. *Emp.*, 37 Cr. L. J, 359 (360)=A. I. R. 1936 Cal. 18=160 I. C. 1028=1936 Cr. C. 110. For contra see *Wahid Ali* v. *Emp.*, 33 Cr. L. J. 604 (605)=138 I. C. 373=A. I. R. 1932 Cal. 523=36 C. W. N. 356=1932 Cr. C. 498=Ind. Rul. 1932 Cal. 454.

[27] *Surendra Nath Das* v. *Emp.*, 35 Cr. L. J. 508 (510)=147 I. C. 999=62 Cal. 534=A. I. R. 1933 Cal. 833=1933 Cr. C. 1493=38 C.W.N. 52 ; *Maung Ba Tin* v. *Emp.*. 27 Cr.L.J. 1284=98 I.C. 180=5 Bur. L. J. 112=A.I. R. 1927 Rang. 67.

evidence of truth of the charge alleged but as corroborating the credibility of the complainant and as evidence of the consistency of her conduct.[28]

Is a dying declaration in such a charge admissible ?

The dying declaration of a deceased person is admissible in evidence on a charge of rape.[29] But if a woman is raped, and decides three days later to commit suicide, the rape is not the cause of her death or transaction resulting in her death, though it may be the contingent motive. Then her statement to her mother-in-law made shortly after the alleged rape is not admissible in evidence either under sec. 6 or 8 or 32 of the Evidence Act.[30]

What constitutes an attempt at rape ?

The only point on which we entertain any doubt in this case is whether the prisoner's conduct amounted to an attempt to commit rape. 7 Car. and Pay. 318 Reg. v. Lloyd, Patterson, J. in summing up said, "In order to find the prisoner guilty of an assault with intent to commit a rape, you must be satisfied that the prisoner, when he laid hold of the prosecutrix, not only desired to gratify his passions upon her person, but that he intended to do so at all events, and notwithstanding any resistance on her part." We believe that in this country indecent assults are often magnified into attempts at rape, and even more often into rape itself ; and we think that a conviction of an attempt at rape ought not to be arrived at unless the Court be satisfied that the conduct of the accused indicated a determination to gratify his passions at all events and in spite of all resistance. In the present case, having regard to the medical evidence, and to the varying statements made at different times by the complainant, we find it impossible to place entire reliance upon her statement : and, as to the extent of the violence to which she was subjected,

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[28] *Nga Sun Pu*, 19 Cr. L. J. 155=43 I. C. 443 (L. B.).

[29] *Bissorunjun Mookerjee*, (1866) 6 W. R. 75, Kemp and Markby J, J.

[30] *Kappinaiah* v. *Emp.*, A. I. R. 1931 Mad. 233 (234)=1930 M. W. N. 702=1931 Cr. C. 329=32 Cr. L. J. 751.

there is no evidence except her own statement. The Sessions Court has not believed her allegation that penetration took place and has consequently refused to convict the prisoner of rape. He seems to have desisted before he was interrupted, and no evidence has been given to show that the complainant's person showed marks of violence (while the Civil Surgeon's evidence is to the contrary effect), nor that the clothes either of the complainant or of the prisoner showed any stains which would indicate to what point the prisoner's criminality had proceeded. In saying this, it is not necessary that we should impute dishonesty, or intentional exaggeration to the complainant. The unsatisfactory nature of the evidence on this point may perhaps be attributed to ignorance, arising from youth or innocence ; for she is stated never to have had sexual intercourse, and she may therefore, possibly, be unable to describe, with any intelligence or accuracy, the nature and extent of acts directed to that purpose.

For these reasons we find the prisoner not guilty of attempt to commit rape, but guilty of using criminal force to a woman, intending to outrage her modesty, an offence punishable under Section 354 I. P. C.[31]

From the moment when an intention is formed to commit an offence, every act done which facilitates the commission of the offence, and which is done with that object in view, is, in one sense, an act done towards the commission of the offence, but the doing of every such act does not constitute an attempt to commit the offence. It must in every case be a question depending upon the circumstances, whether a particular act done (with the requisite intention) towards the commission of an offence is sufficiently proximate to its commission to constitute an attempt, or is so remote as merely to constitute preparation for its commission. But an act which amounts to an attempt to commit rape does not lose that character merely because the offender does not display a determination to effect his object at all costs.

A lady undressed and went to sleep, with a dressing gown on, in a railway compartment. She woke up to find the accused sitting on

[31] *Shankar*, 5 Bom. 403 ; Melvill, Nanabhai Hari Dass J. J.

her berth. She jumped up and rushed screaming to the door, but the accused caught hold of her, put his hand over her mouth and threatened her with a revolver and made her sit down. She then managed to get to the window and open it but the accused caught her by the hair and pushed her on the seat—in a sitting position. He then threatened to strangle her if she screamed. Then he began to unbottom his trousers when she made an attempt to reach the communication cord. The accused then caught her by the wrist and in the struggle her wristlet watch was broken. Then immediately the accused released her, asked her name which she gave and apologised for molesting her, saying that he had mistaken her for another lady with whom he was in love. In these circumstances it was held that it could not properly be said that any single one of those acts, or all of them collectively, amounted to an attempt to commit rape and the accused was convicted under sec. 354 I. P. C., for an assault committed with the intent to outrage the modesty of a woman or which the accused knew to be likely to have that result.[32]

A girl aged 5½ years was found seated on the naked thighs of the accused who had his knees on the ground and his trousers half way down. The girl's trousers were lying on the ground close by. Seeing the mother of the girl the accused stood up and tied up his trousers. With the exception of fresh redness at the entrance to the vagina, the girl bore no other mark of injury, and her hymen was intact. There were no mark of blood or semen on her person. From the state in which the accused and the child were found it may be inferred that the accused did not merely commit an indecent assault but attempted, though unsuccessfully, to effect penetration.[33]

Attempt is an act done in part execution of a criminal design, amounting to more than mere preparation, but falling short of actual consummation, and, possessing, except for failure to consummate, all the elements of the substantive crime ; in other words, an attempt

[32] *G. V. W. Jones* v. *Emp.*, 27 Cr. L. J. 916=96 I. C. 260=4 Bur. L. J. 83=A. I. R. 1925 Rang. 247.

[33] *Mehraj Din* v. *Emp.*, 28 Cr. L. J. 244=99 I. C. 116=A. I. R. 1927 Lah. 222.

consists in the intent to commit a crime, combined with the doing of some act adapted to, but falling short of its actual commission ; it may consequently be defined as that which if not prevented would have resulted in the full consummation of the act attempted.[34] Where, therefore, the accused caught hold of the girl at night, got on to the *charpoy* with her, undid the string of her *pyjama*, was seen struggling with her and ran away at the sight of her mother who came up in answer to her daughter's cries, he was guilty of an attempt to commit rape.[35] The accused was also found guilty of the offence of attempt to commit rape where he caught hold of a girl aged 14 years, threw her down, put sand in her mouth, got on her chest, attempted to have sexual intercourse with her, who resisted and cried, and ran away at the sight of persons attracted there by her screams.[36]

Can a rape be committed by a boy under the age of 14 years.

The presumption of English law against the possibility of the commission of the offence of rape by a boy under the age of 14 has no application in India.[37]

A boy of 12 though physically incapable of committing rape can be convicted of an attempt to rape.[38]

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[34] *In re Amrita Bazar Patrika Press Ltd.*, 47 Cal. 190 (234)=54 I. C. 578=30 C. L. J. 289=23 C. W. N. 1057=21 Cr. L. J. 98 (S. B.), following *Reg* v. *Collins*, (1864) 9 Cox. 497.

[35] *Kishen Singh* v. *Emp.*, 28 Cr. L. J. 663=103 I. C. 199=A. I. R. 1927 Lah. 580=28 P. L. R. 575.

[36] *Bhartu* v. *Emp.*, 35 Cr. L. J. 432=147 I. C. 560=A. I. R. 1933 Lah. 1002=34 P. L. R. 832=1933 Cr. C. 1515.

[37] *Emp.* v. *Paras Ram Dube*, 37 All. 187=13 A. L. J. 254=16 Cr. L. J. 322=28 I. C. 658=A. I. R. 1915 All. 134.

[38] *Nga Tuw Kaing*, v. 18 Cr. L. J. 943=42 I. C. 175=11 Bur. L. T. 185 ; *Emp.* v. *Nga Nynu*, 37 Cr. L. J. 94=159 I. C. 450=8 Rang. 267=A. I. R. 1935 Rang. 393=1935 Cr. C. 1116. For contra see Gopala bin Rama, 1896 unreported Cr. C. 865.

Noma. This affection may be mistaken for injuries from rape. However, now a days, Noma is a rare affection.

It occurs in children who have been debilitated by infections, febrile or wasting diseases, such as, measles, enteric, typhus, consumption etc. It depends upon a microbe. It begins as a dark, livid-red swelling of one vulval lip only. First there is a formation of blisters which break and form dirty grey or bluish-red ulcers; and the ulcerated surfaces become a yellowish grey or greenish black layer of gangrene. This gangrene may destroy the whole of the lip and extend to the orifice of the vagina and the mons veneris. There is fever. Noma is generally fatal.

Physical signs of virginity :—

These signs are comprehended in the following :—

(a) An intact hymen ;

(b) A normal condition of the fourchette and posterior commissure ;

(c) A narrow vagina with rugose walls ;

(d) An undeveloped condition of the nipples, and the absence of darkened areolæ round them.

These, **taken together,** may be held to be clear evidence of virginity ; **taken singly, they cannot be so reckoned.**

The following signs in the sexual parts of a virgin which when found, would entitle the examiner to conclude that a rape had been committed :—

(a) A recent complete rupture of the hymen ;

(b) Presence of blood, fresh or dried, about the vulva ;

(c) Marks of bruising, excoriation, or inflammatory action of the parts ;

(d) Presence of semen in the vagina, or on the body or clothing of female ;

(e) To these objective signs, the following subjective signs may be added :—1. Discomfort in walking ; 2. Frequency of micturition ;

Procedure in rape cases :—

1. Obtain consent first of the victim, if of reasonable age and understanding to give consent, and of the nearest guardian if the victim is not of reasonable age and understanding if possible in writing, a verbal consent should be given in the presence of responsible witnesses.[39]

2. Never proceed alone to the examination of a woman or girl, always have a third person present.

3. Ask nothing except what is strictly necessary for the medical understanding of the facts.

4. Note the following :—

Date and exact hour at which she visits you.
Her walk and mental state.
Who accompanies her.
Her statements : Age, date, time, and place of offence.
Exact position of parties.
Did she cry out or struggle.

[39] *Emp.* v. *Bhonder Prodhan*, 35 C. W. N. 1212 (1216)=1931 Cr. C. 753=134 I. C. 1053=A. I. R. 1931 Cal. 601.

Was she sensible the whole time.
Date of appearance of any discharge,
Objective appearance of this discharge,
Date of pregnancy or of appearance of venereal disease.

When writing a report make it clear that it is the story of the person examined and not the result of your investigations. Draw it up thus for example : Questioned by me Mst.————relates that————she claims that————etc.

5. Always examine the subject on a table if possible, failing which, let her lie cross-wise on a bed with her legs hanging in front of you, flex the legs, separate and elevate the thighs, and let them be held by an assistant.

Note carefully all the following points :—

(a) Appearance of the external parts ; their objective modifications.

(b) Condition of the hymen.

(c) Presence or absence of vaginal discharges ; their character.

(d) Condition of the urethra and urethral discharge, with its characteristics.

(e) Condition of inguinal glands.

(f) Presence or absence of genital or extragenital venereal lesions.

(g) Examine the clothes for blood, sperm, or mud stains, and tears in the dress.

(h) Pass a clean piece of muslin within the vagina

and submit to Chemical Examiner ; examine a piece so treated yourself.

(i) Examine the body for indications of violence and assault.

With reference to the *Male*. After cautioning him, note the following :—

(a) Any, and if so, what appearances of violence are present upon his face or neck, or more locally in the neighbourhood of the external genitals.

(b) Condition of the male organ itself :—1. With reference to marks of injury, such as scratches, or rupture of the fraenum ; 2. Marks of blood etc. 3. Marks or stains of blood upon clothing etc.

(c) His physical conformation.

N. B. Neither the complainant, nor a witness, nor an accused person can be compelled to submit to medical examination for the purposes of evidence. A Criminal Court has by law no power to order any person, whether male or female, to be subjected to medical examination, though, where the consent of the person to be examined (or, in the case of a minor, of his or her lawful guardian), has been obtained, such examination may be authorised. The practice of ordering the medical examination of a woman who has complained of an offence against her virtue is illegal.[40] The examination of an arrested person in hospital by a doctor, not for the benefit of the prisoner's health, but simply by way of a second search, is not provided for by the Cr. P. Code, and in such a case the doctor may not examine the prisoner without his consent. It would be a rule of caution to have such consent noted in the medical report, so that

[40] Para 42, Chapter I, Rules and Orders of the High Court of Judicature at Lahore, made under the Code of Criminal Procedure.

the doctor would be in a position to testify to such consent if called upon to do so, unless such consent is taken medical evidence of such examination would be inadmissible.[41] It cannot, however, be laid down that unless the fact that consent has been obtained is put down in writing, it is to be held that no consent was, in fact, obtained. Evidence disclosed on the medical examination of an accused is admissible if his consent to the examination was, as a matter of fact, obtained.[42]

Characters of Seminal Stains

On the **skin,** semen forms a sort of varnished spot, that recalls the appearance of **dried collodion,** or it forms whitish bright scales.

On **hairs** semen forms a greyish magma agglutinating them,

On **linen** the spot assumes a well known appearance ; the colour is greyish, with a more deeply coloured periphery ; the contour is sinuous ; the linen where the spot lies is stiff, as though starched and it is transparent.

On **wool** and **impermeable materials,** it forms a whitish scaly trail.

The naked eye cannot be depended on. Certainty can only be obtained from the microscope, which demonstrates the spermatozoa.

There may be semen without spermatozoa, not only in old men, but in young adult subjects in the full vigour of life. The absence of spermatozoa in a suspected

[41] *Emp.* v. *Bhondar Prodhan*, 35 C. W. N. 1212 (1216)=1931 Cr. C. 753=134 I. C. 1053=A. I. R. 1931 Cal 601.

[42] *Hanuman Sarma* v. *King-Emp.*, 36 C. W. N. 1152 (1155)=1932 Cr. C. 728=A. I. R. 1932 Cal. 723.

fluid then, does not justify us in saying that it is not semen.

The best form of Procedure for Examination of Seminal Stains

1. Cut out stains upon the cloth to be examined, keeping each in separate watch glass. Cut a portion of it into small pieces.

2. Add sufficient 10% solution of glycerine in water to thoroughly moisten the cloth.

3. Allow to stand under cover for a couple of hours.

4. Prepare series of glass slides, and with flat pointed forceps touch each slide with the moistened cloth, until six slides have been so treated.

5. On 3 of them place cover slips. Dry other three slides by passing through heated air that rises from flame of spirit lamp, repeating process 2 or 3 times till dry.

6. Cover the film with weak gentian-violet stain, warm gently for ½ to 1 minute ; wash off stain in gentle stream of water put on a cover slip, and examine microscopically.

7. Use a microscope magnifying not less than 500 diameters, and examine in a suitable light.

Semen usually contains not only spermatozoa, but also sperm cells in different stages of development, and in addition, clustered crystalline bodies.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. How long after the alleged offence did you examine complainant ?

2. Q. Were the injuries discovered by you, compatible with the commission of rape ?

3. Q. Is it possible that genital injuries inflicted at the time of the alleged offence could have healed before the occasion of your examination ?

A. The blood supply to the female genitalia is so free that healing is comparatively rapid if the parts are kept fairly clean. Slight injuries would disappear in two or three days.

4. Q. Was the hymen ruptured ?

5. Q. Was the nature of the hymen such as would permit of intercourse without rupturing ?

A. The consistency and nature of the hymen are variable. In consistency it may be thin and slightly resistant or it may be tough and muscular or tendinous and very resistant. It may be tensely stretched across the entrance of the vagina or it may be thrown into many folds which yield easily before the entering male organ. The orifice may be very small or very large.

6. Q. Is the hymen always present ?

A. Every female always possesses either an intact hymen or the traces of this membrane.

7. Q. Could intercourse take place without rupturing the hymen ?

A. Yes. Some hymens are smooth and on the stretch when the thighs are held apart ; this is especially so in the young. In some older girls the hymen becomes flaccid and thrown into folds, presenting the appearance of being too large in proportion to the orifice that it surrounds. Such lax hymens will spread out and permit entrance of the male organ without rupturing in the same manner as the foreskin yields to the passage of the glans penis.

8. Q. How is such a hymen to be distinguished ?

A. (a) The membrane is intact, its edges distinct and regular, orifice small, scarcely permitting a finger to pass, is taut when the thighs are separated. Such a hymen will surely tear if the erect male organ should pass beyond it. (b) The membrane is intact, has several folds, the orifice permits two or more fingers to pass, is lax and can be pushed back easily when the thighs are separated. Such a hymen could permit the passage of the erect male organ without tearing it.

9. Q. Is it possible for tears in a ruptured hymen to unite again so as to give it a normal appearance. If so, how would such union be distinguished ?

A. A ruptured hymen rarely heals by a scar. If union ever did take place, careful observation with the aid of a lens would discover a white linear scar running outward from the angle of the notch.

10. Q. What then is the normal method of healing in a ruptured hymen ?

A. Tears in a hymen usually heal without reuniting. The torn edges are uneven and usually there is slight suppuration. These edges heal over as any ordinary superficial wound would, leaving a membrane of artificial divisions.

11. Q. What is the incubation period of gonorrhœa ?

A. The incubation period is from several hours to two or three weeks, depending upon the virulence of the microbe and the vital resistance of the mucous membrane. The ordinary period is three to five days and a very long or short period should throw doubt on the nature of the discharge.

12. Q. If a person has coitus with another affected with gonorrhœa, must he or she necessarily contract the infection ?

A. No. He or she will more frequently escape infection. The same holds good in cases of syphilitic infection.

13. Q. What other causes are there, besides gonorrhœa, of vulvar discharge in children ?

A. Vulvar discharge may result from injury, or lack of cleanliness, the migration of worms from rectum to vulva, any infectious disease may cause it, masturbation may even be a cause. A mucopurulent secretion from the mucous membrane lining the vagina, of a a greenish-yellow colour, more or less viscid, cannot be distinguished from that the result of gonorrhœa. Unhealthy children and those recovering from illness, may suffer from such a discharge. Even infants suffer from leucorrhœa.

14. Q. How is gonorrhœa distinguished from discharge set up by other causes ?

A. Gonorrhœa is attended by very acute inflammatory symptoms, the discharge is free, purulent and often stained with blood ; appears suddenly from one to seven days after exposure to infection, the urethra is almost invariably included in the infection, gonococci are found on microscopic examination of the discharge. In other vulval discharge the inflammation is mild, usually confined to the vulva, the vagina being but slightly involved and the urethra escaping entirely, gonococci are absent.

15. Q. Would it be safe to say that the discharge was gonorrhœal from the symptoms presented ?

A. No. The diagnosis must depend on the presence of gonococci, confirmed by culture on artificial media.

16. Q. Has sufficient time elapsed since the alleged offence, for venereal disease to manifest itself if infection had occurred ?

17. Q. How would you know if the complainant was menstruating at the time ?

A. If the flow of blood is continuing at the time of the examination its source can be ascertained. The menstrual discharge is usually very dark red or brown and has a peculiar odour with an acid reaction. Care, however, is needed in arriving at a conclusion.

18. Q. Could the injuries have been self-inflicted, or inflicted in some way other than coitus ?

A. Signs of such violence are usually confined to the genitalia.

Injuries to the thighs and other parts of the body are forgotten, injuries such as would have followed a struggle.

19. Q. Is it possible to state whether or not vulval penetration has taken place ?

A. In the absence of injury vulval penetration is not likely to have occurred, for it is reasonable to suppose that the ravisher having progressed thus far would assuredly persist and more or less injury would result, unless—as in the case of a child—no resistance is offered, and the ravisher undisturbed, endeavours to avoid injuring his victim. Even in such a case, some redness or abrasion will be present. If momentary penetration only has occurred (accidentally, so to speak) there will be no physical evidence of the fact.

20. Q. Could inflammatory redness and abrasion of the mucous membrane lining the vulva be due to other causes than violence ?

A. Yes. Inflammatory irritation due to catarrh may occur and be apt to mislead.

21. Q. Was the accused suffering from venereal disease when you examined him ?

22. Q. Are his genital organs well developed ?

23. Q. Did you discover any injuries on him at the time of your examination ?

24. Q. Were the injuries recent ?

CHAPTER X

PREGNANCY AND LEGITIMACY

Under various circumstances, it may become necessary to determine whether a female is pregnant or otherwise; whether she has recently been delivered or has ever borne a child.

Pregnancy may be feigned or concealed. It may be *feigned* for the following reasons :—

1. To enable a widow to produce at a seasonable time a spurious heir.
2. For purposes of black-mail, or to induce her paramour to marry her.
3. To increase damages in action for breach of promise.
4. To increase alimony in case of divorce.
5. To increase compensation on death of husband by accident, etc.
6. To procure stay or commutation of capital punishment.

Pregnancy may be concealed for the following reasons :—

1. To avoid shame in the case of an unmarried female.
2. To conceal infanticide.
3. To procure abortion, or eventually to abandon the child.

The determination of pregnancy or otherwise may become necessary for the following reasons :—

1. To refute libel in a charge of adultery.
2. To show motive for murder or suicide.

At what age can conception occur ?

The earliest recorded age for pregnancy is eight years and ten months (Dodd). The girl ultimately gave birth to a living child weighing seven pounds. This girl menstruated at the early age of twelve months.

Regarding the latest age at which conception can take place, the question was debated by the medico-legal society of Great Britain. The late Lord Riddel presiding told the meeting that he once offered a prize of £40. for the discovery of the oldest mother. The winner was a woman aged 53 years 224 days. Dr. J. Bright Bannister said that early last century it was stated that a woman aged 69 years had given birth to a child, but it was now agreed that there could be no childbirth after the age of 52 years.

Pregnancy usually ceases after the stoppage of menstruation, that is, between 40 and 50 years of age. However, pregnancy is liable to occur after menstruation has ceased.

Continuance of menstruation is not absolutely necessary for conception. Conception may take place before menstruation has appeared, whilst it is in abeyance, and in women who have never menstruated at all.

Conception may occur after the first attempt at coitus, during states of unconsciousness, after rape, and without rupture of the hymen or even penetration.

No fixed time can be given as to when conception has taken place, because it is unknown how long spermatozoa can live in the female genital tracks.

A female may be pregnant and yet be unaware of the fact. This is an important point with reference to unconscious delivery in cases of alleged infanticide.

The diagnosis of early pregnancy, ordinarily is not easy, especially before the third or fourth month of gestation. No opinion is of any use unless the collective value of the signs of pregnancy is considered, as no single sign is sufficient on which to base an opinion.

The following are the signs of pregnancy :—

1. **Stoppage of the menstrual flow.** This sign is not conclusive as it may cease owing to disease. On the other hand, menstruation may continue regularly during the whole period of pregnancy. Further, women who have never menstruated have become pregnant.

2. **Morning sickness.** Nausea ending in vomiting occurs soon after awaking in the morning. It may occur within a few days of conception, but it usually commences after the fifth or sixth week of conception. It is not a reliable sign.

3. **Changes in the breasts.** By the end of the second month the breasts begin to enlarge, gradually becoming firm and tense. The greatest change occurs in the nipple and areola or coloured area around the nipple. This circle around the nipple which, before pregnancy in the fair person is of a pinkish or pale brown colour according to the degree of fairness, and darker brown in the dark-skinned person, increases in size in most persons

as pregnancy advances. The colour deepens to a brownish tinge in the former, to almost black in the latter; the nipple also partakes of the altered colour. The part of the areola immediately around the base of the nipple becomes studded with small outstanding follicles, known as Montgomery's tubercles. The nipple enlarges. By the end of the third month milk can be expressed from the nipple. Milk may occur, however, in the breasts of women who are not pregnant. This sign is only of value in first pregnancies.

4. **Enlargement of the abdomen.** Up till the end of the fourth month the pregnant uterus remains in the cavity of the pelvis, hence no prominence of the abdomen is noticeable. It then begins to rise out of the pelvic cavity and at the end of the fifth month, the upper end is about midway between the pubes and the navel; at the end of the sixth month it reaches the navel; during the seventh month it is midway between the navel and the lower tip of the breast bone, and at the end of the eighth month is level with the lower tip of the breast bone, now quite filling the abdomen.

Enlargement of the abdomen may result from causes other than pregnancy such as, dropsy, ovarian tumour.

5. **Quickening or movements of the fætus.** The period at which this occurs varies between the fourth and fifth months. The movements may be felt by placing the hand on the abdomen. Pregnancy may occur without quickening.

6. **Pulsation of the fœtal heart.** These pulsations can be heard and counted by means of a stethescope,

more or less over the whole of the enlarged portion of the abdomen during the fifth month. These pulsations are not synchronous with the mother's pulse. This is a positive sign of pregnancy.

7. **Ballottement.** This is the motion perceptible to the finger on giving a sudden impulse to the fœtus through the neck of the uterus. It may be elicited from the end of the fourth to the seventh month. This is a positive sign of pregnancy.

8. **Intermittent rhythmical contraction and relaxation of the uterus.** These alternate contractions and relaxations of the uterus are easily perceived by placing both hands spread out over the abdomen. It is present in pregnancy whether the fœtus is dead or alive, and is a positive sign of pregnancy.

The only infallible signs of pregnancy are :—fœtal heart sounds and fœtal movements.

A certain opinion (except in the case of a skilled expert in this particular branch) that pregnancy exists cannot be made before the sixth month.

Unchastity may be declared in consequence of the expulsion from the uterus of a body other than the fœtus. A fleshy mole is due to hæmorrhage into the placenta or membranes. The hydatid mole is a disease of the chorionic villi. Both are the products of conception. A membraneous cast of the womb is sometimes expelled from the uterus in cases of dysmenorrhœa, which must not be mistaken for a product of conception.

Delivery. The following are the signs of *recent delivery in the living* ;—

A female who has been delivered at full term, generally presents for one or two days, longer if she is delicate or if the labour was protracted or difficult, an appearance of weariness and exhaustion. The pulse is soft and quick. The *breasts* are hard and knotty and milk containing calostrum corpuscles can be expressed from the nipple. The veins of the breasts will be found dilated and marked. The *abdomen* may be slightly full, but lax, and the skin wrinkled. In a first child-birth this condition of flaccidity may not be marked, due in large measure to the better tone of the abdominal muscles and the extent of distension. The pregnancy scars or pale coloured streaks are seen on the skin of the abdomen chiefly in the neighbourhood of the navel and the middle line of the abdomen. These lines however, also occur in dropsy, ovarian tumour, obesity, or any other cause of distension of the abdominal walls; they are seen on the thighs of people who have been fat.

For two or three weeks after delivery there is a discharge from the uterus and vagina called the *lochia*. During the first two or three days it consists of blood, for the next three or four days it is thin and watery and by the ninth day it is yellowish-grey or slightly greenish. By the tenth or twelfth day it disappears.

On the first day after delivery the *uterus* can be felt as a hard ball about five inches above the pubes. At the end of twenty-four hours the uterus becomes softer and the upper end is slightly above the level of the navel. On the third day it is level with the navel, at the end of a week, midway between it and the pubes and on the tenth day it is behind the pubes and ceases to be recognizable

by palpation through the abdominal walls. In about six weeks the uterus reaches its normal condition.

The *vagina* and lips of the pudenda bear marks of distension and injury; the vagina gapes; lacerations are generally found, especially at the border of the perineum; the posterior commissure is destroyed.

The *cervix uteri* is soft and open, its edges bruised and torn, the mouth of the womb will admit one or two fingers to pass into it for a short distance.

All these signs are well marked for the first few days, by the end of a week they have diminished greatly and by the end of a fortnight the diagnosis of a recent delivery is generally impossible.

Where these appearances and conditions, or most of them are found in any case of alleged pregnancy it may safely be concluded that the female has been recently delivered of a child since no other like set of conditions are found from any other cause.

The following are the signs of *remote delivery in the living*:—

As a rule, childbirth leaves permanent indications of it in the mother's body, and the greater the number of children, the more likely are these indications to be found. On the other hand, it would be impossible to swear to a delivery in a female after a period of twelve months if the contents of the womb had been expelled before the sixth month. No single sign is of much use in forming an opinion on this subject; many signs are needed.

As a rule, the breasts are pendulous, the nipples long,

and the pigment of the areolæ darkened. The body of the breast may exhibit pale streaks, the result of previous distension.

The breasts of any woman may become pendulous. In young people they may become so through masturbation. It will be difficult to gauge the degree of tint of the areola owing to the colour of the skin varying so much among Indians. The presence of Montgomery's tubercles would be more reliable. The pale streaks, if found, prove that the breasts have at some time been greatly distended, as by obesity or inflammation and not that pregnancy was the cause. The breasts as a rule, become somewhat wrinkled after lactation.

The abdominal walls are less firm and elastic, and are usually marked by white streaks on their lateral aspects. These signs may have been the result of dropsy, obesity, tumour etc. There is generally a deeply pigmented median line extending from the navel to the pubes.

If the hymen is present, it will be found ruptured in several places, the tears extending completely down to the vaginal walls. When the hymen is ruptured by coitus the tears do not extend to the vaginal walls, and portions of the membrane may be found between these tears. If delivery has taken place, the hymen will be represented by either, small projecting tags or nothing at all, the membrane having completely sloughed away. It is asserted that an unruptured hymen is positive proof that delivery has never taken place, but note the following case :—

A prostitute, twenty-two years old, a syphilitic, came to the lying-in clinic, states Dr. Budin, the French obstetrician, she was seven months pregnant (it was her first pregnancy), and the child seemed

dead. The exmination of the genital organs showed that the vaginal orifice was intact ; the hymen formed a complete circle. She was delivered of a dead, macerated fœtus without losing her hymen, and so returned to her occupations as intact as she had entered the clinic.

The fœtus was immature, dead and macerated, which made all the difference. However, no hymen can withstand the passage of a full time child without being completely destroyed.

The vagina usually remains partly open, not being fully closed by the lips of the pudenda. The fourchette (posterior junction of the outer lips) is almost invariably ruptured during delivery, hence it will show the scar of an old rupture. Disease or accident may be alleged as the cause of what is found.

The body of the cervix and uterus is larger than in the virgin. The mouth of the womb is larger and may be transverse in shape instead of oval or circular as in the virgin.

The following are the signs of *recent delivery in the dead* :—

Nearly all the foregoing signs may be found and can be more easily demonstrated.

The breasts must be cut open and the whole of the utero-genital track should be removed entire and a complete examination of each part made in a good light.

The womb will be found enlarged, its cavity, depending upon the stage of pregnancy will measure from three to ten inches in length and will probably contain blood clots. The site of the placenta will be marked by a darker

colour, thinner mucous membrane, and the openings upon it of the uterine vessels. This placental site is incontrovertible proof of recent pregnancy and is recognisable up to nine or even twelve weeks after delivery.

The womb, if the female is delivered at term weighs about thirtyfive ounces. The cervix is gaping wide and lacerated and its walls are soft and flabby. The uterine vessels in the broad ligaments are large and tortuous.

The non-virgin uterus weighs one and a half ounces, and is distinguished by the following characters. The upper end and body are rounded externally ; the cavity of the body loses its triangular shape ; the external os gapes ; the surface of the lips are irregular and often nodulated.

Immediately after delivery the uterus weighs thirty ounces and is eight to twelve inches in length. Two or three days after delivery it weighs from twenty to twenty-four ounces and measures seven to eight inches in length. Seven days after delivery it weighs sixteen ounces and is five to six inches long. Fourteen days after delivery it weighs twelve ounces and is four inches long. Two months after delivery it weighs one to one and a quarter ounce and is three inches long. Involution is complete in about two months after delivery.

The virgin uterus weighs about five hundred grains and measures three inches in length by two inches in breadth and one inch from before backwards.

Signs of *remote delivery in the dead.* We have here all the signs enumerated under the preceding and the uterus can now be fully examined and the differences between the uterus that has never been pregnant and the uterus that has been pregnant noted.

The uterus that has never been pregnant differs from the uterus of a woman who has borne children to full term. The length measured externally from the highest point of the fundus to the external os is about two and a half inches. There is a slight constriction externally dividing the length into two almost equal parts, the upper slightly longer portion includes the body and fundus, the lower portion comprises the cervix. The top of the fundus is flat, rising hardly at all above the level of the Fallopian tubes. The external os is either round or transverse, smooth and devoid of scars. If a longitudinal section is made from side to side dividing the organ in two, anterior and posterior halves, the cavity of the body is seen to be rather shorter than the cavity of the cervix, somewhat triangular in shape, the walls convex inwards and the space small. The cavity of the cervix is fusiform and marked anteriorly and posteriorly by a longitudinal ridge from which secondary ridges branch obliquely upwards, producing the arbor vitæ.

The uterus that has been pregnant compared with one that has never been pregnant, is larger, and its walls thicker. The total length externally is about three inches of which two inches go to the body and fundus, one inch to the cervix. On longitudinal section the cavity is larger, somewhat pear-shaped and the walls are concave inwards. The top of the fundus externally is arched upwards above the level of the Fallopian tubes. The external os may be either round or transverse, its edges are irregular, and it may admit the tip of the finger.

For some months after delivery, the sinuses of the placental site are visible. The walls of the uterine arte-

ries which undergo thickening during pregnancy, remain permanently thicker than those of the uterus that has never been pregnant.

Legitimacy

Section 112 of the Indian Evidence Act, 1872, states:— "The fact that any person was born during continuance of a valid marriage between his mother and any man, or within two hundred and eighty days after its dissolution, the mother remaining unmarried, shall be conclusive proof that he is the legitimate son of that man, unless it can be shown that the parties to the marriage had no access to each other at any time when he could have been begotten". This section consists of two parts. The first part deals with the birth of a child during the continuance of a valid marrirge between a man and a woman; and the second part deals with the birth of a child during 280 days after the dissolution of that marriage. A child born during either of those periods must be presumed, according to this section, to be the child of that man. Such a presumption is, of course, not unrebuttable. The man can prove that he had no access to his wife during the time when the child could have been begotten. If he can prove it then the child will not be held to be his child.[1] The section goes no further than that and no counterpresumption arises *ipso facto* from the circumstances that a child was born more than 280 days from the date of dissolution of the marriage.[2]

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[1] *Ma Thein* v. *Maung Mya Khin*, 38 Cr. L. J. 646=168 I. C. 825= A. I. R. 1937 Rang. 67. See also Hidayat Ullah v. *Mohammad Ali*, A. I. R. 1937 Lah. 266.

[2] *Mt. Rahim Bibi* v. *Chiray Din*, A. I. R. 1930 Lah. 97=120 I. C. 495.

The rule of Muhammadan Law on this point is stated in Wilson's Anglo-Muhammadan law, fifth edition, at page 159, as follows :—"It is conclusively presumed that a child born within less than six months after the marriage of the mother cannot have been begotten by her husband in lawful wedlock." This rule is in direct conflict with the first part of sec. 112. But the Courts are bound to give effect to the clear provisions of section 112, although they conflict with the rules of Muhammadan law.[3]

Assuming that the child was born of the mother, the chances of doing this depends upon two facts only :—

1. Physical inability on this part of the husband to perform the sexual act.

2. Want of access on the part of the husband.

Want of access in this Section resolves itself into the questions.

What is the maximum length of time over which gestation can extend ?

What is the minimum period of gestation compatible with the viability of the child ?

There is no means of determining the exact moment of conception. To try to fix it accurately is impossible. The generally accepted average period of normal gestation

[3] *Sibt Mohammad* v. *Mohammad Hameed*, 48 All. 625=96 I. C. 582=24 A. L. J. ,723=A. I. R. 1926 All. 589 ; *Mt. Rahim Bibi* v. *Chirag Din*, A. I. R. 1930 Lah. 92=120 I. C. 495. See also *Waras Mohammad* v. *Ali Bakhsh*, 76 P. R. 1891, *Hajira Khatun* v. *Amina Khatun*, A. I. R. 1923 All. 570 and *Mt. Kaniza* v. *Hasan Ahmad Khan*, A. I. R. 1926 Oudh 231 (234)=1 Luck. 71=92 I. C. 82=3 O. W. N. 114.

is forty weeks, or ten lunar or nine calendar months, or two hundred and eighty days.

The data generally adopted by women to fix the time of delivery are :—

1. To count from the date of cessation of the last menstrual flow.

2. To count from the date of coitus when only one such act has been indulged in.

3. To count from the date of commencement of quickening.

All the above methods are untrustworthy, because (a) The menstrual flow may cease from various causes and may continue after conception has occurred. (b) One single act of coitus gives conclusive proof of the maximum duration of a terminated pregnancy. Fertilization of the ovum does not necessarily occur immediately after coitus, as it is known that spermatozoa can remain alive in the upper recesses of the vagina for more than two weeks. (c) The date of quickening varies greatly in different women.

The duration of human gestation is subject to considerable variation ; in some women it is always protracted. The result of a large number of observations is to show that the average period is about two hundred and twenty-eight days.

The law in India fixes two hundred and eighty days as the normal period of gestation, but a fact that a child is born more than two hundred and eighty days after the dissolution of his mother's marriage or after the parties

had access to each other does not make him illegitimate, but his legitimacy may be questioned.

Many cases have been recorded in which the duration of pregnancy has varied from two hundred and eighty to three hundred and twenty days. There is reason to believe that gestation may be prolonged for a period equivalent of ten menstrual periods, that is three hundred and eight days. The fact of a child being of an unusual size at birth would be evidence in favour of the possibility of a protracted gestation above the normal period of two hundred and eighty days. However, it is also possible that a child might be unusually small at full term and therefore not larger than usual when born at a later period (Galabin's Midwifery).

Yet the centres of ossification should show an advance in size, and the presence of well defined centres in the upper end of the tibia and the cuboid bone of the foot must be expected. These may be ascertained by means of the X rays.

A case is reported from Simla, where the child was alleged to be born three hundred and twenty-three days after the cessation of the last menstrual flow and three hundred and ten days after the last coitus. The child was not unusually large. It was admitted by the Chief Court, Punjab, that the child was legitimate.

In the case reported in the British Medical Journal of the 6th of August 1922, (Gaskill. v. Gaskill), adultery and illegitimacy were alleged. The period between the last act of sexual intercourse and the birth of the child was three hundred and thirty-one days and as there was

no evidence proving misconduct, the case was decided in favour of defendant.

A child born within 330 or 333 days from the last access of a husband is legitimate.[4] In that case it was held that there was no inherent impossibility of gestation of 330 or 333 days after cohabitation, but the fact was noted as suspicious. With each succeeding day beyond that period the improbability would naturally increase, and although medical science mentions cases of longer duration, those cases were never tested in any law courts and are of no value.[5] But a child born eleven months after the cessation of marital intercourse between the parents is illegitimate.[6]

What is minimum period of gestation compatible with the viability of the child ?

Most authors hold that a child born at one hundred and eighty days gestation may live. A child may be born alive before this period, but it is not viable or capable of living. A fœtus of three or four months' development may exhibit signs of life, movements of the limbs, etc., but it cannot continue to live, owing to the want of development of the breathing muscles and breathing centre. Most six months children die immediately or within a few days of birth ; occasionally one has been reared.

[4] *P* v. *P*, 12 I. C. 946=260 P. W. R. 1911=77 P. R. 1911. See also *Bhairon Prasad* v. *Mt. Gopi Kunwar*, A. I. R. 1930 P. C. 139=58 M. L. J. 708=123 I. C. 550=32 Bom. L. R. 871=32 M. L. W. 8. For contra see *Fatteh Din* v. *Umrao*, A. I. R. 1923 All. 440=82 I. C. 592.

[5] *Mt. Rahim Bibi* v. *Chirag Din*, A. I. R. 1930 Lah. 97=120 I. C. 465.

[6] *John Howe* v. *Charlotte Howe*, 21 I. C. 645=14 M. L. T. 447=25 M. L. J 594=38 Mad. 466=1913 M. W. N. 983. See also *Mt. Rahim Bibi* v. *Chirag Din*, supra and *Ma Thin* v. *Maung Mya Khin*, 38 Cr. L. J. 646=168 I. C. 825=A. I. R. 1937 Rang. 67.

If a person knowing that a woman is pregnant marries her, the child of the woman, though immediately born after the marriage, becomes in law his child unless the man proves that he had no access to the woman when the child could have been begotten, quite irrespective of the question whether the mother was a married woman or not at the time of the conception.[7]

A son born 5 months and 21 days after the marriage of his parents is legitimate, being born during the continuance of the marriage between his parents unless it is shown that his parents had no access to each other at any time when he could have been begotten.[8] A child born more than 280 days after the divorce by her first husband or his death, but within six months of her re-marriage is to be considered legitimate under sec. 112 of the Indian Evidence Act.[9]

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. Can conception occur before the appearance of menstruation ?

A. Yes, conception may occur before the appearance of menstruation and in women who have never menstruated at all.

2. Q. Can conception occur without the normal performance of the sexual act ?

A. It is not necessary for even penetration to occur. A man suffering from a deformity of the penis such as, epispadias, may in his attempts to gratify his sexual desire deposit semen at the vulva, the spermatozoa then find their way along the genital canal. Thus a female may become pregnant and be unaware of the fact.

[7] *Sethu* v. *Palani*, A. I. R. 1926 Mad. 628 (630)=50 M. L. J. 453=93 I. C. 317=49 Mad. 553=24 M. L. W. 112. See also *Palani* v. *Sethu*, 47 Mad. 706=A. I. R. 1924 Mad. 677=47 M. L. J. 155=20 M. L. W. 69=1924 M. W. N. 502=81 I. C. 466.

[8] *Kahan Singh* v. *Natha Singh*, A. I. R. 1925 Lah. 414=90 I. C. 123=26 P. L. R. 509=7 L. L. J. 184.

[9] *Nurul Hasan* v. *Muhammad Hasan*, 7 I. C. 1022=146 P. L. R. 1910=78 P. R. 1910=107 P. W. R. 1910.

3. Q. Is it possible in the early months, say up to the third, to definitely say whether a person is pregnant ?

A. It is indeed very difficult before the third month or even the fourth. There is a great margin for error and any opinion must be treated with suspicion. The only signs of pregnancy which are infallible, and would therefore justify making a statement on oath of the condition, are the presence of fœtal movements and the fœtal heart-beat. In most cases these are not available until at least the middle of the fourth month and then only if the foetus is living.

4. Q. What signs would you expect to find in a living person who has recently been delivered ?

A. Sometimes an appearance of langour and exhaustion : pulse soft and quick : breasts hard and knotty : colostrum can be expressed from the nipples : veins of the breast are dilated and easily seen : abdomen is lax and the skin of same is wrinkled : a lochial discharge from the vagina : uterus can be felt several inches above the pubes ; vagina gaping more or less, mouth of the womb soft and open.

5. Q. Is it possible for conception to follow coitus with a boy who has not yet arrived at maturity ?

A. Yes. Brend reports a case in which a boy, twelve and a half years of age had sexual intercourse with his sister aged fourteen. She became pregnant. Taylor reports a case observed by Ruttel where a girl of fourteen became pregnant by a boy of the same age.

6. Q. The period of normal gestation is nine calendar months, or ten lunar months, or an average of two hundred and seventy eight days. What is the maximum length of time over which gestation can extend ?

A. An extended period of 300 days can now be regarded as well established. In all cases where pregnancy much over this period is alleged, confirmatory evidence should be expected in the exceptional weight and size of the child.

In 1917, the English Courts dismissed the petition of the husband who had been absent from his wife for 307 days. The labour was

normal and the child was of average size and weight. The petitioner was unable to support his case by other evidence.

In a case in 1921, the period was 331 days. The child was not weighed at birth, but the doctor who attended estimated it to be ten pounds. The petition was dismissed (Brend).

A case is reported from Simla where the child was alleged to be born 323 days after the cessation of the last menstrual flow and 310 days after the last coitus. The child was not unusually large. It was admitted by the Chief Court of the Punjab, that the child was legitimate.

7. Q. Is it possible for a child to be fully developed at the end of the eighth month of gestation ?

A. Yes, but if this period is much under 250 the child will show evidence of immaturity. An eight month's child cannot be distinguished with certainty from one born at the ninth month.

8. Q. At what advanced age does a man become infertile, that is, cease to produce spermatozoa ?

A. There is no age limit for the production of spermatozoa. Caspar mentions a case in which spermatozoa were found in a man of ninty-six years.

9. Q. Is it possible for a woman to become pregnant eight weeks after her last confinement ?

A. This is undoubtedly possible, but such an occurrence is rare. It is also possible for a woman to abort at the end of eight weeks after her last confinement.

10. Q. How long after the event in the living. do the signs of recent delivery fail to furnish reliable information of the approximate date of its occurrence ?

A. Usually at the end of ten days or a fortnight the parts regain their normal appearance, it is then impossible to fix the date of delivery to any degree of certainty.

11. Q. From any indications you may deem reliable, can you, with certainty declare that a woman has borne a child, a considerable time after delivery ?

A. No. A positive diagnosis of such having taken place cannot usually be made. A typical nulliparous appearance has been found in a woman who has had several children. Nevertheless, a fairly decided opinion can be expressed if a reasonable number of the signs of a previous pregnancy is present.

CHAPTER XI

ABORTION

"In folly or weakness it always beginneth; but remember, it seldom concludeth without repentance."

Section 312 I. P. C.—Whoever voluntarily causes a woman with a child to miscarry, shall, if such miscarriage be not caused in good faith for the purpose of saving the life of the woman, be punished etc., and if the woman be quick with child, shall be punished etc.

The offence under this section can only be committed when a woman is in fact pregnant.[1]

A woman is with child within the meaning of this section as soon as she is pregnant.[2]

This section supposes an expulsion of the child before the period of gestation is completed. In a case in which the child was full grown the Court declined to convict the accused of causing miscarriage under Section 312 but convicted them of attempt to cause miscarriage under Section 312 and 511 read together.[3]

Explanation.—A woman who causes herself to miscarry is within the meaning of this section.

Section 313 I. P. C.—Whoever commits the offence defined in the last preceding section without the consent

[1] *Q.* v. *Kabul Pattur and Jhampa*, 15 W. R. Cr. 4. Kemp and Glover J. J.

[2] *Q.* v. *Ademma*, 9 M. 369. Mattusami Aiyar and Brandt J. J.

[3] *Q.* v. *Arjuna Bewa*, 19 W. R. Cr. 32. Glover and Dwarkanath Mitter J. J.

of the woman, whether the woman is quick with child or not, shall be punished etc.

Section 314 I. P. C.—Whoever, with intent to cause the miscarriage of a woman with child, does any act which causes the death of such woman, shall be punished etc. And if the act is done without the consent of the woman, shall be punished etc.

Where the accused administered poisonous drugs to produce miscarriage and death resulted thereby, he was punishable under Section 314 I. P. C. though there was no proof that he knew that the drug would be likely to cause death.[4]

Explanation.—It is not essential to this offence that the offender should know that the act is likely to cause death.

Section 315 I. P. C.—Whoever, before the birth of any child does any act with the intention of thereby preventing that child from being born alive, or causing it to die after its birth, and does by such an act prevent that child from being born alive or causes it to die after its birth, shall, if such an act be not caused in good faith for the purpose of saving the life of the mother, be punished etc.

Section 316 I. P. C.—Whoever does any act under such circumstances that if he thereby caused death he would be guilty of culpable homicide, and does by such act cause the death of a quick unborn child, shall be punished etc.

In Medicine, abortion is understood to mean the expulsion of the contents of the pregnant uterus before the sixth month of pregnancy. If the expulsion takes

[4] *Q.* v. *Kalachand Gopi*, 10 W. R. Cr., 50 Cal. Phear and Hobhouse J. J.

place between the sixth month and full term it is said to be a premature labour.

In law, the term miscarriage is applied to expulsion at any period, short of full term.

Abortion may be natural or accidental, or it may be criminal. Natural abortion is of very frequent occurrence and generally occurs at or a little before the third month of gestation, and then usually in first pregnancies. It is more frequent among the rich than among the poor. Its occurrence may be caused by one or more of the following :—

1. **Trivial injury or nervous excitement** in those naturally predisposed to miscarry.

2. **Specific fevers** of all kind. During an attack of any of them the uterus may empty itself.

3. **Excessive vomiting** of pregnancy and *excessive lactation.*

4. **Chorea Gravidum** (chorea of pregnancy). Pregnant woman are liable to chorea (St. Vitus' dance).

5. **Convulsions** may cause abortion, due to asphyxia of the womb.

6. **Bright's disease,** especially if advanced.

7. **Advanced Heart, Lung, or Liver disease.** They are certainly dangerous complications of pregnancy.

8. **Syphilis** is an extremely frequent cause of abortion and that too, without marked syphilitic symptoms other than the repeated abortions.

9. **Uterine and Ovarian disease.** These frequently

arise from an abortion or badly managed delivery, but once established they cause numberless abortions.

10. **Disease of the placenta,** usually syphilitic or accidental separation of a portion.

11. **Disease** and especially **death of the fœtus.**

The tendency to natural miscarriages is greatest at the time of a menstrual period had not the woman become pregnant. At these periods very slight causes are liable to produce it, such as coitus, sudden great joy or sorrow etc.

To distinguish criminal from natural abortion, there must be clear proof forthcoming if the former is alleged.

Criminal abortion may be attempted or brought about in three ways :—

1. By the administration of drugs.
2. By general violence.
3. By local violence,

Administration of drugs. By drugs is meant, any noxious plant, or mineral or chemical substance. The following are some of the many substances used for this purpose :—

Aloes	Elaterium	Lead	Pennyroyal
Arsenic	Ergot	Mercury	Papaya seeds
Antimony Tart	Gamboge	Mudar	Quinine
Bomboo leaves	Hellebore	Nutmeg	Rue
Cantharides	Iron	Oleander	Savin
Carrot seeds	Juniper	Pineapple	Squill
Colocynth	Kerela	Plumbago	Tansy
Croton seeds	Laburnum	Potassium Sulph	Yew

Many of these may be procured in any bazaar, and vaunted chemical preparations for this purpose are advertised widely in many newspapers. Every village dai has knowledge of one or more substances that she considers an unfailing agency for procuring abortion, and many are the cases of criminal abortion which never come to light.

None of these substances, however, can be depended on to cause miscarriage and this is to be expected when we consider that in the early months (the time when abortion is commonly attempted), the fœtus is only the length of the width of the palm of your hand floating in a quantity of protective fluid and the mouth of the womb closed. Contractions of the uterus can scarcely be expected to empty the cavity if the mouth of it is closed, and even if contractions of the uterus are brought about they could hardly damage the fœtus which is surrounded by this protective fluid.

Nevertheless, owing to idiosyncrasy or a predisposition to abort, any of these substances may bring on a miscarriage.

There is no drug, and no combination of drugs which will, when taken by the mouth, cause a healthy womb to empty itself, unless under one of two conditions :—

1. The womb is unhealthy and therefore easily emptied by general depressing influences of ill health.
2. The doses administered are actually dangerous to life in themselves.[5]

[5] *Asgarali Pradhania* v. *Emp.*, A. I. R. 1933 Cal. 893 (894)=37 C. W. N. 1151=1934 Cr. C. 2=146 I. C. 590=35 Cr. L. J. 97.

General violence. This includes any form of violent exercise such as, running, jumping, riding, climbing, carrying heavy weights, kneading the abdomen or applying heavy pressure to it by another whilst the person stands against a wall (a common method adopted in India) etc.

General violence of this nature is also very uncertain in its effects. Results depend much on the person's temperament. In one person a simple fall or sudden fright will bring on miscarriage, while another may go through the whole list of the above mentioned exercises without interruption of pregnancy. As in the administration of drugs so also in some cases of general violence, the measures adopted are far too drastic, often resulting in fatal internal injury.

Local violence. As a rule, after failure in the use of drugs and general violence, local violence is resorted to. It is local violence which offers the greatest danger to the life of the woman. One method adopted by the village dai is to insert a small bag of uncooked gram far up into the vagina to rest against the mouth of the womb. The gram slowly absorbs moisture from the vagina and swells. The continued pressure acts as an irritant to the womb. It is frequently allowed to remain in its position for several weeks in the hope that it will cause the womb to empty itself. More often than not it fails.

Another method is to insert into or against the mouth of the womb a fair sized piece of arsenic. It is caustic and irritant. It is sometimes passed within the womb.

Twigs of various irritant plants are often introduced within the womb by skilled abortionists who manage to

induce expulsion of the contents of the organ without injuring the mother. Plumbago, oleander, lal chitra, madar, are those most frequently used in this way. The common method of performing this operation is as follows :

A suitable stick is selected and the greater portion of it is wrapped round with cotton wool, then a paste of the powdered plant is smeared over the cotton wool and passed into the upper part of the vagina or into the womb. The plant itself may be administered internally at the same time.

Among the upper classes of India and Europeans, such objects as knitting needles, hairpins, pencils, catheters and uterine sounds may be inserted within the womb with the object of rupturing the membranes which surround the fœtus and draining off the fluid. The loss of this fluid causes the organ to completely empty itself. The results attained vary with the degree of skill displayed. Fatal injury frequently results or septic infection takes place.

Considerable care is necessary in examining all substances expelled from the womb ; for the honour of an accused woman will depend upon the opinion offered as to the nature of the substance alleged to have been expelled.

Is it a fœtus ?

In miscarriage, during the first three months of pregnancy it is usual for the fœtus to be expelled entire *en bloc* without rupture of the membranes.

During the last six months a miscarriage goes through the two stages as at full term, viz : rupture of the mem-

branes followed by expulsion of the fœtus and after a time by the expulsion of the placenta.

If, in the course of a miscarriage, during the first three months of pregnancy, it is found that the membranes have been ruptured and the embryo expelled alone and no pathological cause can be discovered to explain it, one is justified in attributing the miscarriage to local violence.

If it is concluded that the substance expelled is a fœtus it is important to determine its age from the degree of development it exhibits.

At the end of one month. The ovum is about the size of a pigeon's egg, weighs about twenty grains and is covered with chorinic villi. The embryo is curved and is about one third of an inch long. The eyes are represented as two black dots, the extremities as nipple-like protuberances.

At two months. The ovum measures at its greatest diameter about two and a half inches and the embryo about one and one eighth inch long. The nose, lips and external parts of generation are visible but sex is doubtful. Anus is a dark point. The extremities project slightly from the trunk. At the end of the seventh week centres of ossification in the lower jaw and clavicle have appeared. Towards the end of the eight week in the ribs and frontal bone.

At three months. The embryo measures two to two and a half inches long and weighs one to two ounces. The mouth and eyes are closed. Fingers are separated and nails recognisable. With aid of magnifying glass sex can be detected. The suprarenal and thymus glands are formed.

At four months. The fœtus is from five to seven inches long and weighs from four to eight ounces. Skin is rosy and fairly dense. Sex is distinguishable with the naked eye. The head is about one fourth of the length. The umbilicus is near.

At five months. The length of the fœtus is ten to eleven inches and weighs from seven to ten ounces, varying in individuals. From this month the length of the fœtus in inches is approximately exactly double the number of the lunar months. Hair is present on the head, and lanugo over the whole body. The nails are distinct. The skin is covered with vernix caseosa. Points of ossification have appeared in the pubes and os calcis.

At six months. The length of the fœtus is twelve to thirteen inches and weighs one or two pounds. The colour of the body is a cinnabar red. Eyebrows and eyelashes are beginning to form. Pupillary membrane still present. Fat is commencing to form in the subcutaneous tissues. The testes are just below the kidneys. Centres of ossification are present in the manubrium sterni.

At seven months. The fœtus is from fourteen to fifteen inches long and weighs three or four pounds. The skin is a dirty red colour. The hair is about half an inch long and plentiful. The pupillary membrane is thin and transparent. The eyelids are non-adherent. The large intestine is full of dark olive green meconium. The testes are near the abdominal ring. Centres of ossification are present in the astragalus.

At eight months. The fœtus is from fifteen to sixteen inches long and weighs three to five pounds. The pupil-

lary membrane has practically disappeared. The skin, covered with soft hair is of a rosy flesh colour. The testes are usually in the inguinal canals, but sometimes have entered the scrotum. The open vulva exposes the clitoris to view. The nails have almost reached the tips of the fingers.

At nine months. The average length of the fœtus is twenty-one inches and the weight from five to nine pounds, with the well known signs of maturity. The lanugo has almost disappeared and the hair on the head is about two inches long. The nails project beyond the finger tips and reach the ends of the toes. Both testicles are in the scrotum. A centre of ossification is present in the lower epiphysis of the femur. This latter is the most reliable indication of maturity.

Is it a mole ?

Moles are the diseased appendages of the fœtus and are therefore products of conception.

Is it a cast of the uterus or a polypus ?

In some cases of dysmenorrhœa there is shedding of the menstrual decidua and the entire membrane can often be discovered in the discharge. Again a polypus may be discharged from the womb ; the presence of a pidicle would indicate its character.

What are the signs of recent abortion in the living ?

The signs of recent abortion are essentially those of recent delivery, but are proportionate in intensity to the length of gestation. The signs are more distinct the further the pregnancy is advanced. If abortion should occur

within the first two or three months, the ovum will be expelled entire and in a couple or three days' time the parts resume their normal condition. The signs will be ill defined, there will be slight softening of the external os and a slight enlargement of the uterus. If after the third month (the fourth or fifth month is the most dangerous time) the placenta is likely to be retained and set up inflammation and sepsis. During this time the mouth of the womb will be found open, it may admit a finger for a few days after the abortion and it may or may not be lacerated. It is soft to the feel. The uterus will be enlarged and there may be a discharge from it.

In cases of abortion the following questions may arise.

Was the woman quick with child ?

The reply to this question will be based on the period of the pregnancy which can be determined by examining the fœtus. In the miscarriage occurred in the early months of gestation before quickening is possible, there will be no difficulty in giving a positive answer, but if it took place after the period when quickening is usually felt great caution is necessary. The best that can be done is to describe the appearance of the fœtus, the stage of its development, and to state the usual period of pregnancy at which quickening occurs. The more advanced the period of the pregnancy, the greater the probability that the woman experienced quickening, but the question does not admit of a positive answer.

Did the woman's death result from abortion or the attempt to cause it ?

It is only the fact that marks of violence are found on

a woman who is or was pregnant that can cause suspicion of attempted or completed abortion. The violence can be judged on general principles. If a criminal has resorted to kneeling on the abdomen much violence may be done internally without leaving any bruises on the skin.

Chevers reports the following case :—A woman greatly decomposed was brought for post mortem examination. When the body was laid on the table, the fœtus was in the uterus, but later was expelled by the force of the gases of decomposition. In removing the intestines, the end of a stick which had in some way escaped wounding the bowels, was found lying close along the front of the spine and reaching nearly as high as the diaphragm. On tracing it downwards, it was found to have passed through the posterior wall of the uterus at its lower third, its end was in the upper part of the vagina. The uterus was about six or seven inches long from cervix to fundus, the walls and substance throughout were intensely inflamed, as were the appendages, connecting membranes, and cellular tissue about these parts which were, moreover, greatly infiltrated. The stick was wound round with cloth, which no doubt was, at the time of its introduction into the vagina and uterus, covered with some irritating substance. Madras. Quart. Jour. of M. S. Vol. X for 1866, p. 181.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. Is it difficult or otherwise to induce abortion ?

A. Abortion may occur in an apparently normal female from very simple causes such as, coitus, fright, emotion ; especially at the time when. had not the female become pregnant, menstruation would have taken place ; on the other hand, the most strenuous exercise combined with the ingestion of drugs considered likely to cause the womb to empty itself will fail to induce abortion.

2. Q. Can a woman unaided induce abortion on herself by mechanical means ?

A. Yes. Such cases are of frequent occurrence ; knitting need-

less, pencils, etc., have been inserted within the womb with the help of a mirror. Fatal injuries frequently result.

3. Q. Is it always possible to be able to certify that an abortion has occured ?

A. It is by no means easy to certify that an alleged abortion has taken place or not. Up to the second month the embryo may easily escape from the womb without leaving any traces behind that would differentiate the case from an ordinary menstrual period. The only proof is to find traces of the embryo or of placental tissue, which is usually destroyed before any examination is carried out.

4. Q. What are the signs of a recent abortion ?

A. Essentially those of recent delivery, proportionate in intensity to the length of gestation ; they are more distinct the further the pregnancy is advanced. If abortion occurs within the first three months, the parts resume their normal condition in two or three days. The signs are ill defined, the womb will be slightly enlarged and its mouths slightly softened. If after the third month, the mouth of the womb will be found open for a few days and will be soft to the feel, the womb itself will be enlarged and there may be a discharge from it.

5. Q. From the appearance of the fœtus, can you say if the woman was "quick with child" at the time of the abortion ?

A. This must be based on the period of the pregnancy. If the abortion occurred in the early months of gestation before quickening is possible there will be no difficulty in giving a positive answer but if it took place after the period when quickening is usually felt, caution is necessary. It is really only necessary to describe the appearance of the fœtus, stage of its development and state the usual period at which quickening occurs. The more advanced the pregnancy the greater the probability that the woman experienced quickening, but no positive answer can be given. The whole question is based on an old and erroneous belief that quickening indicated the commencement of life in the child, whereas, life begins at the moment the ovum is fertilised.

6. Q. Can injuries to the vaginal or outer surface of the

womb be attributed to the passage of its contents in a case of abortion ?

A. Any such external injury must be attributed to mechanical interference.

7. Q. Is there any drug that will cause abortion without endangering the life of the person taking it ?

A. There is not one single internal medicament which it can be consistently with experience asserted, that even abortion has followed its use, it must have produced this abortion and there is no drug or combination of drugs which will when taken by the mouth cause a healthy uterus to empty itself unless it be taken in doses sufficiently large to seriously endanger by poisoning the life of the female who takes it or them.

8. Q. Is the drug in question, noxious ?

A. If a substance produces an ill effect on a person it must be considered noxious.

9. Q. Can you definitely say that abortion has taken place ?

10. Q. What are the causes of natural abortion ?

A. It may result from constitutional disease of the mother, local disease of her generative organs, or disease of the fœtus itself. It might occur in a normal woman from coitus, emotion, fright etc. ; some woman have a predisposition to abort.

11. Q. Did you discover any condition in the body rendering natural abortion a likely occurrence ?

12. Q. How far was pregnancy advanced ?

13. Q. Was this the woman's first pregnancy ?

14. Q. Were there any characteristics in the substances expelled from the womb that would lead you to suspect criminal abortion ?

A. In the later months of gestation, as a rule, the expulsion of the uterine contents is preceded by rupture of the membranes. In the first three months of gestation this is not the case. It is the rule for the fœtus to be expelled entire *en bloc* without rupture of the membranes. If an abortion, during the first three months of

gestation occurs, and the membranes are found ruptured and the embryo expelled alone and no disease of the embryo or of the mother is discovered, one is justified in attributing the abortion to mechanical means. This rupture of the membranes is not absolute proof of criminal abortion, but M. Leblond, in eighteen cases of abortion during the first three months of pregnancy, found rupture of the membranes in only one case, in this the membranes were found to be abnormally friable.

15. Q. Was the product of the womb really a fœtus ?

16. Q. Could it have been merely the coats of the womb and unconnected with pregnancy ?

A. Fleshy masses may be expelled from the womb which may have nothing to do with pregnancy. Polypi may be discharged from the womb.

17. Q. Is a fœtus, expelled during the early weeks of gestation plainly recognisable as such ?

A. No. Recognition of such material presents difficulty during the early weeks of gestation, more especially if it happens to be decomposed. A blood clot has been often mistaken for an embryo.

18. Q. Is it possible for the womb to rupture spontaneously, during the early months of gestation ?

A. A spontaneous rupture of the uterus is impossible during the early periods of pregnancy.

19. Q. Would a rupture of the uterus immediately incapacitate a person ?

A. Cases of extensive rupture have gone about their usual occupations for several hours before serious symptoms have supervened. Much will depend on the rapidity of hæmorrhage that will follow the rupture.

CHAPTER XIII

INFANTICIDE

"The madness of desire shall defeat its own pursuits; from the blindness of its rage thou shalt rush upon destruction."

Section 299 I. P. C. Whoever causes death by doing an act with the intention of causing death, or with the intention of causing such bodily injury as is likely to cause death, or with the knowledge that he is likely by such act to cause death, commits the offence of culpable homicide.

Explanation 3. The causing of the death of a child in the mother's womb is not homicide. But it may amount to culpable homicide to cause the death of a living child, *if any part of that child has been brought forth though the child may not have breathed or been completely born.*

Section 315 I. P. C. Whoever, before the birth of any child, does any act with the intention of thereby preventing that child from being born alive, or causing it to die after its birth, and does by such act prevent that child from being born alive, or causes it to die after its birth, shall, if such act be not caused in good faith for the purpose of saving the life of the mother, etc.

Section 316 I. P. C. Whoever does any act under such circumstances that if he thereby caused death he would be guilty of culpable homicide, and does by such act cause the death of a quick unborn child, shall be punished etc.

Section 317 I. P. C. Whoever being the father or mother of a child, under the age of twelve years, or having the care of such child, shall expose or leave such child in any place with the intention of wholly abandoning such child, shall be punished etc.

Where a mother abandoned her child with the intention of wholly abandoning it, and knowing that such abandonment was likely to cause its death, and the child died in consequence of the abandonment, she was convicted only under section 304 and not under section 317.[1]

Section 317 I. P. C. was intended to prevent the abandonment or desertion by a parent of his or her children of tender age, in such a manner that the children not being able to take care of themselves run the risk of dying or being injured.[2].

Any person receiving an infant from its mother on the understanding that the mother never wished to have it back, must be regarded as a person having the care of it.[3]

The gist of the offence is the exposure and leaving with the intention to wholly abandon.[4]

Where a mother left her home ten days after the birth of a child and the child was fed for four days after the mother's departure, partly with cow's milk and partly from the breast of the infant's maternal aunt, and eventually the child died of weakness, probably resulting from infantile diarrhœa.[5]

The child must die in consequence of the exposure.[6]

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[1] *Banni*, 2A. 349. Straight J.

[2] *Felani Hariani*, 16 W. R. 12. Bayley and PaulJ. J.; see also, 33 P. R. 1872; 4 P. R. 1879; 5 P. R. 1878.

[3] *Blanche Constance Cripps*, 18 Bom. L. R. 934; 41 B. 152; 3 Bom. Cr. C. 217; 37 I. C. 306; 18 Cr L. J. 98. Beaman and Heaton J. J.

[4] *Antakke*, 24 Mad. 662; 4 P. R. 1879; 33 P. R. 1872; 23 A. W. N.; 18. A. 364.

[5] 1893 A. W. N. 100

[6] *Kuda Bux*, 10 W. R. 52. Looh and Glover J. J.

Explanation. This section is not intended to prevent the trial of the offender for murder or culpable homicide as the case may be, if the child die in consequence of the exposure.

Section 318 I. P. C. Whoever, *by secretly burying or otherwise disposing of the dead body of a child, whether such child die before or after, or during its birth,* intentionally conceals or endeavours to conceal the birth of such a child, shall be punished etc.

It is sufficient if the body is temporarily concealed with the intention of removing it elsewhere when opportunity arises.[7]

It is sufficient to show that a child was born and it was sufficiently developed to have lived if born alive.[8]

The mere leaving of the body where the birth took place did not constitute an offence as it did not amount to a secret disposal.[9]

Under seven months the probability is that the child would not be born alive.[10]

In 2 Cox C. C. 489 (*Queen* v. *Morris*), Coltman, J., decided that the concealment sought to be checked by this type of legislation is that which would keep the world at large in ignorance of the birth of a child. While therefore the offence may on the one hand be committed, even though the pregnancy and delivery be made known to a confidante, so on the other hand, it is not an offence within the section if the endeavour to conceal proceeds from a desire to escape individual observation or anger. A woman is not bound to announce that she is going to have a child, and if the child lives she is quite at liberty to keep its existence secret. Sec. 318 I. P. C., is designed to punish a person for intentionally concealing the birth of the child from all and sundry ; though, she will not escape the

[7] 13 C. P. L. R. 188.

[8] *Radha Rangu*, 1 Bom. L. R. 155.

[9] Mt. *Saraswati*. 1 N. L. R. 89 ; 5 C. P. L. R. 29 diss.

[10] *Bilaee*, 2 C. P. L. R. 153.

consequences of her act if she merely discloses the fact of the birth to some confident. A previous announcement of the birth to some persons does not render a subsequent secret disposal innocent : 1 Mood C. C. 480 (*R.* v. *Douglas*). But where to conceal its birth a woman left a baby in the corner of a field to die of exposure and the dead body was subsequently found there ; it was held that she could not be convicted of secretly disposing of the dead body of a child : 10 Cox C. C. 448 (Jane Mary).[11]

There is an English case, II Cox C. C. 684 (*Reg.* v. *Mary Aun Williams*), in which Montague Smith, J., decided that in order to convict a woman of attempting to conceal the birth of her child, the dead body must be found and identified as that of the child of which she is alleged to have been delivered.[11]

Two forms of infanticide are usually described, viz., **infanticide by omision** and **infanticide by commision.**

Homicide is destroying the life of a human being. Popularly the term "infanticide" is used to denote homicide where the human being killed is a newly born infant. The law, however, makes no distinction. They both fall under **Section 302 I. P. C.** but there is this difference,—**the law assumes that every child is born dead until the contrary is proved,** and consequently in cases of the alleged homicide of a new-born infant proof of its having been born alive is required.

While it is necessary under the English law that the child should be **completely** emerged to constitute it a human being, Sec. 299, explanation 3, I. P. C. enacts, that, it is culpable homicide to cause the death of a living child, if any part of that child is born even though the

[11] *Sailabala Dasi* v. *Emp.*, A. I. R. 1935 Cal. 489=69 C. W. N. 990=1935 Cr. C. 881=36 Cr. L. J. 1460=158 I. C. 761=62 Cal. 1127= 62 C. L. J. 260.

[12] *Mst. Badhu*, 29 P. R. 1915. Rattigan and Jones, J. J. Fsslie.

child may not have breathed. It must be proved *that the child lived. While the child is in the womb it is possible* for it to breathe and yet die before any part of its body has been born. It is thus necessary to prove not only that the child breathed, but that it breathed and was living after it was completely or partially born.[12]

It is necessary therefore to know the meaning of live birth.

In the case of alleged infanticide, the medical jurist having examined the body of the child, will be asked to give his opinion on the following questions :—

1. Has the woman charged been recently delivered ?
2. Is the body of the child examined, that of a viable child ?
3. Was the child alive when any part of it was brought forth ?
4. If the child was born alive, what caused its death ?

With reference to 1 see Chapter VIII.

With reference to 2. The degree of maturity of the child, is a factor which must be taken into account in framing an answer to the question : Did this child live after its birth ? because the less the degree of maturity, the less the probablility of live birth. Indeed, in the case of a child born before the 120th day of intra-uterine life, the possibility of live birth may be altogether excluded. For the characters whereby the degree of maturity can be ascertained see Chapter V.

With reference to 3. Proof of the child being dead before birth or of being incapable of maintaining a separate existence, may be adduced from the following facts :—

(a) Evidence of immaturity or non-viability. **Children less than the age of seven months of uterine development are medically considered, in the great majority of cases, to be incapable of maintaining a separate existence.**

(b) A monstrous birth. Such is generally considered to be incapable of living a separate existence. It, however, will entirely depend upon the character of the monstrosity whether maintenance of a separate existence is possible or not. The Siamese twins, lived for many years. But acephalous (headless), anencephalous (no brain), hemicephalous (half a head), ectocardiac (displaced heart), and other abnormalities usually die quickly after birth. To kill a monster, or prevent it from living, is murder in the eye of the law.

(c) Evidence of intra-uterine death. A child whose body bears marks of maceration (putrefactive changes induced by the body lying in the liquor amnii) would likely be born dead. But then you have to decide whether such appearances were produced within or without the mother's body, since all bodies to be examined are not found fresh, but, on the contrary, some are found advanced in decomposition.

Given the body of a child which presents none of the foregoing appearances, how are we to decide as to whether or not it was born alive ? It can only be answered

from the signs found by post mortem examination of the following :—

1. Condition of the lungs.
2. Changes in the umbilicus.
3. Changes in the digestive tract.
4. Changes in the circulatory organs and channels.

1. **Condition of the lungs.**—Prior to independent life, the lungs are absolutely without function. The course of the fœtal circulation is regulated to suit this condition. Before birth, the lungs only recieve that amount of blood-supply which is necessary for their vitality and growth ; after that event, all the blood in circulation in the body of the child must pass through these organs to become reaërated. In order that the process of aeration may be accomplished, the respiratory function must be set in operation. Both changes which happen at the same time at the birth of a living child, produce, therefore, physical changes in the lungs, with respect to volume, colour and weight.

Changes in the volume of the lungs.—Before birth the lungs do not fill the cavity of the chest, the left not even partially over-lapping the pericardium. In texture they resemble the liver, the lobules are indistinctly marked. After respiration, they more or less fill the cavity of the chest. The left lung now more or less covers the pericardium. Inflation is more marked in the apex of the right lung ; here the air enters with the least difficulty. Between these two conditions of non-inflation and complete inflation there are intermediate stages of incomplete

inflation, where it is almost impossible to affirm from physical appearances alone whether or not air has entered the lungs; to make certain, further procedure is necessary.

Colour of the lungs.—Prior to respiration, the lungs are reddish-brown or liver colour. The margins may appear more red on account of their greater translucency. Fœtal lungs present no patches of different colour. After respiration, the colour becomes marbled in general aspect, of dark bluish-red ground with many bright red limited patches or, bright red ground colour with dark bluish-red circumscribed patches. **This marbling in appearance and colour is absolutely characteristic of natural inflation.** This cannot be simulated by any artificial method. With artificial inflation the colour becomes of a uniform bright red.

Weight of Lungs.—When respiration takes place, there is an increased supply of blood to the lungs, in consequence of which their weight is increased. A lung which contains air, is specially lighter than water, and therefore, will float.

The fœtal lung differs in a marked degree from the lung of an individual who has breathed. After respiration has been fully established, the lung soon comes to occupy almost the whole space allotted to it in the pleural cavity; in the fœtus, on the other hand, the lung is packed away at the dorsal aspect, and occupies a relatively much smaller amount of space in the chest cavity. Further, it is firm to the touch and sinks in water. It is only when air, and an increased supply of blood are introduced into the lung that it assumes the soft spongy and buoyant qualities which are characteristic of the adult lung.

The Hydrostatic test.—Take a hand-basin, and fill nearly full with water. Place the lungs and heart en masse in the water in the vessel; note what happens. The mass may either sink completely, or it will float more or less completely although submerged in greater or lesser bulk. Let us assume that it floats, but that the mass is submerged; then remove the heart from the lungs, and each lung from the other, and test each lung separately; should each float perfectly, then wrap the lung in a piece of soft cloth, place the whole upon the floor, and stand upon the mass with the flat part of the sole of the boot; then test the floatation once more; if it still floats freely, then it may safely be affirmed that the child has breathed freely.

Now let us assume that the mass sinks completely; then detach the heart and lungs and test each lung separately. Assume that the right lung sinks in its entirety; then cut up the lung into pieces and test each piece separately, noting whether each piece sinks or floats; separate the pieces which have floated, apply pressure to each in the above-named fashion, but with a correspondingly less severe pressure, and test floatation of the pressed pieces once more; if they still float, it will indicate that these pieces, at least, contain atmospheric air. Repeat the process with the left lung, and at the conclusion note the number and situation of the pieces which have floated, and thereafter, pronounce an opinion as to whether respiration has been imperfectly established or but weakly established.

In cases of imperfect inflation the upper part of the

right lung is likely to float when the major portion of the left, and the bases of both lungs sink.

If one or both lungs, or if even portions of them float after pressure has been duly exercised upon them, the child has breathed perfectly, or imperfectly, and if both, and all the portions of both lungs sink, the child has not breathed at all.

An artificially inflated lung has a uniform bright red colour, the surface on section presents a dry appearance, while in natural inflation, bloody frothy fluid will escape; the stomach and intestines, are apt to become abnormally filled with air, a condition only commonly found in far advanced decomposition.

The gases of putrefaction may assist in causing the lungs to float, but there must be substantial evidence of such putrefaction coupled with non-inflated state of the lungs before this view can be entertained in an individual case. It would be absurd to expect that such products would be present in lungs to such an amount as would of themselves cause flotation, where the rest of the body bore no evident marks of putrefaction. Besides in a child's body the lungs are amongst the last organs to undergo putrefaction, and therefore, marked evidence of putrefaction of the body generally would require to be present to permit of these gases being deemed an important factor in the flotation. When lungs and body are far advanced in decomposition, it becomes impossible to determine whether flotation, if it takes place, is due to the presence of atmospheric air, or putrefactive gases, or of both combined. Therefore admit frankly your

inability to affirm that the child had breathed. This much can be safely said :—If a putrefying lung sink in water, it is good evidence that the child had never breathed, or had but imperfectly respired.

Assuming that the child had survived its birth, but has some days afterwards been put to death, attention must be given to the conditions indicative of the period it has lived.

(a) The changes which occur in the umbilical cord are of great moment in determining this question. The first signs of separation may be apparent from 36 to 48 hours after birth, and consist of an inflammatory line at the point of junction of the cord with the abdomen. The line of separation becomes deeper daily till the 5th, 6th, 8th, or even the 9th day when separation is complete. Separation in the largest number of cases is accomplished on the 6th day, in the next largest, on the 5th day. The 5th or the 6th day therefore is the average.

(b) Look for the presence or absence of food in the stomach, and the presence or absence of meconium in the small intestines.

The presence of food, such as partially digested milk would point to the fact that the child had survived its birth, although its absence would not negative this conclusion. Absence of meconium **does not necessarily** indicate that the child has survived its birth.

The umbilical vessels begin to contract about 10 hours after birth, and are completely impervious within a week after. The foramen ovale, ductus arteriosus, and ductus venosus become functionless in ordinary cases,

sooner or later after birth, but they are all pervious in the newly born child. **A newly-born child is one under 15 days old.**

The following conditions, when found on the body of a newly-born child, would warrant an examiner in affirming that the child had breathed :—

1. When the child is sufficiently mature to be able to live an independent existence. Maturity may be held established if centres of ossification are found in the **epiphysis of the lower end of the femur,** and in the **tarsal cuboid bone.**

2. When the lungs more or less completely fill the thoracic cavity.

3. When the colour of the lungs is marbled or mottled.

4. When the lungs or portions of them, after being duly tested, float in water.

5. When a bloody, frothy fluid exudes from the lung section under water on slight pressure, and fine bubbles of air are seen to escape through the water.

The following case of post mortem crying was reported by Dr. H. C. Craven Veith, M.R.C.S., L.R.C.P., in the B. M. Journal of the 31st of May 1924 page 956 :—

"On March the 3rd 1923, I was called to a confinement .....I found a face presentation with the chin rotated into the sacral hollow. The patient was in a very exhausted condition, so I obtained the necessary assistance, perforated and crushed the head, and delivered with the cranioclast.

Whilst delivering the placenta the dead and decerebrated fœtus was left on the end of the bed, and suddenly it took two or three deep gasping breaths and began to cry loudly. The crying lasted about two minutes.

Had one performed a post mortem examination on the body of the child, one would have found the lungs very fully expanded and the inference would have been that it had been born alive, and then suffered a violent death".

If the child was born alive, what caused its death ?

In suspected or alleged infanticide, the essential question to be decided, is, the cause of the child's death. Was it due to natural causes, disease, or faults of development, or to accident, or to acts of a criminal character ? And if the latter, were they committed before or after birth ?

Natural causes.—During intra-uterine existence, the fœtus may die from many different diseases, either affecting it directly, or involving the placenta, or from morbid conditions of the mother. It may die from faults of development, or its death may be due to inherent deficiency of vitality.

Of all the diseases to which the fœtus is liable, syphilis is the most common cause of death in utero, or soon after birth. The infant presents an unhealthy, shrievelled, and often senile appearance. Skin is blotchy, and may exhibit copper coloured patches. Bullæ are often found on the hands and feet and other parts. In the lungs, areas of a dense white colour are seen airless

even though the child breathed. The whole of the lungs may be involved. Gummata may be found. There may be an osteo-chondritis of the lower end of the femur, which is most often affected. Death of the child may be due to disease of the heart, or brain, or other organs, to rickets, rheumatism, leukæmia, malignant disease, or from the specific infectious diseases transmitted from the mother. Any febrile condition affecting the mother may cause the death of the fœtus.

Children who die during gestation, especially from natural causes are usually retained for some days or even for weeks. In the latter case the body is macerated. Putrefaction does not occur in the fœtus within the intact membranes.

Disease of the placenta causes death of the fœtus, so does separation, which may be caused by a fall or a blow.

During parturition, the child may die from various causes. More than half of the still-born children die during delivery. The causes of death during parturition are premature interruption of the placental circulation, and pressure on the child's head.

One of the commonest causes of still-born is asphyxia, induced by premature interruption of the placental circulation. It is possible for the child to commence respiration within the uterus, if so, the fluid in which it lies is drawn through the mouth and nostrils into the trachea and bronchi. Deprived of oxygen, deaths occurs unless the child is quickly delivered, and even after birth the presence of fluid in the trachea and bronchi may prevent the entrance of air. The post mortem appea-

ances in these cases are distinctive, liquor amnii, vernix caseosa, and often, particles of meconium, are found in the trachea and bronchi, and also in the stomach. The lungs are congested, the respiratory efforts cause the establishment of the pulmonary circulation; petechial hæmorrhages are well marked, beneath the pleura, pericardium and on the thymus gland. If the mouth and nostrils were closed by the membrane or by being pressed against the uterus, no fluid can enter, and the trachea and bronchi are empty, the other signs are present. A cyanosed condition of the face, petechiæ and injection of the conjunctivæ, are also generally present in cases of antenatal asphyxia.

A child may be born alive and may breathe, notwithstanding the presence of liquor amnii in the trachea and bronchi.

The common causes of interference with the placental circulation are pressure on the cord, owing to prolapse, or to being round the child's neck.

The caput succedaneum may be found on the head or on the buttocks. Its position is an indication of the presentation, its presence shows that parturition lasted some time; it is not formed in precipitate labour. The formation of a caput succedaneum and of petechial hæmorrhages or larger blood effusions shows that the child was alive during parturition. Blows on the head after birth will cause effusion of blood; marks of injury to the surface will, as a rule, enable them to be distinguished from the effusions caused by compression during birth.

If labour is prolonged, and especially, if the child's

head is subjected to excessive compression, serious or fatal hæmorrhage may occur from rupture of the meningeal vessels. The bones of the head may be bent or fractured. Extravasations of blood may occur at the base of the brain, along the spine, in the pleura, and in the peritoneum

Death of the Child after birth.—

The exposure of the dead body of a fœtus, does not necessarily indicate either that it has been born alive or that it has met with a violent death.

The child may die from immaturity. Children of full term may die after birth from inability to sustain a separate existence, a condition known as Birth Debility, and post mortem examination may show no cause of death.

The child may die after birth, from injuries sustained during parturition. These cases require very careful examination, the injuries may be caused by uterine compression, or by efforts of the mother or others to assist delivery.

Precipitate labour may be fatal to the child. When the plea of precipitate labour is put forward, examination of the child's body requires great care. If delivery occurred in the upright posture the umbilical cord will usually be torn, generally close to the body of the child near the navel. Fractures, the result of precipitate labour, generally occur in the parietal bones, and take the form of multiple fissures. In case of infanticide by blows on the head, complete smashing of the skull is almost invariably found. Injuries to the head caused by precipitate labour are seldom immediately fatal, the child lives and breathes for some time. Hæmorrhage from the torn

cord is rarely great, the blood coagulates and the bleeding is stopped. In fatal hæmorrhage from the cord it is probable that the infant was a "bleeder".

Death of the Child from criminal acts—The commonest means adopted for killing newly-born infants is by causing asphyxia in some way. Closure of the mouth and nostrils, by the hand, or with a cloth is one way. Marks of the fingers and nails will be found on the cheeks and lips, bruises will also be present. But bruises and scratches may be due to attempts of the mother, or others, to assist delivery ; even fracture of the lower jaw has been caused in this way. If the membranes were tightly drawn over the child's head, no sign of injury would be caused, and if it was done before the child had breathed, the case would pass for one of intra-uterine suffocation. The introduction of the finger into the mouth and throat is sometimes practised ; abrasions of the pharynx are generally present. The pharynx may be plugged with a piece of cloth. The mouth and throat may be plugged with mud or cow-dung or the child may be suffocated by burying its face in these or other substances.

It was proved that the body of the child was discovered, lying on its abdomen, in a box containing wool, with its face raised and its mouth open. A red worsted comforter had been passed twice round the neck, and was tied a second time in a single knot over the chin. In the mouth which was open, was found a small quantity of fine flocks of wool. The medical evidence showed that the child had been born alive, the left lung being fully inflated. The brain was congested. There was no mark produced by the ligature on the neck either internally or externally. Death was referred to obstructed respiration (suffocation), caused partly by the ligature and partly by the wool in the mouth ; but the latter was considered to be the more active cause. In the defence it was urged that the ligature

could not have produced strangulation, because the comforter was tied upon the chin ; that the medical evidence showed the wool in the mouth to have been the immediate cause of death ; and this was probably taken into the mouth by the child itself in the instinctive act of breathing and not put there by the prisoner for the purpose of suffocation. The child had probably been placed carelessly on a quantity of wool, into which it had sunk by its own weight and this had caused its death. The Judge in charging the jury said, that had the prisoner intended to choke the child with the wool she would have inserted enough to fill its mouth. The prisoner was acquitted. Taylor Med. Jur. p. 281.

The child may be throttled. Strangulation by a ligature is a common mode of infanticide.

Evidence proved that the prisoner was delivered of a child under much suffering, on a stone floor, and was heard to cry several times. The witness left it in charge of its mother, and on returning shortly afterwards, she found it dead with black mark upon its throat. The midwife who separated the child from its mother, deposed that it gave a short half-cry ; she thought it was dead when she first saw it, and the marks on the neck were not more than a woman might have caused in attending to deliver herself. The medical evidence proved that there were many ecchymosed marks about the throat of the child, as well as on the right side of the neck, and blood was effused beneath them. The marks might have been produced by the fingers ; death had been caused by pressure on the windpipe. The Judge left it to the jury to say whether the marks of violence might not have been unconsciously inflicted by the prisoner herself during labour. The jury returned a verdict of not guilty. Taylor Med. Jur. p. 288.

The tissues of a new born child are very delicate and easily injured, consequently even a ligature of soft cloth will produce a mark and frequently the pattern will be impressed on the skin. This is also seen when a cloth is forcibly pressed over the mouth and nostrils.

In a case reported by Evans, of death of a new born child by strangulation, it was stated : Great violence had been used, but

there was no trace of discolouration in the course of the ligature, or of ecchymosis of the tissues beneath. The muscles were very dark in colour. *The skin had been so compressed as to give the impression of coarse towelling of a close texture having been used.*

In a strangulation mark, the surface is abraded, blood stained and hard and parchment-like when dry. *The tissues beneath are injured, and filled with extravasated blood. The defence might try to make out that the mark* is the result of the cord being found tightly wound round the neck at birth. The cord is not infrequently found round the neck generally in two or three turns, but it rarely leaves any mark on the neck, even in those cases where it had to be divided to permit the completion of delivery. Should a mark be caused, it will be faint, the surface soft and smooth, not abraded, and the tissues beneath uninjured. Moreover, if the child was strangled within the uterus, the lungs would be unexpanded.

The umbilical cord has been used as a ligature to strangle the infant. The mark caused would show no abrasion of the surface, but there would be extravasations of blood in the tissues beneath. The cord would show marks of having been grasped.

Pressure on the chest is another means of infanticide. Bruises and finger marks are found on the skin and tissues. Children are not infrequently killed by smothering ; a blanket or other cloth is thrown over the child. No external marks are found. Infanticide by drowning is common. The usual post mortem appearances of drowning are found.

Fractures of the skull from homicidal violence are almost invariably very extensive. Infanticide by thrusting

a needle into the brain through a fontanelle, or an orbit has been recorded.

A pregnant woman, within five days of the ordinary term of gestation, fell, while running, so that her abdomen struck sharply against an angular stone. There was an immediate loss of blood, and the movements of the child ceased. Parturition came on four days after the accident. Stanelli found the head of the child much enlarged and in a putrid state. The woman died in an hour. On examining the child, the skull was found almost crushed, the parietal having become separated from the temporal bones as if by external violence. The marks of injury were entirely confined to the head. Gaz. de Hop. Nov. 7. 1846, p. 523.

Death may be caused by neglect, or want of assistance at birth, or by exposure.

The following comparative details show the changes produced before and after respiration in the new-born infant :—

Before Respiration	After Respiration
1. Uniform dark liver colour.	1. Mottled red or pink and grey with blood vessels over surface.
2. Solid, occupy only the upper dorsal part of the chest, leaving pericardium exposed.	2. Expanded and reach the sides of the pericardium.
Not crepitant when handled or cut, and exude little blood on section.	3. Crepitate when handled or cut, and exude frothy blood on section.
4. No inflated air vesicles visible, but possibly bubbles of gas due to putrefaction, present on surface of lung.	4. Inflated air vesicles visible on surface of lung.
These are :—	These are :—
(1) Large, not uniform ;	(1) Small, nearly uniform ;
(2) Not in groups ;	(2) In groups :
(3) Project considerably from surface of lung ; and	(3) Project only slightly or not at all, and
(4) The gas in them can be pushed readily from place to place.	(4) Cannot be pushed from place to place.
(5) Bubbles collapse on pricking.	

FACTS BEARING ON THE QUESTION OF LIVE BIRTH.

1. **A few minutes to some hours after birth :**

   The stomach contains a frothy fluid, and clots will be found in the vessels of the umbilical cord.

2. **After twenty-four hours :**

   Contraction and thickening of the coats of the umbilical arteries, near the umbilicus.

3. **After the second day :**

   Contraction throughout the greater part of the umbilical arteries, and the epidermis begins to exfoliate.

4. **After the third day :**

   Contraction of the umbilical arteries to their termination in the iliacs. Slight contraction in umbilical veins. Dessication of the cord, the formation of an inflamed ring, and a slight purulent discharge at the point of ultimate separation.

5. **After the fourth day :**

   The cord separates.

6. **After the fifth day :**

   Contraction of the umbilical veins complete.

7. **After the seventh day :**

   The ductus arteriosus contracted to the size of a crow quill.

8. **From eighth to tenth day :**

The fœtal openings (ducts arteriosus, ductus venosus, and foramen ovale) become obliterated.

9. **From tenth to twelfth day :**

The osseous centre of the femoral epiphysis measures 5 to 6 millimetres in diameter, i.e. 1/5 or 1/4 inch. Cicatrisation of the umbilicus. If healed, indicates infant has lived for about 21 days.

10. **Of doubtful value :**

Presence of food in stomach. Depth to which air has penetrated in the intestines. Presence (quantity and situation) of the meconium.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. What are the signs of recent delivery ?

2. Q. Can you say with any degree of certainty that a woman had been delivered a fortnight after the alleged occurrence ?

A. Proof of this must be confirmed by several signs of recent delivery corroborating one another. After a fortnight many of the signs disappear.

3. Q. Was the child born dead ?

A. A child born before sixteen to twenty weeks of utero-gestation can show no signs of life whatever. For civil cases, the evidence of life at birth consists of any of the following :—(a) The slightest possible movement of a limb or twitching of a muscle. (b) The slightest attempt at respiration. (c) The slightest pulsation of the umbilical cord. These indications produce no effect on the body which leaves traces of occurrence post mortem. It is impossible for any one but a witness present at the birth to swear that a child of six

months was not born alive. The mere hearing of a cry without occular proof that some portion of a child was born is not sufficient, for a child may cry before any part of it is born and while the head is in the vagina and cases have been recorded where crying was audible while the child was still within the womb. The signs of live birth which leave traces post mortem will be found in the text.

4. Q. Was the child viable ?

A. There is no case recorded of a child being reared which has not undergone a period of utero-gestation of at least one hundred and eighty days, a few between one hundred and eighty and two hundred and ten days have lived and several between two hundred and ten and two hundred and forty days.

5. Q. What is the hydrostatic test ?

6. Q. How did you perform the hydrostatic test in this case ?

7. Q. What difference is there in the appearance of the lungs, before and after respiration ?

A. Before respiration the lungs are of a pale brown or chocolate colour, similar to the liver ; this colour is uniform and never mottled ; they are firm and compact like the liver and do not crepitate when squeezed ; they lie close to the spine and are scarcely visible when the chest cavity is opened, only their anterior borders project forwards close to the chest wall.

After respiration the colour is lighter and redder and is mottled or marbled in appearance showing either bright red patches on a dark bluish-red ground or bluish patches on a bright red ground ; they are elastic and crepitant, on section, a blood stained froth can be squeezed out ; the volume is greater and they occupy a much larger portion of the chest cavity ; the previous sharp margins are rounded.

8. Q. What would lead you to conclude that floating of the lungs was due to respired air or that it was due to putrefaction ?

A. The gases of putrefaction will be expelled by pressure. If the lungs or portions of them float after compression, respired air is also present. If the floating is due to putrefactive gases, putrefaction must be considerably advanced and signs of it will be found in other

parts of the body. Bubbles of gas are seen between the lung and its covering membrane (pleura) and by slight pressure these bubbles may be made to run along under the pleura showing that they are external to the air cells. If on section a portion of putrid lung is squeezed while under water comparatively large bubbles will ascend, when only respired air is present, the bubbles liberated are much smaller.

9. Q. Because portions of a decomposed lung floated would you definitely say that the child had breathed and was born alive ?

A. If the lung floats as a whole and all the pieces float after having been subjected to compression complete inflation by respiration has occurred. If some of the pieces sink and others float after being subjected to compression, partial inflation of the air cells has taken place. If all the pieces sink the strong presumption is, that the child has not breathed at all. Gases of putrefaction can be expelled by compression but if the putrefaction is such that the lung tissue is softened and broken down, pressure will drive out respired air as well as putrefactive gases.

10. Q. What does the hydrostatic test prove ?

A. The floating of the lungs in water is not a proof that a child has been born alive nor is the fact of their sinking in water any proof that the child was born dead. The floating proves only that the child has breathed ; the sinking, either that it has not breathed or breathed but imperfectly. A child may breathe before, during or after birth but the test will not indicate when respiration was performed. A child may survive birth for many hours when no air has reached the lungs (See Taylor on this point).

11. Q. Was the weight of the lungs, that which usually obtains in a mature infant ?

12. Q. What are the signs of maturity ?

A. Length of body nineteen inches, average weight seven pounds, pupillary membrane absent, navel said to be midway between pubes and ensiform cartilage, testicle in scrotum and labia majora cover vagina and clitoris, centre of ossification in the lower epiphysis of the femur.

13. Q. Did you examine the umbilical cord ? What did you find ?

14. Q. If death was the result of bleeding from the cord, how would you know ?

A. All the organs in such a case will be pale and anæmic, that is, devoid of blood (almost).

15. Q. What distance from the navel was the cord divided, and were the edges such as would lead you to believe they were cut or torn across ?

A. In precipitate labour, if delivery occurs in the upright posture, the umbilical cord will usually be torn across close to the body of the child near the navel. Bleeding from such a tear is seldom great, but infants bear the loss of blood badly.

16. Q. Could marks resembling homicidal violence result in attempts at self-delivery ?

A. A woman may unintentionally injure her child in efforts to drag it from her. The presence of signs of respiration more or less complete is strongly presumptive against death being the result of accident, yet again the injnry may not be immediately fatal although accidentally inflicted, sufficient time elapsing between its infliction and the death of the child to allow of respiration.

CHAPTER XIII

UNNATURAL SEXUAL OFFENCES

"This detestable vice is a poison lodged in the soul, which contaminates and always destroys everything that is good in it."

An unnatural offence is defined by Section 377 I. P. C., to be "carnal intercourse against the order of nature with any man, woman or animal," and like rape, "penetration is sufficient to constitute the carnal intercourse necessary to the offence described in this section."

The various forms of unnatural intercourse are comprised under the terms, Sodomy, Tribadism, and Bestiality.

Sodomy means anal intercourse between two men or a man and a woman; pederasty is the same, the passive agent being a boy.

Tribadism is a form of sexual gratification practised between two women, the clitoris of one being inserted in the vagina of the other. Since it is not publicly known, it has little medico-legal importance.

Bestiality means intercourse between a man or a woman and an animal.

Unnatural sexual intercourse has been practised in all ages and in all countries. At the present time it is very prevalent throughout the East. In China it appears to be looked on as a legitimate and proper pleasure.

The crime of sodomy is extremely common in India; fewer cases come to light now than in days gone by.

It appears to be not uncommon for men to take sometimes the part of the active agent, sometimes that of the passive. There are also individuals who habitually, as a trade, take the part of passive agents ; many of them are eunuchs and profess to live by dancing and singing, some have been castrated in early childhood in order to be brought up to the trade, others voluntarily undergo the operation in adult life ; some retain their genitals.

The fact that many cases of inverted sexual instinct have a pathological basis, shows that sodomy may be the act of an irresponsible person especially in old men of spotless reputation which makes it necessary, in court, to examine not merely the deed, but also the mental condition of the perpetrator.

In connection with this crime the term "active agent" signifies the male person who effects intercourse, and "passive agent" signifies the male or female on whom intercourse is practised. Both active and passive agent (if consenting) are equally guilty.

In order to sustain a charge of sodomy, the evidence required is the same as in rape, with two important exceptions :

1. It is not necessary to prove the offence to have been committed against the consent of the person upon whom it has been perpetrated ; 2. Both active and passive agents are guilty. If it is proved that penetration has taken place, then the crime of sodomy has been committed.

The offence made punishable under sec. 377 I. P. C., requires that penetration, however little, should be proved strictly. Thus then an attempt to commit this offence

should be an attempt to thrust the male organ into the anus of the passive agent. Some activity on the part of the accused in that particular direction ought to be proved strictly. A mere preparation for the operation should not necessarily be construed as an attempt. Where there was an intention on the part of the accused to satisfy his lust by a carnal intercourse against the order of nature and he made every preparation to satisfy his lust, but before he could thrust his organ in he spent himself, he had not done any act which might be construed as an attempt to commit the offence of sodomy.[1]

Coitus per os falls within the provisions of Section 377 I. P. C.[2] Carnal intercourse against the order of nature with a bullock by placing penis inside the nostrils of the bullock is also punishable under sec. 377 I. P. C.[3]

It is not conceivable that the offence of sodomy could be perpetrated on an adult of either sex against his or her will in the absence of unconsciousness, as the slightest resistance would suffice to prevent its preparation. The act cannot be perpetrated on a person during sleep without his or her knowledge.

What are the signs of a recent act of sodomy ?

Injury at, and in the neighbourhood of the anus.

The presence of semen, especially in young children and females.

[1] *Nowshirwan* v. *Emp.*, A. I. R., 1934 Sind 206 (208)=36 Cr. L. J. 718 (720)=155 I. C. 435=1934 Cr. C. 1411=28 S. L. R. 330.

[2] *Khanu*, 26 Cr. L. J. 945=87 I. C. 97=A. I. R. 1925 Sind. 286. For contra see *In re Gobindarajulu Naicker*, 1 Weir 382.

[3] *Khandu* v. *Emp.*, 35 Cr. L. J. 1096=150 I. C. 320=35 P. L. R. 73=A. I. R. 1934 Lah. 261=1934 Cr. C. 489.

Transmission of venereal disease similar to that suffered by the active agent.

N. B. Unless an examination is made soon after the perpetration of the crime, the signs of it in the passive agent will disappear.

Injury at, and in the neighbourhood of the anus.

If perpetrated for the first time on the passive agent, there is usually some injury at the anus, and the greater the force employed, and the greater the disproportion in size of the penis of the active agent, and the anus of the passive agent, so much the more will be the injury; naturally, for it can only be with brutal effort that the swollen, erect penis of an adult can be inserted into the anus of a child of tender years. With the increasing age of the passive agent, injury to these parts become less and less frequent.

If the act is with the consent of the passive agent, no resistance is offered, he or she relaxes the sphincter and permits the penis to pass in with comparative ease; in such cases no injury is likely to be found. Injuries effected **tend to disappear very rapidly.** Slight injuries would disappear in a couple or three days.

The signs of anal injury following the crime of sodomy are either objective or functional; the former are :—

Redness at and around the anus.
Tears and excoriations.
Funnel-shaped deformity.

Redness is of little significance per se, as it may be the result of scratching or other irritation.

Tearing always takes place on the **median line** where the mucous membrane is particularly adherent. The sphincter muscle may be paralysed.

Funnel-shaped deformity is a depression of the buttocks in the form of a funnel towards the anus, and becomes more pronounced under the influence of the pain attendant on examination. The natural folds about, and radiating towards the anus become obliterated. The anus may be gaping, due to paralysis of the sphincter.

Professor Tardieu reports a case by Dr. Espallic of a girl of twelve years of age who had been subjected to the act of sodomy on two occasions only, and this is what he says : "The child was submitted to my observation, **two months after the act occurred**. Here is what was found : The anus, examined without separating the buttocks, or on separating them only slightly, exhibited no infundibulum, properly speaking ; but on opening the buttocks, the radial folds disappeared and you looked at once into the depths of the anus." This unusual symptom caused Dr. Espallic to write to Professor Tardieu to the following effect : "According to your book and all the authors I have at hand, paralysis of the sphincter occurs only as a result of the abuse of the pederastic act. Here the intromission of the penis into the anus took place only twice and, nevertheless, there is paralysis."

The **functional signs** are : Heat, pain and burning in the region of the anus. They are increased by walking, defæcation and handling the parts.

Presence of semen

As pointed by Taylor at p. 283 of the second volume

of his Principles and Practice on Medical Jurisprudence (Edn. 2) "in a charge of sodomy, stains of semen constitute important evidence."[4] This sign is a very valuable one; it is the irrefutable proof that sodomy has been accomplished. The semen may be found at the anus, on the neighbouring parts and on the clothing of the victim. An irrigation of the rectum may be carried out and the washings examined for spermatozoa.

Transmission ot venereal disease similar to that suffered by the active agent.

Such discovery with correspondence in time is an important sign of sodomy.

Syphilis.—Since we know that the syphilitic chancre appears at the point where it was inoculated and there only, and such a chancre is discovered on the anus of an alleged victim of sodomy, and this chancre corresponds with a similar lesion on that part of the penis of the active agent that would lie in contact with it, it is sure proof of anal intercourse having taken place. The medico-legal value of this point is very great in the male, very much less in the female. Professor Tardieu says: "The circumstances in which a primary lesion of the anus develops without there having been intercourse contrary to nature are exceptional." However, such a chancre can arise from other causes than unnatural intercourse. Inoculation may take place by the finger in scratching the part. This must be remembered.

In the female the anal chancre is rather frequent, due

[4] *Devi Das* v. *Emp.*, A. I. R. 1930 Lah. 318 (320)=1930 Cr. C. 350=31 Cr. L. J. 343=10 Lah. 794=122 I. C. 93=31 P. L. R. 742.

to inoculation by syphilitic secretions (passed in by the male during coitus) passing out over the anus.

Habitual sodomy.—Much has been written and said of the signs manifested by the habitual sodomite, but no reliance can be placed on any of them.

The signs described by many authors are :—

The skin about the anus becomes smooth and thickened.

The muscle of the anus loses its tone and fails to contract readily when the adjacent skin is pinched.

The opening is deeply situated presenting the funnel-shaped appearance.

In the habitual sodomite, if the skin on both sides of the anus is put upon the stretch the sphincter muscle relaxes and exposes a large area of mucous membrane which may even protrude. In a normal person a similar stretching of the skin will cause the sphincter muscle to contract.

In habitual sodomites, piles, fissures and prolapse of the rectum are frequently found.

Casper has reported a celebrated affair of pederasty in which the Count of Cayus was the hero ; after twenty-five years of passive sodomy, the acts repeated two or three times a week, he presented the following signs :—buttocks flabby and thin, gaping like a funnel ; obliteration of the folds about the anus ; appreciable enlargement of the anal orifice ; no prolapse of the mucous membrane ; no tears ; no cicatrices of the sphincter.

Habitual sodomites are numerous. Remember that there are inveterate sodomites whose examination will be absolutely negative.

False charges of sodomy are common, quite as common as rape. They are made for the purpose of blackmail. Even if the charge is unfounded, trial is dreaded. A charge of this nature is one very easy to bring and very difficult to refute. The evidence in support of such a charge has to be very convincing.[5] In such circumstances, it would not be safe to convict the accused, unless the complainants' evidence is corroborated in material particulars implicating the accused. It is true that in law such corroboration is not required, but as a matter of prudence, there ought to be no conviction without such corroboration, except in very exceptional cases.[6]

Bestiality

Unnatural intercourse between a man or woman with the lower animals. Low morality and great sexual desire, with lack of opportunity for natural indulgence are the principal motives of this unnatural means of sexual satisfaction.

Evidence of the offence is seldom found. Human spermatozoa may be discovered in the vagina of the

[5] *Emp.* v. *Sain Dass.* 27 Cr. L. J. 593=94 I. C. 257=8 L. L. J. 180=A. I. R. 1926 Lah. 375=27 P. L. R. 353.

[6] *Bal Mukundo Singh* v. *Emp.*, 38 Cr. L. J. 70=165 I. C. 707=39 C. W. N. 1051=61 C. L. J. 583, following *Reg.* v. *Jellyman,* (1838) 8 C. & P. 604 and the *King* v. *Tate.* (1908) 2 K. B. 680=77 L. J. K. B. 1043=99 L. T. 620=72 J. P. 391=52 S. J. 699=21 Cox C. C. 693=1 Cr. App. Rep. 39 ; *Ganpat* v. *Emp,,* 19 Cr. L. J. 946=47 I. C. 670=38 P. W. R. 1918 Cr.=73 P. L. R. 1918 ; *Muttani Ram* v. *Emp.*, A. I. R. 1927 Lah. 836=9 L. L. J. 111=28 P. L. R. 235. But *see Sardar Ahmad* v. *Emp.*, 16 Cr. L. J. 266=28 I. C. 154=185 P. L. R. 1915=42 P. W. R. 1914 Cr.

animal. Hairs of the animal may be found under the foreskin or about the genital organs or embedded in blood spots or on the clothes.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. How long after the alleged offence did you make the examination ?

2. Q. Are the injuries compatible with the commission of the offence ?

3. Q. Did you discover any stains on the person or clothing of either of them ?

4. Q. Were these stains examined for spermatozoa ?

5. Q. What are the characters of dried semen on the skin, on hair, on linen, on woollen material ?

6. Q. Must injury necessarily result when the act of sodomy is committed on a child by an adult ?

A. No. The anus, especially in children is very dilatable. If a moderate-sized penis is inserted without violence, no injury except relaxation of the sphincter will result. If the penis is large and intromission gradual and with care the overstretching of the parts may result in one or more fissures of the mucous membrane with a gaping of the anus due to paralysis of the sphincter. If the act is committed by one boy on another there is not likely to be any trace of the act.

7. Q. Can this act be committed on an adult against his will ?

A. Undoutedly not ; the slightest resistance will prevent it. It is difficult to insert an oiled examining index finger into the anns of a patient against his will.

8. Q. Can the act be committed on a person in a state of natural sleep ?

A. It is contrary to all probability.

9. Q. Were either suffering from venereal disease ?

10. Q. Is every form of venereal disease found at the anus necessarily the result of anal coitus.

A. Not necessarily so. Inoculation may be by the fingers but the true cause of anal chancre in the male is most ordinarily, most frequently, contact with an infected penis. In woman anal venereal disease is of no value as infection is so easy from the vulva.

CHAPTER XIV

INSANITY

Your noble son is mad ;
Mad call I it ; for to define true madness,
What is't but to be nothing else but mad.
Shakespeare

What is insanity ?

There is no definition possible that would not include in its limits a large number of persons supposed to be sane and fail to include a goodly number of those whom it was intended to include.

The Lunacy Act contains no definition whatever of insanity or unsoundness of mind or of lunacy. The law provides no test whatever in respect of that matter or any standard at all. Furthermore, there is no text-book or authority which gives any definition of the three matters.

The medical and legal standards of insanity are not identical for purposes of the criminal law, i.e. when a person charged with a crime pleads insanity.

From the medical point of view it is probably correct to say that every man at the time when he commits a murder is insane, that is, he is not in a sound, healthy, normal condition, but from the legal point of view a man must be held to be sane so long as he is able to distinguish between right and wrong, so long as he knows that the offence he is committing is a wrong thing to do, so long as he has a guilty mind.[1] It is not, therefore, every

[1] *Sher Sinoh* v. *Emp.*, 25 Cr. L. J. 395=77 I. C. 443=A. I. R. 1323 Lah. 508.

person suffering from mental disease that can avoid responsibility for a crime by invoking the plea of insanity. A man may be suffering from some form of insanity in the sense in which the word is used by a medical man but may not be suffering from unsoundness of mind as defined in Sec. 48 I. P. C. There is, thus, a clear distinction between "medical insanity" and "legal insanity," and the courts are concerned only with the legal and not with the medical view of the question.[2]

The law deals leniently with a person who has committed crime but is proved to have been insane when he committed it.

So much reference has been, and is being made to the Macnaughton case[3] in murder trials, and it is of first importance for a proper understanding of the reason why the law and medical opinion do not coincide with regard to definitions of insanity, that a brief history of the case and the rules arising from it would seem to be interesting and useful.

In March, 1843, Daniel Macnaughton was charged at the Central Criminal Court before three judges for the wilful murder of Edward Drummond, Sir Robert Peel's Private Secretary.

The judges and lawyers engaged were : Lord Chief Justice Tindal, President ; the other two judges being,

[2] *Bayga* v. *Emp.*, 32 Cr. L. J. 1230=134 I. C. 773=32 P. L. R. 331=A. I. R. 1931 Lah. 276=1931 Cr. C. 532=Ind. Rul. 1931 Lah. 981 ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714 (716)=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536.

[3] (1843) 10 C. & F. 200=3 Scott. N. R. 595=I. C. & K. 30=4 St. Tr. (N. S.) 847=59 R. R. 85.

Mr. Justice Williams and Mr. Justice Coleridge (latter Lord Chief Justice). For the Crown, the Solicitor-General Sir William Follett, Mr. Weddington and Mr. Russell Gurney. Accused was defended by Mr. Cockburn, Q.C. (later Chief Justice), Mr. Clarkson, Mr. Bodkin (later Public Prosecutor), and Mr. Monteith.

In opening the case the Solicitor-General said Mr. Drummond entered State service as a clerk to the Treasury and eventually became private secretary to the Chancellor of the Exchequer, the Earl of Ripon, and later was employed in a similar capacity to Sir Robert Peel. The prisoner intended to kill Sir Robert Peel, but mistook Mr. Drummond for Sir Robert.

Police constable Silver stated that on the afternoon of the 20th of January, 1843, he was proceeding towards Charing Cross, when he heard the report of a pistol shot. He saw Mr. Drummond stagger to the pavement and at the same time the prisoner, who was not more than four or five yards away, put a horse pistol into his left breast. The witness then saw him draw another pistol from his right breast with his left hand, and he immediately seized him and tripped him up. On the way to the police station the prisoner said, "He shall not break my peace of mind any longer." The Inspector said to him, "I suppose you are aware who the gentleman is you shot at?" The prisoner replied, "It is Sir Robert Peel, is it not?" He also said he had been an object of persecution by the Tories. Mr. Drummond died from his injuries on the Wednesday following the attack.

For the defence Mr. Cockburn put forward a plea of insanity and reviewed certain periods in the prisoner's

life in which he had shown signs of an unbalanced mind. He called several medical witnesses, who expressed the opinion that Macnaughton committed the act when insane. His morbid delusion was that he was subject to a system of persecution and this delusion deprived him of all restraint or control over his actions.

Counsel was proceeding to call further medical witnesses when the Lord Chief Justice asked the Solicitor-General if he had any medical evidence to rebut the testimony of the witnesses for the defence. The Solicitor-General said he had not, whereupon the Lord Chief Justice said the Bench felt the evidence to be so strong that they were induced to stop the case. The Solicitor-General replied that after that intimation he should not press for a verdict.

By the direction of the Bench the jury returned a verdict of "Not Guilty" on the ground of insanity, and the prisoner was ordered to be detained during the Queen's pleasure.

In view of the great public interest aroused by the trial the House of Lords decided to refer certain questions to the judges on the state of the law relating to crimes committed by persons supposed to be insane or afflicted with monomania.

On the 19th June the judges assembled in the House of Lords for the purpose of delivering their opinions on the questions submitted to them. The Lord Chief Justice announced that Her Majesty's judges had most attentively and carefully considered the questions referred to them, and with the exception of Mr. Justice Maule,

they were unanimous in the opinion he would read to the House.

The first question propounded for their consideration was: What is the law respecting alleged crimes committed by persons afflicted with insane delusions in respect of one or more particular subjects or persons? as, for instance, where at the time of the commission of the alleged crime, the accused knew that he was acting contrary to the law, but did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury, or of producing some supposed public benefit.

The opinion of the judges on this question was that, notwithstanding the person committing the wrong act when labouring under the idea of redressing some supposed injury or grievance, or under the impression of obtaining some public or private benefit, he was liable to punishment.

The second question was: What are the proper questions to be submitted to a jury when a person alleged to be afflicted with insane delusion respecting one or more particular subjects or persons is charged with the commission of a crime, murder for example, and insanity is set up as a defence?

The judges were of opinion in answer to this question that the jury ought in all cases to be told that every man should be considered of sane mind unless it was clearly proved in evidence to the contrary. That before a plea of insanity should be allowed, undoubted evidence ought to be adduced that the accused was of diseased mind, and that at the time he committed the act he was not

conscious of right or wrong. This opinion related to every case in which a person was charged with an illegal act and a plea of insanity was set up. Every person was supposed to know what the law was, and therefore could not justify a wrong act, except it was clearly proved that the person did not know right from wrong. If it was not satisfactorily proved, the accused was liable to punishment, and it was the duty of the judges so to tell the jury when summing up the evidence, accompanied with those remarks and observations as the nature and peculiarities of each case might suggest and require.

The judges gave no opinion on the third question, which was: In what terms ought the question to be left to the jury as to the prisoner's state of mind at the time the act was committed?

The fourth question, upon which so much has been rested in subsequent trials when the defence of insanity was raised, was as follows: If a person under an insane delusion as to existing facts commits an offence in consequence thereof, is he thereby excused?

The judges were unanimous in their reply to this point. They said that if the delusion was only partial the person accused was equally liable with a person of sound mind. If the accused killed another in self-defence he would be entitled to an acquital: but if committed for any supposed injury he would then be liable to the punishment awarded by the laws to his crime.

The last question was: Can a medical man, conversant with the disease of insanity, who never saw the prisoner previously to the trial, but who was present

during the whole trial and examination of all the witnesses, be asked his opinion as to the state of the prisoner's mind at the time of the commission of the alleged crime, or his opinion whether the prisoner was conscious at the time of doing the act that he was acting contrary to law, or whether he was labouring under any, and what delusion at the time ?

With respect to this question the judges were of opinion that the question could not be put to the witness in the precise form stated above, for by doing so they would be assuming that the facts had been proved. That was a question that ought to go to the jury exclusively. When the facts were proved and admitted, then the question, as one of science, could be generally put to the witness under the circumstances stated in the interrogatory.

Thus, if a person suffers from a delusion but is not otherwise insane, he is to be held responsible and punishable for his offence unless he has acted in such a way as would have been permissible had the facts about which his delusion exists been true.[4] For example, if a man kills another whom he believes to be about to kill him (self defence), he is not to be held responsible ; but if he kills another whom he believes to be robbing him, he is to be held responsible and punisbable. The statements of a man, who has been a lunatic, as to the exact nature of his delusions do not afford conclusive proof thereof even after he has recovered from insanity and is fit to

[4] *Ghinua Uraon*, 19 Cr. L. J. 135 F. B. Pat. Miller C. J. Chapman & Atkinson J.J.; *Ghatu Pramanik* v. *King Emp.*, 28 Cal. 613 (618).

stand his trial.[5] His liability will not be diminished simply because he did the act under the influence of some delusion, or in order to redress or avenge some real or supposed grievance.[6]

In other cases, to establish a defence on the ground of insanity, it must be clearly proved that, at the time of committing the act, the party accused was labouring under such unsoundness of mind, as not to know the nature and quality of the act he was doing or, if he did know it, that he did not know he was doing what was wrong.

It would be erroneous to make every form of insanity an excuse for crime. Those who have dealings with insanes know that many of them take an unfair advantage of the fact which they very soon learn, that they are immune from punishment and other natural consequences of their actions, so long as they remain in an institution for insanes.

It is not every form of unsoundness of mind that would exempt a person from criminal responsibility: it is only unsoundness of mind which materially impairs the cognitive faculties of the mind that can form a ground of such exemption.[7]

Section 84 I. P. C.—Nothing is an offence which is done by a person who, at the time of doing it, by reason of unsoundness of mind, is incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to law.

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[5] *Zurab Gul* v. *Emp.*, 38 Cr. L. J. 533 (534)=168 I. C. 373= A. I. R. 1937 Pesh. 38.

[6] *Emp.* v. *Sajjan Singh*, 32 Cr. L. J. 816 (818)=139 I. C. 746= Ind. Rul. 1931 Lah. 508.

[7] *Mantajali*, 21 Cr. L. J. 317 C. Sanderson C.J. and Walmsley J.

The Indian law limits non-responsibility only to those cases in which insanity affects the cognitive faculties (the cognitive faculties are those of knowing, perceiving, conceiving, as opposed to, emotion and volition, a perception, sensation, notion or intuition), and the cases in which the insanity affects only the emotions and the will, subjecting the offender to impulses whilst it leaves the cognitive faculties unimpaired, have been left outside the exception, because it has been thought that the object of the criminal law is to make people control their insane as well as their sane impulses. Where an offender's cognitive faculties are unimpaired he is fully responsible for the act committed by him.

A case can be brought within that section, only if it is proved, that—

(*a*) at the time of committing the offence,

(*b*) the accused was labouring under a defect of reason,

(*c*) which had been caused by unsoundness of mind,

(d) such as had rendered him incapable of knowing the nature of the act or that he was doing what was either wrong or contrary to law.[8]

In accordance with orders passed by a Division Bench of this Court on the 24th of February last, Major E. Wilkinson, the Officiating Sanitary Commissioner, has been examined with reference to the state of mind of the appellant Chajju Mal. Briefly summarised Major Wilkinson's evidence is to the effect that the appellant who has for many years been known to him as a man of the very best character,

[8] *Tola Ram* v. *Crown*, 8 Lah. 684 (690)=28 Cr. L. J. 598=102 I. C. 774=29 P. L. R. 104=A. I. R. 1927 Lah. 674.

was for some time past suffering from ill health and despondency. The witness examined him very carefully in October 1907, but was unable to find any trace of definite disease. He states that he was at the time greatly puzzled, but that in the light of subsequent events he has no hesitation in saying that the appellant must have been a victim to "Melancholia," which he describes as a definite mental disease, which is at times marked by homicidal outbreaks. Major Wilkinson was of opinion after reading the evidence of Captain Crown, Civil Surgeon, Lyallpur, who saw the appellant within a few hours after the commission of the crime, that the appellant must have been insane when he killed the poor little girl, and that he could not have realised the nature of the act he was committing. The witness adds : I could not say whether he knew that he was killing a girl at the time. The crime was a part of the disease. This view of the nature of the act would be effected by the state of disease. My opinion as to his knowledge of the quality of the act at the time would not be effected by his subsequent admission that he had committed a crime. Under "Melancholia" symptoms vary, and are liable to sudden variation from very slight exciting causes. Recovery might be equally sudden. I should think that "Melancholia" would tend to obscure the moral as well as the mental sense."

Major Wilkinson had admittedly not seen the appellant for some time prior to the commission of the crime, and it was therefore obviously impossible for him to state with any definiteness his opinion as to the condition of the appellant's mind at the time the murder was committed. The utmost that can be gathered from his evidence is, that, for some time past the appellant was in a weak state of health and that subsequent events prove that this disability was due to "Melancholia." It is clear, therefore, that Major Wilkinson's evidence does not throw any appreciable light on the question whether, when the appellant killed the girl, he was by reason of unsoundness of mind incapable of knowing the nature of his act, or that he was doing that was wrong or contrary to law.

Upon this point the evidence of Captain Cowan, Civil Surgeon, who saw the appellant very shortly after the commission of the murder, is more important, but we cannot read this evidence as proving that the accused was, from a legal point of view, insane when

he killed the child. Captain Cowan found that the appellant was in a mentally sane condition when he saw him, but he infers that he **must have been** out of his mind when he committed the act because, (a) the appellant had been in bad health for some time previously; (b) there was no motive for the crime; (c) there was no pre-meditation, and (d) there was no attempt to conceal the crime. Captain Cowan, however, admits that the reasons which led him to believe that the man was insane at the time are consistent with sanity. But he adds that in his opinion the appellant was insane at the time, and that this opinion is strengthened by the fact that he has heard that the appellant had only a month before the murder killed his little neice in a somewhat similar manner. Captain Cowan further stated that "uncontrollable impulse" might well point to temporary insanity.

Such then is the medical evidence in the case, and we have referred to it in detail, as the only question before us is, whether the appellant was, or was not insane, within the meaning of Section 84 of the I. P. C. at the time when he caused the death of the little girl, Mussammat Giyan Devi, aged 2 years. In the Sessions Court the appellant absolutely denied that he was the author of the murder, and he further added that his previous confessions of guilt were due to Police machinations. Mr. Grey has very rightly abandoned this defence, for there can be no possible doubt whatever, that it was the appellant who caused the death of the child. Upon this point, the case against the appellant is as clear and as definite as any case can possibly be, and the only question which we have to decide is, whether the appellant can claim the benefit of Section 84 of the I. P. Code. Upon this point the assessors and the learned Sessions Judge were of opinion that the plea of insanity had not been established, and though they expressed no final opinion thereon, the learned Judges, before whom this appeal was in the first instance argued were apparently inclined to take the same view. They say in their order of the 24th of February last, when dealing with this aspect of the case, that they are not prepared to accept the appeal to that extent on the record as it then stood, though in view of the fact that they thought it necessary to take Major Wilkinson's evidence upon this question, they refrained from expressing any definite opinion

thereon. We have now had the benefit of Major Wilkinson's opinion, but we are bound to say that it does not in any wise carry the case any further. His evidence so far as it goes, merely proves that the appellant was a man of very good character that he was suffering from debility, and that in all probability he committed this very extraordinary and wholly motiveless crime in a fit of "Melancholia." To all intents and purposes this was the gist of the evidence given by Captain Cowan, and as the latter officer had more recent opportunity of seeing the appellant, his evidence would naturally be more entitled to consideration than would that of Major Wilkinson. So far then as the present question is concerned, we have the fact that the 3 assessors, the Sessions Judge, and the two learned Judges of this Court are of the opinion that the alleged insanity of the appellant has not been established, but as the Division Bench of this Court refrained from giving a final decision upon the point, it is now our duty to determine the question.

We feel bound to admit that in quession of this kind the duty imposed by law upon the Courts is one of grave difficulty. It is notorious that the test of insanity as viewed from a legal point does not coincide with the medical idea, and that in many cases a man who is in the opinion of medical experts of unsound mind, cannot claim the benefit of Section 84 of the I. P. Code. In our opinion this is one of those cases. In the present case the medical evidence given by gentlemen of professional eminence and unimpeachable veracity, is distinctly in favour of the plea put forward on behalf of the appellant. But it is after all, founded upon "*a priori*" grounds. They argue that the appellant must have been insane because he was a man of high character who would not in the ordinary course of things commit a cruel murder of this kind, and their opinion is strengthened by the fact that the crime was committed without motive ; that the murderer had for some time previously been in ill health ; that there was no pre-meditation, and that there was no attempt to conceal the murder.

It is with the utmost diffidence that we venture in this case to differ from the theoretical views expressed by the medical experts. They have regarded the case from the point of view merely of medical

men, and so far as the case before us is concerned, their opinions are admittedly theoretical. They say that the accused must have been insane and that it seems impossible that he could have realised what he was doing because he was a man of blameless antecedents, was at the time in a bad state of health, and was the author of a wholly objectless crime. But while all these facts are undoubtedly entitled to consideration, the important question for a Court of Law is whether, when the accused committed the act, he was by reason of unsoundness of mind incapable of knowing the nature of his act, or, that what he was doing was wrong or contrary to law? In the present case there is evidence to show that prior to the commission of the murder accused deliberately got rid of the presence of the boy Chajju Ram (P. W. 4). The latter deposes that shortly before the commission of the offence, the accused gave him two pice and told him to go off and get some sweets, and in his confession to the Magistrate, 1st class, dated the 27th of May, 1908, the accused admitted that he had sent Chajju Ram to the bazar so that he might be able to kill the girl without being seen by the latter. In face of this evidence it is impossible to say there was no premeditation on the part of the accused. Assuming, however, that the accused was overpowered by an uncontrollable impulse to commit murder, we find from his own confession before the said Magistrate that he was perfectly well aware that in killing Mussammat Gyan Devi, he was doing a "bad thing." His cognitive faculties were, therefore, unimpaired, and from a legal point of view he was fully responsible for the act committed by him.

In this connection we may refer to the case of Queen Empress v. Kader Nasyer Shah, I. L. R. XXIII. Cal. 604. In that case it appeared from the evidence that since his house was burnt, the accused neglected house and field work, and frequently complained of pain in the head and spoke to himself, when the pain was particularly severe; he did not answer when spoken to; on one occasion he was seen eating potsherds; he played and went about with children much more than he was to be expected from a man of his age; the murder was committed without any motive; the accused was fond of the boy; when the enquiry preliminary to the commitment was taken up he was found to be in an unfit state of mind to

be able to make his defence, and the enquiry was not resumed until somewhat more than a year afterwards.

On the other hand, the accused observed some secrecy in committing the murder, he tried to conceal the corpse, and hid himself in a jungle ; his recollection of the fact was full and clear. Upon these facts, the High Court (O'Kinealy and Bannerjee, JJ.) held that the plea of insanity had not been established. We will presently quote a passage from their judgment which states in clear terms the law relating to cases of this kind, but before doing so, we would point out that in the case before us the facts are much stronger against the accused. There is here no evidence that the accused suffered from any pain in the head, and Captain Cowan distinctly states that when he saw the accused, within an hour or two of the murder, the latter appeared to be depressed but was perfectly calm and answered all questions put to him in a perfectly rational manner, and recollected most distinctly all that had happened in the afternoon. The witness further testified that the accused was then (i.e. on the 26th of May, 1908) of sound mind and able to answer any question rationally. Mr. Grey relied very strongly upon the fact that in the Calcutta case the accused observed some secrecy in committing the murder, and tried to conceal the corpse, and he argued that in the present case there were no such facts against the accused But we cannot agree as to this, for it is very clearly proved that the accused deliberately got rid of the presence of the boy, Chajju Ram, and he himself has admitted that he sent the boy off to buy sweets in order to be in a position to kill the girl without being observed. So far then as the facts go, the present is a far stronger case than that which was before the High Court of Calcutta.

In that case the learned Judges made the following observations :—

"The law on the subject is that laid down in Section 84 I. P. C., which enacts, that "nothing is an offence which is done by a person who at the time of doing it, by reason of unsoundness of mind is incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to law." The provision of our law, which is in substance the same as that laid down in the answers of the Judges

to the questions put to them by the House of Lords in McNaghten's case shows that it is only unsoundness of mind which materially impairs the cognitive faculties of the mind that can form a ground of exemption from criminal responsibility, the nature and the extent of the soundness of mind required being such as would make the offender incapable of knowing the nature of the act, or that he is doing what is wrong or contrary to law. Instances of unsoundness of mind of this description would be such as these : A person strikes another, and in consequence of an insane delusion thinks he is breaking a jar. Here he does not know the nature of the act. Or, he may kill a child under an insane delusion that he is saving him from sin and sending him to heaven. Here he is incapable of knowing by reason of insanity that he is doing what is morally wrong. Or, he may, under insane delusion believe an innocent man, whom he kills, to be a man that is going to take his life, in which case, by reason of his insane delusion he is incapable of knowing that he is doing what is contrary to the law of the land.

We learn, however, from medical and legal authorities who have considered the subject of responsibility in mental disease (see Maudsley's Responsibility in Mental Disease, Chapter III ; Bucknill and Tukes Psychological Medicine, page 269, and Stephen's History of the Criminal Law of England VII, Chapter XIX) that insanity affects not only the cognitive faculties of the mind which guide our actions, but also our emotions which prompt our actions, and the will by which our actions are performed.

It may be that our law, like the law of England, limits non-liability only to those cases in which insanity affects the cognitive faculties ; because it is thought that these are the cases to which the exemption rightly applies. and cases in which insanity affects only the emotions and the will, subjecting the offender to impulses whilst it leaves the cognitive faculties unimpaired, have been left outside the exception, because it has been thought that the object of the criminal law is to make people control their insane as well as their sane impulses, or to use the words of Lord Justice Bramwell in Reg. v. Humphreys, (10 Clark and Finnelly, 220), See (Taylor's Manual of Medical Jurisprudence 10th Ed., p. 745) "to guard against mis-

chievous propensities and homicidal impulses". Whether this is the proper view to take of the matter or whether the exemption ought to be extended as well to the cases in which insanity affects the emotions and will, as to those in which it affects the cognitive faculties is a question which is not for us here to consider. There are, no doubt eminent authorities who are in favour of extending the exemption to those cases, but our duty is to administer the law as we find it. It might be said of our law as it has been said of the law of England by Sir J. Stephen, (See his History of Criminal Law of England, Vol. II., Chap. XIX., p. 167) that even as it stands, the law extends the exemption as well to cases where insanity affects the offender's will and emotions as to those where it affects his cognitive faculties because where the will and emotions are affected by the offender being subjected to insane impulses, it is difficult to say that his cognitive faculties are not affected. In extreme cases that may be true ; but we are not prepared to accept the view as generally correct, that a person is entitled to exemption from criminal liability under our law in cases in which it is only shown that he is subject to insane impulses, notwithstanding that it may appear clear that his cognitive faculties, so far as we can judge from his acts and words, are left unimpaired. To take such a view as this, would be to go against the plain language of Section 84 of the I. P. Code, and the received interpretation of that Section. See the cases of *Queen Empress* v. *Lakshman Daydu*, I. L. R., X Bom. 512 ; *Queen Empress* v. *Venkatasami*, I. L. R., XII Mad. 459 ; and *Queen Empress* v. *Razai Mia*, I. L. R., XXII, Cal. 817."

With this exposition of the law we entirely concur and we quite agree that it is not for us to question the expediency or justice of the law. We have merely to administer the law as it stands, and we must leave it to the Legislature to decide whether the provisions of Section 84 of the I. P. Code, are, or are not, in accordance with the modern view of expert opinion upon the question of insanity and responsibility for acts.

In the case before us, we are constrained to hold that the appellant was well aware, that he knew at the time that he was, in his own words, doing "a bad thing." There was, however, a certain amount of premeditation in the commission of the offence, which

tends to show that the appellant's cognitive faculties were so far impaired that he did not realise the nature of the act which he intended to commit. In addition to this, we have it proved that he covered the corpse over with a cloth, and that very shortly after the commission of the crime, he went to the thana and reported what he had done. Thus it is proved, that before committing the crime he intentionally got rid of the presence of the boy, Chajju Ram, and that immediately after its commission, he hid the body under a cloth, and shortly afterwards went and informed the police of what he had done. These facts, in conjunction, with his own admission before the Magistrate 1st class, prove that, at the time when he killed the girl, he was well aware that he was doing what was wrong, and that he was committing murder.

At the same time, we have no doubt whatever, that the accused was at the time suffering from mental derangement. From a strictly legal point he was **sane**, but in the face of his antecedents, and of the absolutely motiveless nature of his offence, the obvious inference would be, that his mind was unhinged. While, therefore, we must dismiss this appeal and confirm the sentence passed by the Sessions Judge, we think it only right to direct that the record should be forwarded to His Honour the Lieutenant Governor with a recommendation, that the case may be dealt with by His Honour under Section 401 of the Cr. P. Code in such manner as His Honour may think fit. This was the procedure adopted by the learned Judges of the Calcutta High Court in the case above referred to, and in the circumstances, it seems to us that in a case of this kind, we should leave it to the Local Government, to take such action as it may think proper. We ourselves are bound by the strict provisions of law and we have, therefore, no alternative, but to uphold the conviction and sentence, but we think that the appellant's case is in many respects entitled to favourable consideration at the hands of the Local Government. Appeal dismissed.[9]

The apparent inadequacy of the motive for a crime (murder) and other circumstances have in some cases suggested a suspicion of the accused being of unsound

[9] *Chajju Mal,* 16 P. W. R. 47 Robertson & Rattigan J. J.

mind at the time of the crime.[10] But inadequacy of motive is not a matter which is conclusive evidence of insanity, and although in a case of doubt it may perhaps assist in turning the scale one way or the other, by itself it does not afford any strong evidence of mental derangement.[11]

One Ajmal Din murdered his wife in the presence of his three children and his step brother, by inflicting no fewer than twenty-two wounds with a rambi ; the motive alleged being resentment at his wife's disinclination to fall in with his wishes regarding the betrothal of his daughter. He was sentenced to death by the Sessions Judge as no plea of insanity had been raised and no suggestion made that Ajmal Din was not perfectly sane. At the hearing of the appeal before the High Court, the Government advocate raised this question, and the Sessions Judge was directed to make an enquiry.

He was told that he should arrange to have Ajmal Din kept under special medical observation for twenty days and then give a finding whether at the time of the alleged murder he was not in a sound mental condition. The finding has been given, and the Sessions Judge holds first, that, "if section 105 of the Indian Evidence Act is

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[10] *Vodde Subbigadu*, 27 Cr. L.J. 46 (47)=91 I.C. 78=1925 M.W.N. 649=22 M. L. W. 550=49 M. L. J. 598=A. I. R. 1925 Mad. 1238. See also *Bhagawati Prasad* v. *Emp.*, A. I. R. 1924 Oudh 190=74 I. C. 69=24 Cr. L. J. 741.

[11] *Nga San Pe* v. *Emp.*, 38 Cr. L. J. 397=167 I. C. 395=A. I. R. 1937 Rang. 33 ; *Emp.* v. *Bahadur*, 29 Cr. L. J. 204=106 I. C. 796=9 Lah. 331=A. I. R. 1923 Lah. 796; *Inayat* v. *Emp.*, 29 Cr. L. J. 1006=112 I. C. 222 ; *Jalal* v. *Emp.*, 30 Cr. L. J. 1024=119 I. C. 270=Ind. Rule 1929 Lah. 862 ; *Mohammed Islam* v. *Emp.*, 32 Cr. L. J. 327=129 I. C. 323=7 O. W. N. 1100=A. I. R. 1931 Oudh 77=Ind. Rul. 1931 Oudh 99=1931 Cr. C. 113 ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536 ; *Mt. Sakni Chamain* v. *Emp.*, A. I. R. 1936 Pat. 245=1936 Cr. C. 285=162 I. C. 25=37 Cr. L. J. 543=1936 P. W. N. 189.

strictly applied, then the accused has failed to prove his insanity." but in the conclusion holds that in view of the opinion expressed by two of the medical officers he is strongly of opinion that the sentence of death ought not to be carried out. Now, the three medical officers have given their opinion as follows. The first is Dr. R. E. Murray, Civil Surgeon, Gurdaspur, who had Ajmal Din under his observation and states that he noticed no symtoms of insanity. The second is Captain M. L. Bhagat, Assistant Surgeon, Gurdaspur, and he says that Ajmal Din seemed to him to be of unsound mind but as a matter of fact was normal physically and mentally. This he subsequently qualifies by saying that he thinks he may have committed the murder under the influence of homicidal mania : indeed that this was probably so, and that he makes this inference from his eccentricity and from the history of the case. Major Cox states, positively that he found no symptoms of insanity and having said that the question to be decided is whether the accused was insane or sane at the time of the alleged crime, continues as follows :—

"During the course of my conversation with him on the 24th, the accused related to me the most minute details of the tragedy including the hour it was committed and the hour he was apprehended. This lucid memory of these minute details implies that his cognitive faculties were intact and he must have been aware that what he was doing was morally wrong."

Then he goes on to say :

"On the other hand, there is an insane state known technically as epilepsy larvee, a condition that takes the place of the actual epileptic fit. This state lasts from a few seconds to a few hours, and consists of an isolated impulsive act, usually of a violent nature. It is characterised by subsequent loss of memory of the events that have occurred during the attack, but not invariably. Since there is a history of insanity and epilepsy in his family and the record in the Superintendent's journal of a peculiar insane attack of short duration with loss of memory for events, **there is just a possible chance** that he suffered such an attack at the time of the tragedy without loss of memory.

"Circumstances connected with the crime, taken collectively tend to favour insanity, viz :—

1. Sudden loss of self-control, the essential feature of insanity.

2. The murder was of an unnatural character.

3 The immediate benefit procured by accused in murdering his wife was absurdly out of all proportion to the subsequent disadvantage and injury it entailed on him.

4. The act was apparently unpremeditated, seemingly effected on the spur of the moment, as though in an impulsive manner and carried out in the presence of witnesses.

5. There was no attempt at concealment or escape.

6. An absence of all attempts at explanation.

7. The alleged motive was childish, and absurdly inadequate.

Tuberculosis is a half sister of insanity. The offspring of a tuberculous parent is very prone to lowered resistance of the nerve cell and is a potential insane."

In our opinion the net result of the examination of these three doctors is that the accused has wholly failed to establish insanity. His mother may have had tuberculosis, though there is no evidence to this effect except the statement of the accused himself. His younger brother Umar Din is said to have suffered from epilepsy and died of the disease at the age of 22, but here again there is no evidence. In our opinion it is conclusively established, more especially by the evidence of Major H. W. V. Cox, that the accused knew perfectly well what he was doing and remembered every incident and every detail which occurred. His conduct throughout in closing the door and refusing to open it shows that he knew he was committing a crime, and, though it is fortunately unusual for a man to inflict 22 wounds upon his victim, it might just as well point to a deliberate desire to torture the unfortunate woman as to any unsoundness of mind. We, therefore, find that no reason has been shown why Ajmal Din should not suffer the extreme penalty for

this brutal crime. We dismiss the appeal and confirm the sentence of death.[12]

Occasionally after the commission of a murder the defence puts forward a plea that the accused has always been peculiar and hence not in his right mind, but this plea will not avail the accused.

Where all that is proved is that a person who has committed a murder is conceited, odd, irrascible and that his brain is not quite all right, it is insufficient to establish, that the accused was incapable of knowing that what he was doing was wrong.[13]

Another plea is absence of motive, absence of pre-arrangement etc., but note the following :—

The mere co-existence of the five circumstances, namely : 1. the absence of any motive, 2. absence of secrecy. 3. multiple murders. 4. want of pre-arrangement, and 5. want of accomplices, is not sufficient by itself to prove unsoundness of mind within the meaning of Section 84 I P. C. The law requires proof of incapacity to realise the nature of the act, and presumes that where a man's mind or his faculties of ratiocination (reasoning) are sufficiently clear to apprehend what he is doing he must always be presumed to intend the consequences of the action he takes.

A man may be suffering from insanity in the sense in which the word would be used by an alienist but may not be suffering from unsoundness of mind within the meaning of Section 84 I. P. C.[14]

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[12] *Ajmal Din*, No, 332 of 1926 Lah. dated 10 June 1926 Sir Shadi Lal C. J. and Coldstream J. directing the Sessions Judge to make an enquiry into the mental condition of Ajmal, Harrison and Dalip S. J.J. confirming the death sentence. See also *Bhagwati Prasad* v. *Emp.*, A. I. R. 1924 Oudh 190=24 Cr. L. J. 741=74 I. C. 69.

[13] *Abdul Rashid*, 28 Cr. L. J. 635 Lah. Broadway and Skemp. J.J.

[14] *Mani Ram*, 28 Cr. L.J. 120=99 I. C. 328=8 Lah. 114=8 L.L.J. 566=27 P. L. R. 823=A. I. R. 1927 Lah. 52.

There is no subject in medical jurisprudence which requires greater care and professional knowledge than the investigation of insanity.

The perpetrator of a crime may be defended on the plea of irresponsibility for his act, owing to insanity. The capacity of a person to take care of himself and to safeguard his interests may be questioned on the ground of mental disease. A will may be disputed on the plea that at the time of making it, the testator was insane and unfit to dispose of his property. A person who entered on a contract, may subsequently seek to repudiate it, on the plea that at the time of entering on it, he was insane. In the interval between committing a crime and standing his trial, the perpetrator may have become insane, and it may be necessary to express an opinion as to the fitness of the accused to stand his trial and make his defence.

It is very important to recognise the early symptoms of insanity. **Insanity does not develop suddenly ;** almost invaribly, there are actions of eccentricity or emotional changes constituting a sort of perliminary state. Except in idiots and imbeciles, insanity is a change in a person's normal mental condition or habits. A change in the emotional state is frequently the first sign of insanity ; love to hate, gaiety to moroseness, anger and irritability to placid contenment, avarice to prodigality, trust to suspicion, etc. Later, delusions may appear. They may appear early in the disease. Sleeplessness is very common.

Before going further it will be necessary to define certain terms which are frequently used in connection with insanity cases.

Aura. An aura is a peculiar sensation experienced by a person which foreruns an epileptic attack.

Delusion. Judgment is the act by which the mind determines the relationship between two or more representations. When the relationship is imaginary, the judgment arrives at a false conclusion. This becomes a delusion when it is in conflict with evidence. Delusions are not necessarily a sign of insanity. We all have our delusions. An insane delusion is a judgment which cannot be accepted by people of the same class, education, race and period of life as the person who expresses it.

Epileptic Automatism. This is a condition in which actions are performed without consciousness or intention. In such a state a person may commit extravagant, perhaps criminal acts. They may behave in an apparently normal and rational manner so that the condition is unsuspected.

Hallucination. Hallucination is a perception without an object. Any of the senses may be affected.

Illusion. This is a perception which alters the qualities of the object perceived and presents it to the consciousness in a form other than the real one.

Imperception. In this condition the person is able to see, hear, feel, taste and smell objects in their surroundings, but they are unable, in spite of previous experience of such objects to form ideas from sensations aroused by them. If one sees a book on a table and cannot tell what it is, he suffers from imperception.

Incoherence. When a person's speech is of such a nature that another person is unable to follow his line of thought, it is said to be incoherent.

Forms of Insanity.

Amentia (absence of intellect) or in other words **Idiocy.** The term idiot is applied to one who from congenital defect has never had mental power. In absolute idiocy there is complete absence and impossibility of attention. Such people are unable to guard themselves against common physical dangers.

Imbecility is a minor form of idiocy. They are incapable of managing themselves or their affairs, and are incapable of being taught to do so as children.

Feeble-mindedness. The feeble-minded are those in whose case there exists from birth, or from an early age, mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision and control for their own protection, or for the protection of others.

Moral Imbeciles. Moral deficiency finds early expression in perversities of the character and conduct. The child is naughty, develops vicious sexual habits, is cruel, deceitful, irritable and violent; or he is, on the contrary, taciturn and dissembling. Education totally fails to modify such natures. As the child becomes a man, as he comes into more direct contact with society, his infirmity becomes more manifest. The dominant feature of moral deficiency is a profound egoism combined with a regard to good and evil; he is always a conceited braggart, and a liar of the first water. His exclusive aim is his pleasure, or his own interest, and to reach his aim he will not hesitate to use any means or expedient. Cruel and malicious towards his inferiors and towards the weak in general, he is cowardly towards anybody who is above him.

Almost always, other psychical anomalies are present in addition to the disorders of the moral sphere. There is **weakness of judgment**. He realises imperfectly the possible consequences of his acts, and in spite of all his precautions he ultimately enters into conflict with the law. **Impulsiveness** is usual. The moral insane readily yields to the first impulse.

A magistrate convicting an accused person who is unable to understand the proceedings is not competent to release on probation of good conduct but must report the case for orders of the High Court.[15]

Dementia. Dementia is a loss of faculties or powers of the mind in a person who was formerly in possession of them. In other words, a person formerly of sound mind, who has lost his memory, his powers of intellect and volition, in whom ideas, affections and determinations are utterly expelled, whose mind is apparently utterly destroyed, he, we say, is demented. He is in the same condition as an idiot. Dementia is that condition into which all long continued cases of insanity drift and is **gradual in its origin**. It is a process of degeneration.

The symptoms observed in dementia are : There is somnolence during the day and insomnia at night ; slowness in thought and movement ; loss of memory extending backwards, that is, there is loss of memory for recent events gradually extending backwards till he is left with only the memory of his childhood, he then thinks and acts as a child, there is excessive emotional reaction so that he

[15] *Addela Serribadu*, 13 Cr. L. J. 248. M. Benson and Sadasiva Aiyar J.J.

becomes irritable or unduly sentimental, sometimes there are delusions of neglect and persecution. There is inabilily to take in the meaning of simple sentences or of pictures. Later he is unable to recognise objects or to give them a name. He has little or no idea of time or place, does not know where he is, has no idea of his age and is unable to say what year it is. There is lack of coherence in the train of thought and voluntary attention is practically obliterated. In the **senile** type of dementia control of the sexual instinct is lost early. This is of considerable medico-legal interest and importance on account of the frequency with which old men, hitherto unsuspected of mental disorder and bearing a spotless reputation, are suddenly arraigned before a criminal court for a sexual offence often of a perverse character. Finally the instincts disappear.

Mania (Exaltation and Excitement). Mania is characterised by a condition of excitement or exhilaration in excess of that which is justified by the circumstances in which the individual suffering from it is placed and by disproportionately excessive activity of the movements of the large proximal joints. There are four cardinal symptoms of mania. Flight of ideas. Morbid sense of well-being and irritability. Impulsive character of the reactions. Motor excitement.

Mania is constantly preceded by a period of depression. This is important with reference to malingering. This depression sometimes amounts to a melancholic state.

The face of the maniac is flushed, the eyes brilliant, expression happy and animated. The manner and gestures

indicate a state of ease, yet the victim is timid. Lucidity is perfect, orientation and memory are intact. The attention is extremely mobile and is distracted by all external impressions. Ideas, uncontrolled are formed at random. Judgment is disordered. He is pleased with everything. He "never before felt so well." Irritability is evident in the violent outbursts of anger which occur on the slightest provocation. He will not be contradicted, and will accept no suggestions. The moral sense is diminished, he lies, cheats, steals, etc., without the least scruple.

He is erotic. Conversation is animated, strewn with eccentric remarks, strange words and puns. He is usually profane and obscene. Sleep is diminished, occasionally altogether absent ; but **in spite of the insomnia he experiences no fatigue.**

Melancholia (Extreme depression). Melancholia is characterised by a condition of misery in excess of that which is justified by the circumstances in which the individual suffering from it is placed and by lack of energy owing to temporary weakness of the muscles controlling the movements of the large proximal joints.

The signs and symptoms of melancholia are : Onset insidious, preceded by ill-defined symptoms such as, general prostration, insomnia, loss of appetite, discouragement. The features are drawn, head bowed down upon the chest, the arms hang inertly at the sides or rest upon the knees. The general bearing is slouchy.

Attention is markedly weakened. Intellectual exertion is impossible or accomplished after repeated and painful efforts. Lucidity is intact, but perceptions are incomplete,

uncertain, and often inaccurate. Everything appears strange or unrecognisable. The mood is sad and gloomy, pessimistic; he emits monotonous groans. He complains of having become indifferent towards everything, and of experiencing no affection.

The execution of the simplest act necessitates an effort so great that he gives up the attempt. Hs lives in constant indecision and uncertainty. Conversation is most difficult and unsatisfactory. His voice is scarcely audible and speech is indistinct. The same words are reiterated.

There is loss of body weight. Sleep is diminished and disturbed by nightmares. Cutaneous sensibility is blunted.

All melancholics are potential suicides, and require very close watching.

Acute Confusional Insanity. (Brain-fever toxic or infection insanity). This condition arises in persons exhausted after mental or physical stress, or as a result of typhoid, influenza, and other febrile conditions, child-birth and severe injuries. Early symptoms are: restlessness, insomnia, irritability, and inability to concentrate. Later there is mental confusion: the victim feels "all in a muddle". Illusions and hallucinations are prominent. He may mistake the identity of those around him. Conversation is incoherent and irrational. Memory for recent events is impaired. He may not know where he is or be able to name correctly the date, month or year. There may be fleeting delusions. There is general loss of control, conversation may become obscene and his behaviour erotic and degraded. Periods of excitement may

occur. Suicide may be attempted. Such cases should therefore, be kept under constant observation.

Dementia Praecox (Insanity of adolence). This is a process of mental disorganisation of irregular course which affects predestined individuals who have previously been intelligent, and who in most instances are youthful.

At the onset of the disease, he becomes shy, solitary and moody ; loses interest in his surroundings, becomes indifferent to his future, neglects his person and property. He may sit unoccupied with a vacuous expression on his countenance. This apparent depression may frequently be interrupted by outbursts of meaningless laughter. Some display an aimless restlessness and avoid the presence of anyone who seeks to approach them. He is usually conscious of his surroundings and knows where he is. His habits are usually dirty.

The most fundamental and constant phenomenon of dementia precox, is mental deterioration or dementia. While all of the elements of mental activity are affected in varying degrees in dementia precox, the dissociation of their functions is more evident than the actual impairment, and this dissociation or non-coordination of mental processes has been termed intrapsychicataxia, or schizophrenia (splitting of the psyche). This non-coordination of thought is especially manifest in the separation of thought-content and emotional reactions, i.e., unreasonable and unreasoning emotional reactions co-existent with an intellectual state that would normally control them, orapathy when emotion would be expected. The whole attitude and behaviour of the patient impresses one as

being incongruous. This incongruity in behaviour can sometimes be traced by psycho-analysis to hidden complexes or states of feeling which are more or less completely separated from consciousness and manifest themselves in the anomalous emotional reactions. These complexes are undoubtedly of great importance in the determination of the symptomatology of dementia precox[16].

In Dr. Sajous's Analytic Cyclopedia on Practical Medicine, 9th edition, 1924, Vol. III at page 765, there is an account of the mental disease known as "**Hebephrenia**", which is as follows :—

"The onset of this form of dementia precox is usually gradual and the patient may not come under medical observation for several years. The disease occurs at an earlier age than in the other forms, and frequently develops at or soon after puberty. Most of the cases begin before the 25th year. The individual, pre-disposed from childhood, apparently unable to withstand the rapidly increasing complications and responsibilities of life, especially the new instincts and feelings accompanying the maturing of sexuality succumbs to the strain, and the result is a slowly progressive mental deterioration which may reach any degree of dementia. It has often been said of these patients that they are "ship-wrecked on the cliffs of puberty." Previous to any definite dementia the individual generally complains of headache, sleeplessness, palpitation and various neurasthenic symptoms. He loses interest in his surroundings and occupation, and spends much of his time in listless day-dreaming. Capacity for continuous effort is lost, and, as a result of inefficiency, he frequently changes his position of employment, making the excuses that the work is too hard, that he is unfairly treated, that he does not feel well or strong. At the same time a mental and physical examination

[16] *Onkar Datt Nigam* v. *Emp.*, 36 Cr. L. J. 392 (399)=153 I. C. 780=19356. W. N. 53=1935 C. L. J. 45=1935 Cr. C. 228=A. I. R. 1935 Oudh 143.

reveals nothing characteristic. The mentality is good, and may even be much above the average. There is often observed, however, what has been termed the "shut-in" personality, characterized by seclusiveness, shyness, introspection, and self-absorption. The patient lives within himself, taking as little part as possible in the affairs of those about him.....In the physical examination there is nothing found to account for the various subjective complaints of the patient excepting evidence of a diminished resistance and vitality in the muddy complexion, the coated tongue, and sluggish bowels ; the cold, clammy hands and fluctuating colour of the face, indicative of a general loss of vasomotor tone or stability."

"One of the earliest and most characteristic of the definite symptoms of hebephrenia is the change in temperament and in the emotional life of the individual. Periods of restlessness or excitement recurring at intervals or alternating with states of depression, irritability, obstinacy or total indifference to everything making up their environment replace normal and rational reactions.....while the intellectual process are but little affected, the emotions are distinctly abnormal. The patient shows passion without cause, or is apathetic in the face of real calamity. Morality and the sense of responsibility are affected, with the result that not only are obligations neglected, but offences are committed against moral and civil law. Masturbation and promiscuous sexual intercourse are frequent, and petty crimes make patients of this disease common inmates of the prisons".....

"As has been said, there is from the first a progressive mental deterioration. This is early evidenced by a lack of interest in the environment, the field of consciousness being largely restricted to personal considerations.".....

"The behaviour undergoes a characteristic 'and progressive change ; the manner is childish, silly, affected, and gives the impression of insincerity. Silly laughter is particularly characteristic and occurs without the least provocation or relation to external circumstances.".....

"Judgment discrimination is affected early, and as the dementia progress become badly disorganized..... It may be taken as a well-

established rule, however, that a definite dementia, or actual intellectual loss, once established is permanent."……

"It is characteristic of the hebephrenic form of dementia precox, in contradistinction to the catatonic and paranoid forms, that the emotional and intellectual deterioration are the main features, and are but little complicated by the occurrence of the more active symptoms common in the other forms, such as negativism, catalepsy sterotypies, persistent and systematized delusions, etc." [16]

In the **Katatonic** form of this disorder, the peculiarities of conduct are shown in their most typical form. There are two varieties of katatonia, the **excited** and the **depressed**.

In the excited form he is in a state of unceasing activity, violent, destructive and impulsive. Strikes statuesque attitudes, grimaces, and performs curious antics. He appears to be willfully obstinate and contrary ; this behaviour is known by the name of **negativism**. In this condition he either refuses to do anything he is told or does just the opposite. If you ask him to show his tongue, he closes his separately and so on. He may copy any action that may be performed in front of him. This is spoken of as **echopraxia**. Another manifestation is to repeat any words or remarks made to him ; for instance, if you say to him, "how old are you" he will reply, "how old am I." This is spoken of as **echolalia**. Fantastic delusions and hallucinations are usually present.

In the depressed form he becomes mute. He will stand rigidly in the same position from morning till night provided he is not disturbed. He behaves like a statue. He stands like a dummy, mucous flowing from his nostrils and saliva drooling from the corners of his mouth. He

may gradually pass into a condition of stupor and remain almost immobile for months. I have known a patient to be in such a condition for eighteen months.

Paranoia (chronic delusional insanity). This condition usually occurs among middle-aged people, characterised by delusions which are closely related and bound up together into a system. Hence it is sometimes spoken of as systematised delusional insanity. The essence of the condition is a disorder of judgment in which the person **projects** his own ideas on to other people.

The delusions develop progressively. The disorder is so insidious that it is difficult to say when it commenced. The victim finds reasons for his beliefs and endeavours to shape his conduct in accordance with them. Hallucinations do not occur. There is abnormal keenness of the perceptive faculty. From the commonplace salutations of his friends he perceives that he is a greater man than he had hitherto supposed. That he is the richest or the wisest man alive and if these beliefs are not accepted by others he develops persecutory ideas and declares there is a conspiracy formed against him.

In a flower worn by a lady he perceives that she is in love with him. He may threaten or attempt murder if his attentions are not reciprocated. He grows more and more suspicious and vain. Delusional interpretations become more and more numerous until finally the **fixed idea**, an idea of persecution or grandeur, around which a whole delusional system is subsequently built up.

As soon as the fixed idea is formed, the disease develops very rapidly and is characterised by :

The unchangeableness of the fundamental fixed idea ; the absolute faith he has in his delusions ; the apparent logic of the delusional system ; the absence, or at least extreme rarity of hallucinations, and the presence of numerous false interpretations ; the promptness and intensity of the reactions ; and the absence of intellectual enfeeblement regardless of the length of time that the disease has lasted.

These people need careful watching for the so-called "**homicidal maniacs**" are usually paranoics.

Epileptic Insanity. Because an individual suffers from epileptic fits he must not be considered as insane. The insanity rarely, if ever, develops before the epilepsy has been of long standing. The main factor which determines the incidence of epileptic insanity appears to be frequent recurrence rather than severity of the convulsions ; indeed it is more liable to occur in those who are subject to attacks of minor epilepsy than in those who suffer from major epilepsy only.

In major epilepsy or "grand mal," the fit is usually ushered in by an aura. After the aura there is usually turning of the head and eyes to the right or left, with loss of consciousness, the limbs on one or both sides are drawn up in **tonic spasm** (continuous tension), the person becomes deeply cyanosed, froth appears at the mouth, and he seems to be at the point of death. The tonic spasm relaxes and is replaced by clonic jerks (rigidity and relaxation succeeding each other) affecting all the parts which had just been tonically contracted, and the tongue may be severely bitten during the clonic contractions and the froth at the mouth becomes blood-stained if this happens.

There succeeds complete flaccidity of all the muscles, the breathing is loud, rapid and stertorous and the contents of the bladder and rectum may be expelled. Occasionally there is a brief poriod of consciousness, and he may vomit, he may sink into a deep stuporous sleep which lasts for hours.

Besides these severe attacks of epilepsy there are others of much slighter character so far as their outward manifestations are concerned. These are attacks which are known as "petit mal" and are vaguely described as "sensations", "turns," "lapses," "spells," etc. Sometimes these attacks are the only ones which occur. In other cases there are also attacks of severe epilepsy in the same person. One of the most common forms which they assume is a momentary loss of consciousness, occurring suddenly, interrupting for a moment the person in the middle of a sentence. In such an attack the sentence may be resumed where it was broken off and the person remain quite unconscious that anything has occurred. Sometimes there is mental confusion lasting only for a few seconds, and of this and this only the person may be aware when he regains consciousness. Usually there is a slight change of colour, the eyes may become fixed and the pupils dilated. Sometimes there are vague and indefinite movements of the hands, not infrequently if the person is walking or standing he suddenly falls but automatically picks himself up again, rubbing in an absent-minded way the part he may have hurt in his fall. Sometimes the attacks are more than momentary. They may occur suddenly and unexpectedly.

These attacks of "petit mal" vary in severity and

duration from merely momentary lapses little noticeable by others to attacks in which consciousness is lost for some minutes.

There is one condition of the highest medico-legal importance which may occur as a sequel to attacks of "petit-mal" viz : that which is known as "post epileptic automatism". After a slight attack—and such attacks are often so slight as to pass almost, if not quite, unnoticed—the person may go through some elaborate and apparently purposive act. He may, for example, begin to undress himself, and if interfered with, will resent it and may become violent.

A person had attacks of severe epilepsy and also of "petit mal." On one occasion he had a slight attack in the street. It was apparently momentary, but after it was over, he began to undress himself where he was. He was taken in charge by the police, brought before a magistrate who ridiculed his story and fined him 25 shillings or 24 hours' imprisonment.

Another instance which illustrates the great medico-legal importance of this automatism is the following :—

A patient was shown into the consulting room and while telling his story he was noticed to stop, suddenly become pale, and to look absent-minded. This only lasted for a few seconds, when he immediately made a dart for the fire place, seized the poker, and was about to assault the doctor, whom he had never seen before, when he was seized and overpowered by students who were in the room. There is a little doubt that crimes are occasionally committed—even homicide—by persons while they are in this irresponsible condition, and every case in which such a plea is urged as an explanation of apparent murder, has to be carefully scrutinised.

The following case was recently tried in England :

Harry Bagguley, aged 49 years, was charged with murdering his wife. The prosecution story was as follows. The couple were married in 1913, and there was one child. His wife obtained an order against Bagguley under the Guardianship of Infants Act, and went to reside with her parents at New Longton. While there she received letters from him complaining that he was being ignored by his wife and daughter, and that he was "being treated like a dog." Bagguley had been in the employ of a cotton manufacturer at Accrington, and on the night the woman was shot he apparently took a revolver and some ammunition from a cupboard in his employer's residence. He went to the house at New Longton, where his wife was staying, and when told by a step-sister that Mrs. Bagguley was not in he forced himself into the house. When Mrs. Bagguley came back she at once ordered her husband out. She tried to put him out, but he again forced his way in. Then the couple, still struggling, got outside. Directly afterwards a shot was fired, and Mrs. Bagguley screamed for help. Three more shots were fired, and as the woman was being helped into a neighbour's house her husband fired into her back, and remarked, "I have done you this time, haven't I?" Then, turning to a by-stander, he stated, "You can have the gun now. I have done what I wanted." He was asked to go to the police station, but he refused, and declared that he would wait for the police. He did so, and when the officer arrived stated, "I am here. I have done the job with the intention I came for". When the officer was examining the revolver Bagguley added, "There is nothing to be afraid of. I have done it, and I am ready to take my punishment. The only thing I am sorry about is my little girl."

Defence counsel argued that Bagguley knew nothing about the occurrence. He was subject to minor epilepsy, after which he was liable to act like an automaton for varying periods. Bagguley, went into the witness-box and stated that after an accident as a boy he had wandered about, not knowing what he was doing. In August 1897, he enlisted in the 1st Battalion of the Lancashire Fusiliers, and he subsequently served in Malta and Gibraltar, during which time he had "Mediterranean fever." Bagguley added that while in the Army he had lots of escapades, and in Cairo he made a barber, under threats, shaved his head like a Mahomedan. He knew nothing about

this incident until he went on parade the following morning, when, in consequence, he was reduced from a lance-corporal to a private. He regained his rank, but again lost it owing to another attack, in which he "dropped down in a faint." Again he knew nothing of what had happened. In January, 1909, he volunteered for India, where he had sunstroke. At the outbreak of the Great War he joined his old regiment with the rank of sergeant. In June, 1916, he received a commission as second lieutenant for gallant conduct in the field, but after being blown up by a shell he was sent home suffering from shell shock. Then came another of his seizures and he found himself in Southampton, in officer's uniform. As soon as he realised his position he returned to his headquarters, but he was sent to the reserve battalion to be placed under the observation of the medical officer. In 1917 he returned to duty in France, and at Messines he was wounded in the knee. He afterwards resigned his commission, but was granted the honorary rank of second lieutenant. Subsequently he re-enlisted in the Air Force, and went to India, and on his return to England as a quartermaster sergeant he was made treasurer of the sergeant's mess at Bury. Again he had another relapse, and found himself in Poole, Dorset. He was court martialled, and a medical board found that he had suffered from an attack of minor epilepsy, and was unfit for further service. On the day of the tragedy he felt a fit coming on him after dinner, and he remembered nothing more until he found himself in the police station at Leyland the following morning. His mind was still a blank about killing his wife. Dr. Arthur Lowndes, who was called for the prosecution declared that when he saw Bagguley on the night of the crime he appeared to understand what had happened, and seemed normal. Cross-examined, Dr. Lowndes added that epilepsy produced a condition of automatism and loss of memory. Mr. Justice Humphreys: How long does it last?—A few seconds.—Have you ever known it last for hours?—I have never met a case.—Major Oswald Duke Jarvis, of Edinburgh, produced a medical certificate regarding Bagguley's discharge from the Army, in which it was shown that he had suffered from epilepsy and loss of memory. Major Jarvis thought that epilepsy produced a condition of post-epileptic automatism, in which a man might do certain things of which he had no knowledge. His

mind would be a complete blank while he was in that state.—Judge : May a man leave his house, go to the railway station, buy a ticket, pay for it, then go to another town and perhaps take a tram ride, pay for it, do some shopping. then go back and when he recovers be unaware he has ever left the town ?—Witness : That is exactly the situation. Dr. Alastair Robertson Grant, deputy medical superintendent of the Country Mental Hospital, Whittingham, Preston, stated that he considered it possible for Bagguley to have acted in the manner he did while in the condition described, and still know nothing of what had happened. Dr. Grant cited the case of a man who threw his baby into the sea at Blackpool, in the presence of 20 witnesses, and then went up to one of them and said, "I have thrown my baby over the pier." That man, added Dr. Grant, was found guilty, but insane.—Summing up, the judge remarked that there was no doubt that Bagguley was an epileptic. It might be difficult to understand how a man in such a condition gave rational answers to questions. The medical witnesses had given important evidence which helped them to understand something, and the public were very much indebted to the men who devoted their lives to the scientific investigation of such a difficult problem as disease of the brain.

If the jury could reconcile Bagguley's conduct with the theory of post-epileptic automatism they must return a verdict of "guilty, but insane". The jury returned a verdict of "guilty, but insane", and Bagguley was ordered to be detained during His Majesty's pleasure.

An important exposition of the law relating to insanity and crime was made by the Lord Chief Justice of England (Lord Hewart) in his summing-up at the Sussex Assizes on the 8th of March 1935 in the case in which Percy Charles Anderson, 21, motor mechanic, was indicted for the murder of Miss Edith Constance Drew-Bear, 21, whose body, with three bullets in it and a scarf tied tightly round the neck, was found in a water tank on the 25th of November 1934.

The prosecution alleged that after firing three shots into the girl's body, Anderson caused her death by tying his scarf tightly round her neck. He later boarded an omnibus, dripping wet and without boots, jacket, or waistcoat. He was alleged to have told the police that he had a quarrel with the girl, who had accused him of smiling at another girl. The statement went on :—"Then I got a pain through my head. I started swimming for my life.....I cannot remember any more from the time I sat down with my young lady until I found myself in the sea."

Evidence was then called.

Dr. E. W. Lindeck of Brighton, questioned by Mr. Eric Neve who defended, said that it was possible to have an epileptic condition which produced a complete black-out of the memory. There was a condition which produced a state of maniacal excitement such as occurred in an ordinary seizure but without the usual fit. Individuals affected like that could commit the most brutal acts of violence, being at the same time perfectly oblivious both to the injuries they inflicted upon others and to the damage which they themselves sustained.

Replying to further questions by Mr. Neve, Dr. Lindeck said that there was a condition sometimes called masked epilepsy. A feature was that the individual could not only commit acts of ungovernable fury but could subsequently perform a number of other acts purely automatically. He would be unconscious of what he was doing and why he was doing it.

When Anderson went into the witness box he said he had no recollection at all of what happened after Miss Drew-Bear spoke to him about some girl smiling at him while they were sitting together beside the tank. He then seemed to get a pain across his head and a blankness seemed to come over him. The next thing he remembered was that he was in the sea.

Counsel addressed the jury.

Mr. Eric Neve in his final speech for the defence, said the explanation which he put forward was that if Anderson killed the girl in the way that was suggested he had not the faintest knowledge

of what he was doing. He submitted that Anderson was suffering from masked epilepsy at the time of the crime. He appealed to the jury to return a verdict of "Guilty, but insane".

The Lord Chief Justice, in opening his summing up, said the case had some importance in relation to the administration of the criminal law, and proceeded :—

"It is said that if at the time of the committing of the act the defendant was to be excused from the ordinary penal consequences of that act because he was, within the meaning of the criminal law, insane. I say within the meaning of the criminal law because the criminal law is very precise on these matters. That, it seems to me, is the real importance of this case. You have been told partly by omission—inadvertently no doubt, partly by suggestion—well considered I should think to connive at a view of the criminal law which is absolutely wrong. I ask you to take the law from me.

"What is the law with regard to crime and insanity? The foundation of the whole matter, the very root of it which is vital to all citizens in all civilized communities, is a proposition which has not yet been offered It is the real foundation of the law relating to insanity : '*Everyman is presumed to be sane and to possess a sufficient degree of reason to be responsible for his crimes until the contrary is proved to the satisfaction of the jury.*

"If the contrary is to be urged, what is it that has to be done? '*To establish a defence on the ground of insanity it must be clearly proved*'—not in the phrase in which Mr. Neve spoke more than once, that is 'suggested'—that will not do ; *it must be clearly proved that at the time of the committing of the act the party accused was labouring under*—what ?

"Now every word of this is of first-rate importance—'*Under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing or*'—observe the word is not "and" but "or"—'*that he did know it but did not know that what he was doing was wrong*'. That being so, what is the burden upon the defence where such a defence is raised ? You observe that the burden is upon the defence. The Crown starts with the presumption that every man is sane.

"There are three things which must be clearly proved—not faintly or rhetorically suggested. First, it must be clearly proved that at the time of the committing of the act the accused person was suffering from disease of the mind. That is stile Number One. Secondly it must be clearly proved that because of that matter, and not because of something else, he was then labouring under a defect of reason. This is stile Number Two. Then comes the choice of stiles. He need not get over both of them, but he must get over one or the other. It must be clearly shown that, because of that disease of the mind resulting in infirmity of reason, either he did not know the nature and quality of his act or, if he did, he did not know what he was doing was wrong.

I wish you to have those points in your mind to-day. This case does not begin to be established on the part of the defence until you are satisfied by clear proof, not by vague suggestion, that at the time when this act was done, if you believe that this man did it, his mind was diseased, his reason was consequently defective, and therefore, and not otherwise, either he did not know what he was about, or, if he did, he did not know what he was doing was wrong.

"It seemed to be suggested to you that unless you come to a certain conclusion to some extent in the prisoner's favour, you were interfering, if I followed it, with the solar system and in the breaking off the singing of birds. (Mr. Neve had concluded his speech to the jury by asking them to let the accused man go "and see the sunshine and hear the larks signing".)

"I am sure you will not have any consideration of that kind present in your mind. The solar system is much more likely to be interfered with and the song of birds much more likely to cease if juries upon a sentimental exhortion fail to do their duty. You have taken an oath to give a true verdict, not upon fantasy or romance, but upon evidence.

"Then I would ask you to consider this, whether it is better that a guilty man, if he be guilty, should be punished, or that a sane man, on a false allegation of insanity should be detained for a long time in a criminal lunatic asylum? Please do not consider consequences

at all. The question for you is much simpler, much more direct, much more free from any consideration of that sort."

The jury returned a verdict of "guilty".

Before passing sentence the Lord Chief Justice remarked: "the jury have come to the only conclusion which was possible for conscientious juries to entertain".

A remarkable case of epileptic automatism is that of the Revd. Ansel Bourne mentioned by Professor James.

The patient, who was an itinerant preacher, disappeared on the 17th of January 1887, and did not recover until the 14th of March of the same year, when he found himself keeping a confectioner's shop under the name of A. J. Browne in Norristown, Pensylvania, 200 miles away.

During the whole of the attack nobody in Norristown even suspected that there was anything wrong with the man.

Insanity of Indian Hemp. Hemp as an intoxicant is used in three forms, namely : bhang. ganja, and charas. *Ganja* consists of the plant itself, stem, leaves and flowers matted together in long bundles. In other words, it is the dried flowering top of the cultivated female plant which has become coated with resin in consequence of having been unable to set seeds freely. *Bhang* is a mixture of the leaves and capsules without stems. It is made into a decoction and drunk, often mixed in various ways. It is in this form that the Sikhs take the drug. *Charas* is the resinous exudation from the leaves and flowers. It is the most concentrated form and is either smoked or swallowed whole. Ganja is the variety used (as is charas) for smoking in chillums usually mixed with tobacco. It is the variety commonly used in Bengal.

Bhang is often taken, especially by Sikhs, to nerve themselves for acts requiring dash and courage, and it is

well-known that people intoxicated with hemp drugs are liable to commit acts of homicidal violence, to run amok, or to attack people without provocation. It is certain that acts of this kind, quite unpremeditated, may be performed practically unconsciously under the influence of charas, etc., and no recollection may remain on recovery. On the other hand, this property of the drug may be taken advantage of by a man to nerve himself for a deed which he has already planned—murder, etc.

The immediate effect of a large dose of hemp is first, dizziness followed later by excitement, delirium, hallucinations of a pleasing nature, visual and auditory, a rapid flow of ideas, a state of ecstasy, a great inclination to muscular movements with a marked tendency to acts of wilful damage and violence. A state of recklessness and disregard for danger and consequences, the whole, followed later by deep sleep and forgetfulness of all but the initial symptoms.

The most common form of disorder, the result of hemp excess, is a condition of acute mania of short duration. It is a violent mania of *sudden onset* with great exaltation and sense of well being, restlessness, noisiness, intense irritation at the slightest control, a tendency to commit wilful damage and especially acts of reckless violence. The face is suffused, the eyes bloodshot. This state is always followed by complete forgetfulness of the entire period. There is no condition attended with reckless violence to all compared with these cases, and once seen, such an instance can never be forgotten, and it is this fact which renders hemp drug insanity of such importance from a medico-legal point of view, as very many cases of

murder have been committed during this condition, and when no opportunity of examining a person arises, a *history of sudden onset* of excitement with intense violence, resulting in a brutal unprovoked murder with proof of administration of the drug and complete forgetfulness afterwards, is very significant.

Impulsive Insanity. There are states of the mind in which a person feels impelled to perform certain acts against his will.

Dipsomania is one form of the disorder. It comes on in attacks during which the person is unable to resist drinking alcoholic preparations to an inordinate extent although he is most anxious to abstain.

Kleptomania is a recurrent impulse to steal.

Pyromania is a recurrent impulse to set things on fire.

Some people are periodically impelled to mutilate animals. Others, again, are impelled to commit murder or suicide. Many of this latter class seek to be taken care of until the impulse has passed off.

The characters of this disorder are: Incessant recurrence of the obsession; resistance which almost invariably proves to be useless; mental anguish while the struggle between instinct and volition is going on; and relief, when, for better or worse, the struggle is over.

There is no disturbance of sensation in these cases of obsession, and perception is normal except for the rare occurrence of hallucinations. The judgment is sound, there are no delusions, they have clear insight into their condition and there is no disturbance of memory.

The conduct is normal between the recurrences, as also is emotional reaction, and there is change of temperament. In other words, he is quite capable of managing himself and his affairs and of attending to his ordinary duties. For these reasons it is not justifiable to regard the disorder as an insanity.

LEGAL CAPACITY OF THE INSANE

1. As a general rule the insane are regarded as incompetent to give reliable evidence ; but the law allows the presiding judge to decide the matter in each individual case and it is left to the jury to determine how much importance they will attach to the evidence of an insane person.

In the case of written evidence (affidavits) a preliminary enquiry must be held to determine whether the person's insanity is of such a nature as to render unreliable his evidence upon the particular matter under consideration.

2. For a will to be valid the law requires the testator to have a "sound disposing mind" either at the time when he gave instructions for the will to be prepared or at the actual moment of its execution ; it is not necessary that he should have a "sound disposing mind" on both occasions.

When a medical man is called upon to decide whether an insane is of a sound disposing mind, he should endeavour to ascertain :—

(a) Whether the patient understands the nature of the will ;

(b) Whether he understands the nature of the gift ;

(c) Whether he is capable of enumerating, on the one hand, the details of his estate and, on the other, the individuals who have any reasonable claim to benefit from it ;

(d) Whether there appears to be any person who has exercised undue influence on his decision ;

(e) Whether he is suffering from any delusion which might influence his decision, and whether he has any insane dislike to or suspicion of any member or members of his family, who might in the ordinary course become beneficiaries ;

(f) Whether he has any delusion respecting his property, which might influence his decision ;

(g) Whether, having once announced his decisions, he is capable of recapitulating them, say a few days later.

These are the main points upon which the medical man will be cross-examined should he be called upon to give evidence when the will is disputed.

It is the general rule at law that an idiot or imbecile cannot make a will, because he has no disposing mind.

CIVIL RESPONSIBILITIES

The occurrence of insanity does not excuse a person from the performance of a contract made previously to his becoming insane.

Contracts for "necessaries," made by an insane person not so found by inquisition, are binding. By the term "necessaries" is meant such articles as clothing ; but the term is an elastic one and it is left to the judge and jury to decide what articles are "necessaries."

Criminal Responsibilities.

A person who is suffering from insanity, is not, on that account considered irresponsible for his acts, unless the disease of his mind is of such quality as to bring him under section 84 of the Indian Penal Code which lays down—"Nothing is an offence which is done by a person who, at the time of doing it, by reason of unsoundness of mind, is incapable of knowing the nature of the act, or that he is doing what is either wrong or contrary to law."

It is not sufficient to show that the accused was insane ; it must be proved that at the time he committed the offence, he was, by reason of unsoundness of mind, incapable of knowing the nature of the act, or that what he did was either wrong or contrary to law.

It is for the jury to determine whether the prisoner, when he committed the offence, with which he stood charged, was incapable of distinguishing right from wrong or under the influence of any delusion which rendered his mind at the moment insensible of the nature of the act he was about to commit—since in that case he would not be legally responsible for his conduct. On the other hand, provided the jury should be of opinion that when he committed the offence he was capable of distinguishing right from wrong and not under the influence of such a delusion as disabled him from discerning that he was

doing a wrong act or one contrary to law, he would be amenable and held guilty in the eye of the law. In other words, to establish a defence on the ground of insanity it must be clearly proved that at the time of committing the act the party accused was labouring under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing ; or if he did know it, that he did not know that what he was doing was wrong. If the accused was conscious that the act was one which he ought not to do and if that act was at the same time, contrary to the law of the land, he is punishable. The standard to be applied is whether according to the ordinary standard adopted by reasonable men the act was right or wrong.[17]

Any disease which so disturbs the mind that you cannot think calmly and rationally of all the different reasons to which we refer in considering the rightness or wrongness of an action, any disease which so disturbs the mind that you cannot perform that duty with some moderate degree of calmness and reason, may be fairly said to prevent a man from knowing that what he did was wrong.[17]

The onus of proof where the plea of insanity is taken on behalf of the accused lies on him and it must be proved affirmatively that the accused was insane at the time when he committed the act in question.[18] But this does

[17] *Kazi Bazlar Rahman* v. *Emp.*, 30 Cr. L. J. 494=115 I. C. 561=A. I. R. 1929 Cal. 1=33 C. W. N. 136=Ind. Rul. 1929 Cal. 385=48 C. L. J. 307.

[18] *Kazi Bazlur* v. *Emp.*, *Supra* ; *Nga Sau Pe* v. *Emp.*, 38 Cr. L. J. 397=167 I. C. 395=A. I. R. 1937 Rang. 33 ; *Sardar Bakhsh* v.

not mean that the accused must lead evidence. If it is apparent from the evidence on the record, whether produced by the prosecution or by the defence, it is open to the Court to consider whether the evidence proves to its satisfaction that the accused comes within the exception of sec. 84 I. P. C.[19] That onus may be discharged by producing evidence as to the conduct of the accused shortly prior to the offence and his conduct at the time or immediately afterwards, also by evidence of his mental conditions, his family history, and so forth. If contemporaneous acts of his are proved to have been of such a nature as to indicate that he was quite incapable of forming rational views, that would be a strong element to show that at the time of the crime in question he was not capable of knowing that it was a wrongful act.[20] It must, however, be borne in mind that his condition, antecedent and subsequent to the commission of the crime, is relevant only in so far as it might assist the Court in

Emp., 35 Cr. L. J. 1398=151 I. C. 672=35 P. L. R. 703 ; *Emp.* v. *Sajjan Singh*, 32 Cr. L. J. 816=139 I. C. 746=Ind. Rul. 1931 Lah. 506 ; *Emp.* v. *Bahadur*, 29 Cr. L. J. 204=106 I. C. 796=9 Lah. 331 =A. I R. 1928 Lah. 796 ; *Chandu Lal* v. *Emp.*, 25 Cr. L. J. 348= 77 I. C. 236=21 A. L. J. 776=A. I. R. 1924 All. 186 ; *King-Emp.* v. *Ram Sundar Das*, 23 C. W. N. 621=29 C. L. J. 209=20 Cr. L. J. 383 ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536 ; *Onkar Datt Nigam* v. *Emp.*, 36 Cr. L. J. 392=153 I. C. 780=1935 O. W. N. 53= 1935 O. L. J. 45=1935 Cr. C. 238=A. I. R. 1935 Oudh 143.

[19] *Emp.* v. *Musammat Anandi*, 45 All. 329 (330)=A. I. R. 1923 All. 327=24 Cr. L. J. 225=71 I. C. 689.

[20] *Emp.* v. *Bahadur*, 29 Cr. L. J. 204 (205)=106 I. C. 796=9 Lah. 331=A. I. R. 1928 Lah. 796.

coming to a conclusion as to his mental capacity at the time when he committed the offence. The mere fact that on former occasions he had been occasionally subject to insane delusions or had suffered from derangement of the mind, or that subsequently he had at times behaved like a mentally deficient person is *per se* insufficient to bring his case within the exemption.[21]

Where for months prior to the occurrence the accused had shown symptoms of insanity and it was after a stay of nearly a year in the Lunatic Asylum that he was considered to be in a fit state to undergo his trial, the inference seemed irrestible that he had been in a continuous state of insanity, and whatever act he did he did in an irresponsible way and did not know the nature thereof or that it was wrong if it happened to be a wrong act according to law.[22]

To establish a ground of insanity it must clearly be proved that at the time of committing the act the party accused was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or as not to know that what he

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[21] *Tola Ram* v. *Crown*, 8 Lah. 684 (690)=28 Cr. L. J. 598=102 I. C. 774=29 P. L. R. 104=A. I. R. 1927 Lah. 674 ; *John Dowlat Moon* v. *Emp*, 29 Cr. L. J. 393 (397)=108 I. C. 424=A. I. R. 1928 Pat. 363 ; *Chandgi* v. *Emp.*, 33 Cr. L. J. 634=138 I. C. 532=33 P. L. R. 211=A. I. R. 1932 Lah. 260=1932 Cr. C. 325=Ind. Rul. 1932 Lah. 508 ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714 (717)=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536 ; *Nabi Ahmad Khan* v. *Emp.*, 33 Cr. L. J. 542 (545)=137 I. C. 800=9 O. W. N. 355=1932 Cr. C. 373=A. I. R. 1932 Oudh 190=Ind. Rul. 1932 Oudh 283 ; *Bagga* v. *Emp.*, 32 Cr. L. J. 1230=134 I. C. 773=32 P. L. R. 331=A. I. R. 1981 Lah. 276=1931 Cr. C. 532=Ind. Rul. 1931 Lah. 981.

[22] *Bhagwati Prasad* v. *Emp.*, A. I. R. 1924 Oudh 190=24 Cr. L. J. 741=74 I. C. 69.

was doing was wrong. It would be obviously very difficult ordinarily to prove the precise state of an offender's mind at the time of the commission of an offence, but some indication thereof is often furnished by the words or the conduct of the offender while committing it, or immediately before or after the commission of the offence.[23] Where there is nothing to show that he was incapable of understanding the nature of his act at the time when the offence was committed, the plea of insanity is not established.[24]

Insanity affects not only the cognitive faculties of the mind which guide our actions, but also our emotions which prompt our actions and the will by which our actions are performed. It is only unsoundness of mind which materially impairs the cognitive faculties of the mind that can form a ground of exemption from criminal responsibility, the nature and the extent of the unsoundness of mind required being such as would make the offender incapable of knowing the nature of the act, or that he is doing what is wrong or contrary to law. If it is an open question, a mere possibility that accused may have been insane, the presumption is that he was respon-

[23] *Dewa Ram* v. *Emp.*, 38 Cr. L. J. 893 (894)=170 I. C. 431=A. I. R. 1937 Lah. 486 ; *Tola Ram* v. *Emp.*, 28 Cr. L. J. 598 (600)=8 Lah. 684=102 I. C. 774=29 P. L. R. 104=A. I. R. 1927 Lah. 674 ; *Nabi Ahmad Khan* v. *Emp.*, 33 Cr. L. J. 542=137 I. C. 800=9 O. W. N. 355=1932 Cr. C. 373=A. I. R. 1932 Oudh 190=Ind. Rul. 1932 Oudh 283 ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714 (716)=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536.

[24] *Chandgi* v. *Emp.*, 33 Cr. L. J. 634=188 I. C. 532=33 P. L. R. 211=A. I. R. 1932 Lah. 260=1932 Cr. C. 325=Ind. Rul. 1932 Lah. 508.

sible for his action unless the kind of insanity referred to in sec. I. P. C., is affirmatively proved.[25] Where a man was of unsound mind at the time he committed the deed but he knew perfectly well he was doing what was a wrong thing to do, he cannot claim exemption of the said section.[26] The finding that he was not in a normal state of mind at the time he committed the act is, however, *per se* insufficient to bring a case within the provisions of the said section unless it is shown that he was by reason of such unsoundness of mind incapable of knowing the nature of the act or that what he was doing was either wrong or contrary to law.[27] A man may be suffering from some sort of insanity in the sense in which the expression is used by medical man, but may not be suffering from unsoundness of mind as contemplated by law. If he is capable of knowing the nature of the act or of realizing that the act is wrong or contrary to law, he must be held to be guilty.[28] To ascertain whether a person

[25] *Emp*, v. *Gedka Goala*, 38 Cr. L. J. 846 (847)=170 I. C. 74=18 P. L. T. 294=A. I. R. 1937 Pat. 363=16 Pat. 333; *King-Emp.* v. *Ram Sundar Das*, 23 C. W. N. 621=29 C. L. J. 209=20 Cr. L. J. 383; *Emp.* v. *Bahadur*, 29 Cr. L. J. 204=106 I. C. 796=9 Lah. 371=A. I. R. 1928 Lah. 796; *Maulu* v. *Emp.*, 25 Cr. L. J. 576=81 I. C. 64=A. I. R. 1923 Lah. 619. But see *Zurab Gul* v. *Emp.*, 38 Cr. L. J. 533=168 I. C. 373=A. I. R. 1937 Pesh. 38.

[26] *Lachman* v. *Emp.*, 25 Cr. L. J. 683=81 I. C. 171=22 A. L. J. 116=46 All. 243=A. I. R. 1924 All. 413.

[27] *Nga Kan Tha* v. *Emp.*, 34 Cr. L. J. 791 (793)=144 I. C. 437=A. I. R. 1933 Rang. 144=1933 Cr. C. 734=Ind. Rul. 1933 Rang. 111.

[28] *Emp.* v. *Sajjan Singh*, 32 Cr. L. J. 816 (818)=139 I. C. 746=Ind. Rul. 1931 Lah. 506; *Pancha* v. *Emp.*, 32 Cr. L. J. 714 (716)=

was incapable of knowing the nature of the act, a very common test was to ask whether the man would have committed the act if a Policeman would have been at his elbow.[29]

There is no rule of law which enables a person to set up a defence of ungovernable fury unless that defence is proved affirmatively to amount to a defence of insanity so that he either did not know what he was doing or did not know that what he was doing was wrong.[30] Uncontrollable impulse[31] co-existing with the full possession of the reasoning powers is no defence in law, nor is moral insanity, i.e., existence of delusions[32] which indicate a defect of sanity such as will relieve a person from criminal responsibility, any defence in law.

139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536 ; *Mani Ram* v. *Emp.*, 28 Cr. L. J. 120=99 I. C. 328=8 Lah. 114=8 L. L. J. 566=27 P. L. R. 823=A. I. R. 1927 Lah. 52 ; *Jalal* v. *Emp.*, 30 Cr. L. J. 1024=119 I. C. 270=Ind. Rul. 1929 Lah. 862.

[29] *Onkar Datta Nigam* v. *Emp.*, 36 Cr. L. J. 392 (400)=153 I. C. 780=1935 O. W. N. 53=1935 O. L. J. 45=1935 Cr. C. 228=A. I. R. 1935 Oudh 143 ; *Karma Urang* v. *Emp.*, 114 I. C. 159=A. I. R. 1928 Cal. 238=32 C. W. N. 342=30 Cr. L. J. 247.

[30] *Nga Kwe* alias *Lal Sat* v. *Emp.*, 38 Cr. L. J. 278=166 I. C. 527=A. I. R. 1937 Rang. 26 ; *Sher Singh* v. *Emp.*, 25 Cr. L. J. 395=77 I. C. 443=A. I. R. 1923 Lah. 508.

[31] *Kazi Bazlar Rahman* v. *Emp.*, *supra* ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714 (717)=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231=Ind. Rul. 1932 All. 536.

[32] *Kazi Bazlar Rahman* v. *Emp.*, *supra* ; *Jalal* v. *Emp.*, 30 Cr. L. J. 1024=119 I. C. 270=Ind. Rul. 1929 Lah. 862.

The accused had a dream in which Goddess *Kali* appeared to him and told him that his father was a descendant of the Goddess *Kali*, that his father's tongue was black, that either he would have to kill his father or his father would kill him and that he was to take the head to the Court at Silchar. The accused honestly believed this and cut off his father's head the next day and was proceeding with it to the Court when he was arrested. The Civil Surgeon said that the accused had definite delusion which passed off after a couple of months, that he could not tell right from wrong, that he was definitely insane and said that he wanted to dedicate his father's head to the Goddess *Kali*. The accused was given the benefit of sec. 84 I. P. C.[33]

Where the facts that the death of his son had unhinged the mind of the accused and that he often kept awake at night, was often silent or gave incoherent answers, attempted at times to commit suicide, was apparently at times subject to delusions, became violent, at times and had no motive for murdering his wife and daughter and attempting to murder another daughter, were proved by the evidence of a number of witnesses, the conclusion seems irresistible that he must have committed the offences without realizing the nature of his act and that the case falls within the purview of sec. 84 I. P. C.[34]

Where the accused believed herself to be possessed by evil spirit and killed her husband in pursuance of the bidding of the spirit on pain of being killed herself by that spirit, it is not a case of unsoundness of mind rendering her incapable of knowing the nature of the act or that she was doing what was either wrong or contrary to law and sec. 84 I. P. C. had no application to such a case.[35]

[33] *Karma Urang* v. *Emp.*, 30 Cr. L. J. 247=114 I. C. 159=32 C. W. N. 342=A. I. R. 1928 Cal. 238=Ind. Rul. 1929 Cal. 223.

[34] *Dewa Ram* v. *Emp.*, 38 Cr. L. J. 893=170 I. C. 431=A. I. R. 1937 Lah. 486. See also *Zurab Gul* v. *Emp.*, 38 Cr. L. J. 533=168 I. C. 373=A. I. R. 1937 Pesh. 38.

[35] *Mt. Sukni Chamain* v. *Emp.*, A. I. R. 1936 Pat. 245 (247)= 1936 Cr. C. 285=162 I. C. 25=37 Cr. L. J. 543=1936 P. W. N. 189.

It is not mere eccentricity or singularity of manner that will suffice to establish the plea of insanity ; it must be shown that the prisoner had no competent use of his understanding, so as to know that he was doing a wrong thing in the particular act in question.[36]

Where all that the evidence goes to show is that the accused was moody, irritable and conceited, and may be said to have been peculiar but at no time did he suffer from insanity of such nature or degree as to preclude him from knowing the nature of his act or to obscure the distinction between right and wrong, he is not entitled to the benefit of sec. 84 I. P. C.[37]

It is not every kind of franatic humour or something unaccountable in a man's actions that points him out to be such a mad man as is to be exempted from punishment ; it must be a man that is totally deprived of his understanding and memory and doth not know what he is doing, no more than an infant, than a brute or a wild beast. It is only such persons who are not the object of punishment. The circumstance of the convict having acted under an irresistible influence to the commission of the offence is no defence if at the time he committed the act he knew he was doing what was wrong.[38]

In order to claim exemption from criminal liability it is not enough to show that the physical and mental ailments from which the accused suffered had rendered his intellect weak and had affected

[36] *Kazi Bazlar Rahaman* v. *Emp., supra* ; *Mohammad Islam* v. *Emp.*, 32 Cr. L. J. 327=A. I. R. 1932 Oudh 77=129 I. C 323=7 O. W. N. 1100=Ind. Rul. 1931 Oudh 99=1931 Cr. C. 103 ; *Ramadhin* v. *Emp.*, A. I. R. 1932 Oudh 18=8 O. W. N. 1221=1932 Cr. C. 50=33 Cr. L. J. 163=135 I. C. 384=7 Luck 341.

[37] *Umar Khan* v. *Emp.*, 33 Cr. L. J. 186=135 I. C. 666=32 P. L. R. 804=A. I. R. 1932 Lah 11=Ind. Rul. 1932 Lah. 122=1932 Cr. C. 21.

[38] *Sardara* v *Emp.*, 29 Cr. L. J. 827 (828)=111 I. C. 331 ; *Tola Ram* v. *Emp.*, 28 Cr. L. J. 598 (600)=8 Lah. 684=102 I. C. 774=29 P. L. R. 104=A. I. R. 1927 Lah. 674.

his emotions and will[39] or that he was in a bewildered state of mind a day or two before the state of occuarence[40] or that has was ailing for sometime before the occurrence, had not taken food for some days and had no motive to commit the crime[41] or that he had not been quiet himself and had been disturbed and distressed by the shortage of cloth, rice and fodder[42] or that he was an inveterate *ganja* smoker.[43]

The accused was a young man of weak intellect: the motive actuating the offence was trivial and inadequate. As soon as he had killed his uncle, which he did by hacking him on the head and neck with a sword, the prisoner rushed about, brandishing his weapon, and shouting "Victory to Kali." He attempted to strike other persons, including his own father. When the paroxysm had passed off, during the Police enquiry, the prisoner appeared to be rational, but, immediately afterwards, he developed *aphasia,* attempted to commit suicide and was undoubtedly insane from that time for a period of five years. Held that these were the signs and *indicia* of insanity as expressed in works on the subject of Medical Jurisprudence, that, by reason of unsoundness of mind, he was incapable of knowing that he was doing an act which was wrong or contrary to law and that he was, therefore, not guilty of the offence of murder.[44]

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[39] *Tola Ram* v. *Emp.*, supra ; *Ismail* v. *Emp.*, 29 Cr. L. J. 540=109 I. C. 364.

[40] *John Dowlat Moon* v. *Emp.*, 29 Cr. L. J. 393=108 I. C. 424=A. I. R. 1928 Pat. 363.

[41] *Mahommad Sarwar* v. *Emp.*, 31 Cr. L. J. 164=120 I. C. 733=A. I. R. 1930 Nag. 63=1930 Cr. C. 151.

[42] *King Emp.* v. *Ram Sundar Das,* 23 C. W. N. 621 (623)=29 C. L. J. 209=20 Cr. L. J. 383 ; *Mabajjan Bibi,* 33 Cr. L. J. 476=137 I. C. 511=Ind. Rul. 1932 Cal. 339=A. I. R. 1932 Cal. 658=1932 Cr. C. 650.

[43] *Public Prosecutor* v. *Budipiti Devasikamani,* 29 Cr. L. J. 63=106 I. C. 559=27 M. L. W. 77=A. I. R. 1926 Mad. 196=55 M. L. J. 228 ; *King-Emp.* v. *Tincouri Dhopi,* 27 C. W. N. 290=39 C. L. J. 34.

[44] *Shibu Koeri* v. *Emp.*, 10 C. W. N. 725.

Just before the commission of offences the accused was behaving in an extraordinary manner and had been muttering something to himself that some persons had ruined him. No apparent sane motive could be alleged for the attack which was unaccountable. The accused was in normal condition at the time of trial. Held that it would seem from all the circumstances of the case that at the time when he attacked the deceased and his wife he was really suffering from an impulse of *homicidal mania* and it was probably as the result of it he committed these offences and that sec. 84 I. P. C. applied to the case[45]

The chief points which are indicative of the commission of homicide by an insane, are the absence of motive, the absence of concealment of the act, the absence of accomplices, numerous murders being committed at the same time and the absence of elaborate premeditation. Where, therefore, the persons upon whom the accused made the murderous assault, were strangers to him, he had absolutely no motive in firing at them, he committed his offences without any attempt at concealment of the crime, there was no accomplice with him, he did not only shoot one person but tried to kill two and there was also no premeditation in the commission of the offences with which he stood charged, he was acquitted on the ground of unsoundness of his mind at the time when he committed those offences.[46]

It is possible that in recovering from a fit of epilepsy

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[45] *In re Vodde Sabbigadu*, 27 Cr. L. J. 46=91 I. C. 78=1925 M. W. N. 649=22 M. L. W. 550=49 M. L. J. 598=A. I. R. 1925 Mad. 1238.

[46] *Oukar Datt Nigam* v. *Emp.*, 38 Cr. L. J. 392 (396)=153 I. C. 780=1935 O. W. N. 53=1935 O. L. J. 45=A. I. R. 1935 Oudh 143=1935 Cr. C. 228.

a person might be homicidal and any act which he did during or whilst recovering from such a fit would not be one for which in the present state of the law he would be criminally responsible.[47]

If there is evidence of premeditation and design or evidence that the prisoner after the act in question tried to resist arrest, the plea of insanity may be negatived. A prisoner trying to resist arrest after he had committed the act in question, shows that he is well aware that he has committed an act which in law is criminal.[48]

It is a mistake to suppose that in order to satisfy a jury that the plea of insanity is well founded, scientific evidence must be adduced. If the existence of facts is such as to indicate an unsound state of mind, that is quite sufficient.[48] But the opinion of the expert on lunacy cannot be brushed aside upon the strength of the lay opinion of the trial Judge.[49]

Entire devotion to the interest of the client, warm zeal in the maintenance and defence of his rights and the exercise of his utmost learning and ability—these are the points which can only satisfy the truly conscientious advocate. Every man accused of an offence has a

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[47] *Nga Ant Bwe* v. *Emp.*, 38 Cr. L. J. 667=168 I. C. 863=A. I. R. 1937 Rang. 99.

[48] *Kazi Baxlar Rahman* v. *Emp.*, 30 Cr. L. J. 494=115 I. C. 561=A. I. R. 1929 Cal. 1=33 C. W. N. 136=Ind. Rul. 1929 Cal. 385=48 C. L. J. 307.

[49] *Oukar Datt Nigam* v. *Emp.*, 36 Cr. L. J. 392 (399)=153 I. C. 780=1935 O. W. N. 53=1935 O. L. J. 45=A. I. R. 1935 Oudh 143=1935 Cr. C. 228.

constitutional right to a trial according to law and the duty of his counsel requires him to scan with legal knowledge the forms of proceedings against the accused.[48]

A counsel assigned for the defence of an accused charged with the offence of murder, cannot decline the office, nor can he abate a jot of his duty to the accused and to the court because of the querulous attitude taken by another counsel who is asked to associate himself with the counsel assigned to the accused.[48]

The object of cross-examination is not to produce startling effects but to elicit facts which will support the theory intended to be put forward. If the facts are clearly on record, the skilful cross-examiner knows when not to make an unskilful use of the right of cross-examination.[48]

When the commission of offence is clearly established, the absence of motive is immaterial. If the facts are not clear, motive may explain what otherwise would be difficult of explanation.[48]

The want of motive for the commission of a crime and its being committed under circumstances which render detection inevitable are, no doubt, important points to be taken into consideration, coupled with the other evidence on record on the question of insanity. But the fact that a horrible murder has been committed with no apparent motive does not lead to the inference that the perpetrator of the deed must have been mad at the time.[48]

Insanity which is not sufficient to operate as ground for exemption from criminal liability for the offence

committed may be a sufficient cause for not inflicting the extreme penalty of death for the offence of murder.[50]

The procedure in the case of lunacy at the time of the trial and the lunacy at the time of the commission of the offence are entirely separate matters leading to different consequences and these two matters must not be confused together. The first point that a Court has to decide when an accused person is brought before it who is suspected or alleged to be a lunatic, and before the Court can even proceed with the trial for the offence alleged to have been committed, is whether the accused person appears to the Court to be of unsound mind and consequently incapable of making his defence.[51] There is no provision of law in India making it incumbent upon a Committing Magistrate to order a medical inquiry upon a defence of insanity. It is only in such cases when the accused appears to be incapable by reason of mental infirmity, of taking his trial, that this issue of insanity must be tried before the trial for the offence is proceeded with.[52] For

[50] *Kazi Bazlar Rahman* v. *Emp., supra* ; *Pancha* v. *Emp.*, 33 Cr. L. J. 714=139 I. C. 147=A. I. R. 1932 All. 233=1932 Cr. C. 231= Ind. Rul. 1932 All, 536 ; *Chandgi* v. *Emp.*, 33 Cr. L. J. 634=138 I. C. 532=33 P. L. R. 211=A. I. R. 1932 Lah. 260=1932 Cr. C. 325 =nd. Rul, 1932 Lah. 508 ; *Mahommad Sarwan* v. *Emp.*. 31 Cr. L. J. 164= =120 I. C. 733=A. I. R. 1930 Nag. 63=1930 Cr. C, 151 ; *Maula* v. *Emp.*, 25 Cr. L. J. 576=81 I. C. 64=A. I. R. 1923 Lah. 619 ; *Mt. Sukni Chamain* v. *Emp.*, A. I. R. 1936 Pat. 245=1936 Cr. C. 285= 162 I. C. 25=37 Cr. L. J. 543=1936 P. W. N. 189.

[51] *Nabi Ahmad Khan* v. *Emp.*, 33 Cr. L. J. 542=137 I.C. 800=9 O.W.N. 355=1932 Cr. C, 373=A. I. R. 1932 Oudh 190=Ind. Rul. 1932 Oudh 283.

[52] *Emp* v. *Bahadur*, 29 Cr. L. J. 204=106 I. C. 796=9 Lah 371= A. I. R. 1928 Lah 796.

procedure in case of accused being lunatic, see Chapter XXXXIV of the Criminal Procedure Code (Act V of 1898).

MALINGERING OR FEIGNING INSANITY.

In considering the question of insanity do not accept without verification the statements of the person brought or sent to you for examination, for he may be a malingerer. It is often very difficult to discover malingering. Most individuals know little or nothing of insanity, and consequently do not represent the known types of the disease. The attitudes, the gestures, the reactions, and the conversation present a forced, pretended aspect of voluntary exaggeration, which at the very start may arouse your suspicion. Still as the clinical types are poorly defined in psychiatry, it would be unwise to declare the existence of malingering, merely from an unusual combination, and character of symptoms.

The principal elements upon which the diagnosis of malingering is to be based are as follows :—

The existence of a motive, such as legal prosecution, some sentence or punishment which the subject may seek to escape. The attack always (in such cases) follows the commission of the crime. No one would feign insanity to avoid suspicion. No doubt in the great majority of cases there is some important motive for assuming disease, but this is not always true, and sometimes the motive is not always apparent to the casual observer. Too much importance must not be attached to motive ; otherwise there is danger of being misled for what might be consi-

dered by one person as sufficient reasons for a certain action another might consider totally inadequate.

The time of onset of the supposed insanity is a fact to be recorded. As stated above, it is rare for a person to feign mental disease in order to avoid the suspicion of being connected with some crime. It is not assumed until a charge has definitely been laid; therefore care must be exercised in collecting the data of individual's conduct and conversation for some time previous to the crime in question. If he has already suffered from attacks of insanity earlier in life, it may be possible for mental disease to reappear somewhat suddenly, but otherwise it must be remembered that, save under exceptional circumstances **the rapid development of insanity is not common.** This suggests the next point for investigation viz :—

The mode of onset of the illness. Has it begun in the usual way with **sleeplessness** and possibly a feeling of **malaise**? Was he irritable, inattentive and restless for sometime before the more serious symptoms of mental disorder declared themselves? What is the **family history** of the individual? Does he inherit mental instability? Were his parents or immediate relations ever insane or subject io epilepsy, or kindred diseases? Endeavour to obtain a full life history of the patient; make a record of the illness he has had, any known peculiarities of disposition and weather he is known to be temperate or the reverse.

After these preliminaries the immediate symptoms of the supposed disease should be examined.

Remember that in a large majority of cases of mental disorder, **physical health is also affected.** *In some types of insanity the bodily health suffers severely; in others* the disturbances are less marked. This knowledge is very valuable, when the decision has to be made weather the disease is true or spurious.

Endeavour to find out whether there is any apparent cause, mental or physical, for a mental breakdown. Persistent refusal of food rather favours true insanity, for the malingerer rarely permits himself to be fed by means of an œsophageal or nasal tube.

Quantitative incoherence is **almost impossible in a sane person,** and if this symptom is present, there can be but little doubt as to the diagnosis being true insanity. If you doubt this statement just try to be incoherent for **three consecutive minutes only.** During this time you will probably constantly repeat the same words, and will not then be incoherent the whole time. A sane man may wander in his conversation, and may stray from subject to subject, but he can usually be followed. There is a very great difference between wandering conversation, and true incoherence.

Where a stranger visits a person of unsound mind, the latter commonly appears to be much better mentally than he really is as for the moment his **attention is arrested,** or he is on his guard. This characteristic is a very important one. It is owing to this peculiarity that so many causal observers overlook insanity, and pronounce a man to be sane when in truth he is suffering from profound mental disorder. But how is it with the malingerer? Is he willing to appear better than he

really is ? By no means. He is already afraid that he may **not** be judged to be insane, and he feels that he must run no risks. The appearance of a stranger usully heralds the apperarance of all symptoms, and the patient so far from seeming better, is much more energetically insane than when alone. It may be safely held that a person feigning insanity will rarely, if ever, try to prove himself sane ; for he runs the great risk of satisfying others that he is sane, a conclusion which he obviously desires to avoid. But there is no better proof in general, that the insanity (supposing other evidence of it to be strong) is real, than keen and eager attempts by the accused to **prove that he is sane,** and strong and indignant remonstrance against being held to be insane, although they would protect him against trial and punishment.

The malingerer is rarely content to be passive, while his mental state is in question, and commonly his energies are directed to producing, convincing proof of his insanity. He is often noisy, or will fling himself about the room in an extravagant frenzy when visited by strangers, and yet when alone he is quiet and well behaved. This **overacting** is very characteristic of the malingerer. He finds the strain of feigning insanity a severe one, and accordingly prefers to use his powers **when visitors are present,** rather than when alone. Another distinction between true and feigned insanity, is that the **truly insane are consistent** while the sane feigning insanity are more commonly inconsistent. The sane man has to be constantly adapting himself to his surroundings, which are for ever changing. He says that he will do something, but he does the reverse, because he finds that circumstances

have altered. An insane person is more consistent than this, and if he decides to do a certain thing, he will usually carry it through, in spite of its proving disagreeable or distressing. Convictions are often stronger in the mentally unstable, for the sounder mind is constantly weighing considerations for and against, and is more ready to abandon a previously declared determination. This question of consistency is important when examining persons for feigned insanity.

The **conduct** of the insane is usually **in keeping with their conversation**. If a man truely insane talks extravagantly, his conduct is correspondingly prodigal, or if his speech is the expression of melancholic thoughts, his attitudes will reflect the depression of his mind.

It happens sometimes in cases of real insanity that the person is far more insane in his actions than in his conversation, for he may be guarded in the latter. With the malingerer the reverse is not uncommonly observed, for the man who feigns disease, at times, forgets that he is acting a part, or in giving great attention to that phase of the part which lies in speech, loses sight of the phase, which lies in conduct, and so betrays himself. When a man refuses to speak (a symptom easily assumed ; a person has only to keep his mouth shut and not heed the questioner, and this requires but little art or exertion), information as to his true mental state can only be derived from a study of his behaviour. We know the diseases in which mutism occurs, (low forms of idiocy, stupor, dementia præcox, melancholia, epileptic insanity, and sometimes hysteria) we must examine the individual for the symptoms common to these maladies.

If the refusal to speak appears to be due to some delusion, it may be necessary to place the patient **under constant observation** for some time. Under such supervision he may be accidentally caught or he may become weary of his self-inflicted task.

A clumsy actor may assume too profound weak mindedness, and with care his deceit may be discovered. Test the malingerer by some simple method, such as asking him to name coins, or some common articles of daily use. He may from excessive caution, and in fear of showing sanity by correct answers, name the objects wrongly. A truely insane person would either be insulted or smile when asked to do such a childish thing, and would probably ask you, if you thought he was a fool; nevertheless he would answer correctly.

Sleeplessness is a symptom which **cannot be simulated for long**. The malingerer may keep himself awake for a night or two, but he is soon overcome by the exhaustion of his self-imposed effort, and sleeps soundly. Now in nearly all forms of acute mental disease, **insomnia is a prominent symptom,** and a certain amount of suspicion may fairly be entertained, where sound sleep accompanies a recent development of apparently acute mental disturbance. This mistrust would be greater if supported by any other inconsistent phenomena.

Delusions might be supposed to be easily simulated; but this is by no means the case. Many of the truely insane are very reticent about their beliefs and disbeliefs and it is often only by observation of their eccentric conduct, that their ideas can be discovered.

The insane man declares himself in a hundred little ways, but always has an explanation ready, for any criticisms of his actions and will at once stoutly deny any suggestion that his mind is unhinged. The malingerer frequently limits himself to one or two delusions, which he constantly harps upon, but he will often prove himself a cheat in that his actions are not always in keeping with his expressed beliefs.

Hallucinations and illusions should be tested, and although the reality of them may be difficult to disprove, it may be possible to discover the fraud. **Moving objects in hallucinations usually pass from left to right, or make their appearance to the left of the patient, advance and disappear in the distance.** This is the rule for right handed patients ; in the left handed, the movements is usually from right to left. Visual hallucinations are usually black, white, or grey, like shaded drawings. especially in the more chronic forms of insanity. Coloured vision sometimes occur in the acute forms. Hallucinations of both hearing and vision are **most frequent at night,** when all is dark and quiet.

With regard to the forms of mental disorder chosen by malingerers, they will be found to be very varied.

True melancholia develops **very gradually**—the symptoms being more marked in the **early morning**—further the physical health suffers, and the patient is sleepless. Altogether the condition is not an easy one to feign with any degree of success. Simple melancholia, and the sub-acute types of depression, could be simulated more easily, but they are seldom chosen, as the malingerer

fears, that with so mild a mental disturbance, he would not be deemed to be insane.

No one but the boldest fool would dare to choose acute mania for his deception. He would fail at the very onset, as incoherence is beyond his powers. The acute maniac is on the move day and night, he **rarely sleeps**. The malingerer mostly overacts his part when in the presence of others, and underacts it when alone After a few hours of feigned excitement, he tires and sleeps. He further differs from the truly maniacal person in that it is usually impossible to get his attention even for a brief moment.

Some persons select delusional insanity for their fraud. Here you must remember that delusional states are usually of **slow development** ; step by step the patient weaves his story, and in the early weeks of the disorder, his want of mental balance is commonly **shown by his erratic conduct,** rather than by his extravagant conversation. The man believes he is the victim of some conspiracy and is for ever watching for some corroborative evidence to support his belief. In a thousand ways he shows his suspicions, and yet rarely, if ever, expresses his thoughts in words. On the other hand the malingerer will develop an organised delusion in a day and will exhaust his hearers by constantly repeating in almost the same words his false beliefs. He fails to keep his actions always in harmony with his supposed delusions and his want of consistency is very helpful in exposing the fraud.

Profound dementia is another form of insanity that is sometimes chosen, but in this again, the malingerer readily falls into a trap. He is apt to assume a sudden mental

enfeeblement of a very advanced type. Now we know that dementia usually runs a **steady progressive course gradually,** over an extended period of **months.** Dementia is nearly always **secondary** to some acute attack of mental disease, except in such instances as alcoholism, or senility, and even then its course is not a rapid one.

In all cases of doubt, the individual should be placed under constant supervision, and a careful record of his conduct should be kept both by day and by night. **Avoid forming a too rapid judgment,** as great injustice may be done. The unskilled malingerer, is easily detected. The expert imposter gives real difficulty. Thorough watchfulness will slowly but surely expose the fraud. It takes time but the malingerer will lose confidence in himself when once he sees that he is playing a losing game.

Remember the patient must have no idea of your suspecions, and no suggestion of the possibility of fraud should be confided to the attendant. To tell him that you believe the man to be a malingerer, is one of the surest ways of defeating the end in view. Carefully give your instructions as to the symptoms **you require to be watched,** and note down any information that the attendant may volunteer, but receive everything without comment. When the patient converses with you, keep an **impassive expression and manner.** After a time a casual suggestion in his presence as to your surprise at the absence of certain symptoms, may induce him to add them to those he has already assumed. A quiet acknowledgement of such additions may encourage him to accept from time to time any other suggestions that you may choose to make. When you have definitely conclud-

ed that you are dealing with an imposter, it is frequently wise to let him see that you fully realise the true condition.

BRIEF SUMMARY OF THE RULES FOR ADMISSION TO OR DISCHARGE OF LUNATICS FROM A MENTAL HOSPITAL

Admission to a Mental Hospital.

1. On a petition from the patient himself.

2. Reception order from a Magistrate, on the petition of relatives or others.

3. (a) Any European, subject to the terms of the Army Act, can be admitted on an order signed by an Administrative Medical Officer.

(b) Every officer in charge of a Police Station, may arrest any wandering or dangerous lunatic.

(c) The Magistrate, on a medical certificate, can issue a Reception Order for the admission of any lunatic not properly cared for or controlled, or who, he has reason to believe is being cruelly treated.

(d) The Magistrate may authorise the detention of an alleged lunatic, in suitable custody, under medical observation for a period of ten days. Under certain conditions this period may be extended to a maximum of thirty days.

Discharge of Lunatics.

1. *A patient admitted on his own application, cannot be detained for more than twenty-four hours, after he has given notice in writing.*

2. Non-Criminal Lunatics—

(a) The patient being cured, is discharged under Section 31 of the Act.

(b) The patient not being sane, but not being dangerous or aggressive, on the undertaking of a relative, can be discharged under Section 33 of the Act, security being taken from the relatives by the District Magistrate.

3. Criminal Lunatics are of three classes—A, B and C :—

A. Those who are unable to stand their trial, as their mental condition renders them unfit to make their defence.

B. Those who have become sane, stood their trial, but found to have committed the crime when insane.

C. Persons who have become insane, while undergoing a term of imprisonment in jail.

A Class—are kept until fit to stand their trial, or a report is made that they are never likely to be fit.

B Class—are detained in the Mental Hospital, if the crime is against the person, for four years ; or six years in the case of the form of the insanity being melancholia. On the expiration of this period, they are discharged if sane, or sent to the Non-Criminal Section if still insane.

In the case of crimes not against the person, the period of detention is usually considerably less.

C Class—patients are returned to jail on recovery. If recovery does not take place, they are transferred to the Non-Criminal Section of the Mental Hospital on expiration of their sentence.

The Transfer of Lunatics to England :—

This is always a matter of difficulty, as few steamer companies are willing to take them. If the patient be a Government servant or his family is domiciled in England, Government will generally arrange a passage by troopship, application for which should be made through the Local Government.

The Indian law of lunacy does not hold in England, and it is therefore useless to send a medical certificate with the case, but a written statement should be sent. The patient is discharged from an Indian Mental Hospital under Section 33 of the Act, but on arrival at the end of the voyage, he must be seen and certified by two registered medical practitioners, and a Reception Order obtained from a Sheriff or Magistrate, before the patient can be admitted into any British Mental Hospital.

Attention is also invited to paragraph 1063, Manual of Government Orders.

LAW RELATING TO THE ADMISSION, DETENTION AND DISCHARGE OF LUNATICS IN INDIAN MENTAL HOSPITALS (INDIAN LUNACY ACT, 1912).

As amended by Act VI of 1922, Act XI of 1923 and Act V of 926.

ADMISSION AND DETENTIONS

Under the provisions of Section 4, no person other than a criminal lunatic, or a lunatic so found by inquisition, shall be received or detained in a Mental Hospital without a Reception Order, save as provided by Sections 8, 16, and 98 ;

Provided any person in charge of a Mental Hospital, may with the consent of two of the visitors of such Mental Hospital, which consent shall not be given except upon a written application from the intending boarder, receive and lodge as a boarder in such Mental Hospital any person who is desirous of submitting himself to treatment.

A boarder received in a Mental Hospital under the proviso above noted shall not be detained in the Mental Hospital for more than twenty-four hours after he has given to the person in charge of the Mental Hospital notice in writing of his desire to leave such Mental Hospital.

Application for Reception Order.

Under the provisions of Section 5 an application for a Reception Order shall be made by a petition accompanied by a statement of particulars to the Magistrate within the local limits of whose jurisdiction the alleged lunatic ordinarily resides, shall be in the form prescribed and shall be supported by two medical certificates on separate sheets of paper, one of which certification shall be from a Medical Officer.

If either of the medical certificates is signed by any relative, partner or assistant of the lunatic or of the petitioner, the petition shall state the fact, and where the person signing is a relative the exact manner in which he is related to the lunatic or petitioner.

The petition shall also state whether any previous application has been presented for an enquiry into the mental capacity of the alleged lunatic in any court ; and if such application has been made, a certified copy of the order made thereon shall be attached to the petition.

No application for a Reception Order shall be entertained in any area outside the Presidency towns unless the Local Government has, by notification in the local official Gazette, declared such area as an area in which Reception Orders may be made.

Application, by whom to be presented.

In accordance with the provisions of Section 6 the petition shall be presented by—

(a) the husband or wife of the alleged lunatic, or,

(b) if there is no husband or wife or the husband or wife is prevented by reason of insanity, absence from India

or otherwise from making the presentation, by the nearest relation of the alleged lunatic who is not so prevented.

If the petition is not so presented, it shall contain a statement of the reasons why it is not so presented, and of the connection of the petitioner with the alleged lunatic and the circumstances under which he presents the petition.

No person shall present a petition unless he has attained the age of majority as determined by law to which he is subject, and has, within fourteen days before the presentation of the petition, personally seen the said lunatic.

The petition shall be signed and verified by the petitioner, and the statement of the prescribed particulars by the person making such statement.

Procedure upon Petition for Reception Order.

In accordance with the provisions of Section 7, upon the presentation of a petition the Magistrate shall consider the allegations in the petition and the evidence of lunacy in the medical certificates.

If he sees grounds for proceeding further, he shall personally examine the lunatic unless, for reasons to be recorded in writing, he thinks it unnecessary to do so.

If he is satisfied, he may make an order for the reception of the lunatic ; but if he is not satisfied, he may fix any other date for considering the petition, notice of which shall be given to the petitioner and to any other person to whom such notice, in the opinion of the Magistrate, should be given.

Detention of alleged lunatic pending enquiry.

As provided in Section 8, pending the conclusion of the equiry into the allegations etc., in the petition referred to in preceding paragraph, the Magistrate may make such order as he thinks fit for the suitable custody of the lunatic.

Consideration of Petition.

In accordance with the provisions of Section 9, the petition shall be considered in private, in the presence of the petitioner, the lunatic (unless the Magistrate in his discretion directs otherwise), any representative of the lunatic and such other persons as the Magistrate thinks fit.

Order.

As provided in Section 10, after considering the petition referred to in the previous paragraphs, the Magistrate may either make a Reception Order or dismiss the petition or may fix another date for further enquiry or evidence, and may state the source from which the cost of the lunatic's maintenance should be met. If the petition is dismissed, a copy of the recorded grounds for its dismissal shall be delivered to the petitioner.

Further provision as to Reception Orders Petition.

As provided in Section 11, no Reception Order shall be made under Section 7 or 10 of the Act, save in the case of a lunatic who is dangerous and unfit to be at large unless—

(a) the Magistrate is satisfied that the person in charge of the Mental Hospital is willing to receive the lunatic, and

(b) the petitioner or some other person satisfies the Magistrate, in a written engagement, that he will pay the cost of the lunatic's maintenance.

Reception Order in case of Lunatics from Foreign States in India.

1. As provided in Section 11B (1), when an arrangement has been made with any foreign European State with respect to the reception of lunatics in Mental Hospitals in British India, the Governor General in Council may, by notification in the Gazette of India, direct that a Reception Order may be made under this Act in the case of any lunatic, or class of lunatics, residing in the territories in India of such foreign European State, and shall in such notification specify the province or provinces within which such reception orders may be made.

2. On publication of a notification under the preceding paragraph, the provisions of the Lunacy Act, as to the making of Reception Orders on petitions and for temporary detention in suitable custody, shall apply, in the case of such lunatics with the following modifications, namely—

(a) an application for a Reception Order may be made by petition presented by such officer or agent of the foreign State in which the alleged lunatic ordinarily resides, as may, by general or special order, be approved by the Local Government in this behalf :

(b) the functions of the Magistrate shall be performed by such officer as the Local Govern-

ment may, by general or special order, appoint in this behalf, and such officer shall be deemed to be the Magistrate having jurisdiction over the alleged lunatic for all the purposes of the said provisions :

(c) for the purposes of Sections 5 and 18(1) (Act IV of 1912) the expressions "Medical Officer" and "Medical Practitioner" shall include such persons or class of persons as the Local Government may specify in this behalf ;

(d) the Magistrate may in his discretion extend the period prescribed by Section 19 (Act IV of 1912), within which the alleged lunatic must have been medically examined and

(e) Sections 6 (1), (2), (3), 11 and 34 of the Act (Act IV of 1912) shall not apply,

and with such other modifications, restrictions or adaptations as the Governor-General in Council may, by notification in the Gazette of India, direct for the purpose of facilitating the application of the said provisions.

3. A Reception Order made under this paragraph shall be deemed to be a Reception Order made under Section 7 or Section 10 (Act IV of 1912), as the case may be.

Reception Order in case of Lunatic Soldier. 44 and 45 Vict. C. 58.

Under the provisions of Section 12, when any European who is subject to the provisions of the Army Act has been declared a lunatic in accordance with the provisions of the Military Regulations in force for the

time being, and it appears to any administrative medical officer that he should be removed to a Mental Hospital, such administrative medical officer may, if he thinks fit, make a Reception Order under his hand for the admission of the said lunatic into a Mental Hospital which has been duly authorised for the purpose by the Governor-General in Council.

Powers and Duties of the Police in respect of Wandering or Dangerous Lunatics and Lunatics Cruelly Treated or not under proper Care and Control.

In accordance with the provisions of Section 13, every officer in charge of a Police Station may arrest, or cause to be arrested all persons found wandering at large within the limits of his station whom he has reason to believe to be lunatics and shall arrest, or cause to be arrested all persons within the limits of his station whom he has reason to believe to be dangerous by reason of lunacy. Any person so arrested shall be taken forthwith before the Magistrate.

Every officer in charge of a Police Station who has reason to believe that any person within the limits of his station is deemed to be a lunatic and is not under proper care and control, or is cruelly treated or neglected by any relative or other person having the charge of him, shall immediately report the fact to the Magistrate.

Reception Order in care of Wandering and Dangerous Lunatics.

As provided in Section 14, whenever any person is brought before a Magistrate under the provision of subsection (1) of Section 13, the Magistrate shall examine

such person, and if he thinks that there are grounds for proceeding further, shall cause him to be examined by a medical officer and may make such other enquiries as he thinks fit ; and if the Magistrate is satisfied that such person is a lunatic and a proper person to be detained, he may, if the medical officer who has examined such person, gives a medical certificate with regard to such person, make a Reception Order for the admission of such lunatic into a Mental Hospital.

Provided that, if any friend or relative desires that the lunatic be sent to a licensed Mental Hospital and engages in writing to the satisfaction of the Magistrate, to pay, the cost of maintenance of the lunatic in such Mental Hospital, the Magistrate shall, if the person in charge of such Mental Hospital consents, make a Reception Order for the admission of the lunatic into the licensed Mental Hospital mentioned in the engagement.

Provided, further, that if any friend of relative of the lunatic enters into a bond, with or without sureties, for such sum of money as the Magistrate thinks fit, on condition that such lunatic shall be properly taken care of and shall be prevented from doing injury to himself or to others, the Magistrate instead of making a Reception Order, may, if he thinks fit, make him over to the care of such friend or relative.

Order in case of Lunatic Cruelly Treated or not under proper Care and Control.

In accordance with the provisions of Section 15, if it appears to a Magistrate, on the report of a police officer or the information of any other person within the limits

of his jurisdiction that a person deemed to be a lunatic, is not under proper care and control, or is cruelly treated or neglected by any relative or other person having the charge of him, the Magistrate may cause the alleged lunatic to be produced before him and summon such relative or other person as has or ought to have charge of him.

DISCHARGE OF LUNATICS

Order of Discharge from Mental Hospital by Visitors.

Under the provisions of Section 31, three of the visitors of the Mental Hospital (of whom one shall be a medical officer) may, by order in writing, direct the discharge of any person detained in such Mental Hospital and such person shall thereupon be discharged.

Provided that no such order is made in the case of persons detained under Section 12 or in the case of a criminal lunatic otherwise than is provided by Section 30 of the Prisoners Act of 1900.

When such order is made, if the person is detained under the order of any public authority, notice of the order of discharge shall be immediately communicated to such authority.

Discharge of Lunatics in other cases and of European Military Lunatics.

As provided in Section 32, a lunatic detained in the Mental Hospital under a Reception Order made on the

petition shall be discharged if the person on whose petition the Reception Order was made so applies in writing to the person in charge of the Mental Hospital.

Provided that no lunatic shall be discharged if the officer in charge of the Mental Hospital certifies in writing that the lunatic is dangerous and unfit to be at large.

A person detained in the Mental Hospital under a Reception Order made under Section 12 shall be detained therein until he is discharged therefrom in accordance with the military regulations in force for the time being or until the officer making the order applies for his transfer to the military authorities with a view to his removal to England. But if it appears to the officer in charge of the Mental Hospital that the discharge of the lunatic soldier is necessary either on account of his recovery or for any other purpose, such person shall be brought before the visitors. On the visitors recording their opinion that the discharge should be made, the Central or other Officer Commanding the Division, District, Brigade or Force, or other Officer authorised to order the admission of such person into the Mental Hospital, shall forthwith direct him to be discharged, and such discharge shall take place in accordance with the military regulations in force for the time being.

Order of Discharge on undertaking of the Relative for due care of the Lunatic.

In accordance with the provisions of Section 33, when any relative etc. of a lunatic detained under Section 14, 15 or 17 desires that such lunatic shall be delivered over

to his care and custody, he may make application to the authority under whose order the lunatic is detained. If such authority, in consultation with the person in charge of the Mental Hospital and visitors (one of whom should be a medical officer), thinks fit and if such relative, etc., enters into a bond, with or without sureties for such sum of money as the said authority deems suitable, that such lunatic shall be properly taken care of and shall be prevented from doing injury to himself or to others, he may make an order for the discharge of such lunatic.

Discharge of Persons subsequently found on inquisition not to be of unsound mind.

As provided in Section 34, if any lunatic detained in the Mental Hospital on a Reception Order made under Section 7, 10, 14, 15 or 17 is subsequently found on an inquisition under Chapter IV or V of the Act, not to be of unsound mind and incapable of managing himself and his affairs, the person in charge of the Mental Hospital shall forthwith, on the production of a certified copy of such finding, discharge the alleged lunatic from the Mental Hospital.

All documents received with patients shall be returned on their death or discharge to the Committing Magistrate or Court except in cases of military insanes, when they will be forwarded to the Staff Officer of the District.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. Did you examine the accused ?

2. Q. How long had he been under your observation ?

3. Q. What period do you consider sufficient to enable you to form a reliable opinion as to a person's state of mind ?

4. Q. How often did you observe him and for what length of time on each occasion ?

5. Q. Is your opinion based on your own observation ?

6. Q. Had you personally verified that he did not sleep or that he refused food. On how many occasions did you do so ?

7. Q. Will you briefly describe the conduct of accused while under your observation ?

8. Q. Why do you consider him of unsound mind ?

9. Q. What are the usual symptoms of insanity ?

A. Failure of adjustment to surroundings ; changes in manner, habits, and disposition from those customary before ; clashing with social laws ; solitariness ; perhaps delusions, hallucinations, illusions.

10. Q. Does he suffer from delusions, and what is the subject of them ?

11. Q. Was his behaviour consistent with his delusions ?

12. Q. Can a delusion be simulated, if so, how could it be detected ?

A. Delusions are not easily simulated. If they are, they are usually limited to one or two which are constantly harped upon and the person's actions are not in keeping with his expressed beliefs.

13. Q. Did he suffer from any hallucinations. What were they ?

14. Q. *Can hallucinations be simulated, if so, how could it be detected ?*

A. Yes. The reality of them may be difficult to disprove. Moving objects in hallucinations usually pass from left to right in right-handed persons, or make their appearance to the left of him, advance and disappear in the distance. In left-handed persons, these will be reversed Visual hallucinations are usually black, white, or grey, like shaded drawings. Hallucinations are most frequent when the surroundings are dark and quiet.

15. Q. Have you inquired into his previous history ?

16. Q. Has he suffered from epileptic fits ?

17. Q. Can an epileptic fit be distinguished with certainty from an hysterical fit ?

A. An hysterical fit is rarely sudden. It occurs in association with some emotional disturbance ; there are tremblings, palpitation and emotional display with crying and screaming, tossing about without injury, the tongue is not bitten and there is no loss of control over the bladder and bowels.

An epileptic fit is sudden, may begin with a cry, the muscles first assume a state of continuous tension or rigidity, which is immediately followed by clonic contractions (spasms in which rigidity and relaxation succeed each other), this condition is then followed by sleep or coma. The tongue may be bitten during the fit. Hysteria and epilepsy may co-exist.

18. Q. In what conditions, do you consider, acts may be committed unconsciously ?

A. In masked epilepsy, epileptic automatism and in certain cases of acute insanity.

19. Q. Could the crime have been committed while accused was in a state of epileptic automatism ?

A. After a slight attack especially of minor epilepsy a person may carry out some elaborate and apparently purposive act, anything from undressing in public to the undertaking of a long train journey or even a sea voyage and afterwards remember nothing of it.

20. Q. Have you any reason to suspect that accused is malingering?

21. Q. Have you any proof to offer that he is not malingering?

22. Q. The accused is alleged to have been insane at the time he committed the offence. Can you offer any reason why this was not the case?

If the accused is able to describe the various details of the crime including the date and hour of its occurrence, it would prove that his cognitive faculties were sound and intact and that he was aware that what he was doing was wrong.

CHAPTER XV

POISONS

"Of all forms of death by which human nature may be overcome the most detestable is that of poison, because it can of all others be the least prevented either by manhood or forethought; and therefore in all cases where a man wilfully administers poison to another or lays poison for him and either he or another takes it and is killed by it, the law implies malice although no particular enmity can be proved."

Section 284 I.P.C.—Whoever does, with any poisonous substance any act in a manner so rash and negligent as to endanger human life, or to be likely to cause hurt or injury to any person, or knowingly or negligently omits to take such order with any poisonous substance in his possession as is sufficient to guard against probable danger to human life from such poisonous substance, shall be punished etc.

Accused was in charge of a carelessly and badly managed dispensary. He had occasion to dispense some hydrochloride of quinine. Without taking the trouble to read the label on the bottle, which he took up from a non-poisonous medicines cupboard, he mixed the contents of the bottle (which actually was hydrochloride of strychnine) into the mixture, and administered the mixture to several persons, all of whom died but one. *Held* that the act amounted to gross and criminal negligence and that he had been rightly convicted under Section 304A.[1]

The abundance in which a large variety of deadly plants spring up in the hot and moist atmosphere of India,

[1] *P. N. DeSouza*, 21 Cr. L. J. 367=42 All. 272. Tudball, J.

and the unrestricted freedom with which nearly all the most potent kinds of mineral and vegetable poisons can be purchased in every Indian bazaar, added to the familiarity with the action of narcotics which has arisen from their daily habits of opium-eating and hemp-smoking, sufficiently account for the prevalence of cases of poisoning.

The use of various poisons for their supposed **aphrodisiac** effects is very common. Among them are arsenic, nux vomica, strychnine, dhatura, cannabis indica, opium and cocaine. **Love-philtres** are also much believed in, in some of which arsenic or dhatura are used.

Whoever administers a poison like arsenic to another must be considered to know that the act is so imminently dangerous that it must in all probability cause death or such bodily injury as is likely to cause death ; and if death occurs, he is guilty of murder, notwithstanding that his intention may not have been to cause death. *Held* that the case fell within the definition of murder but accepting the conclusion that his intention was not to cause death he was sentenced to transportation for life.[2] But note the following :

Per Plowden J.—"It does not necessarily follow that because the substance administered was in fact a deadly poison, the nature and properties of the substance were known to the person who administered it. In deciding this question the ordinary rules of evidence and of reasoning apply, and the decision must be formed upon all the legal materials available. The circumstance that there may be a difficulty in establishing the requisite knowledge or intention by no means discharges the prosecution from the burden of so doing. No Court is at liberty to infer merely from the fact that the substance

[2] *Gouri Shankar*, 19 Cr. L. J. 382=40A 360=44 I. C. 686=16 A. L. J. 178 ; *Emp.* v. *Chhattarpal Singh*, 32 Cr. L. J. 126=128 I. C. 282=7 O. W. N. 980=A. I. R. 1930 Oudh 502=Ind. Rul. 1931 Oudh 42=1930 Cr. C. 1166.

administered with fatal results was, for example, arsenic, that therefore the act was murder on the simple ground that to admit the plea of ignorance that the substance employed was arsenic or that it had deadly properties would be dangerous to society. The guilty knowledge or intent must be established whether ignorance of the nature and properties of the substance administered is pleaded or not; and, when it is pleaded, the plea cannot be ignored. The ignorance pleaded must be negatived and the guilty knowledge or intent established, not necessarily by direct evidence, which is often impossible, but by inference from all the circumstances, the probable motive, the object, the general knowledge of the class to which the accused belongs and his conduct in relation to the particular transaction.[3]

Accused administered poison to her husband, in the belief that it was a love potion to increase his affection for her, with fatal results. *Held* that she was guilty of an offence under Section 304A as she acted both negligently and rashly in dealing with a deadly form of poison.[4] But where the accused gave aconite to a girl for being administered to her husband with the object of gaining his love and the girl mixed the powder in cooked food and served the same to her husband, father-in-law and brother-in-law and the husband did not die but the others died, the accused was found guilty under Sec. 302 read with Sec. 115 I. P. C,[5]

The administration of an injurious drug to a person for the purpose of inducing love, in ignorance of its nature or effect, and

[3] *Mst. Suttan*, 35 P. R. (1884). Plowden and Burney, J.J.

[4] *Ramava Channappa*, 17 Bom. L. R. 217; 3 Bom. Cr. C. 38; 16 Cr. L. J. 305; 28 Ind. Cas. 641 (1915). Heaton and Shah, J.J.; *Pika Bewa* v. *Emp.* 39 Cal. 855; 14 I. C. 195; 15 C. L. J. 152; 13 Cr. L. J. 195; 16 C. W. N. 1055; *Phulmani Mundain* v. *Emp.* 25 Cr. L. J. 449; 77 I. C. 801; A. I. R. 1924 Pat. 635. See also *Emp.* v. *Jamna*, 31 All. 290.

[5] *Amod Ali Sikdar* v. *Emp.*, 33 Cr. L. J. 79=134 I. C. 896=58 Cal. 1228=A. I. R. 1931 Cal. 757=35 C. W. N. 573=Ind. Rul. 1931 Cal. 896=1931 Cr. C. 1021.

without care and enquiries as to its properties which causes serious illness to such person, amounts to an offence under Section 337, and and Section 307. But the person furnishing the drug may be guilty under Section 307, and the person who helps him to prepare the drug may be guilty under Section 328/109.[6]

Section 328 I. P. C.—Whoever administers to or causes to be taken by any person any poison or any stupefying, intoxicating or unwholesome drug, or other thing with intent to cause hurt to such person or with intent to commit or to facilitate the commission of an offence or knowing it to be likely that he will thereby cause hurt, shall be punished etc.

What is a poison ?

A poison is a substance which when applied to the body externally or introduced in any way into the body, is capable of destroying life, without acting mechanically, but by its own inherent properties.

The definition given by Chief Justice Lord Coleridge is : A poison is that which, when administered, is injurious to health or life.

It is manifest that the administration of a substance with the intention of causing death and with the result that death was caused thereby would come under the definition of culpable homicide ; and it is quite immaterial whether the substance which caused the death was one which would be called a poison or not.

Legally, the bearing and limitation of the term poison are dealt with in the following sections of the I. P. C. :— 284, 299, 304A, 324, 326 and 328.

[6] *Bhagava Giriyappa,* 19 Bom. L. R. 54 ; 38 I. C. 1003 (1917) ; 18 Cr. L. J. 443. Batchelor and Shah, J.J.

Evidence in a case of murder by poisoning.

There is no doubt that in all cases of murder by poisoning, the only way in which the case of an accused can be successfully placed before the jury so that they are in an unassailable position to give their opinion one way or the other, is by the most minute analysis of the whole of the evidence in the case.[7]

In a case of murder by poison there are three main points to be proved : *firstly*, did the deceased die of the poison in question : *secondly*, had the accused got the poison in question in his or her possession : and *thirdly*, had the accused an opportunity to administer the poison in question to the deceased. If these three points are proved a presumption may under certain circumstances be drawn by the Court that the accused did administer poison to the deceased and did cause the death of the deceased. It is not usual, that reliable direct evidence is available to prove that the accused did actually administer poison to the deceased. The evidence of motive which is frequently given in these cases is of subsidiary importance and the mere fact that the accused had a motive to cause the death of the deceased is not a fact which will dispense with the proof of the second and third points that the accused had the poison in his or her possession, and that the accused had an opportunity to administer the poison.[8]

[7] *Ekabbar Mondal* v. *Emp.*, A. I. R. 1937 Cal. 756 (759)=I. L. R. 1937, 2 Cal. 315.

[8] *Gajrani* v. *Emp.*, 34 Cr. L. J. 754 (755)=144 I. C. 357=Ind. Rul. 1933 All. 414=1933 Cr. C. 664=A. I. R. 1933 All. 394=1933 A. L. J. 1617 ; *Happu* v. *Emp.*, A. I. R. 1933 All. 837 (838)=1933 Cr. C. 1463=146 I. C. 1089=56 All. 228. See also *Gurdevi* v. *Emp.*, 26 Cr. L. J. 593=85 I. C. 817=A. I. R. 1923 Lah. 325.

Recognition of poisoning.

Signs and symptoms causing suspicion are :—

(a) Sudden onset of illness in healthy person (acute poisoning).

(b) Rapid development and termination by recovery or death.

(c) Close relation of time of onset to taking of food or drink.

(d) Multiple occurrence. Several persons having eaten same food.

(e) Peculiar odour of breath or abnormality in excreta.

Confirmation of the suspicion.

(a) By analysis of food and drink.

(b) By analysis of excreta or vomited matter.

(c) By post mortem examination.

(d) By analysis of viscera and their contents.

Analysis may fail to detect poison in consequence of :—

(a) Elimination of poison by vomiting, purging or lavage.

(b) Destruction of poison by putrefactive changes.

(c) Absence of a reliable test.

(d) Insufficiency or wrong selection of material.

(e) Negligence or want of skill of the examiner.

Symptoms of different classes of poisons.

Acrid poisons. (such as arsenic).

1. Sometimes pain in mouth and throat shortly after poison is swallowed.

2. Severe epigastric pain with nausea and at length vomiting.

3. Vomited matter sometimes contains blood.

4. Abdominal tenderness on pressure rendering even breathing painful.

5. Painful purging, sometimes of blood.

6. At first quick pulse, hot skin, afterwards weak pulse, cold clammy skin, and marked general weakness.

Diseases which may produce similar symptoms :—

Cholera, inflammation of stomach or bowels or peritoneum strangulated hernia, dysentery, ruptured viscera, etc.

Narcotic poisons. (such as opium).

1. Feeling of drowsiness with difficulty in walking or standing with great tendency to sit or lie down.

2. Patient then falls asleep followed by insensibility.

3. At first quick pulse, warm skin ; afterwards slow pulse, cold skin. Breathing loud and noisy sometimes.

4. Pupils vary with different poisons. With dhatura, larger than normal, with opium smaller than normal.

5. Sometimes delirium ; sometimes convulsions of whole body or of limbs of one side.

Diseases which may produce similar symptoms :—

Apoplexy, epilepsy, sunstroke, severe fever rapidly ending fatally, inflammation of brain and spinal cord, and disease of kidneys and heart, and convulsions in children.

Neurotic poisons. (such as dhatura and aconite.)

1. Produce symptoms of both acrids, and narcotics.

2. Peculiar taste in mouth, more or less pain in throat and stomach with great thirst, sometimes vomiting.

3. Sleepiness ending in insensibility and death is usual termination. Convulsions may occur before death, sometimes tetanic spasms.

4. In small doses usually act as acrids, in larger ones as narcotics. Acrid action is seldom fatal.

The symptoms of neurotic poisons vary so much that no list of diseases can be drawn up which may be mistaken for the effects of these poisons.

The post mortem signs are only useful in poisoning by corrosive, irritant or odorous substances, or because of particles found in the hollow viscera, or because affording evidence against poisoning e.g., the presence of scybala in the colon or rectum excludes irritant poisoning.

Circumstances that influence the action of poisons.

1. **The method of administration**—When given by the mouth a poison, other than corrosives or irritants, has first to be digested before it can get into the blood and produce its effects. Snake venom administered by the mouth is inert. When given hypodermically (rare), a lethal dose is about a third less than that administered by the mouth. When administered by way of the rectum, or vagina (as in cases of abortion), a lethal dose is about double that by the mouth.

2. **Idiocyncrasy**—"What is food for one is poison for another." A minute quantity of cocaine dropped into the

eye sometimes gives rise to serious symptoms of poisoning. Cases are on record where people have taken immense quantities of arsenic and other drugs and have recovered. Others have died from acute poisoning after the administration of medicinal doses of poisons.

3. **Age**—As a general rule, poisons have more effect on the young and the old than on persons of middle age. Children are generally affected by disproportionately small doses of poisons, and towards some substances they exhibit a special susceptibility, for example, opium. On the other hand, towards mercury and belladonna they show a disproportionate tolerance.

4. **Habit**—A person who continues to take non-lethal doses of a drug will, after a time, acquire a degree of tolerance for it. This is the case with opium eaters. Drugs for which tolerance can be acquired by habit are, alcohol, tobacco, cocaine, chloral, opium and to a certain extent, arsenic.

5. **Condition of the organs,** especially the absorbing and excreting organs, the stomach and kidneys.

When a poison is swallowed (corrosives and irritants excluded), it becomes, as it were, divided into three parts: A. B. C.

A, being that portion still in the stomach, unabsorbed; B, that portion that has been absorbed and is in the blood; C, that portion that has been excreted from the body.

The symptoms presented by this dose of poison are not the result of A, and only partially the result of C, but are almost entirely the result of B.

In poisoning by corrosives and irritants the initial symptoms are entirely due to A, but afterwards to A and B.

Absorption will thus be influenced by the condition of the stomach and kidneys. If the stomach happens to contain a large quantity of undigested food, absorption must obviously be slowed down. If diseased and its lining membrane covered with a thick layer of gastric mucous secretion, absorption must be slow. On the other hand, if the organ is healthy and empty, absorption will be rapid. Should the kidneys be diseased, as in Bright's disease, elimination of the poison will be delayed and diminished, leaving a larger quantity of poison in the blood. In such circumstances, even repeated ordinary medicinal doses of a poison may prove fatal; especially is this the case with opium.

How to conduct a post mortem examination on a suspected case of poisoning.

1. Examine surroundings, clothing, surface of body, and natural orifices. In **surroundings** may be found vomit or excreta, fragments of food, or vessels in which suspicious material may be present. On the **clothing or surface of the body** may be stains or marks of vomit, of fæces, or of the poison itself; or wounds may be detected. In a **natural orifice** may be present poisonous material or signs of its having been present:—the mouth, rectum and vagina in certain cases show signs of great value; there may be a characteristic odour at the mouth.

After opening the body and examination of parts *in situ*, certain viscera must be removed:—

(a) The stomach, by placing a double ligature at œsophagus and duodenum and cutting between them.

(b) Upper part of small intestine, two feet or so in length, in a similar way.

(c) Liver, kidneys, spleen.

(d) Urine by using a clean catheter.

The stomach having been placed in a clean dish, should be opened along lesser curvature. The contents having escaped, the fingers passing over the mucus membrane may detect grit or particles; such materials must be removed with point of knife and placed in a clean bottle. Examine stomach in a clean flat vessel, wipe the mucus membrane with absorbent cotton pad or swab and distilled water. Note smell.

Hyperæmia of cardiac end and greater curvature suggests irritant poisoning; in disease redness is more general, although in intense irritation the whole mucus membrane may be inflamed. Discolouration or putrefaction is most marked on posterior wall.

Softening and Corrosion are very characteristic of corrosive poisoning, or action of strong irritants, especially when affecting cardiac end and greater curvature. Corrosives also affect mouth and gullet, but irritants do not. Postmortem softening affects chiefly posterior wall and extends to muscular coat, without separation of mucus membrane, and the softened patch is not surrounded by inflamed area as in corrosion.

Ulceration has same signification and site as corrosion. A pathic gastric ulcer is frequently on lesser

curvature with firm and indurated edges, while that due to corrosion has soft friable margin with neighbouring mucus membrane also softened.

Perforation is a further extension of last process, but is rare in poisoning.

Hæmorrhagic patches are often present in corrosive and irritant poisoning.

Discolouration or blackening may be due to sulphuric acid or to staining by fruit juice. Green colouration may be due to copper, and yellow to arsenic.

The intestines may show hyperæmia or inflammation from irritant poisoning, but softening or ulceration from this cause is rare. Observe contents of large intestine; presence of solid matter **negatives** irritant poisoning.

Stomach contents must be broken up between finger and thumb, when gritty particles will be felt and removed. Any peculiar fragments must be removed, washed and examined, and all seeds etc., should be similarly treated; by this proceeding particles of white or yellow arsenic, pieces of aconite root, fragments of nux vomica seeds, dhatura seeds, and bhang may be at once recognised. In opium poisoning there is often a characteristic smell or presence of viscid brown matter; some of this mixed with distilled water and filtered can be rendered acid with a drop or two of dilute hydrochloric acid and tested for meconic acid.

Contents of small intestine should be similarly examined.

Mouth and pharynx must be examined for inflamma-

tion, corrosion or ulceration and the presence of foreign matter.

The œsophagus must be removed after examination of lungs and heart, cut open and examined.

The brain in opium poisoning is usually much congested, as are also the lungs.

The preservation and despatch of material for chemical analysis is the **duty of the person performing the post-mortem examination,** and should be **carefully** and **correctly** done.

The viscera should be despatched in wide-mouth bottles, so that material may be readily extracted even though hardened by spirit. In one bottle place stomach and contents; in second small intestine and contents; a third, a portion of liver, not less than 16 ozs. in weight, one kidney, and whole or large piece of spleen; a fourth, urine; a fifth, a sample of preservative used; any particles, etc., which have been removed must be packed appropriately and sent dry.

Before bottling, the solid viscera should be weighed intact and the portion sent also weighed, while any fluid material should be measured. In case of alcoholic poisoning use a saturated solution of common salt as preservative.

After securely corking and sealing, accurate labels must be fixed to the containers giving exact nature of contents and name of deceased, with serial numbers or letters agreeing with the invoice list of articles; the despatcher should sign each label, and date the same. Vomit, excreta, etc., should be treated as above. The

bottles must be carefully packed in stout boxes with lots of packing material. An invoice list of articles must be prepared agreeing with the labelling on the vessels etc.

In the case of murder by poisoning, there should be evidence of identification of every single article that is suspected to contain any poison. The evidence should be complete as to the history of such articles, and it should be shown that they were kept in proper custody throughout, if they are to be relied on as supporting a conviction, and there should be no possibility of any question being raised as to the identity of any such article.[8]

The opinion of the examiner as to the cause of death, and a complete post mortem report, must be furnished.

The reasons for these precautions are (a) poison found in the solid viscera can only have got there by the blood stream, so that if thus detected, when no contamination by stomach contents, etc., has occurred, positive proof is afforded that the poison was absorbed during life, and moreover when the vital powers were active ; (b) certain vegetable poisons can only be readily detected in the contents of the alimentary canal, and mixing with this material, of blood and juices, embarrasses the examination and may cause loss of the poison in purifying processes.

Shridar, 7 Bom. L. R. 640 ; 2 Cr. L. J. 585.

Poisons commonly used in India for Criminal purposes

ARSENIC

Arsenic is the commonest poison in India. It is easily procurable, being used for many purposes, namely, as a medicine, caustic, depilatory, dye, vermin killer, preservative for skins, and as a charm.

Accused administered arsenic to a boy of nine years of age with the object of preventing the boy's father giving evidence against the accused in a criminal trial. The boy died from the effects of poisoning. The accused was held guilty of murder.[9]

By a proper adjustment of dosage the symptoms caused by the administration of arsenic can be made to resemble those caused by disease. In most countries this is the poison most frequently used for homicidal purposes.

Arsenious Oxide—White Arsenic—(Vernacular, sankia safaid, sumbulkar). This is the commonest form of arsenic used. It is sold in the bazaars as vitreous white lumps or as an opaque white powder resembling flour for which it may easily be mistaken. It has neither taste nor odour. It cannot be identified without chemical tests. It is but slightly soluble in cold water, only about half a grain to a grain being taken up by an ounce of water. Stirred in

[9] *Gouri Shankar*, 19 Cr. L. J. 382=40 All. 360=44 I. C. 686=16 A. L. J. 178; *Emp.* v. *Chhattarpal Singh*, 32 Cr. L. J. 126=128 I. C. 282=7 O. W. N. 980, 7=A. I. R. 1930 Oudh 502=Ind. Rul. 1931 Oudh 42=1930 Cr. C. 1166.

boiling water and then allowed to cool, from a grain to a grain and a quarter is dissolved in the same quantity of water ; but when it is boiled for an hour, about twelve grains are dissolved in the ounce of water. This solubility is, however, diminished in the presence of any organic matter in the liquid. It is therefore less soluble in infusions of tea or coffee than in pure water. In the presence of acids and alkalies its solubility is greatly increased. When powdered white arsenic is added to water or other drink, it floats on the surface and adheres to the sides of the vessel. It volatilizes at a temperature of 201°C and will deposit on a cool surface in the form of octahedral crystals.

A pinch of arsenious oxide weighs abont 16 or 17 grains ; a teaspoonful about 150 grains.

Since arsenic has neither taste[9A] nor odour and the quantity necessary to kill is so minute, it is frequently mixed with food and drink without being detected by the victim. The vehicles usually employed are : sweet-meat, gur, atta bread, rice and hulwa.

When arsenious oxide is combined with potash or soda it is used to saturate fly-papers, and strong solutions can be obtained by soaking these in water ; this fact has been used with criminal intent.

Another mode of administration is by way of the vagina, either for homicidal purposes or with the object of procuring an abortion.

Arsenious oxide is a powerful caustic when applied to

9A *Emp.* v. *Sikandar*, A. I. R. 1930 All. 532 (534)=1930 Cr. C. 757=152 I. C. 585=31 Cr. L. J. 862=1930 A. L. J. 1405.

raw surfaces, though it has no action on the unbroken skin. Internally it is (unless the dose be extremely small) a severe gastro-intestinal irritant. This effect is the same however the drug is administered, even after hypodermic injection ; the arsenic is excreted into the stomach after absorption *(never in the form of powder, however),* and this sets up gastric irritation through the mucous membrane. It is quickly absorbed into the blood.

Death is not the result of its irritant properties on the gastro-intestinal tract. It is a very powerful tissue poison that brings about the fatal issue.

Arsenic is eliminated chiefly by the urine and to a less extent by the bowel, sweat, saliva, bile, milk, tears, hair, etc. ; but it is also stored up in the body, mainly in the liver and kidneys.

Children can tolerate arsenic better than adults. Individuals may acquire the habit of arsenic eating.

In acute poisoning the interval between the reception of the poison and the onset of symptoms ranges from ten minutes or sometimes almost immediately, if a strong solution be taken on an empty stomach, to twelve or more hours if the drug be taken in solid form and the stomach be full of food. The usual period, however, is from half an hour to an hour. In a typical case a sensation of heat developing into a burning pain is felt in the throat and stomach. This is soon followed by uncontrollable vomiting and later by severe purging, the stools being first of all fæcal, but later assuming a rice-water appearance, and often containing blood. The patient suffers from intense

thirst, which cannot be relieved, as drinking is immediately followed by rejection of the swallowed fluid. There is profound collapse, the features are sunken, the skin moist and cyanosed. The pulse is feeble and irregular and respiration is difficult. The pain in the stomach is persistent, and cramps in the calves of the legs add to the torture. Death may be preceded by coma but consciousness is often maintained to the end. The similarity of the symptoms to those of cholera is very marked, but if suspicion arises it can be cleared up by examining any of the secretions for arsenic. More rarely the poison attacks the nerve centres, and gastro-intestinal symptoms may be almost or quite absent. In such cases the acute collapse occurs in company with both superficial and deep anæsthesia of the limbs, and is soon followed by coma terminating in death. In criminal poisoning repeated doses are sometimes given, so that such cases may not be typical, but will present some of the aspects of acute and some of chronic arsenical poisoning.

Certain anomalies may occur. Pain may be absent or slight. Vomiting and purging may be absent. Thirst may be absent. The symptoms may be just those of cholera. Signs of collapse may be the first symptom. These variations in the symptoms do not appear to be associated with the form or quantity of the poison administered.

Death by the administration of arsenic is from its external symptoms easily liable to be confused with death due to gastritis and kindred ailments and a careful quantitative analysis of the contents of the viscera is generally

necessary in order to establish that death was actually caused by the arsenic found in the body.[10]

Symptoms of arsenic poisoning before death are indistinguishable from the symptoms of some natural diseases, such as Cholera and acute Dysentry. Both diseases are common in India and both can cause sudden death. It is not possible to be certain by a naked eye but by post mortem examination of the stomach and intestines that death was due to arsenic poisoning. Post mortem appearances similar to those observed in undoubted cases of arsenic poisoning are also similar to those produced by certain natural diseases, and other irritant poisons. It is just possible too that under certain condition they might be produced by the action of the digestive gastric juices of the stomach upon the tissues after death.[11]

During the course of an epidemic of cholera when the people are panic stricken and doctors terribly overworked poisoning by arsenic (or corrosive sublimate) might very easily be overlooked and be allowed to pass undetected. In cholera, as a rule, the severe pain and abdominal tenderness which are such characteristic features of acute poisoning by arsenic (and corrosive sublimate) are wanting. Pain in the abdomen may, it is true, be a prominent feature in cholera, but when severe, it is usually inter-

[10] *Sarbai* v. *Emp.*, 34 Cr. L. J. 398 (399)=142 I. C. 714=16 N. L. J. 35=Ind. Rul. 1933 Nag. 130=A. I. R. 1933 Nag. 303=1933 Cr. C. 1261.

[11] *Happu* v. *Emp.*, A. I. R. 1933 All. 837 (838)=1933 Cr. C. 1463 =146 I. C. 1089=56 All. 228. *See also Mt. Gaya Kunwar* v. *Emp.*, 35 Cr. L. J. 700=148 I. C. 600=A. I. R. 1934 Oudh 62=11 O. W. N. 312=1934 Cr. C. 231=1934 O. L. R. 341.

mittent, of a colicky character and often due to spasmodic contraction of the abdominal muscles rather than to inflammation of the stomach and intestines and is relieved rather than increased by external pressure. The pain too, in cholera is usually developed after the vomiting and diarrhœa, whereas, in acute irritant poisoning, the pain and abdominal tenderness precede or, at all events, are developed simultaneously with these symptoms.

The narcotic symptoms are : vertigo, dimness of sight, severe headache, pains in the back and limbs, faintness, stupefaction, soon followed by profound depression of the vital powers, the limbs may be paralysed, clonic convulsions may appear, death taking place in a few hours, or even more rapidly, or the patient falls asleep and passes into a state of coma—the coma might simulate opium poisoning—followed by death in a few hours.

When the nerve centres are attacked the gastro-intestinal symptoms may be almost or completely absent. In such cases the acute collapse occurs in company with both superficial and deep anæthesia of the limbs, and is soon followed by coma terminating in death.

When arsenic is gradually absorbed into the system in very small quantities over a prolonged period, the symptoms of chronic poisoning will result. The earliest symptoms are slight gastric disorders, loss of appetite and general malaise, followed later by colicky pains, irritation of eyelids and skin eruptions. But sooner or later peripheral neuritis develops, usually beginning with sensory disturbances, tingling, numbness, formication, and usually cutaneous anæsthesia. Later the affected muscles become

exquisitely tender, and then atrophy. Pigmentation of the skin may occur in the later stages. Recovery is very slow, and in fatal cases death usually result from heart failure.

A picture of acute and chronic poisoning combined may be seen when arsenic has been repeatedly administered with criminal intent in large but not immediately fatal doses. The symptoms are; loss of appetite, nausea, perhaps vomiting, slight abdominal pain and mild diarrhœa. The eyelids become puffy, the whites of the eyes reddened, the eyes and nose water and there is slight headache. If the administration is prolonged malnutrition follows, chronic gastro-intestinal catarrh is set up, eruptions occur on the skin, the skin of the palms and soles become thickened, the finger and toe nails become brittle and ragged, pigmented discolourations occur about the armpits, abdomen, scrotum, folds of the thighs and knees lastly neuritis develops, characterised by hypersensitiveness, weakness or paralysis, usually commencing in the lower extremities. Progressive emaciation may terminate in death from exhaustion.

In some cases of acute poisoning, the person recovers from the acute symptoms but passes into a cachexial state (sickly looking state), and suffers from great weakness, emaciation and skin diseases and perhaps peripheral neuritis and dies after a week or ten days or even longer from heart failure.

In November 1900, a man applied for admission to the Medical College Hospital, Calcutta. He gave the following account of his illness :—

About a month previously he suffered from gonorrhœa, which was cured by Kaviraji medicines in about a week. When cured he

purchased, from a grocer's shop, ninety grains of sankhia or white arsenic. Half an hour after swallowing it, he was attacked by severe vomiting, which continued for eight days during which he was unable to retain any nourishment. The vomit was of the colour of bile. While the vomiting lasted he did not suffer from purging, but subsequently he had loose stools daily. He felt very week, was giddy, and everything seemed dark when he stood or sat up. There were aching pains and a sensation of burning all over the body.

On admission to hospital, he was in a very week condition, dull and apathetic. answered questions sluggishly, pulse and respiration very weak. His skin was scurfy, and his appearance was very cachetic. conjunctivæ, had a yellow tint. In hospital he suffered from fever, temperature rose at times to 104° Fr.; he passed tarry-looking stools ; once or twice, the motions contained bright blood. He sank gradually, and died on the 10th of November.

On post mortem examination. the body was emaciated. skin scurfy, the skin of the soles of the feet was separated in places and loosened generally. There were some small pustules on the face, and eyelids were glued together by secretion, the conjunctivæ were jaundiced. The blood was fluid, the muscles of the heart were pale. The liver, spleen and kidneys were congested. The lungs were very congested, and the trachea and bronchi were filled with frothy fluid. The mucous membrane of the stomach was abnormally pale ; on the posterior wall and along the great curvature, there were five depressed cicatrices, evidently resulting from healed ulcers, the largest was an inch and a half long by one third of an inch wide, the others were irregularity oval in shape. The ulceration had destroyed the mucous and sub-mucous tissues down to the muscular coat.

There was slight congestion of the duodenum, scattered patches of congestion in the colon, and in the rectum ; the cæcum was pale. The viscera were analysed, no poison was found. Gibbons Med. Jur.

Post Mortem Appearances.—The striking changes produced by arsenic are generally *confined to the stomach and bowels,* however introduced, whether through a wound, diseased or ulcerated surface or by the act of swallowing.

The mucous membrane of the stomach, which is often covered by a layer of mucous mixed with blood or bile and with a thick white pasty looking substance containing arsenic, is commonly found red and inflamed in dotted or streaky patches; the colour, which is of a dull or brownish red, becomes brighter on exposure to the air—at other times it is of a deep crimson hue, interspersed with black-looking lines or patches of altered blood. The redness is usually most strongly marked at the greater end; in one case it may be found spread over the whole mucous surface, giving to it the appearance of red velvet, in another it will be chiefly seen on the prominences or folds of the membrane. The inflammation of the mucous membrane may be well marked within a short period (even two hours). There may be ulceration (rare) of the mucous membrane of the stomach. The mucous membrane of the small intestine may be inflamed throughout, but commonly the inflammatory redness is confined to the upper part, or to the duodenum, especially to that portion which joins the stomach. Of the large intestine the rectum appears to be the most prone to inflammation. Subendocardial hæmorrhages are said to be common. The alimentary canal is nearly empty; a colon or rectum which contain hard fæces *negatives arsenical poisoning*, but to this rule there are rare exceptions.

Arsenic may prove fatal without showing any signs of inflammatory reaction. The red velvety appearance of the mucous membrane may be altogether absent, even in cases where well marked irritant symptoms were present during life.

A woman 35 years of age, and a young man were accidentally

poisoned by tea or coffee made with water which had been boiled in a kettle containing arsenic.

All the members of the household who had partaken of the tea or coffee suffered, but only the two mentioned, died. The woman lived about fourteen hours from the time of taking the poison ; the young man about twenty-four hours.

The woman's stomach was uniformly slightly congested on the posterior surface, and about the pylorus. The stomach of the young man presented in all parts, small scattered patches of slight congestion. In both, sub-endocardial ecchymosis was present in the left ventricle, and in both there were small scattered patches of slight congestion of the small intestine.

The symptoms in both were burning pain in the stomach, violent vomiting and purging. The cases were acute, attended by marked symptoms of gastro-intestinal irritation, yet the appearances of the stomach and intestine were slight congestion only. In these cases the poison was in solution, and was taken on an empty stomach ; the tea or coffee was drunk at 7 a.m. Under these circumstances absorption would be very rapid and consequently the congestion observed in the stomach and intestine was probably, mostly produced during elimination of the poison from the blood. Gibbons Med. Jur.

Some authorities hold that arsenic is not an accumulative poison, others that to a certain extent it is. When administered medicinally it is temporarily deposited in the organs and is eliminated in about two or three weeks. Hence in those cases surviving the immediate action of the poison, no arsenic may be discovered in the body a fortnight after its administration. Vomiting and purging tend to free the stomach and intestines from the poison.

Entire absence of arsenic from the body is quite consistent with the supposition that death was the result of poisoning by arsenic, but in such instances it is strong

evidence that the deceased lived some time after the administration of the poison.

After absorption of arsenic into the system, most of it is stored in the liver, from where it is gradually distributed over the whole body. There is a tendency of storage in the hair and nails, and since the cells of these tissues are non-vascular the poison remains in them, hence in chronic poisoning arsenic will be found in these tissues.

From a wide examination of cases the Royal Commission on Arsenic, reported that arsenic does not penetrate even into the proximal hair, that is, the hair nearest the scalp, unless taken by the person affected some weeks before and does not penetrate to the distal hair, that is, the hair away from the roots, unless the person affected has taken arsenic at a considerably distant period—months, perhaps years ago; for the arsenic remains in the hair as it grows and the hair growing about five or six inches a year it is possible to compute how long ago the arsenic was taken by the distance it is away from the scalp in the case of a woman with long hair.

Thus if a minute quantity of arsenic is found in the distal end of the hair, it will prove that arsenic must have been taken weeks ago, months ago, or even years ago, before an accused may have met the deceased in the case of acute arsenical poisoning and though arsenic may be found the deceased may have died of epidemic diarrhœa or acute gastro-enteritis which may be due to various causes.

From a medico-legal point of view the finding of

arsenic in the hair would be strong evidence of administration. Hair and nails soaked in an arsenical solution absorb arsenic in increasing amounts—in other words, both hair and nails exhibit preferential absorption and not merely surface absorption. The importance of this observation can hardly be exaggerated, for it has been customary to consider a higher concentration of arsenic in the hair and nails than in the viscera as proof that the arsenic was absorbed by those tissues during life. That assumption is proved to be false.

If arsenic is being absorbed into growing hair or nails from living body fluids, the distribution would not be even, for as the hair grows either an arsenic containing band grows with it and is followed by an arsenic free zone—in the case of a short period of administration—or more and more of the hair contains arsenic until the distribution becomes even—in the case of long continued administration.

The finding of more arsenic in the parts nearest the scalp than in the end is strong evidence that the arsenic has been absorbed from body fluids—provided it can be shown that no external contamination can account for it.

Arsenic absorbed into growing hair cannot be removed by prolonged soaking. This fact is a means of distinguishing arsenic absorbed during life from that absorbed from external contamination.

After putrefactive changes have taken place it is possible for arsenious oxide to be converted into the yellow sulphide and any arsenic found should be carefully examined to see whether it is yellow arsenic or white arsenic partially converted. Such an observation will be

found important later, if arsenic in any form is found in the home or on the person of the accused.

The other forms of arsenic are; **Yellow arsenic** (Vernacular hartal, or **Orpiment**, haldia) and Red arsenic (Vernacular mansil, or **Realgar**, naushadar kani.)

Fatal Dose.—The fatal dose of arsenic is two grains, but two ounces have been recovered from. Immunity may be established by custom. If the dose be in coarse fragments vomiting may get rid of most of it, but a fine powder adheres to the mucous membrane of the stomach.

Analysis and detection.—A small quantity of the powder placed on platinum foil is entirely volatilised at moderate temperature (100 F.) as a white vapour ; should there be any residue—it is impurity.

If a small portion of the white powder is slowly heated in a glass tube of narrow bore it will be sublimed without melting and form a ring of minute octahedral and tetrahedral crystals remarkable for their lustre and brilliancy. Under a microscope magnifying 250 diameters the appearance of these crystals is remarkably beautiful and characteristic ; one not exceeding $\frac{1}{4000}$ of an inch in diameter may be easily recognised.

The quantity of arsenic found in the body is no criterion of the amount taken. Arsenic is not a normal constituent of the body ; under no circumstances is it found in the tissues after death, except in cases in which it has been taken by or administered to the deceased. If a person has died with arsenic in the body, there is **scarcely any limit** to the period at which it may be detected.

In India arsenic is used as medicine in all manner of diseases, and it is also used as an aphrodisiac. It is, therefore, impossible to take the mere evidence that arsenic was detected as sufficient to prove conclusively death from arsenic poisoning. It is of the utmost importance, before a Court could find any individual guilty of murder by the administration of arsenic, that a very complete chemical analysis should be made. In other words, there ought to be a careful examination of the viscera of the body and an analysis by a competent analyser showing from the amount of arsenic found in the viscera that at least a lethal dose must have been administered. Mere examination of vomit or night-soil is totally insufficient and it would be extremely dangerous to rely upon some traces of arsenic found in either of these two things. Arsenic might be put in the vomit or night-soil after death. Arsenic on the other hand may be legitimately in the body through various causes. Arsenic in some forms is obtained from earth, and if the vomit and night-soil was taken from the earth, it is not beyond the bounds of reasonable possibility that traces of arsenic might be detected in these two substances from that cause. It is usual where the matter to be examined has been contaminated with earth to send a sample of the earth from a neighbouring spot to be analysed in order to show whether there is arsenic in the earth or not.[12]

[12] *Emp.* v *Sikandar*, A. I. R. 1930 All. 532=125 I. C. 585=1930 A. L. J. 1405=Ind. Rul. 1230 All. 729=31 Cr. L. J. 862=1930 Cr. C. 757. But see *Sarabjit* v. *Emp.*, 35 Cr. L. J. 189=146 I. C. 817=10 O. W. N. 771=A. I. R. 1933 Oudh 382=1933 Cr. C. 1099 where it has been held that the fact that no arsenic or other poison was detected in the viscera cannot possibly be regarded as negativing

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. **Q.** Has arsenic any characteristic taste or odour ?

A. Arsenic is tasteless and odourless.

2. **Q.** How much would a pinch of arsenic weigh ?

A. Approximately sixteen or seventeen grains.

3. **Q.** What is the smallest fatal dose of arsenic for an adult ?

A. About two grains or even less.

4. **Q.** Is arsenic soluble ?

A. Arsenic is with difficulty soluble in cold water ; one part is soluble in one hundred parts, or half a grain of arsenic in one ounce of cold water.

5. **Q.** Is it more soluble in boiling water ?

A. Yes, Arsenic is soluble in boiling water to the extent of one part of arsenic to ten parts, or twelve grains in one ounce of boiling water.

6. **Q.** If arsenic was administered to a person in food, would he be likely to detect it ?

A. If administered in fine powder, he would not, as it has no taste or odour.

7. **Q.** Would there be any taste in the arsenic obtained from fly-paper by boiling ?

A. Yes, the water would be coloured and it would be bitter.

8. **Q.** If arsenic is found in solution in the stomach, could it have been taken in the solid form ?

A. If solid arsenic is found in the stomach, it must have been taken in the solid form, but if only arsenic in solution is present it may be derived from arsenic taken in solution or from solid arsenic dissolved in the stomach.

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the theory that the deceased died of arsenical poisoning when arsenic was detected in the vomit and the wash from the stomach of the deceased.

9. Q. If arsenic was taken in the pill form would the pill be found in the stomach after death ?

A. It would depend on the solubility of the material used in making it whether the pill would be found in the stomach after death.

10. Q. What is the first action of a poisonous dose of arsenic ?

A. It first acts on the mucous membrane of the stomach, causing irritation and subsequent inflammation.

11. Q. Can the action of arsenic be influenced by the state of the stomach ?

A. The action of arsenic is modified by the state of the stomach. A thick coating of mucous would prevent its action for a short time.

12. Q. If arsenic is taken on an empty stomach, could its action be delayed ?

A. It is very unusual for its action to be delayed if the stomach is empty. Taylor quotes cases in which the action was delayed for two hours, five hours and ten hours.

13. Q. What is the usual time for symptoms to appear ?

A. The usual time for symptoms to appear is from half to one hour after the poison is taken. The cases quoted by Taylor are exceptional.

14. Q. Could the symptoms subside after having commenced, to reappear at a later period ?

A. As a general rule, once the symptoms begin they continue.

15. Q. How long does it take for arsenic to be absorbed by the stomach ?

A. Absorption of arsenic in solution is rapid ; complete solution and absorption of solid arsenic is slow ; but some is quickly dissolved and absorbed. This is why the symptoms appear so rapidly in arsenic poisioning (half an hour or even less).

16. Q. What are the first symptoms ?

A. The first symptom is, generally, a feeling of heat and dis-

comfort in the stomach, quickly followed by burning pain and vomiting ; later purging and cramps, then collapse.

17. Q. When does collapse occur ?

A. This depends on the resisting power of the victim and the quantity of arsenic taken ; the larger the quantity, the sooner the collapse.

18. Q. Are the symptoms always the same in arsenic poisoning ?

A. Arsenic sometimes acts as a narcotic ; then it would not cause vomiting or other symptoms of irritation. A combination of narcotic and irritant symptoms may occur, the one or other predominating.

19. Q. If a person had taken arsenic and vomited at once, what inference would you draw from it ?

A. The immediate vomiting would indicate that a large quantity had been taken on an empty stomach.

20. Q. If the Chemical Examiner discovered only traces of arsenic in the body, does it mean that only a small quantity had been taken ?

A. No. The quantity found after death is no criterion of the amount taken, as a great deal is got rid of by the vomiting and purging. Of the portion absorbed, elimination by .the stomach, bowels and kidneys begins at once.

21. Q. What is the condition of the stomach after poisoning by arsenic ?

A. The peritoneum over the stomach is usually red and congested. The internal mucous membrane of the stomach is inflamed with patches of congestion and hæmorrhage. Arsenic is sometimes erratic. A person may die of arsenic poisoning and no sign of irritation be found in the stomach ; this is more likely to be the case when a well diluted solution is taken.

22. Q. What disease can be confounded with arsenic poisoning ?

A. The resemblance to an attack of cholera is marked. The diagnosis of arsenic poisoning can be made by the following symptoms : the burning character of the pain in the stomach and great

tenderness on pressure over the epigastrium, the vomiting preceding the purging, the feeling of constriction and dryness in the throat, the presence of bile and blood in the vomit and in the motions, the marked straining at stool, the history of the onset of symptoms within a short time of taking food or drink and the rapid increase of symptoms.

23. Q. Could post mortem staining be mistaken for inflammation of the stomach ?

A. If on stretching the organ it is found that blood in the veins break up into isolated lengths with blank intervals between them, then the condition is due to post mortem staining, if it remain in unbroken lines it is the result of inflammation.

24. Q. How long after death, may arsenic be recovered from a body ?

A. Arsenic is an indestructible poison and may be found in the body many years after.

25. Q. Supposing only the skeleton is found, is there any possibility of finding traces of arsenic if death was the result of poisoning by it ?

A. It is possible. Arsenic should be looked for specially in the bones of the pelvis and the neighbouring vertebræ.

26. Q. Could arsenic found in the body after examination have been carried into it from the earth surrounding the body or coffin ?

A. Arsenic may occur in certain soils. This arsenic is insoluble in water, but may be dissolved out by hydrochloric acid, proving its previous insolubility. "Under the most favourable circumstances, a dead body does not acquire an impregnation of arsenic from contact with arsenical earth." (Taylor).

27. Q. Is the finding of arsenic in the hair corroborative of acute arsenical poisoning or of chronic arsenic taking ?

A. If arsenic is found in the hair it indicates that probably the arsenic had been taken for a period, the minimum of which would be about three months.

28. Q. Is arsenic a normal constituent of the human body ?

A. No.

29. Q. Is arsenic found in varying quantities in all sorts of tinned foods ?

A. In general most foods contain traces of arsenic, but below the limit fixed by the Royal commission.

MERCURY

Metallic Mercury.—(Vernacular, Rasa Para) is not poisonous in mass, but in a finely divided state (especially if kept for long period and exposed to light, when the mercury passes into a high state of oxidation) it is actively poisonous. The fluid metallic mercury may sometimes be swallowed without affecting health. It may, however, cause salivation and other constitutional effects, such as mercurial tremors and loss of muscular power.

Mercurous Chloride or **Calomel.**—(Vernacular Raskapur) sold as white powder or in white masses, is insoluble in water. It is almost tasteless and is entirely volatilised by heat. Calomel, even in medicinal doses (the ordinary medicinal dose is 2 to 5 grains) may destroy life by causing excessive salivation with ulceration and gangrene. As sold in the bazaars, it usually contains as an impurity, the perchloride, sometimes to the extent of ten per cent, and to this its poisonous properties are largely due.

The salts of mercury commonly used as poisons in India are :—

Corrosive Sublimate.—Perchloride of Mercury (Vernacular darchikna, talachikna sumbul). One part is soluble in sixteen parts of cold water and in two parts of boiling water. A lump of corrosive sublimate resembles a lump of alum and is extraordinarily heavy.

A mixture of Corrosive Sublimate and Calomel.—(Vernacular, Raskapur). Pure calomel is itself poisonous

in large doses but as a rule, by acting as a purge, it is got rid of in the excreta.

Cinabar, or Mercuric Sulphide.—(Vernacular, Shingraf) the vermillion of trade, is sold in the bazaars as a red powder or red masses.

Corrosive sublimate is very astringent and metallic to the taste, so much so, that a person swallowing the smallest quantity would become aware of it. It will sink immediately when added to water, differing thus strikingly, from arsenic.

Large doses act as a corrosive ; small doses or when absorbed from the skin, as an irritant poison. It is to be remembered that this salt is readily absorbed through the unbroken skin and frequent poisoning has thus taken place.

When this poison is administered, it is rapidly absorbed. A person may die of corrosive sublimate poisoning and no mercury may be found in the tissues. On the other hand, the elimination of mercury in some cases is so slow that discovery in small quantities in the viscera is consistent with the supposition of death from some cause other than mercurial poisoning.

Symptoms of corrosive sublimate poisoning.

The symptoms come on almost immediately the poison is swallowed. A strong metallic coppery taste in the mouth is experienced and an intense burning pain is quickly felt in the mouth, throat and stomach and pain radiating over the abdomen, violent vomiting of white or blood stained stringy mucous follows. The tongue and back of the throat are whitened and look as if caustic

had been applied, the voice is hoarse, breathing and swallowing become difficult owing to swelling of the larynx. Œdema of the glottis may occur.

Colicky pains in the abdomen are followed by profuse diarrhœa with straining, the stools become watery, blood-stained and contain shreds of mucous membrane. The pulse is small and frequent, the skin cold and clammy, and the temperature subnormal. The urine is scanty, blood-stained and albuminous or it may be completely suppressed. If death is not rapid, salivation, ulceration of the mouth, loosening of the teeth, fetor of the breath and gangrene of the stomach may occur. However, symptoms admit of considerable variation.

Death occurs in, from a few hours to five or ten days from collapse, sometimes preceded by convulsions and unconsciousness.

Symptoms in brief of acute corrosive sublimate poisoning :—

1. Metallic taste in mouth as soon as poison taken.
2. Burning pain in mouth, throat, stomach.
3. Immediate vomiting of blood-stained masses of white matter.
4. Mucous membrane of mouth and throat corroded and greyish white in colour.
5. Pain and vomiting quickly followed by collapse, death within 48 hours, in 4 hours, or even in half an hour, or may be, several days.

Symptoms of chronic poisoning by corrosive sublimate :—

The symptoms are modified by the dose and the interval between each dose. There is nausea followed by occasional vomiting and pain in the stomach. There is general constitutional disturbance with anæmia and cachexia and mental depression. Salivation is more prominent than in acute poisoning, but it may be intermittent. The glands of the mouth become painful and swollen. The gums tender and the teeth loosened. The breath has an offensive smell, the bowels are irritable and diarrhœa is frequent. Tremors may commence in the tongue and face and spread to the limbs. Paralysis may occur. Delirium and mania may follow.

Fatal Dose.—Three to five grains.

Fatal Period.—This may be prolonged to five or even ten days, but if corrosion be severe death may occur in a few hours from shock.

Post-mortem Appearances.—The surface of the mouth, throat, and gullet is corroded, of a greyish white colour. The stomach may be corroded through the entire thickness of its walls, the peritoneum presenting a greyish white colour ; this condition is as a rule confined to the posterior surface. The contents of the stomach are masses of coagulated albumen and mucus mixed with bloody fluid. The mucus membrane is thrown into folds, rigid, thickened, and the surface of a greyish colour. The changes are due to the coagulating and hardening properties of the poison ; the tissues are fixed and hardened. The corrosive appearances may extend into the duodenum,

and jejunum, for a short distance. Poisoning by weaker solutions of poison cause a vivid red instead of the greyish white with hæmorrhagic patches. Ulceration of the stomach is rare.

The deceased, a durwan, went up to a native police officer on duty in Chowringhee Road, Calcutta, and stated that a man, a stranger, with whom he had walked back from Kalighat, had, on parting at the corner of Chowringhee, given him a pan. He put it into his mouth, and began to chew it; in a few minutes he felt a burning pain in his mouth, and a sensation of swelling of the tongue and throat. He was taken to hospital, and, on examination, his mouth and throat were found to be corroded; there was dyspnœa; tracheotomy was performed. He died on the fifth day.

On post mortem examination, the interior of the mouth, the pharynx, and œsophagus, were found to be corroded, covered with wash-leather sloughs, the gums were also corroded, the front of the tongue was denuded of epithelium, the epiglottis was swollen, rigid, and covered with slough, the aryteno-epiglottic folds were very swollen.

The stomach contained curdled milk and bile, its mucus membrane presented patches of congestion, distributed all over the surface. In the transverse colon, there were small areas of acute congestion. There was congestion of the liver, and marked congestion of the kidneys; pneumonia in the stage of consolidation of the whole of the lower lobe of the left lung.

Analysis and Detection.—Mercury is not infrequently found in the solid viscera, large intestine and urine, when absent from the stomach and its contents.

The presence of Corrosive Sublimate in a sample of Calomel may be detected in the following way :—

Put a drop of water on a clean knife and add a few grains of the Calomel suspected, wash the blade after the lapse of a minute, if a black spot of Magnetic Oxide forms, it shows the presence of the perchloride.

Solid Corrosive Sublimate sublimes and deposits as a haze, on the cooler part of a test tube, seen microscopically to consist of prismatic crystals arranged in stars, crosses or singly. A solution with **potassium iodide** gives a red precipitate soluble in excess to a clear fluid, with **sulphuretted hydrogen** gives a precipitate first yellow, then brown, and finally black; with **silver nitrate** gives a white precipitate soluble in ammonia, thus showing the presence of chlorine. Reinsch's test as for arsenic.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. What does corrosive sublimate look like?

A. It looks like alum, is in crystalline lumps. It differs from arsenic by the absence of the opaque, broken china appearance. It is extraordinarily heavy, much heavier than arsenic.

2. Q. Is it soluble in water?

A. Yes. One part will dissolve in sixteen parts of cold water and in two parts of boiling water.

3. Q. Are all salts of mercury poisonous?

A. Calomel metallic mercury, white precipitate (ammoniate), red precipitate (red oxide), or other salts may cause mercurial poisoning.

4. Q. Has corrosive sublimate any characteristic taste or odour?

A. Corrosive sublimate is odourless, but has a burning metallic taste.

5. Q. If administered to a person would he be aware of it?

A. Yes. As soon as it is taken he will experience a metallic taste and a burning pain in the mouth, throat and stomach.

6. Q. How long after taking it do symptoms of poisoning appear?

A. Almost immediately.

7. Q. What are the symptoms?

A. Vomiting occurs almost immediately, the vomit being mixed with blood and containing masses of white matter (coagulated albumen). The tongue and throat are whitened as if caustic had been applied. The voice becomes hoarse and breathing difficult; colicky pains followed by diarrhœa and straining; collapse and death.

8. Q. What is the smallest fatal dose?

A. The smallest fatal dose is about 2 grains.

9. Q. How long after taking a poisonous dose would a person die?

A. In acute cases, where a very large dose is taken, death may occur in half an hour. In other cases where the lethal dose is a small one, the poisoning assumes a sub-acute form and death will then supervene in from five to ten days.

10. Q. Can you say whether death was caused by the administration of a single dose or by doses repeated after intervals?

A. In the latter the symptoms are those of the acute form of poisoning plus the following: straining and copious diarrhœa, the evacuations becoming watery and blood stained and containing shreds of mucus membrane, swelling of the abdomen and great pain, increased by pressure, intense thirst, salivation may appear on the second day or may be absent altogether, cold clammy skin, small weak pulse, feeble respiration. The victim dies of exhaustion after several days.

11. Q. Can poisoning by corrosive sublimate be mistaken for that by arsenic?

A. Although vomiting, burning pain in throat and stomach, colic and purging are common to both poisons, the tongue and throat are whitened by corrosive sublimate. This does not occur in arsenical poisoning.

12. Q. Can poisoning by corrosive sublimate result from the application to the unbroken skin?

A. Yes. Applied externally to the unbroken skin corrosive sublimate has caused death, the symptoms being almost identical with those which follow the entrance of the poison by the mouth. Poisoning has resulted from absorption through wounds and ulcers.

OPIUM

Opium.—(Vernacular, afim, aphiyun) is the dried juice of the unripe poppy.

A specimen of good opium obtained in the bazaar is a nearly black, sticky mass of firm uniform consistence and granular texture. It is frequently mixed with gums, catechu, vegetable juices, sugar, starchy matter and earth.

This is the drug selected by the **suicide** and **infanticide**. Opium is in constant use as sedative and stimulant. It is also employed to enable continued sexual indulgence to be enjoyed. Accidental deaths are rare. Habit allows large quantities to be consumed with impunity.

The poisonous effects of opium chiefly depend on the quantity of the alkaloid **morphine** present in the sample swallowed. In the Indian variety it is about 4 or 5%. In a good sample of opium there should be about 10% of morphine present.

Poisoning by opium in adults is almost invariably suicidal. Its "heavy" smell and bitter taste hinders it from being used as a homicidal poison. It is, however, frequently administered homicidally to infants.

Symptoms of acute poisoning by opium.

There is usually an interval of from half to one hour between the taking of the poison and the onset of the symptoms. The interval may be shorter or may be pro-

longed for several hours. Christison, mentions a case in which the symptoms were deferred for eighteen hours.

The earliest symptom may be slight excitability. This is followed by giddiness and soon after, drowsiness. The drowsiness increases rapidly. All the muscles become relaxed and the limbs flaccid. The victim cannot walk or stand and sleep overpowers him. The pupils are contracted, the pulse soft, breathing slow and shallow, skin moist. The sleep deepens into stupor. At first he can be roused, but soon no stimulation will do this. Reflex action becomes abolished. The pupils contract to pin points, the pulse is quick and feeble, breathing slower, laboured and sterterous, the face and lips are livid, the veins of the neck distened, skin cold. Gradually the stuper passes into coma which becomes profound, the pupils dilate and death occurs from asphyxia.

Symptoms in brief of acute opium poisoning.

1. Slight excitability, giddiness, then drowsiness.
2. Sleepiness
3. Contracted pupils
4. Complete insensibility
5. Skin sweating, sterterous breathing
6. Coma, pupils dilated
7. Death from asphyxia

The *sudden form of poisoning sometimes occurs* after a large dose, the person falls into a deep sleep five or ten minutes after taking the poison and dies in a few hours. The pupils are usually dilated.

In some cases *convulsions are the principal symptoms.* Sometimes *paralysis occurs* as a result of opium poisoning, or inability to empty the bladder; *but usually* there is only as a result, heaviness, dry tongue, and loss of appetite for one or two days. Sometimes there may be albuminuria, numbness, or an eruption of the skin, or loss of taste.

Opium poisoning does not always end in slow asphyxia.

The action of opium is modified by various circumstances, of which the chief are :—

1. Age
2. Habit
3. Idiocyncrasy
4. Pain

Age.—Infants and young children are very susceptible to the action of opium. One drop of laudanum has caused death.

Habit.—The influence of habit is seen in India. Habitual opium eaters take large quantities without any poisonous effects being produced. Their only sensations are stimulation and intoxications. In India the majority of opium eaters continue to take the same quantity for years without any apparent bad effect. Many increase the amount from time to time.

Idiocyncrasy.—Occasionally, owing to a peculiar idiocyncrasy a marked insensibility to the action of opium is observed as in the case recorded by Christison, where a person, not accustomed to its use, took an ounce of laudanum without any other effect than headache and

constipation. On the other hand, cases are met with, where alarming symptoms of poisoning are produced after taking an ordinary medicinal dose.

Pain.—The existence of pain markedly influences the action of opium. The following is an extract from a lecture delivered by the late Professor Trousseau, recorded by the late Professor G. Dieulafoy of France :—

"An old lady came under my care in 1845. She had been suffering from epileptiform neuralgia of the face for the past ten years. The attacks lasted from a few seconds to three minutes. They sometimes commenced in the sub-orbital nerve, sometimes in the mental and at other times in the supra-orbital nerve. The trouble rapidly spread to the three branches, and when the paroxysm was at its height the muscles of the face worked convulsively. The poor woman had sometimes twenty attacks in an hour ; they returned on the least movement. She could not speak, cough, eat, or drink without having a severe paroxysm. To moderate the pain, she rapidly carried her hand to her face, which she pressed violently, making the skin move over the bones. When the pain was more acute, she started up and walked about the room, stamping her foot and uttering dull groans. At times the attacks did not appear for a week, a fortnight, a month or even longer. They then returned with renewed vigour.

The most remarkable thing was that the pain disappeared completely after each paroxysm, except for a feeling of numbness. I ordered morphia internally, commencing with fairly large doses of **three to five grains a day**, and being resolved to increase the doses if the drug was well borne. **In less than a fortnight I was giving**

sixty grains of morphia each day. The improvement was great. During the course of the day she had only slight shocks of dull pain in the branches of the trifacial nerve. The digestive functions were but little disturbed, and the intellectual faculties were in good conditions; but the patient having a limited fortune, the enormous price of morphia almost ruined her. I therefore had recourse to opium. She began to suffer as soon as she ceased using the remedy. I found a chemist who consented to sell her raw opium at the market price, and she was able to obtain raw opium, which she made up into **fifteen grain pills,** and **took five, ten or twenty** a day, as occasion arose.

It is remarkable that these enormous doses of opium did not notably disturb her digestion. **There was no somnolence,** and she obtained her usual rest at night. For six years I saw the patient from time to time, and I was able to notice the following therapeutic effects; She sometimes had no attack for two or three months. She then suspended the use of the opium, after having gradually diminished the quantity in proportion as the pains diminished. The epileptiform neuralgia then returned suddenly with renewed violence. She took from the first **about half an ounce of raw opium,** and kept up this dose until the attack had calmed down. The opium, therefore, gave her immense relief, but did not completely cure her, and I repeat, especially since my attention has been especially called to this kind of neuralgia, I have never met with a case that was curable."

Symotoms of chronic poisoning by opium. (morphine).

In addition to the eating of opium, many persons take

morphine hypodermically. The symptoms of chronic poisoning in these circumstances are : The individual loses all sense of right and wrong, he will lie and thieve in the most degrading way, especially if his desire is to obtain the drug and absolutely no statement that he makes can be trusted. He neglects his work and allows his business to go to ruin. His body wastes and becomes anæmic, there is loss of appetite, indigestion, dry mouth, sluggish bowels and a foul tongue. The nails are brittle, the skin dry, the hair turns grey early, and falls out. There is sexual impotence, no erections take place, no semen is secreted. In women the monthly flow ceases, the flow of milk is stopped but the flow of urine is increased. The pupils are small, and loss of muscular power, slight failure of muscular co-ordination and tremor are present in severe cases.

In the case of adicts, morphia is so quickly destroyed in the body that it is with great difficulty that one finds it at all. It would not be found in the decomposed body of an adict.

The diseases which resemble poisoning by opium are as follows :—

Apoplexy.—This greatly resembles opium poisoning, in fact the brain is often in a similar state when opium has been given in poisonous doses, to that in which it is after apoplexy has happened. It may be distinguished by the pupils being usually contracted in death by opium, and dilated in apoplexy ; besides this an attack of apoplexy often occurs when a person cannot have taken food recently while on the other hand in poisoning by opium the poison may be found in the stomach. Although

apoplexy usually occurs in persons about 40 years of age ; yet cases have been recorded at all ages.

Heatstroke.—Many of these cases are similar to this form of poisoning in the suddenness of attack, and the sleepiness or insensibility of the sufferer ; but they differ in only occurring in the hot weather, and in the skin being remarkably hot and dry in cases of heatstroke, while in poisoning by opium it is moderately warm and moist.

In opium poisoning also the pupils are usually contracted, and in dhatura poisoning dilated. In poisoning by alcohol the smell can usually be detected in the breath. If convulsions occur, opium poisoning may be mistaken for poisoning by strychnine or nux vomica but in the latter there is great rigidity and little movement of the limbs, the contrary occurs in poisoning by opium.

Post mortem appearances.—Congestion of the brain, lungs and liver is present, but is merely a sign of death from asphyxia. Traces of solid opium may be found in the stomach, but the smell will usually, in India, be obscured by putrefaction.

Mode of detecting opium.—It can readily be identified by its physical appearances, its dark red, almost black, colour, its characteristic odour and taste. If there is any doubt, a fragment placed in water partially dissolves, giving a more or less reddish solution. To one portion of the solution **a drop of tincture of iron** should be added ; this **gives a deep red solution** of meconate of iron if opium is present. This red colour is not altered

by boiling. To another portion of the opiate solution add some strong nitric acid; the solution will be reddened from the action of the acid on the morphia.

These tests can easily be applied to the contents of the stomach, or to vomited matters having the odor or appearance of opium being mixed with them. Take a small quantity of the contents, acidulate it with dilute sulphuric acid, and then allow it to stand for some hours after; filter and test the filtrate as above described with tincture ferri perchloride and with nitric acid. This can be done in the post mortem room in a few minutes. Other tests concern the Chemical analyser to Government.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. **Q.** Could opium be administered to a person in food or drink without his detecting it?

A. Opium is very bitter and has a strong and characteristic odour and on this account it is not likely that a person would take it without detecting it unless he was intoxicated.

2. **Q.** How long after taking opium do symptoms of poisoning appear?

A. The interval will depend upon the form in which the poison is taken and the condition of the stomach at the time. The shortest interval would follow if taken in solution on an empty stomach. This interval may be from a few minutes to eight hours. The usual period is from half to one hour.

3. **Q.** What are the usual symptoms of opium poisoning?

A. First there may be a little excitement followed by giddiness and drowsiness, the eyes are kept open with difficulty. Sleep quickly

supervenes, gradually deepening to absolute insensibility with sterterous breathing. The pupils contract to pin points, the pulse and breathing become feeble, the skin is cold and clammy and a convulsion very frequently ushers in death.

4. Q. Are the symptoms in all cases similar?

A. Certain anomalies in the symptoms may occur, thus, there may be vomiting and purging, convulsions, delirium, tetanic spasms, one pupil dilated, the other contracted, numbness, paralysis.

5. Q. Can remission of symptoms occur after onset, to reappear at a later period?

A. Yes, partial recovery may occur in some cases, even becoming sufficiently conscious to recognise friends and relatives and to give details of circumstances as to how the poisoning had occurred. Coma again supervenes and death follows. The explanation is that during the stage of great depression absorption of the poison probably ceases, but when stimulation has improved the circulation another dose is taken up from the alimentary canal.

6. Q. Is it possible for a person to exercise voluntary power after having taken a fatal dose of opium?

A. It is possible that a person after taking a quantity of opium sufficient to cause death may yet be able to walk about and perform various acts for a couple of hours. Nevertheless, with large doses and rapid absorption narcosis and coma may occur almost at once, with dilated pupils and speedy death. Such speedy incapacity would be likely to follow an overdose of morphia hypodermically administered.

7. Q. Can poisoning follow the application of opium to the unbroken skin?

A. Death has been caused by a poultice made with laudanum applied to the stomach. The introduction of opium into the vagina would cause poisoning.

8. Q. How do children react to opium?

A. Infants and young children exhibit an extreme sensibility to opium. One drop of laudanum has caused death in an infant seven days old, in eighteen hours.

9. Q. What is the smallest fatal dose for an adult ?

A. The smallest fatal dose recorded is four grains of opium or one grain of morphia. These four grains refer to the opium of the British Pharmacopoeia which contains about double as much morphia as Indian opium and is probably about three or four times as poisonous as the common bazaar opium.

10. Q. Can the action of opium be influenced by any special circumstances ?

A. The action of opium is modified by various circumstances of which the chief are: age, habit, idiocynerasy, full or empty stomach, and presence of disease.

11. Q. Is it possible for a quantity of opium recognised as a medicinal dose for one person to cause poisoning in another ?

A. Occasionally a marked insensibility to the action of opium is observed in some people unaccustomed to its use. On the other hand, there are people who exhibit extreme sensibility, an ordinary medicinal dose producing alarming symptoms of poisoning.

12. Q. What symptoms of other states could be mistaken for those of opium poisoning ?

A. The one symptom of importance is coma (profound stupor or insensibility) which may be the result of opium, alcohol, cerebral bleeding and other inflammatory conditions of the brain, uræmia etc.

In alcoholic coma the breath usually smells of alcohol, if absent, it cannot be due to alcohol. The pupils are usually contracted but will dilate to the stimulus of pinching the skin of the neck, the temperature is usually subnormal, the pulse rapid and strong, later becoming feeble, breathing of the snoring type.

In coma due to cerebral bleeding, there may be a period of delirium in addition to the coma. the pupils may be unequal, contracted or dilated and may not react to light, breathing is slow and sterterous, the pulse is full and bounding.

In coma due to injury to the head the pupils are equal and dilated or contracted and react to light, breathing is shallow and slow with sighing, the pulse feeble, temperature is usually subnormal, vomiting may occur.

In coma due to uræmia the person may be aroused, onset is gradual, pupils may be contracted or dilated, the breath has a peculiar uræmic odour, pulse is slow, high tension, heart is enlarged, breathing is slow and sighing, there may be convulsions.

The post mortem appearances of opium poisoning resemble those in death by asphyxia.

NUX VOMICA AND STRYCHNINE

Strychnos Nux Vomica bark.—(Vernacular, kuchela-ke-chill). Nux Vomica bark is distinguished by its quilled form, whitish external surface, covered with small red dots, is intensely bitter. It gives a blood red colour when nitric acid is applied to the inner surface.

Strychnox Nux Vomica seeds.—(Vernacular, kuchela-ki-bij). Nux Vomica seeds are shallow saucer shaped discs, three quarters of an inch in diameter, covered with radiating silky fibres and slightly raised in the centre. They are light brown in colour, hard and tough and difficult to pulverise. When powdered, the colour is grey-brown, resembling very much liquorice powder. It is intensely bitter. Its poisonous properties are due to the presence of the *alkaloid strychnine* and when we speak of nux vomica poisoning we really mean poisoning by strychnine.

Preparations of these seeds are used as medicine by hakims and pansaries for the cure of rheumatism and other diseases. Nux vomica is also used as a vermicide and for poisoning dogs and cattle. The bark is used as a tonic.

In India, homicide by administering nux vomica or strychnine, is rare, probably owing to its easy detection on account of its intense bitterness, but it could be administered without detection in pill form and no doubt this is the method adopted by the poisoner. Death from accidental causes is fairly common as the bark has frequently been mistaken for kurchi bark.

The alkaloid strychnine is exceedingly poisonous and since it gives rise to tetanic convulsions, poisoning by it may be mistaken for tetanus,

Symptoms of Acute Strychnine Poisoning.

Shortly after swallowing the poison there is usually a sense of suffocation and impending calamity with difficulty in swallowing saliva. There is a trembling of the whole body followed by twitchings of muscles. Tetanic convulsions then follow suddenly with great violence and nearly all the muscles are affected simultaneously. The hands are clenched, the limbs stretched out, the head drawn back, and the body becomes as hard as a board. As the convulsions increase, the whole body becomes arched backwards until only the head and heels are resting on the bed or ground. The abdominal and thoracic muscles are strongly contracted arresting the breathing. The hands and arms become strongly flexed, the legs may be separated and with the soles of the feet incurved. The jaw is strongly contracted (the last muscles to become affected). The face is congested or livid, the mouth covered with froth the eyeballs prominent and staring, pupils dilated and the lips livid.

As a rule, consciousness is retained and during the convulsions the suffering is intense. The convulsion lasts about a minute and is followed by complete relaxation. The victim feels exhausted and is bathed in perspiration. Within a short time or on the slightest impulse, such as, an attempt to move, a sudden noise, a draught of cold air, etc., a convulsion recurs. In fatal cases the convulsions rapidly succeed each other and increase in severity

and duration, ending in death from exhaustion. The convulsions when once clearly established progress rapidly either to death or recovery, and the mind remains clear till the end.

Fatal Dose.—About thirty grains of the powdered seeds. One thirtieth of a grain of strychnine has caused death in a child. The smallest fatal dose for an adult is half a grain.

Fatal Period.—The time of onset of symptoms is variable. In poisoning by nux vomica the interval between the taking of the poison and the onset of symptoms is longer than in poisoning by strychnine. The average interval in strychnine poisoning is **5 to 20 minutes**, but this period may be prolonged to one hour or even longer. The condition of the stomach has a considerable influence on the time at which the symptoms commence, so has the form in which the poison has been administered. It would obviously be shorter if the poison was given in solution on an empty stomach. In fatal cases of poisoning by strychnine or nux vomica, **death usually occurs within two hours** after administration of the poison.

It is very important to differentiate between tetanus and strychnine.

Tetanus.	Strychnine poisoning.
1. The symptoms come on gradually.	1. The onset of symptoms is sudden.
2. Commences in, and specially affects the muscles of the lower jaw.	2. Does not commence in, nor especially affect the muscles of the lower jaw.
3. The muscles never quite completely relax between the convulsions.	3. The muscles completely relax between the convulsions.

People have died from strychnine poisoning and no trace of the poison has been found in the body.

A strong healthy man of 43 years of age, swallowed five grains of strychnine and died in half an hour ; only about one grain of strychnine was found in the stomach after death (Taylor Med. Jur.)

The facts in evidence against Palmer were as follows :—

On Monday evening the 19th of November 1855 at about 9 p.m., Palmer purchased 3 grains of strychnine, and went to see his friend Cook. Cook's medical attendant had furnished him shortly before a box of morphine pills intended to act as a sedative. Prisoner had the opportunity of substituting strychnine pills for the morphine pills which he induced Cook to take. The result was that Cook instead of sleeping peacefully, was found writhing in agony and screaming loudly ; his muscles rigid and the whole body jerking violently. Palmer was called. He came at once and gave him something which restored him. He sat by his bedside till he was better.

Next day (Tuesday in the afternoon Palmer bought six grains of strychnine, and then went to see Cook. When the Doctor arrived at 7 p m. Cook told him of the evil effect of the morphine pills. After some consultation with Palmer, new pills were made up in place of the old ones, and given to Palmer to administer to the patient. At about 11 p.m., he induced Cook much against his will to take the new pills. At midnight Cook had another attack similar to the other. Palmer was sent for, but too late to be of any good. Cook died in ten minutes. After death his body was arched backwards like a bow, and his limbs were so stiff that they had to be tied. These were the symptoms of strychnine poisoning, as the expert medical evidence conclusively proved, and there can be no doubt that he was poisoned by Palmer with the strychnine purchased for the purpose. **There was no strychnine found in Cook's body at the post mortem examination.**

Post mortem appearances.—Pathologically nothing characteristic has been observed.

Detection.—Fragments of the seeds must be searched for. **The clean cut surface turns red on application of**

strong nitric acid. Chemical tests must be left to the Chemical examiner.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. Is there any difference between nux vomica and strychnine ?

A. Strychnine is an alkaloid and is the active principle of nux vomica. The poisonous quality of nux vomica is due to the presence of this alkaloid, strychnine.

2. Q. What is nux vomica like ?

A. The seed of the nux vomica is a saucer-shaped disc, about three quarters of an inch in diameter and covered with fine downy hairs. These seeds are very tough and resist powdering. The powdered nux vomica bark is not very poisonous ; it is often mistaken for kurchi bark which is harmless.

3. Q. What is the smallest fatal dose of nux vomica ?

A. About thirty grains of the powdered seeds would be fatal.

4. Q. Has it any characteristic taste ?

A. Nux vomica is very bitter. The bitterness is due to the alkaloid strychnine which is about the bitterest substance on earth.

5. Q. How long after taking strychnine would symptoms of poisoning occur ?

A. The symptoms usually commence within four or five minutes but they may be delayed for twenty minutes or even longer but this is rare.

6. Q. How soon does death take place ?

A. Death usually occurs within two hours, but occasionally it may be delayed for five or six hours.

7. Q. Since death is so rapid, strychnine must always be found in the stomach after death ?

A. This is not so. Persons have died of strychnine poisoning and no trace of the poison has been found in the body. The failure to discover strychnine does not prove that it has not destroyed life.

8. Q. What is the smallest fatal dose of strychnine ?

A. A child has been killed by one thirtieth of a grain and an adault by half a grain.

9. Q. Can strychnine poisoning be mistaken for disease ?

A. It may be mistaken for tetanus, but this should not be the case. The muscular contractions or convulsions in strychnine poisoning subside and the muscles become flaccid and free from stiffness. These alternative contractions and relaxations are characteristic. In tetanus, on the other hand, relaxation is never complete between the convulsions or spasms.

ACONITE

Aconite in Hindusthani is called by various names ; these are :—mitha bish, mitha taliya, mitha zahar, dakra, ate singia, mishuri bish, mohara or kath bish, or simply bish or bikh, long-talia or kala mora.

The root of the aconitum ferox is usually employed, though other parts of this plant as well as of some other species of aconite might be used. Poisoning with aconite is often accidental, but it is used homicidally and also as a **cattle poison.** It is legitimately used by native practitioners (hakims) as a drug. It is also sometimes added to native liquors to increase the intoxicating powers. Aconite poisoning is not common, and when it does occur it is often difficult to detect post mortem, especially when putrefaction has occurred.

Signs and symptoms.—Soon after the poison is taken it causes a burning or tingling in the throat or mouth, especially if chewed (this differs from that of capsicum in not commencing so soon, but lasting longer than that of the latter plant). Subsequently there is burning pain in the throat and stomach with tenderness on pressure—this is succeeded usually by vomiting, great weakness, and numbness, with giddiness and tingling felt in the limbs, and sometimes all over the body.

There is generally inability to walk from muscular weakness, but at the same time great restlessness.

Very often there is imperfect vision, but the pupils are natural or dilated, and peculiar sensations, as if the throat was too narrow, or as if parts of the face had become swollen : there is also great weakness and much

anxiety. The pulse becomes small and feeble, slow and irregular, the skin cold and damp, and the person dies remaining usually sensible till death, though sometimes he is so weak that he does not willingly move or talk. Purging sometimes occurs: occasionally convulsions occur or paralysis, while more rarely delirium is one of the symptoms.

The symptoms of poisoning by aconite resemble in some respects those caused by arsenic, but they differ in the peculiar tingling in the mouth, throat and limbs, also in the vomiting not being tinged with blood.

At 11 p.m. on the 8th of August 1865, one Choonee Ghazee, a resident of Tipperah, became very ill immediately after eating his evening meal. He is reported to have felt numbness over the whole body, and to have lost all strength, to have vomited frequently up to 9 o'clock on the following morning and to have died at noon on that day. At the post mortem examination, the stomach was found congested, but quite empty; it was put into a bottle with some spirit, and forwarded to Calcutta for examination. A spiritous fluid was prepared by repeated evaporations, solution, filtration, and re-evaporation, and the resulting extract or essence, was divided into two unequal parts; the larger of these was injected into the stomach of a small cat; much, however, was lost by the struggling of the animal, and more was vomited within a minute from the time it was given. After a lapse of five minutes the following symptoms were seen:—her pupils began to dilate, her breathing to be laboured, and her hind legs became so paralysed that she could scarcely walk, her hips falling to the ground from side to side as she attempted to do so. A little later she could not support the weight of her hips, but squatted down and pushed herself about by the forelegs. Violent efforts to vomit were made from time to time, but only a little frothy matter was ejected. When pinched with tweezers in different parts of the body, no signs of pain were made. She appeared restless and distressed, staring wildly about, the pupils being more dilated. In half

an hour from the time of administration, she began to lose power over her forelegs also, and after an hour she had become quite still and motionless, and perfectly insensible to pain. At this time her pupils varied much in size ; towards 1 o'clock, or two hours from the commencement, they were contracted rather than dilated. From this time she began to recover her normal condition. The smaller portion of the extract was applied to the lip of the experimenter without inducing any decided numbness ; it was also tested chemically. The results were not considered sufficiently satisfactory at the time to justify a confident opinion that aconite was contained in the stomach; when, however, the symptoms of the patient are considered in conjunction with those reproduced in the cat, it is scarcely possible to doubt that aconite was the cause of death.

Fatal Dose.—The smallest fatal dose has been sixty grains of the root.

Fatal Period.—The symptoms have appeared as soon as **two minutes** after swallowing the poison ; though occasionally no change occurs till two hours afterwards. The earliest time that death has occurred is one hour. **The average period is, however, four hours**—and some persons have lived as long as twenty hours.

Post mortem appearances.—General venous congestion due to heart failure is marked. The stomach and intestines are often much inflamed or even ulcerated ; sometimes, however, they are quite healthy. There is no disease that can be mistaken for the effects of aconite, if only the symptoms are clearly ascertained. Injury or disease of the spinal cord may produce tingling in the limbs and weakness, but death is not so rapid, and paralysis is almost always present, while the disease can be ascertained by a post mortem examination.

Mode of detection—The root is generally seen as a

short, black, conical hard solid, a minute portion of which chewed gives a tingling and numb sensation in the tongue and lips. The root when dry breaks with a short fracture, showing a white or brownish centre, sometimes hollow. It consists of a central pith enclosed in a delicate layer of thin brown cells.

Any fragments found in the stomach or vomit, may be macerated in absolute alcohol for two or three hours, and the mixture filtered. This filtrate is then to be evaporated to dryness on a water bath kept below boiling point and the residue dissolved in a little distilled water just acid with acetic. A few drops of this should be tested with the tongue tip and the rest injected into a frog, when the legs will become speedily paralysed. The same thing occurs when mice are fed with it.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. Q. Is it easy to mistake aconite root for anything else ?

A. The root of the horse-radish may easily be mistaken for the root of the aconite although the resemblance is not very marked. The mistake has been made many times.

2. Q. Could poisoning symptoms be mistaken for something else ?

A. The irritation of the stomach causes vomiting, sometimes very violent and there may be diarrhœa. These symptoms may suggest arsenic poisoning, but these are the only symptoms that would do so.

3. Q. What is the smallest fatal dose ?

A. About sixty grains of the powdered root and one fifteenth of a grain of aconitine.

4. Q. How soon after taking the poison would symptoms appear ?

A. Aconite is one of the most virulent poisons known. Within a few minutes of taking it the first symptom appears, namely, a sensation of tingling followed by numbness in the mouth, tongue and pharynx, this is followed by pain in the stomach and vomiting. Within half an hour the tingling and numbness extends throughout the body.

5. Q. How soon would death occur ?

A. If the root has been taken death may follow in, from three to ten hours. If an active preparation is taken, such as the alkaloid aconitine, death may occur in a few minutes.

DHATURA

Dhatura is obtained from two plants, the **dhatura fastuosa** (kala dhatura), **dhatura alba** (sada or safaid dhatura).

The seeds are generally used ; they are large, reniform, and can often be recognized by the naked eye, but they are similar in several respects to the seeds of the common capsicum (lal mirch) which may be mistaken for them if care is not employed. To render a person insensible for the purpose of facilitating robbery or other crime it is usually administered in doses too small to produce a fatal result, but if a large quantity is taken, or if the person is in a weak state, death not infrequently occurs.

Dhatura is almost always used to facilitate robbery and only rarely to produce death, though this occurs occasionally from too large a quantity being taken.

In cases of dhatura poisoning it is always necessary to ascertain the object with which dhatura was administered, and the best indication of the intention of the offender can be gathered from the amount of dhatura administered.[13]

Where dhatura is administered to a person with fatal results with intent to facilitate the commission of robbery, no hard and fast rule can be laid down as to the section of the Penal Code under which the person administering the dhatura should be convicted. The circumstances of each particular case must be taken into consideration.[14]

The use of dhatura in order to facilitate the commission of robbery, does not *per se* necessarily import the contemplation of the victim's death as a means towards or as incidental to the main end of robbery. Judicial experience shows that numerous robberies are committed with the aid of dhatura without fatal results.[15]

On the other hand having regard to the extent to which **dhatura** poisoning does take place in India, both in the case of men and cattle, there is very adequate ground for attributing at any rate, to ordinary Indian villagers a knowledge of the dangerous results that may occur from administering **dhatura.** There is considerable danger in taking too lenient a view as to the extent of the knowledge that should be attributed in such a case, having regard to the frequency of **dhatura** poisoning in India. If, as is stated in Lyon's Medical Jurisprudence, "there seems to be a wide-spread popular belief in India that **dhatura** is simply an intoxicant, and not a poison," then it is all the more necessary that the Courts should add their weight to the correction of that fallacy. Persons making use of poisons, which besides being intoxicants, may likewise prove

[13] *Kesar Din*, 21 Cr. L.J. 319 L. Shadi Lal and Wilberforce, J.J.; *Rana* v. *Emp.*, 31 Cr. L. J. 110=120 I. C. 534=A. I. R. 1930 Lah. 90=1930 Cr. C. 106.

[14] *Sadhu*, 19 P. R. 1919=20 Cr. L. J. 510=51 I. C. 670. Shadi Lal and Martineau, J.J.

[15] *Pira*, 28 P. R. 1881 Cr. P. 71. Plowden J.; *Bhagwan Din*, 30 All. 568=1908 A. W. N. 243=8 Cr. L. J. 383.

fatal if administered in sufficient quantity, cannot escape the fatal consequences of this reckless administration, without showing that they were not possessed of the ordinary knowledge of adults, which even villagers are presumed to possess.[16]

Where dhatura is administered as a love-philtre the offence is not considered so serious.

Where dhatura is given to a young girl with the intention of persuading her to fall in love with the accused and there is no intention to cause hurt to anybody, the offender is guilty of causing simple hurt (S. 319) and not hurt with intent to commit an offence (S. 328).[17]

There are two different kinds of seeds used in India, for the purpose of poisoning; the one **safaid dhatura,** (dhatura alba), is of a whitish colour, less yellow than the seeds of the capsicum (lal mirch), and at the same time both larger and thicker, so that, while 286 seeds of the capsicum are equal in weight to a two anna piece, or 22½ grains, 107 seeds of the dhatura are equal to the same.

The **kala dhatura seeds** (dhatura fastuosa) are of a black or reddish colour. Some, however, are of a fawn colour; they are somewhat thicker but less broad than capsicum seeds: 246 are equal in weight to a two anna piece. All these seeds are usually described as reniform (kidney shaped), but they are rather flat and half oval

[16] *Emp.* v. *Shetya Timma Waddar*, 27 Cr. L. J. 1134=49 I. C. 651=28 Bom. L. R. 1003=A. I. R. 1926 Bom. 518. See also *Emp.* v. *Tulsha*, 20 All. 143=1897 A. W. N. 225; *Emp.* v. *Gutali*, 31 All. 148=6 A. L. J. 124=9 Cr. L. J. 383=1 I. C. 765; *Nanku* v. *Emp.*, 45 All. 557=75 I. C. 361=24 Cr. L. J. 937=A. I. R. 1923 All. 608; *Lala* v. *Emp.*, 9 I. C. 731=12 Cr. L. J. 125=32 P. L. R. 1911.

[17] *Anis Beg*, 26 Cr. L. J. 413 A. Sulaiman J.

shaped, being also often angular at one part. Capsicum seeds are of a pale yellow colour, quite different from the seeds of the dhatura fastuosa, which are usually dark or tawny and much thicker than the former, which are irregularly flat. The dhatura alba seeds are a dirty white, and for the most part are much larger and thicker than the capsicum. If the external covering of the dhatura alba seed be taken off, the interior is about the size and shape of a capsicum seed.

The seeds used in nine-tenths of the cases **are those of the white dhatura.** They are very tough and difficult to powder, unless they are first roasted, which is usually done by the practised dhatura poisoners when they wish to give the drug in powder.

Signs and symptoms.—This drug has a bitter taste, followed after by a burning suffocating sensation. The symptoms usually occur in about ten minutes after the poison is taken, though they may be delayed from half to one hour. There is at first dryness of the throat, with a feeling of faintness, headache and giddiness, with difficulty in walking straight as if intoxicated ; at the same time there is restlessness and thirst.

The pupils are dilated and insensible to light, with indistinctness of vision and drowsiness, the victim almost falling asleep. The sleep may either increase to complete insensibility with dilated pupils and flushed face, and muttering delirium, or the person may awake and then become delirious. The delirium is characterised by great restlessness, frequent moving about, and often a tendency to go naked, and **to pick at various objects.** The pulse is generally slow, the pupils still dilated, and there is

great thirst. After a time he becomes insensible again, and is greatly exhausted ; sometimes convulsions occur with low muttering delirium, and at length he dies. If, as more often happens, he recovers, the insensibility persists for a day or more, and he remains occasionally in an idiotic state, able to speak but not to understand for some time longer, and usually has no recollection of what has occurred after his last meal. Sometimes vomiting is an early symptom, though this is rare.

The symptoms put concisely are as follows :—

1. Sense of confusion, heat and thirst.
2. Dryness of throat, headache.
3. Drowsiness.
4. Giddiness.
5. Loss of consciousness.
6. Incoherency of speech.
7. Flushed face, appearance as if intoxicated.
8. Clutching at imaginary objects.
9. Insensibility with heavy breathing.

The symptoms of **dhatura** poisoning or poisoning by some form of atropin is characteristic and these symptoms cannot be attributed to any natural cause except possibly sun-stroke or heat-stroke and even in the latter cases the characteristic delirious aberration is absent.[18]

Fatal Dose.—It is true that **dhatura** is not exactly a deadly poison, but, if administered in a large quantity, it

[18] *Sarbai* v. *Emp.*, 34 Cr. L. J. 398 (399)=142 I. C. 714=16 N. L. J. 35=Ind. Rul. 1933 Nag 130=A. I. R. 1933 Nag. 303=1933 Cr. C. 1261.

often proves fatal.[18a] The fatal dose is not accurately known, but about 100 seeds will cause death.

In the case of **dhatura** poisoning it cannot be contended that in the absence of proof that the deceased was subject to a fatal dose of the poison, death as a result of that poison cannot be presumed.[19]

Fatal Period.—The ordinary interval between taking the poison and the appearance of symptoms is **5 to 10 minutes.** The ordinary time before death, 6 to 12 hours.

Post Mortem appearances.—

Pathologically there is nothing characteristic. The brain is usually much congested and full of blood. Seeds, fragments of seeds or leaves may be found in the stomach or duodenum. **The excreta and contents of the intestines should be forwarded for examination, as well as the contents of the stomach. If the seeds are not found in the stomach, they may be discovered in the fæces.**

Physiological test for Dhatura.—This is extremely simple. To the powdered seeds add two drachms of water, and a few drops of dilute acetic acid, and allow it to stand for 24 hours. Filter, and evaporate the solution to a small bulk. **A drop of the residue, if put into the eye of a cat, or other animal, will dilate the**

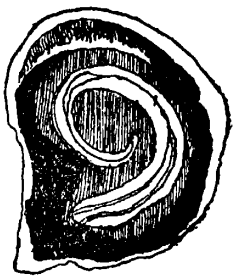
[18a] *Rana* v. *Emp.*, 31 Cr. L. J. 140=120 I. C. 534=A. I. R. 1930 Lah. 90=1930 Cr. C. 106.

[19] *Sarbai* v. *Emp.*, 34 Cr. L. J. 398 (399)=142 I. C. 714=16 N. L. J. 35=Ind. Rul. 1933 Nag. 130=A. I. R. 1933 Nag. 803=1933 Cr. C. 1261.

pupil. Herbivora do not react so well as carnivora. The mydriatic principle appears to be destroyed by putrefactive changes in the body, but can be obtained after some lapse of time, in vomit, or from earth upon which the subject has vomited.

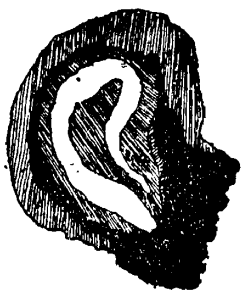
Differentiation between the common dhatura and the capsicum.

CAPSICUM SEED.



Note the Embryo is curved like the numeral 6.

COMMON DHATURA SEED.



Note the curve of the Embryo is away from the (6 like curve) down stooke and not towards it like the Capsium.

QUESTIONS THAT MAY BE PUT TO A MEDICAL WITNESS

1. **Q.** If the leaves or seeds of dhatura were mixed with tobacco and smoked could poisoning occur?

A. Yes. This is a frequent means of administering dhatura. A method of increasing the intoxicating powers of liquor for purposes of robbery is to pour the liquor into a bottle or other vessel which has first been filled with the smoke of burning dhatura seeds.

2. **Q.** Could the seeds be administered in food without the victim detecting its bitter taste?

A. Considering the very frequent cases of poisoning by this method, it is obvious that their presence is seldom noticed by the person taking them. The bitterness of dhatura seeds is not marked.

3. Q. How long after taking the poison would you expect symptoms to show themselves ?

A. The interval is rapid—about ten minutes. If given in the form of a decoction they may appear almost immediately within five minutes.

4. Q. What are the symptoms ?

A. The first is dryness of the throat followed by giddiness and staggering, flushed face, dilated pupils and delirium. As the symptoms increase the power of speech is lost and vision becomes indistinct and disordered. The delirium is characteristic. There is restlessness, wandering incoherent speech, he grasps at imaginary objects and appears to be trying to draw imaginary threads from the ends of his fingers. If the dose is large this condition is followed by stupor.

5. Q. What is a fatal dose ?

A. The number of seeds that would be considered a fatal dose is not known. Probably about one hundred seeds.

6. Q. Could dhatura poisoning be mistaken for disease ?

A. Yes, it could be mistaken for kidney disease, inflammation of the brain, sunstroke, apoplexy, etc.

7. Q. How would you differentiate ?

A. The peculiar characteristic delirium would indicate dhatura poisoning. There is nothing else like it.

8. Q. How would you diagnose dhatura poisoning, post mortem, if no seeds were found in the stomach or bowels ?

A. By the history of the case. 2. Dilatation of the pupils, congestion of the throat, stomach and intestines, especially when crushed seeds have been administered as they appear to act as an irritant ; congestion of the brain and its membranes.

COCAINE

Cocaine is now being much used throughout India, for its stimulant and aphrodisiac (stimulating the sexual passion) effects. It is mostly used in the form of the hydrochloride of cocaine, which is added to pan and chewed.

Cocaine has a marked stimulating effect on the sympathetic system. It increases the frequency of the pulse, causes retraction of the eyelids and a bulging of the eyeballs. The activity of the glands of the body are quickened. It reduces fatigue and causes restlessness and excitement, and causes a pleasant feeling of well being. It quickens the intellect. Destroys the appetite. It may cause muscular spasms of the face if the doses are large.

The withdrawal of the drug is followed by :—dry mouth, complete loss of appetite, constipation, weakness and tremor of muscles especially the tongue, slow pulse with fall in blood pressure and fainting. There may be pains in the limbs and joints with a sensation of insects crawling under the skin, and black specks floating before the eyes. There may be great anxiety and fear of impending harm. The victim may be impulsive and violent and may commit suicide or murder.

Fatal Dose.—Cocaine appears to be a very uncertain drug in its toxic effects ; some people exhibit a great susceptibility and alarming symptoms may follow even the local application of a small quantity to the gums or eye. Other persons can take large quantities without any symptoms of poisoning being caused. **Half a grain**

administered hypodermically almost ended fatally in one case, while in another **14 grains hypodermically** ended in recovery in 5 hours. As a fatal dose half a grain hypodermically has caused death, and ten grains by the mouth.

Fatal Period.—Ten grains by the mouth caused death in one hour, but from **5 to 8 hours** is probably more useful.

Signs and symptoms.—At first, there is generally, a period of excitement, pulse and respiration are increased, there is a sense of fulness and oppression in the head, and there may be delirium of a noisy character. After a short time, signs of collapse appear, the pulse and respiration become weak, the patient sinks into a stupor which deepens into coma, convulsions occur, and death follows. In other cases, symptoms of collapse appear from the beginning; in some persons there is marked delirium, in others unconsciousness from the first.

In fatal cases, death has generally occurred soon, in one instance in 20 minutes.

Post Mortem Appearances.—In post mortem there is nothing characteristic.

The following is a description of the mental state of the "**habitual cocaine eater.**"

Normal activity is replaced by **indolence**, the emotions by **indifference.** All the faculties are dulled. The memory is paralysed. The mood is usually sad, gloomy, and pessimistic, and the will power is nil.

This state of general enfeeblement is interrupted by

sudden outbreaks of gaiety and feverish activity, which disappear very soon, leaving behind them an intensified mental fatigue.

The sensory organs are the seat of **hyperasthesia,** so that even slight stimulation produces painful sensations. At intervals hallucinations appear. Conscious in the beginning, the hallucinations are later accepted by the person as real sensations.

The general nutrition is poor. The skin assumes an earthy colour, the **weight is reduced ;** the process of digestion is sluggish and painful ; and **there is diarrhœa** alternating with **constipation.**

Percy Smith records the case of a nurse, aged 39, who entered Bethlem Hospital as a voluntary boarder for the cocaine habit. She was a German by birth, and had previously been addicted to the use of morphine and laudanum, and her mother had been the victim of the morphine habit. She had commenced to take cocaine about eight months previously, and had gradually increased the dose until ten grains was her usual quantity, though she occasionally took twenty-four and even thirty-six grains at a single dose. For the first six hours after a dose of ten grains she felt more able and inclined for work whilst sitting, but she could not go about, as it produced a feeling of weakness ; at the end of that time she would be disinclined to do anything and would lie down, but could not sleep; about quarter of an hour after a dose she usually suffered from vertigo for an hour and from palpitation for several hours ; she also had great dryness of the mouth, thirst and anorexia (loss of appetite). After a large dose there was difficulty in swallowing. She had hallucinations, and imagined she saw people and heard them talking to her, and used to carry on conversations with them although she knew they were hallucinations. The hallucinations soon disappeared after her admission, and after 4 months, including a stay at the country convalescent home, she left apparently well and 2 months later reported herself as quite well. *B.M.J. Epit.* Aug. 1892, p. 21.

OLEANDER.

Oleander : Nerium Odorum. (Vernacular, Kunair dafter, Gundira, Kurrubi). This is the sweet scented oleander with white or pink flowers, and is common every where in India. All parts of the plant are poisonous, but the roots especially so.

The pounded root is used for suicidal and homicidal purposes, and also as a cattle poison. The root is also said to be used as an abortifacient both internally and as a local application.

Fatal Dose and Period.—These are unknown.

Signs and Symptoms.—Vomiting occurs soon after the poison is taken, accompanied by abdominal discomfort, and sometimes actual pain. The pulse, at first slow later becomes rapid and weak. Respiration is hastened from the beginning. Muscular twitchings and cramps soon set in, with later tetanic convulsions, which have the characteristic of **usually affecting one side more than the other.** Drowsiness followed by unconsciousness usually occurs early.

Two men of the Calcutta Fire brigade had been advised to take a decoction of Oleander root for the cure of rheumatism. They prepared a strong decoction over night, and in the morning, each drank a cupful. Shortly after, they were seized with vomiting and had vomited several times before admission to hospital at 10 a.m. The elder of the two, aged 50 years, was conscious and able to swallow on admission, and complained of no pain. He vomited a yellow frothy fluid in the hospital. About noon, there were spasms in the face and upper extremities and to a slight degree in the legs ; there was no lockjaw, but he could not swallow nor speak. He appeared to understand what was said, and smiled vacantly. The conjunctivæ

were sensitive, the left pupil dilated, pulse very slow and small, about 50 per minute, respiration hurried. Later there were convulsive movements, most marked in the upper extremities, and after a time, the body became rigid. The patient was unconscious, eyes open, pupils dilated, the left more than the right. Pulse rapid, 100 per minute ; respiration hurried, 70 per minute. The rigidity passed off after some hours, but the general condition did not improve. The breathing was stertorous ; coma became profound, and death took place about 26 hours after taking the poison. The other man, strong, 25 years of age recovered slowly. He exhibited similar symptoms, which developed more slowly. Twitching did not begin for about 12 hours, vomiting continued longer. The pulse fell to 50 beats a minute, respiration was hurried, convulsions were marked. The patient became semi-unconscious, he lost the power of swallowing. His condition was serious for some days, and he was dull and morose until the sixth day. About 24 honrs after taking the poison convulsions were marked, the body was arched.

From the washings of the stomach of both and from the viscera of the man who died, the chemical examiner obtained a narcotico-irritant principle producing vomiting, weakness of the heart, general uneasiness and drowsiness but no twitchings or convulsions.

The post mortem appearances in the fatal case, which was examined about four hours after death, were :—Congestion of the internal organs generally ; marked congestion of the lungs. The right side of the heart was full of blood ; the left side nearly empty ; there were spots of sub-endocardial hæmorrhage in the left ventricle. The stomach was in folds, the tops of which were congested, especially along the lesser curvature. The brain was healthy—*Indian Med. Gaz. April, 1899.*

Post Mortem Appearances.—These are in no way characteristic, but there are usually congested patches in the stomach and small intestine.

Detection.—The leaves can be easily recognised by the peculiar arrangement of their stomata on the under

surface, instead of being scattered all over the leaf, they are collected in small circular depression or pits in the epidermis, these pits are full of unicellular hairs which project from the pits and form a fringe round the openings of the stomata.

Chemical tests must be left to the Chemical Examiner.

PART II

APHORISMS

Abdomen

1. Penetrating wounds of the abdomen with protrusion of viscera are not necessarily fatal. Shock may cause early death. If death is delayed, it is usually due to peritonitis.

2. The muscles of the abdomen may be torn by sudden and forcible contractions.

3. In almost all cases of abdominal contusion, shock is an important and early symptom, but in the absence of visceral damage, it is neither severe nor prolonged, passing off in less than twenty-four hours.

4. Visceral complications are likely to be associated with any injury to the abdominal wall and may transform it into an injury of the gravest import.

5. A large proportion of cases of abdominal injuries even including rupture of the intestine, are amenable to treatment by operation if performed early ; if, however, it is delayed, death is almost certain.

6. Bleeding within the abdomen is indicated by : shock, pallor, restlessness, air hunger.

7. Blood may be found effused in and around the abdominal muscles, quite irrespective of the application of violence, but only when a definite discoverable disease is present such as typhoid fever or inflammation of the kidneys.

8. Death may be the immediate reeult of a blow in the upper and central regions of the abdomen ; no injury may be apparent on inspection, and the violence may have been so slight as to leave no mark on the skin. In these cases death has been ascribed to fatal shock transmitted to the system through a violent impression produced on the nerve centre, called the solar or cœliac plexus.

Abortion

1. Abortion may occur in an apparently normal female from very simple causes, such as, sexual intercourse, fright, anger, emotion.

2. The tendency to abortion is greatest at the menstrual periods, that is, at the time when, had not the female become pregnant, menstruation would have taken place. Slight causes acting at these times are very liable to produce abortion.

3. Blows and kicks upon the abdomen during gestation may produce abortion.

4. In abortion during the first three months of gestation it is the rule for the embryo to be expelled entire en block without rupture of the membranes. If during this period the embryo is expelled alone, and no pathological cause for this can be discovered, one is justified in attributing the abortion to criminal means.

5. Hæmorrhage always occurs in abortion which sometimes may be profuse and fatal.

6. The time which elapses from the performance of an operation to induce abortion to the commencement of

expulsion (labour) is subject to great variation. It may be from several hours to a week or more before expulsive action is commenced.

7. It is by no means easy to certify that an alleged abortion has really taken place or not.

8. Fleshy masses may be expelled from the uterus which may not be the result of sexual intercourse.

9. There is no drug or combination of drugs which will when taken by the mouth cause a healthy uterus to empty itself, unless it be given in doses sufficiently large to seriously endanger, by poisoning, the life of the female who takes it or them.

10. There is not one single internal medicament which it can be consistently, with experience, asserted that even when an abortion has followed its use, it must have produced this abortion.

11. If wounds are found on the outer or vaginal surface of the womb, especially punctured wounds of the vagina itself, they could not have been caused by the passage of the contents of the womb ; they are clearly evidence of violence for a purpose.

12. The placental site is absolute proof of recent pregnancy and is recognisable up to nine weeks after delivery.

13. Spontaneous rupture of the uterus is impossible during the early periods of pegnancy.

Adipocere

1. Adipocere is an impure ammoniacal soap, formed by the union of fatty acids with ammonia, usually of a

yellow colour, occasionally white, soft, brittle, unctuous, waxy-looking and mixed with fibres and fragments of unsaponified tissue. Its specific gravity is less than water. It has an odour resembling decayed cheese. It is a very permanent substance. Saponified parts remain unchanged for years.

2. Under suitable conditions (buried in damp soil, lying in water) the body may be transformed into adipocere. It is understood that this condition does not occur before a period of three months.

3. A superficial change in bodies occuring early is sometimes mistaken for adipocere. True adipocere should retain its characteristic appearance, firmness and smell when allowed to dry. Partially changed fats and skin disappear when allowed to dry.

4. Professor Powell of Bombay, has recorded the formation of adipocere in three days and twenty-two hours after death. The recognition of adipocere was supported by microscopic analysis carried out at the time by Major W. H. Dickinson, F.I.C., I.M.S., Professor of Chemistry, Bombay University, and Chemical Analyst to Government. Major Dickinson reported: "The substance sent is adipocere."

Age

1. The only epiphysis which exhibits an ossific centre before birth is the lower epiphysis of the femur, in which it appears a little after the eighth month and at birth is about a quarter of an inch in diameter.

2. Maturity may be held established if centres of ossification are found in the epiphyses of the lower end of the femur and in the tarsal cuboid bone.

3. If a child is a male and the testicles are found in the scrotum, there is every reason to believe that it has passed the seventh and even the eighth month of uterine life.

4. The usual weight of a nine months child is from six to seven pounds, and the length eighteen inches.

5. The anterior fontanelle closes about the end of the first year.

6. The use of the X rays should always be demanded in proving the age of an alleged newly born child.

7. The first permanent molar teeth appear fairly regularly at the age of six years and the second molars at the age of eleven or twelve.

8. An individual may be said to be of adult age when the epiphyses of all the bones are united to their shafts and when the wisdom teeth have errupted.

9. Since menstruation commences, in India, between eleven and thirteen years, a girl showing an absence of development of hair in the armpits and on the genitals with little or no development of breasts, one may safely conclude that she is under twelve years of age. If menstruation is delayed, the girl will show indications of malnutrition or disease.

10. The presence of four wisdom teeth indicates that the person is over eighteen years of age; but their absence gives no certain indication of age.

11. When ossification is once completed, it is difficult to determine the age by an examination of bones.

12. Generally a child of nine should have twelve permanent teeth, at ten or eleven it should have twenty-four, at thirteen or fourteen it should have twenty-eight.

13. If the epiphyses are found united, the individual is almost certainly over twenty-five years of age, and if the three parts of the breast bone are united by bone, he is almost certainly thirty-five or over. These facts may be ascertained in the living by means of the X rays.

14. The pubic hair practically never turns grey before the age of fifty to fifty-five years.

15. Calcareous deposits in the arteries and heart point to the subject having attained to maturity if not advanced life.

16. In old people the hollow interiors of the long bone are large, the cartilages are more or less ossified, the skull sutures have more or less entirely disappeared (first on the inside then on the outside), the lower jaw becomes a mere rounded bone with a smooth surface on either side.

Asphyxia

1. The post mortem appearances in death by aspyxia are essentially the same, whatever may have been the cause.

2. Asphyxia may be caused by paralysis or spasm of the larynx and paralysis of the diaphragm. due to pressure on the nerve trunks or from disease in the upper part of the spinal cord or medulla.

3. Petechial hæmorrhages are frequently seen in the

face, conjunctivæ, lungs, epicardium and other situations, in all forms of death from violent asphyxia, as a result of increase in blood pressure.

4. Vomitting is often a terminal act in fatal syncope (heart failure, drowning, asphyxia and carbon monoxide poisoning, and food masses may be found in the air passage which may have nothing to do with the cause of death.

5. A small particle of material, insufficient in itself to block the larynx, may nevertheless cause death by asphyxia by setting up a laryngeal spasm if it lodges on or between the vocal cords.

Bladder

1. Contusion of a healthy bladder without rupture of its walls is a possible but rare form of injury.

2. Spontaneous rupture of the bladder may occur, when there is paralysis with want of power to expel the urine; when the bladder is ulcerated or otherwise diseased; where there is an obstruction in the urethra from stricture or other causes.

3. Rupture of the bladder may be caused by violence applied directly or indirectly to the abdomen, fracture of the pelvis, straining during labour, defæcation, urination, or lifting heavy weights.

4. Rupture of the bladder is almost always the result of violence directly applied to the part while the organ is in a distended state.

5. Rupture of the bladder produced by a blow is rarely accompanied by marks of bruising or injury to the skin.

Brain and skull

1. Concussion of the brain is usually indicated by fainting, insensibility, or sudden death, occurring immediately after the application of external violence.

2. Concussion symptoms always appear immediately after the injury.

3. Concussion may cause immediate death, no damage being discoverable in the brain, though generally in fatal cases, contusion of the brain substance in the frontal and lateral lobes is found.

4. Whenever concussion occurs after a head injury and the person recovers slowly from it, contusion or laceration of the brain has most likely occurred.

5. In death from concussion of the brain, post mortem examination shows merely the same condition as obtains in shock, viz : engorgement of the lungs, viscera and right side of the heart, damage of varying severity of the brain, from mere stippling bruises to actual disintegration and disorganisation.

6. A blow on the head may cause immediate unconsciousness from concussion and death may take place without return of consciousness or complete recovery may take place in a few minutes to a few hours without any further symptoms.

7. There is nothing in the state of the brain in a dead body which will enable one to distinguish whether concussion or intoxication had existed, and had been the cause of the symptoms. The discovery of alcoholic liquid in the stomach may lead to presumption of the intoxica-

tion, while marks of violence on the head may favour concussion. When both conditions are found, examination of the body cannot solve the question.

8. Neither compression nor obvious physical injury to the brain is necessary to render concussion fatal. This may be entirely dependent on shock to the nervous system. After death, no particular morbid change may be discovered in the body, or there may be merely the mark of a slight bruise on the head.

9. Meningeal hæmorrhages are far and away more commonly the result of injury than of disease, but they do occur occasionally from disease.

10. When a cerebral hæmorrhage, no matter what its extent or seat, is associated with a fractured skull, the presumption that it was due to violence is practically overwhelming.

11. Extra-dural hæmorrhage may result from a blow on the head or from an ordinary fall against some hard object. It is usually associated with fissured fracture of skull.

12. When a person is found with cerebral hæmorrhage and an external injury, it is often difficult to say whether the external injury was caused by a fall, the result of the bleeding or whether the bleeding and the external injury were caused by a blow.

13. Recent intracranial bleedings are recognised by their red colour, and the consistency and appearance of the clot; after some days the clots acquire a chocolate or brown colour, and this passes gradually into an

ochreous tint, which may be met with in from twelve to twenty-five days after the violence.

14. The younger the person, the rarer it is to find definite bleeding or capillary oozing in the substance of the brain without evident violence; yet it may occur at times, e.g. violent cough, as in whooping cough, or for no special cause. It is not very uncommon in a new born children, as the result of difficult labour.

15. A definite hæmorrhage (with evident clot) in the substance of the brain or in the ventricles, is never the result of violence only, unless the violence has been sufficiently severe to leave manifest evidence of its infliction, but it is a very frequent result of disease alone, or of disease plus excitement.

16. In hæmorrhage found in the brain—where the blood is found extra-durally, i.e. between the bone and the membranes,—the cause is due to violence, and that where it is found intra-durally or sub-durally or into the substance of the brain, the cause is disease. There are, however, rare exceptions.

17. Bruises of the brain are never found as the result of disease only, except when the disease causing them is abundantly manifest from evidence derivable from post mortem examination, e.g. scurvy, purpura, etc.

18. Contusion of the brain may be either direct, i.e. in close relation to the seat of injury, or it may be indirect, at the ends of the poles of force which start at the point of impact. Evidences of contusion are usually most marked at the base of the brain.

19. Persons suffering from severe concussion of the brain may perform acts unconsciously and automatically.

20. Contusion of the brain may occur from violence with or without injury to the scalp or skull.

21. Serious damage to the brain and intracranial blood vessels may occur after mere contusions of the skull, after falls upon the feet or buttocks, or after blows or falls upon the chin or head without a fracture of the skull.

22. In very sharp, sudden, localised blows, as from a spent bullet, local bruising of the subjacent brain may be alone produced.

23. In injuries to the surface of the brain, fracture of the base of the skull or spinal column, the cerebro-spinal fluid contains blood within a few hours of the injury and is intimately mixed with it.

24. Cerebral apoplexy has occurred after a clear interval of days to weeks, the longest period being four weeks, after an injury to the head. The injury merely plays the part of an exciting cause in a person predisposed by reason of some weakness of the vessels, due to alcoholism, kidney disease, syphilis or heart disease.

25. A person may recover from the first effects of an injury to the brain but after many days or weeks he may suddenly die ; examination will reveal a great part of the brain destroyed by suppuration although no symptoms manifested themselves until within a few hours of death. The abscess in the brain must be directly traceable to the violence inflicted. In some cases it may be formed independently of such violence.

26. A person may move about and occupy himself while apparently convalescent for a week or ten days after recovery from the first shock and then suddenly be seized with fatal symptoms and die.

27. Wounds of the brain sometimes prove instantaneously fatal even when slight; in other cases recovery results contrary to all expectation.

28. Very severe wounds of the brain, accompanied even by loss of substance, may not cause immediate death, or even immediate insensibility, recovery may even take place.

29. In injury to the upper and middle frontal convolutions of the brain there are neither motor nor sensory symptoms but cerebral irritation and subsequent weak-mindedness are likely to follow especially if the left side is involved.

30. Post traumatic abscess of the brain may occur in an acute form, i.e. within five or six days after the injury, or in a chronic form; in the latter, symptoms may not show themselves until years after the injury.

31. Laceration of the brain is commonly accompanied by fracture of the skull but may occur without it (by concussion), the brain being dashed against the ridges and other irregularities of the base of the skull.

32. Extensive damage to the brain is no proof that the victim died instantaneously, nor that he could not have performed many acts after the injury was inflicted.

33. Fractures of the vault of the skull are nearly always due to direct violence.

34. Blows with broad instruments and falls on the head against some hard object, cause usually, fissured fractures.

35. Fractures of the skull, as a rule, are not dangerous in themselves, but only in proportion to the injury done to the brain or its vessels.

36. Localised fracture of the skull indicates the use of great force and an instrument of striking area closely corresponding to the size of the fracture.

37. Blows from more or less sharp weapons produce cuts in the skull similar to those produced in soft tissues and these cuts truly represent the exact form and extent of the cutting edge.

38. As the skull is not a rigid structure, but of an elastic nature, and subject to change of shape, a portion of the actual force of every blow which it sustains is received by the brain, and is transmitted through it to the opposite pole. The force is checked at this spot, and the brain sustains a contrecoup, causing more or less contusion—a contrecoup contusion.

39. In depressed fractures of the skull, the brain is usually most contused or torn, immediately beneath the injured spot; but in cases where there is no depression, the greatest mischief is frequently found at a point exactly opposite to that struck, whilst the local bruise may be much slighter.

40. In penetrating wounds of the brain, in which the scalp and skull are cut through, laying bare and wounding the brain, the general disturbance is often slight compared with the extent of the local injury, so that, although the

brain substance may protrude from the wound, there is often little concussion, and if the bleeding can escape through the wound and the latter is rendered surgically clean, recovery is likely, but if the wound becomes infected, it is rapidly fatal.

41. A blow from the fist of a powerful man has frequently caused a fracture of the skull.

42. In all cases of fracture of the skull its thickness should be noted ; the fact that the skull was unusually thin must influence an opinion as to the severity of the violence, whether criminal or accidental.

43. Unless the bones of the skull are abnormally thin and fragile a fall from a standing position will not result in fracture.

44. Separation of the sutures of the skull without fracture may occur (even in old persons) from mechanical violence.

45. When the force causing fracture of the skull is a broad one, there may be extensive fracture and separation of the bones of the head without any division of the skin.

46. Suffusion or extravasation of blood into the eyelid occurs in connection with fracture of the skull also from coughing and straining.

Burns

1. A burn may be defined as an injury which is caused by the application of heat, or of chemical substances to the external or internal surfaces of the body, the effect of which is a more or less marked destruction

of the tissues. The definition, therefore, includes all injuries whether produced by fire, water, or by the combustion of tissues due to chemical action.

2. A burn caused during life is distinguished by signs of inflammation : a line of redness and vesication. These cannot be produced after death.

3. If a vesicle present the following characteristics it may safely be concluded that vital reaction had occurred :—it contains a fluid which is serous and found to be such by the presence of albumen and chlorides; there exists an inflammatory areola on the circumference of the vesicle; the base or floor is inflamed and the papilla of the skin swollen and reddened ; the vesicle being burst, pus is present.

4. If marks of vesication, with effusion of serum or a line of redness, or both, are found about a burnt part of a body, you are justified in saying that the burn occurred during life. If these appearances are not met with, it by no means follows that the burns had not been produced in the living body.

5. Blisters due to burns may be produced in a few minutes or after several hours, hence death may take place before the blisters are formed, and then absence does not warrant the opinion that the burn could not have taken place during life.

6. Blisters may be produced by burns both on the living and dead body. They are produced at a lower temperature in the living than in the dead. In the living a burn produces great capillary congestion with effusion

of serum in the blisters, and that this serum, when heated, or treated with nitric acid, sets into nearly solid coagulum. Blisters produced on a dead body, even a few minutes after death, contain a thin watery serum which is rendered milky by heat or nitric acid, that is, it contains very little albumen.

7. If pus is found in a burst vesicle, it indicates that the person had lived for at least thirty-six hours after the burning.

8. Blisters are never produced by corrosives. Sulphuric acid colours the skin brown ; nitric acid stains it yellow ; and carbolic acid stains it white.

9. Burns or scalds, although but comparatively superficial, which involve one third of the body must be reckoned as generally fatal.

10. Children are much more susceptible to the effects of burns than adults ; a comparatively small superficial burn may cause fatal collapse in a child.

11. The extent of skin involved in a superficial burn is of greater importance than the entire destruction of a small part of the body. Death may ensue either from the intensity of the pain produced or from shock to the nervous system. Death rapidly takes place from burns in children and nervous females.

12. Severe pain can kill by shock, such death being instantaneous or followed within twenty-four hours. This form of death is usually associated with those cases in which, either a very large body of flame strikes the face or a very large surface of the body is burnt.

13. An extensive though superficial burn on the

trunk, head or face, especially in a child, may be more serious than a deeper but limited burn on the extremities. A burn is more severe than a scald, because the fluid producing the scald quickly cools and runs off. A scald owes its severity to the large extent of surface usually implicated.

14. If a burn shows signs of having been caused during life, particles of soot are found in the air passages and carbon monoxide is found in the blood, an opinion that death was due to burning can be safely accepted.

Cadaveric rigidity or rigor mortis.

1. In the dead body, the muscles pass into the condition of rigor mortis in a definite order ; first those of the jaw and face, then those of the neck, trunk and limbs ; as regards the latter the legs generally stiffen before the arms, Usually disappearance of rigor mortis follows in the order of its entrance.

2. In India rigor mortis usually commences one or two hours after death, and takes one or two hours to develop, and lasts on an average nineteen to twenty hours.

3. As a rule, rigidity, to quite a definite extent, is present four or five hours after death.

4. Speaking in general terms, rigor mortis lasts for sixteen to twenty-four hours, in sound muscular subjects it may last longer. Dryness and coldness increases the time ; exhausting diseases decrease the time.

5. Warmth hastens and cold retards the onset of rigor mortis. In vigorous unexhausted muscles the onset

is delayed, but when it comes on, it is pronounced and of long duration. Anything which causes fatigue or exhaustion before death hastens the onset of rigor mortis.

6. In death following violent muscular exertion, such as occurs in struggle against an attempted rape, or in a fight with a murderous assailant, rigor mortis may supervene rapidly, almost immediately.

7. As a general rule, the sooner the onset of rigor mortis occurs, the sooner will it disappear and *vice versa.*

8. In the fœtus the onset of rigor mortis is rapid and as rapidly it disappears.

9. Cadaveric spasm is a condition in which the muscles are firmly contracted in the position they were in at the moment of death.

10. Cadaveric spasm occurs in cases in which death was immediately preceded by a state of great nervous tension or excitement.

11. Wounds of the medulla or brain are especially liable to be followed by cadaveric spasm.

12. If an instrument is firmly grasped in the hand of the deceased, no better circumstantial evidence of suicide can be offered. The grasping is owing to muscular spasm persisting after death.

13. The condition of cadaveric spasm cannot be artificially induced or successfully imitated. If a murderer were to place a weapon in the hand of his victim, the fingers would not close over it unless he held or bandaged them in that position until rigor mortis set in. In such a case the marks of his fingers or of the bandage would show up on the hand of the deceased.

14. Cadaveric spasm is not rigor mortis.

15. Circumstances influencing cadaveric spasm are :— great muscular exertion previous to death ; the subject being strong and muscular ; sudden death ; death due to violent disturbance of the nervous system ; drowning and other forms of asphyxial deaths and cold.

Cold.

1. Any circumstance which tends to decrease the power of resistance renders the effect of cold more likely to be fatal, hence infants, old people and those suffering from chronic disease readily succumb.

2. Fatal effects may follow slight exposure to intense cold suddenly applied to the body.

3. If the blood found in the heart after death is of a bright red hue, it is indicative of death from cold, (although dark coloured blood in the heart is consistent with death from cold.).

4. When freezing of the body has taken place prior to the onset of rigor mortis, the latter comes on after the body thaws.

Cooling of the body

1. In children, in thin people and in those wasted by disease, cooling of the body after death is rapid.

2. In the well nourished and in death by asphyxia cooling of the body after death is slow.

3. Under ordinary circumstances a body loses about two or three degrees of heat per hour for the first few hours and thereafter about one degree per hour, but the last few degrees of heat are retained for a long period.

Cut-throat

1. Wounds of the windpipe and gullet are not necessarily fatal if the large blood vessels escape injury.

2. Division of the windpipe altogether destroys the power of speech.

3. Wounds of the carotid vessels, are not necessarily immediately fatal. There are several cases on record which show that wounds involving the common carotid artery and its branches as well as the internal jugular vein, do not prevent a person from exercising voluntary power, and even running a certain distance.

4. In the event of death in cut-throat, the wound does not always cause death by hæmorrhage.

5. In cases of cut-throat, if, at the moment of incision, the head is thrown back, the carotid vessels are likely to escape, because they are then on a plane posterior to the anterior surface of the vertebræ.

6. The end of an incised wound of the throat is often digitated owing to the skin being dragged forward in folds by the cutting instrument, the minute saw-like serrations of the skin point towards the commencement of the wound.

7. The distinction between a suicidal and homicidal cut-throat wound cannot be made from the wound alone, except in a few cases.

8. In cases of cut-throat, if the palmar aspect of the fingers are found cut, it furnishes most convincing evidence of the fact that homicide has been committed ; but if the fingers are not cut it does not prove the reverse.

9. In suspected cases of homicidal cut-throat, the mouth, chin, etc., should be examined for marks of grasping or pressure of the hands of the assailant.

10. Multiplicity of wounds is considered to furnish presumptive evidence of homicide, but many incisions have been made by suicides before they have succeeded in killing themselves.

11. In cases of cut-throat, the existence of small cuts near the commencement of the main cut, and if they are parallel with it, is presumptive evidence that the wounds are suicidal; but if the small wounds are different in direction from the main wound, it points rather to homicide than suicide, and may be referred to struggling to evade the knife.

12. Homicidal incisions of the throat are often prolonged below and behind the skin forming the angles of the wound deeply into the soft tissues. Suicidal incisions rarely possess this character; they terminate gradually in a sharp angle and the skin itself is the furthest point wounded. Exceptions may exist.

13. A homicidal cut-throat varies in its direction according to whether it is done from behind or in front and also with the hand employed.

14. A murderer might cut the throat of his victim from behind while the latter was standing, sitting or kneeling. Under these circumstances his clothing would escape being stained with blood.

15. A right-handed suicide usually cuts his throat from left to right and therefore the incision is bold and

clean on the left side, tailing off towards the right; in a left-handed suicide the incision runs in the opposite direction.

16. Suicidal cut-throat wounds are usually at the upper part involving the hyoid bone and the cartilages of "Adam's apple".

17. Suicidal cut-throat may involve all the structures down to the spine.

18. Oblique wounds passing from above downwards are common to homicide and suicide, but those which take an oblique course from below upwards are generally indicative of homicide.

19. As the skin of the neck is so lax and freely moveable, and as in old people it may hang in folds, several small cuts may be made by one sweep of the knife across the throat.

20. Regularity or irregularity in a cut-throat wound furnishes no presumptive evidence either of homicide or suicide.

Digestion

1. Poisons other than corrosives and irritants must be digested or at least be absorbed by the gastric mucous membrane before they can produce effects.

2. In acute pyrexial diseases the rate of digestion is reduced to a minimum if not held in abeyance.

3. Digestion is delayed by local gastric diseases, sleep and states of unconsciousness.

4. Digestion is more active in the young.

5. Digestion does not cease after death till the body

has become cold. The stomach has been known to digest itself after death in the young irrespective as to whether they were vigorous and healthy or suffering from some lingering disease.

Dislocations

1. Dislocation of certain joints may be caused by muscular action (head of the humerus, kneecap, and lower jaw) and by muscular spasm as in epilepsy or eclampsia.

2. In some persons dislocation of the lower jaw happens with the greatest ease, and constantly recurs. Similarly recurring dislocations of the shoulder joint might occur upon slight muscular exertion.

3. Dislocations are rare in children, since any violence directed to a joint or its neighbourhood is more likely to lead to a separation of the end of the bone (epiphysis); while in the old people the bones become brittle and thus fractures and not dislocations are produced.

4. After dislocation, power of locomotion may exist, except when the injury is in the limbs. For sometime after dislocation of the hip, considerable power over the limb remains; it is only after a few hours that the limb becomes fixed in one position. Exertion with the dislocated member is out of the question.

5. Dislocations are not dangerous to life unless of a compound nature.

Drowning

1. Submersion of the whole body is not necessary for drowning.

2. The reliable external appearances of drowning are: the presence of a fine foam in the mouth and nostrils, the finding of weeds, sand, etc., grasped in the hands, and indicate that the person was alive when immersed.

3. The reliable internal appearances of drowning are: froth and water in the air passages, water in the lungs with distension of the margins, and the presence of water in the stomach.

4. The palms of the hands and soles of the feet become wrinkled and slightly sodden in about twelve and is well marked in twenty-four hours.

5. The presence of objects in the firmly clenched hand—as weeds, grass, sticks, etc., almost conclusively indicates death by submersion as it constitutes a vital act on the part of the person while in the water.

6. If a person falls alive into the water (the process of respiration being in operation or resumed in the water) and if he die therein, the proximate cause of death will be asphyxia, of which, the signs will be apparent on examination of the body; but the measure of their intensity will be determined for the struggle for breath, and the time occupied in dying.

7. The presence of watery mucous froth in the air passages may be regarded as the particular characteristic of asphyxia of drowning, and when discovered in any large quantity it furnishes a satisfactory proof of death by drowning.

8. No deduction as to death from drowning can be made from the condition of the penis. It may be retracted and contracted or in a state of erection or semi-erection.

9. Sub-pleural hæmorrhages are comparatively seldom observed in drowning, but when present they offer strong corroborative evidence of death by drowning.

10. The discovery of water in the stomach, unless it contain similar matter found in that in which the body is found immersed, is not necessarily a proof that it has been swallowed during the act of drowning.

11. The entrance of water into the stomach after death is possible but extremely improbable under the ordinary conditions of drowning.

12. Water and fine particles of sand, mud, etc., may find their way into the air tubes of the lungs if the body is allowed to remain in the water for some time, but the amount will be small.

13. In advanced putrefaction, an opinion that death was due to drowning is not possible.

14. In moderately advanced putrefaction the only evidence of drowning is the presence of water in the pleural cavities and froth in the fine air vessels.

15. The shortest time in which it is possible for a submerged body to rise to the surface, in India, is, twenty-four hours when the body has been entirely submerged in deep water ; four to five hours if close to the bank in shallow water ; almost immediately if the head is resting on the bank.

16. Infants and young children float with the greatest ease, owing to the large percentage of fat and the lightness of the bones.

17. The human body, when it rises to the surface from

putrefaction, usually floats belly upwards. This is due to the large volume of gas in the intestines and that the spine and large muscles of the back are heavier than the belly walls.

18. The post mortem appearances of death by drowning may be altogether absent, and yet drowning may have been the cause of death.

19. In drowning, murder is usually indicated when a body is found gagged, or with a cord round the neck, or with the limbs tied together.

20. If the body of an adult is found naked in the water, the presumption is accident.

21. If the body of an adult is found in shallow water, accident is indicated.

Fractures

1. If a bone has been fractured, the fact will be indicated by a node or projection at the seat of the fracture.

2. Callus is the cementing material thrown out between the ends of a broken bone, which gradually hardens; in fractures of bones some amount of callus is found in about ten or twelve days, if then callus is felt, the fracture is probably of this duration at least, but if none be found, it is impossible to state what is the age of the fracture.

3. Callus assumes a cartilaginous structure in, from sixteen to twenty-five days, and it becomes ossified in a period varying from three weeks to three months.

4. The formation of callus occurs a little more rapidly in children than in adults. The average length of time required for firm union is :—ribs, three weeks ; forearm, collar bone, leg bones, four to five weeks ; thigh bone, six to eight weeks.

5. Callus may not show at all in an X ray negative, even when union is sufficiently firm for the splints to be left off and the limb used.

6. Once union has taken place it is impossible to say when the fracture occurred ; it may have been six months or six years, as after six months bone undergoes no perceptible change.

7. In young persons, fractured bones unite rapidly, in the old slowly, in the diseased and unhealthy, union is slow, and sometimes does not take place at all.

8. Slight violence might break the bone of an aged person, the bone, at that age, being very brittle.

9. The great majority of greenstick fractures occur under the age of fifteen years, most frequently in bones of the forearm, then clavicle, rare in the bones of the arm, leg and thigh.

10. Fractures more readily occur from equal degree of force in the old than in the young and in the young rather than in the adult.

11. A fracture caused ten or twelve hours before death would be indicated by a copious effusion of blood into the surrounding parts and between the fractured edges of the bone as well as by laceration of the muscles, or if for a longer period before death there may be marks

of inflammation. Fractures caused several hours after death are not accompanied by an effusion of blood.

12. A fracture produced shortly after death, while the body is warm and another produced shortly before death will present similar characters, except that in the former case there might be less blood effused.

13. In a case where there is no appearance of disease, a fracture may be ascribed to spontaneous causes. Bones have been fractured by moderate muscular exertion. In such cases there will be no abrasion of the skin nor any appearance to indicate that a blow has been struck ; such a fracture of the rib is most unusual.

14. When the force causing fracture of the skull is a broad one, remember that there may be extensive fracture and separation of the bones of the head without any division of the skin.

15. A fracture may be spontaneous, and occur in a bone the strength of which has been diminished by some preceding abnormal changes. The degree of force which produced the fracture would not be sufficient to cause a fracture in a healthy bone.

16. A blow from the fist of a powerful man has frequently caused a fracture of the skull.

17. In all cases of fracture of the skull its thickness should be noted ; the fact that the skull was unusually thin will influence your opinion as to the severity of the violence, whether criminal or accidental.

18. Unless the bones of the skull are abnormally thin and fragile a fall from a standing position will not result in fracture.

19. Separation of the sutures of the skull without fracture, may occur (even in old persons) from mechanical violence.

20. In fractures of the vertebræ, a person is generally so disabled whatever may be the situation of the fracture, that he cannot walk or exert himself. However, there are exceptions.

21. Fracture of the spine unaccompanied by dislocation is rare.

22. Fractures of the nasal bones are always the result of severe direct violence.

23. Fractures of the upper jaw, cheek bones, and lower jaw are nearly always due to severe and direct violence.

24. A rib may be fractured by muscular exertion.

25. When a rib is fractured by direct violence, it is usually found broken at one place only and the fractured ends are driven inwards ; if the violence is indirect, the fractured ends are driven outwards and are often broken in two places, one in front and one behind.

26. In compression of the chest fractures of the ribs may be symmetrical, i.e., the same on either side, without any external marks of injury.

27. The fracture of several ribs on either side cannot be caused by a fall.

28. Fractures of the upper ribs are more serious than those of the lower, because greater violence is needed to produce them.

30. Fractures are not dangerous to life, unless, when of a compound nature; they occur in old persons; or in those who are debilitated by disease or dissipated habits. They may then cause death by irritative fever, erysipelas, gangrene, tetanus, pyæmia or delirium tremens being set up.

31. Confirmatory proof of the fracture of a bone, by an X ray photograph should be demanded in all criminal cases.

Gunshot Wounds

1. In gunshot wounds, where cordite ammunition is used, it is not possible to judge the distance of the part struck from the point of firing, by reason of the absence of marks of scorching, smoke or ingraining or tattooing with particles of unconsumed powder, as in the case of black gunpowder.

2. In the case of a shot-gun wound, if the distance from which the gun is fired is within twelve inches, the wound will, as a rule, be single, while beyond this, each shot will make a separate wound.

3. A fatal wound may be caused by the discharge of a blank cartridge fired within about four inches of the body.

4. A single bullet of no great dimensions fired from a gun at a distance of from four to six yards, has been known to produce an extensive wound.

5. If clothing is worn and a bullet strikes at a moderate distance the aperture in the clothing where it enters is round and the margin is regularly defined. The nearer the wounded person is to the assailant the more

perfect is the hole in the clothing provided the firearm is not discharged in immediate contact. The aperture by which it passes out is irregularly torn.

6. A round aperture may be produced by the discharge of small shot, say a foot from the body. The aperture is not a regular round hole but a lacerated wound.

7. Small shot could not produce a single entrance wound having an appearance of circularity about it without at the same time singeing or burning the skin or clothing.

8. If the bullet fired is a conical one, the nearer it is discharged to the body the more likely is it that the bullet will traverse the body, though the charge of powder has more to do with the result than anything.

9. Air pressure in some cases causes the wound of entrance to be enlarged so that if a revolver is discharged close to the chest the amount of injury done cannot be measured by the size of the bullet.

10. Pistol or revolver bullets rarely traverse the body completely especially if they have to traverse bone.

11. In three quarters, if not, a larger proportion of gunshot wounds inflicted by high velocity rifles, it is impossible to tell the exit from the entrance wound, they are so similar in appearance ; the calibre of these weapons is so small, that their bullets, when the impact with the body is at high velocity, perforate bones just as if a gimlet had been passed through them.

12. The wound of exit caused by ordinary, firearms

is commonly larger than that of entrance, but to this many exceptions may be made, dependent upon velocity, shape and material of bullet.

13. The gravity and extent of a bullet wound bear no proportion whatever to the external wounds either of entrance or exit; this is especially so when bones are struck.

14. A bullet entering the skull may simply traverse it, leaving only a narrow bruised track behind; in other cases it acts explosively, as does a bullet on being fired into a sealed tin containing semi-fluid material, the skull and brains are blown out, or the skull is broken to pieces and the brain reduced to a pulp beneath the intact scalp.

15. A large calibre bullet of slow velocity causes a wound of entrance, which is followed by more or less extravasation of blood around. A bullet of small calibre which has ricochetted and become deformed acts in the same way. The track is marked by great laceration of the soft parts, but the bullet is more easily stopped, only smashing bones at close quarters. If the bullet passes out of the body the wound of exit is larger and more lacerated than the wound of entrance, and attended with more bleeding.

16. The head may be completely shattered by a bullet penetrating the cranium by a course fairly at right angles to the bone and striking more or less centrally.

17. In suicide by gunshot there is commonly strong evidence of design, in accident all evidence of design is wanting.

18. Self-inflicted accidental gunshot wounds bear the characters of near wounds as a rule.

19. Suicidal gunshot wounds are almost always directed to what is considered a vital part, heart or brain usually; such a situation however, does not negative homicide.

20. It is very rare indeed though not absolutely impossible for a suicide to shoot himself from behind.

21. A gunshot wound in the mouth or temple could hardly be ascribed to an accident.

22. If a person be shot in a standing position, and a wound be found nearly transverse through the chest, the firearm was certainly fired from about the level of the shoulder.

23. A bullet fired from a firearm has a tendency to continue in a straight line from the point of entrance to its point of lodgment or to the wound of exit, so that if the internal wound is straight, this straight line proves accurately the direction in which the barrel of the weapon was pointed when fired.

24. If a bullet strikes obliquely a curved surface, its course is often circuitous, as it is deflected by the subjacent soft parts.

25. Deflection of a projectile may occur not merely when it comes in contact with bone, but when it meets, skin, muscles, tendons, or membranes, it then takes its course in the spaces between these different structures.

26. One bullet may sometimes produce several wounds. There is one orifice of entrance, the bullet splits

within the body, dividing into two or more pieces, making several orifices of exit.

27. A gunshot wound, like other wounds, undergoes no change for eight or ten hours after its infliction.

28. If a gunshot wound, has been produced in a dead body, no blood will be effused, unless the bullet strikes a large blood vessel.

29. The exit wound in cases of near discharge is usually smaller than the entrance wound and has none of the characters of a near discharge.

30. The entrance wound caused by a high velocity conical bullet is smaller, as a rule, than the exit when the bullet has lost much of its trajectile force and enters the softer parts of the body first.

31. The entrance wound caused by a high velocity conical bullet is larger than the exit when the bullet first enters through the denser tissues of the body and leaves through the softer ; and when the muzzle is held against the body.

32. The entrance and exit wounds caused by a high velocity conical bullet may be of equal size if the bullet preserves the same velocity through the tissues as it possessed before entrance and that it does not strike bone in traversing the body.

33. The entrance and exit wounds of the skull are easily distinguished. At the entrance wound a larger area of the inner table than of the outer table is fractured, producing a bevelling from without inwards, while at the exit wound the condition is reversed.

34. Generally speaking, if the skin is marked by burning and deposits of unburnt powder, the weapon was not more than twelve inches from the body when fired.

35. The absence of scorching or marks made round the wound by the half burnt powder, indicates that the shot has been fired from some distance.

36. Smokeless powder will not cause blackening of the skin.

37. It is possible for a person to shoot himself twice in the head, both bullets penetrating the brain, or after shooting himself to try other methods.

38. There is no wound which a suicide can inflict on himself which cannot be simulated by a murderer, but there are many wounds which a murderer can inflict which, from their situation and other circumstances could not be suicidal.

39. There are no means of deciding, from examination of a firearm, when the weapon was last used.

40. The facts in any given case can only be determined by experiments with the actual weapon, used and loaded as nearly as possible in the same manner as it was when used for the purposes which are being investigated.

Hanging

1. There is no sign in hanging which distinguishes a suicidal from a homicidal or accidental case; the distinction must be made by a consideration of the circumstances and of the marks of injury found on the body.

2. There is no distinctive sign by which the hanging of a living person can be determined from an inspection

of the dead body, for all the external marks may be simulated in a dead body, and the internal appearances furnish no characteristic evidence.

3. For a person to die by hanging, it is not necessary that the rope or ligature should completely encircle the neck.

4. A person may be murdered by hanging and yet the appearances about the body will not afford evidence of the fact; e.g., in the case of a child, a woman, or a man in a feeble exhausted condition, an unconscious or intoxicated person, or when one person is set upon by many as in cases of lynching.

5. Unless the victim was unconscious or intoxicated, marks of violence about the body must be expected in all cases of homicidal hanging.

6. Marks of violence discovered on the body of a person found hanged are not always to be regarded as furnishing unequivocal proof of murder; they may have been self-inflicted or accidentally prior to the hanging. The position of such marks is important.

7. A bruished ligature mark may be produced within three hours, and a non-bruised mark within six hours after death.

8. The mark usually seen on the neck in hanging during life (non-ecchymosed) may be also produced by ligature applied to the neck of a body within two hours, or even at a later period, after death; the changes in the skin beneath the mark are also devoid of any distinctive characters; hence such a mark is no criterion whether the hanging took place during life or after death.

9. The depression produced by the cord presents the same characters whether the hanging has taken place during life or soon after death, i. e., the appearances may be similar in the two cases.

10. When suspension is by means of a dhoti, saree or chaddar, twisted into a rope, forming a thick soft mass, a broad superficial impression with little or no injury to the surface will result.

11. The appearances of the mark depend on : duration and character of the suspension and the time between death and examination.

12. If seen immediately, the mark will be a soft, moist, shallow impression ; if seen after a considerable time, the mark will be a hard yellowish brown furrow of the consistence of parchment.

13. Fracture or displacement of the vertebræ of the neck in suicidal hanging has never been observed, and all authorities deny the possibility of this happening.

14. Do not rashly assume that a person was murdered simply because his limbs were tied.

15. It is not necessary for the body to be clear of the ground in order to produce death by hanging.

16. Apart from the constriction mark on the neck, there are no external signs by which death in hanging can be diagnosed.

Heart

1. Wounds of the heart are not necessarily instantaneously fatal. Even when death occurs rapidly, considerable power of locomotion may remain after receipt of a

wound. A man has been known to burst open a door, and run a quarter of a mile, after the receipt of a gunshot wound of the heart. The bullet had passed into and out of the right auricle.

2. If death is not immediate, there is intense shock and prostration, with difficulty of breathing.

3. Death in wound of the heart may be due to immediate cessation of the heart's action or from pressure of the outpoured blood within the heart sac, or from bleeding internal or external according to whether or not the blood can escape.

4. Cases have been recorded of wounds of the heart having healed spontaneously, and the sufferer having survived for years.

5. When a wound of the heart is small and the weapon penetrates into the cavities obliquely, life may be prolonged for a considerable period.

6. Wounds which are parallel to the axis of the heart, are less rapidly fatal than those which are transverse to its axis.

7. The suddenness of death in wounds of the right ventricle is not merely the loss of blood, but the degree of compression which the heart experiences from that which escapes into the pericardial sac.

8. Wounds of the auricles are more dangerous than those of the ventricles, as the thicker and more muscular walls of the ventricles may suffice to check the bleeding.

9. Wounds of the auricles are generally immediately fatal.

10. Wounds of the right ventricle are the most rapidly fatal.

11. Penetrating wounds of the chest, perforating the heart or one of the large vessels, are mortal, but not necessarily immediately fatal. The rapidity with which death occurs, depends on the rapidity with which the bleeding takes place.

12. When the heart is in a diseased condition, as in fatty degeneration, slight causes of excitement are sufficient to produce rupture and sudden death. Walking may thus give rise to fatal consequences.

13. The heart is liable to be ruptured either from disease or accident; the rupture is most frequently found in the left ventricle. Rupture, however, is very rare.

14. Wounds of the great vessels are almost invariably fatal.

Impotency

1. Remember there is a difference between impotence and sterility; one is a bar to union the other is not.

2. A woman who has a natural vagina cannot by any general disease be rendered impotent.

3. By impotence is understood, inability to perform the sexual act, and is in the great majority of cases an acquired character.

4. Its causation may be in the deficiency in the parts (defects and deformities of the penis, testicles or surrounding parts); in diseases (prolonged diabetes, albuminuria, disease of the brain and spinal cord); in the func-

tions (imperfect erections, premature ejaculations) ; in the mind (obtrusion of disorderly ideas, lack of confidence, fear, repugnance), etc.

5. Erections may take place shortly after birth. The power usually departs about the sixty-fifth year, though it is often retained ten or fifteen years longer. It may be lost as early as the fiftieth year.

6. In congenital absence of the testicles, impotence is complete.

7. Those in whom the testicles have not descended are usually sterile but not impotent.

8. Complete destruction or removal of the testicles is ultimately followed by impotence, but this may not come on for some years and during that period sexual power and appetite is present and coitus can be fruitful.

9. Disorganisation of the testicles from inflammation or tumours is followed by impotence. If the inflmmation is confined to the epididymus (small body attached to the posterior border of the testicle) only, there will be no impotence.

10. Syphilis, tubercle, cancer, even though involving but one testicle are sometimes associated with impotence.

11. Varicocele may cause impotence long before gross changes occur in the testicle.

12. Indulgence in cocaine will cause impotence.

13. Impotence must be proved to be permanent and incurable.

14. There is no age limit in the male, excluding

disease or accident, of his capability of performing the sexual act.

15. Even in cases of paralysis (hemiplegia and paraplegia) unless the male organs are diseased or destroyed it cannot be said that sexual intercourse is impossible.

Infanticide

1. A newly born child may speedily die from exposure to cold or from want of food. A female recently delivered may walk great distances. Delivery while standing may cause injury to the child. Injury found may sometimes be due to attempts innocently made by the mother to aid delivery. The child may be accidentally suffocated during delivery.

2. Remember that the "caput succedaneum" is generally a bruise and after death presents in most cases the appearances of a bruise; you must not expect to find a serous effusion as is commonly supposed.

3. A child may breathe before, during, or after birth, but the hydrostatic test will not enable one to say in the greater number of cases at which of these periods the act of respiration was performed.

4. The floating of the lungs in water is not a proof that a child has been born alive. Nor is the fact of their sinking in water any proof that the child was born dead. The floating proves only that the child has breathed; the sinking, either that it has not breathed or breathed but imperfectly.

5. A child may be said to have breathed when :— the child is sufficiently mature to live an independent

existence; the lungs more or less fill the thoracic cavity; the colour of the lungs is marbled or mottled; lungs, or portions of them after being duly tested, float in water; a bloody frothy fluid exudes from lung section, under water on slight pressure, and fine bubbles of air escape.

6. The proof of respiration shows that a child has breathed, not that it has been born alive.

7. If the lungs are fully and perfectly distended with air by the act of breathing, it affords strong presumption that the child was born alive, since breathing during birth is in general, only partial and imperfect.

8. The hydrostatic test shows only whether a child has or has not breathed; it does not determine whether a child was born living or dead.

9. A child may survive a considerable time when only a portion of the lungs has received air.

10. A child may survive birth even for twenty-four hours when no air has reached the lungs.

11. After respiration has been perfectly established the air in the lungs cannot be expelled by compression, in whole or in part, so as to cause them to sink.

12. The decision that a child has breathed should be based upon great weight and buoyancy of the lungs, as one condition without the other is open to objection.

13. The presence of food in the stomach proves that the child was born alive.

14. Death due to immaturity will show general want of development and immature condition of the body, with negative evidence of any other cause of death.

15. In intra-uterine putrefaction the child's body is extremely flaccid. The colour of the skin is reddish brown, the skin of the hands and feet is white, and sometimes the seat of blisters. The bones are movable and easily detatched from the muscles etc. The smell, although quite different from atmospheric putrefaction, is characteristic. Such a child could not have been born alive.

16. Death by hæmorrhage from the cord would be indicated by a blanched appearance of the body and a want of blood in the internal organs.

17. Infants are easily suffocated. To cover the mouth and nostrils by clothing or bedding for a few minutes will cause death by suffocation.

18. When a constricting force is applied to the neck of a dead child, at anything within an hour after death, the marks cannot with certainty be distinguished by any appearance from those made on a living body.

19. A child may die of suffocation, but the suffocation may be accidental.

20. The presence of sub-pleural ecchymoses does not indicate the cause of the asphyxia.

21. A ligature applied to the neck during life will cause the skin above and below it to swell and become œdematous. Such an appearance indicates the application during life.

22. A child might breathe before the head is born and be strangled during birth by the cord being short and tightly twisted round the neck. Bruising along the ligature mark may be present in such a case.

23. If the mark on the neck is deep, broad, much bruised and with extravasation of blood beneath it, with injury to the muscles etc., it is presumptive evidence of homicide.

24. The tissues and vessels of an infant are so delicate that very little violence will leave marks. Thus, impressions of nails and fingers on the neck may have been accidentally caused during self-delivery.

25. As a rule in homicidal throttling the violence inflicted to destroy life is always considerably greater than that which is required.

26. The external marks of strangulation produced before death are similar to those produced immediately after death while the body is warm, say, within an hour of death.

27. If a child is strangled during or after birth, medical evidence alone is quite insufficient to determine whether it was strangled before or after birth.

28. Although marks of violence may establish that a child was either living or but recently dead at the time they were inflicted, they can never show that it was born alive.

29. The new born infant bears the loss of blood badly.

30. An incised wound found on the body of a newly born infant may have been accidentally inflicted during the cutting of the navel-string. In such a case the navel-string will be found cut, not lacerated.

31. In cases of alleged infanticide, always make a

thorough search for small punctures of vital organs or signs of twisting of the neck.

32. Fracture of the skull of an infant may result from the expulsive efforts of the womb, but such fractures are generally slight. In homicidal violence the injuries are always more severe.

33. Fracture of the skull, the result of the child falling to the floor in precipitate labour, if possible, is very rare.

34. A newly born child may be easily destroyed by simply exposing it, uncovered or with little covering, to a cold temperature. There will be no medical evidence that death was caused in this way.

35. A newly born infant may die for the want of food and yet an examination of the body will reveal no evidence of the fact.

36. When the dead body of an infant is found in water, it does not necessarily follow that it has been destroyed by drowning.

37. In a newly born infant, respiration may not be strong enough to expand the air cells, life depending on the air in the tubular system of the lungs only, but once the air cells have been distended by air, they remain so.

38. If every part of the lung floats after pressure, it is evidence of complete respiration and evidence that the child has been born alive.

39. If every part of the lung sinks after pressure, it is presumptive evidence that the child was born dead, but does not constitute proof that it was so.

40. The lungs or portions of them may float, although respiration has not occurred.

41. The lungs or portions of them, may sink, although respiration has occurred.

42. The hydrostatic test affords no certain means of distinguishing artificial inflation of the lungs from natural respiration.

43. Gas, the result of putrefaction can easily be removed by compressing the lungs, or portions of them.

44. The lungs of an infant, to all appearances fresh or only showing signs of early putrefaction, will emphatically not float in water from the presence of gases of putrefaction.

45. The lungs of newly born infants which have not respired and accordingly contain no organisms, resist putrefaction to a greater degree than most of the other internal organs and even when putrefaction is advanced in the rest of the booy the lungs are practically unaffected.

46. Early decomposition in these circumstances indicates that the child must have breathed with consequent introduction of organisms.

47. If the stomach, in the absence of putrefaction, floats, it is a confirmatory sign of respiration. If the small intestines float, it is evidence of life after birth. If the test is negative, it is no evidence that respiration has not occurred.

48. The chances of natural death at or before birth in all new born children are great in proportion to their immaturity.

49. Of all points of ossification, that at the lower end of the femur is the most reliable index of a nine months child.

50. In newly born infants, a frequent cause of death is the presence of tenacious mucous occluding the entrance to the larynx.

51. Death in newly born infants may be due to the inspiration of vomited matter into the air passage.

52. The absence of meconium from the large intestine is not proof of live birth, but suggestive of it.

53. True precipitate birth is very rare in first pregnancies. In such a case, signs of easy labour must be present ; there should be no "caput succedaneum" ; the child should be small and the maternal parts roomy.

Insanity

1. The symptoms of insanity are :—Failure of adjustment to surroundings ; changes in manner, habits and disposition from those customary before ; clashing with social laws ; solitariness ; delusions, hallucinations, illusions.

2. Indian Lunacy Act, 1912 (IV of 1912) : "Lunatic" means an idiot, or person of unsound mind.

3. There are two causes of insanity ; heredity and stress. Where the heredity is good the stress would have to be severe ; where the heredity is bad the stress need only be slight to produce insanity.

4. The plea of insanity being of the nature of a general exception an accused person relying on it must establish it.

5. Insanity affects not only the cognitive faculties of the mind which guide human actions, but also human emotions which prompt human actions and the will by which human actions are performed.

6. The Indian law limits non-liability only to those cases in which insanity affects the cognitive faculties, and the cases, in which insanity affects only the emotions and the will subjecting the offender to impulses whilst it leaves the cognitive faculties unimpaired, have been left outside the exception, because it has been thought that the object of the criminal law is to make people control their insane as well as their sane impulses, to guard against mischievous propensities and homicidal impulses. So where an offender's cognitive faculties are unimpaired he is fully responsible for the act committed by him.

7. For the purposes of the criminal law, the medical and legal standards of sanity are not identical. From the legal point of view a man must be held to be sane so long as he is able to distinguish between right and wrong, so long as he knows that the offence he is committing is a wrong thing to do, so long as he has a guilty mind.

8. A person who is in a highly excited and unbalanced condition, but is nevertheless conscious of what he is doing ~~is~~ being wrong and a crime, cannot be said to be of unsound mind within the meaning of Section 84 of the Indian Penal Code.

9. An insane person is one who has had a good brain, but it has become diseased or affected, resulting in a loss

of mentality, while a feeble-minded person is one whose brain has never developed beyond the point at which it is found.

10. An impulsive act is one undertaken without full consideration of the advantages and disadvantages. By an impulse is meant, suddenness not only of conception, but of execution. An impulsive act, then, is an act suddenly conceived and instantly carried out. An impulsive act must be a sudden act. It can be sudden without being impulsive, but it cannot be impulsive without being sudden.

11. Responsibility attaches to acts that are wrong and to no others. A wrong act is a voluntary act in which the actor seeks gratification by inflicting unprovoked harm upon others. Responsibility is the more undoubted, the more closely, the more deliberately, the more frequently the will is concerned in the act.

12. In order that he may be responsible, the actor must will the act, intend the harm, and desire primarily his own gratification; that the act must be done on inadequate provocation, and in addition to all this he must know and appreciate the circumstances in which the act is done. If any of these factors be wanting, responsibility is impaired or abolished.

13. The only conditions in which acts are done unconsciously (and unless done unconsciously they are remembered), are masked epilepsy, in epileptic automatism, and in certain cases of acute insanity.

14. Wandering at large means, not under proper care and control.

15. Mutism may be due to the absence of ideas (idiocy), or the result of a delusion. It is a prominent symptom in katatonia, and other stuporose states.

16. In stupor the receptive faculties may be very active, while the executive are in abeyance ; the emotions are inhibited.

17. An imbecile is a person born with a congenital mental defect whereas a dement is a person with ordinary mental capacity which has deteriorated.

18. Every case of depression is potentially suicidal.

19. The best test for the capacity for the making of a will, is, that a man at the time of signing the will should know the nature and amount of his property, and the just claims of those who are nearly related to him.

20. A person must be considered of a sane and disposing mind, who knows the nature of the act which he is performing, and is fully aware of its consequences.

21. There are no certain legal or medical tests whereby insanity can be demonstrated to exist. Each case must be determined by the circumstances attending it. The true test for irresponsibility in all doubtful cases appears to be whether the person at the time of the commission of the crime, knowing the act to be wrong, could not avoid the perpetration of it.

22. It may be safely held that a person feigning insanity will rarely, if ever, try to prove himself to be sane ; for he runs the great risk of satisfying others that he is sane, a conclusion which he obviously desires to

avoid. But there is no better proof, in general, that the insanity (supposing other evidence of it to be strong) is real, than keen and eager attempts by the accused to prove that he is sane, and strong and indignant remonstrance against being held to be insane, although they would protect him against trial and punishment.

23. The act of suicide does not necessarily indicate insanity.

24. The circumstance of an act being apparently motiveless is not a ground from which the existence of a powerful and irresistible influence or homicidal tendency can be safely inferred.

25. The epileptic's instincts are criminal. Sexual offences as epileptic "equivalents" are frequent. He is liable to commit violent sexual aggressions usually of a perverse nature, such as exhibiting his sexual organs to women and girls and homosexual advances.

26. Children of criminals, drunkards and insanes never develop self-control completely, or at all. They are marked by intensity of desire and marked weakness of control with emotional excess or instability. These are the cases that present perfect intellect and reasoning, and retain the appearances and habits of sane people but in whom there is an insane impulse to commit some criminal act, or an incapacity to control furious fits of rage to which they are frequently liable.

Inhibition.

1. Cardio-respiratory inhibition, that is, sudden cessation of respiration and circulation, may be caused by emotion, sudden fright, a blow on the upper region of the

abdomen or on the genitals, pressure on the throat, the passage of an instrument into the womb or urethra, the finger into the vagina, or drinking cold water when overheated, and yet leave no sign to indicate the cause of death.

Intestines.

1. Contusion of the intestines may result from any blow on the abdomen and varies with the nature of the force of the injury, amount of distension of the gut, and the strength and resistance of the belly wall.

2. In severe contusions, an acute inflammation ensues which may end in ulceration or sloughing of the coats of the bowel and death by peritonitis.

3. Rupture may result from severe crushes, such as the passage of a cartwheel over the belly, by kicks, blows etc. The bowel does not always rupture at the point of impact.

4. Severe wounds of the intestines may be inflicted almost without the consciousness of the individual, and the wounded person may be able to walk a considerable distance.

5. The intestines may be ruptured by an accidental fall. Rupture may occasionally occur from very slight causes. Any force, as a slight blow suddenly applied to the abdomen, will sometimes suffice to cause it.

6. The ileum (the lower half of the small intestine) is the most liable to rupture from accident.

Kidney.

1. The kidney may be crushed to a pulp without any external hæmorrhage.

2. A kidney may be torn in halves, and yet the person possses a power of locomotion and muscular exertion.

3. Excessive rupture of the kidney is almost inevitably fatal by hæmorrhage, but life is generally protracted for some hours at least, the effusion being subperitoneal, that is, outside the abdominal cavity.

Larynx.

1. Ordinary falls or even falls from a height with super-added force are not capable of causing fracture of the cartilages of the larynx.

2. Violent compression applied to the sides of the larynx (as in throttling) is, of all applied forces the most likely to produce fracture of its cartilages.

3. If the cartilages are partly ossified, fractures may be produced by a comparatively moderate degree of applied violence.

Legitimacy.

1. There is no age limit for the production of spermatozoa and therefore no advanced age at which sterility may be assumed.

2. An eighth months child cannot be distinguished with certainty from one born at the ninth month.

3. When one testicle only has descended into the scrotum there is no ground to impute impotency.

4. In all cases of non-descent of both testicles into the sorotum, the persons, although capable of sexual intercourse are usually sterile, though not necessarily so.

5. In cases of epispadias and hypospadias, if the intromission of the penis can be so accomplished that the misplaced orifice should come in contact with any part of the vagina, then the coitus can be fruitful, for if the urine can pass through the orifice, the seminal fluid can.

Lightning and Electricity.

1. Death by lightning is instantaneous, in about 70%. In some cases lightning stroke only causes temporary unconsciousness. In others there are superficial burns with a fern-leaf pattern on the skin. Death may be due to actual destruction of the tissues or arrest of respiration (asphyxia).

2. In death from lightning stroke, rigor mortis sets in rapidly, and putrefaction may be hastened.

3. A very marked sign in death by lightning is the magnetisation of metallic articles found on the person, or of articles which were being carried by the individual when struck.

4. The proximate cause of death by lightning is neuroparalysis or shock.

5. The cause of death from industrial electric currents whether the currents are alternate or continuous, is cardiac arrest, and this may result from even comparatively low voltages, say, 200 volts. Recovery has followed a shock from 2500 volts; therefore death from electricity depends more upon other conditions than the

amount of voltage of the current. In America a current of 1700 to 2000 volts (alternating) and 7½ ampres is used for the purpose of electrocution.

Liver.

1. Wounds of the liver do not prove rapidly fatal unless some of the larger blood vessels are involved. The organ may certainly be torn to a frightful extent without an immediately fatal result ensuing.

2. Ruptures of the liver, spleen and kidneys, unless attended at once with great loss of blood, do not prevent a person from exercising muscular force, or power.

3. Ruptures of the liver may take place from violence applied to the chest and there may be no marks of injury in the region of the liver.

4. Ruptures of the liver may occur from falls or blows, but it may be ruptured merely by a sudden action of the abdominal muscles. A fall on the feet from an elevated spot may also produce rupture.

5. Ruptures of the liver generally prove fatal within forty-eight hours.

Lungs.

1. The lungs may sustain serious injury from a blow or fall, and yet there may be no external marks of violence or symptoms for some hours.

2. There may be laceration of the lung from injury or accident without accompanying fracture of the ribs.

3. It should be observed that death, when it occurs during the convalescence of a person who has survived the first effects of a penetrating wound of the chest, may

have been caused either by imprudence on the part of the patient, or by abuse of regimen or other misconduct. It is recommended that in all cases where a person is progressing to recovery any alteration in the treatment should be made with great circumspection.

Menstruation.

1. Menstruation is not a sign of bodily maturity, it is in most cases merely a sign of puberty and ovulation with possible capacity to conceive.

2. Menstruation may commence before maturity, and maturity may be attained before menstruation.

3. Menstruation is not an invariable sign of sexual maturity.

4. Sexual maturity before the onset of menstruation is very rare.

5. The attainment of puberty is a process spread over months or years. The onset of menstruation is one of the steps, though it may be delayed. Puberty is not generally attained upon menstruation but subsequently.

6. The age for the earliest commencement of menstruation in India may be taken at nine years. The average age for menstruation to appear in Indian girls is twelve years and seven months. In European girls born in India a tendency to early puberty has been rather frequently observed, menstruation commencing at fourteen to fifteen years of age (average).

7. Menstruation usually ceases by the fiftieth year, but a woman has been known to menstruate up to her ninety-ninth year. However, such late periodic discharges may be the result of disease of the parts.

8. It is impossible to fix the age of a woman by the period at which the "change of life" occurs.

9. Conception is possible after the cessation of menstruation.

Poisons.

1. A poison is a substance, which when applied to the body externally or introduced in any way into the body, is capable of destroying life, without acting mechanically, but by its own inherent properties.

2. All poisons must enter the blood before they produce their effects, and fatal effects, depend upon absorption taking place more rapidly than elimination.

3. Fatal effects depend on the amount of poison absorbed, not on the quantity actually taken.

4. After death no trace of the poison may be detected, although death was directly due to the poison.

5. A large quantity of poison increases its rapidly fatal action.

6. Solubility increases the activity of poisons.

7. Dilution may retard or accelerate the action of a poison.

8. Habit lessens the action of poisons.

9. In regard to certain substances, it is found that regular use gradually produces an acquired tolerance, so that the individual, after a time, takes with impunity, a quantity which could have produced fatal poisoning had he taken it before tolerance was acquired by the gradual adaptation of the system to the action of the poison.

10. The habitual use of a poison in medicinal doses does not ensure a perfect toleration on the part of the body with regard to the action of the body.

11. Idiocyncrasy increases or lessens the action of poisons.

12. Idiocyncrasy is a congenital condition, and is to be distinguished from the effects of habit. An individual who possesses an idiocyncrasy towards a particular substance can, without previous habituation, take a poisonous quantity of it, without toxic effects being produced.

13. Disease generally lessens, but in some cases increases the action of poisons.

14. Absorption of poison by the skin is modified by the condition of the part and also by the form in which the drug is applied—thus, the skin of the armpits and groins is more absorbent than the palms of the hands or soles of the feet.

15. In absorption by the skin, watery solutions are not so effective as oily preparations, and application in fine powder is more effectual than a watery solution of it.

16. Absorption of poison by the lungs is very rapid as in the case of gaseous poisons.

17. The absorbing power of the stomach is modified by its fullness or emptiness and poisons insoluble in water may be rendered soluble by the gastric secretions.

18. Sleep and unconsciousness delay the action of poisons. Intoxication may do likewise.

19. Symptoms of poisoning go on from bad to worse.

20. The flesh of animals destroyed by poison may seriously affect those who eat it.

Arsenic.

1. The symptoms produced by arsenic poisoning closely simulate natural diseases.

2. The solubility of arsenic is diminished by the presence of organic matter.

3. The action of arsenic is that of an irritant, causing inflammation of the stomach and bowels, but it does not kill by virtue of its irritant properties.

4. The rapidity and virulence of the poison is depedent on the form and the amount taken.

5. As a rule, the symptoms of arsenic poisoning are continuous, but there may be remissions and even intermissions.

6. Arsenic may produce symptoms closely resembling those of narcotic poisoning.

7. In non-fatal cases of poisoning by arsenic, paralysis may set in, from a few days to several weeks after the poisoning.

8. Arsenic, however introduced into the body, as a rule, attacks the stomach.

9. The action of arsenic is modified by the state of the stomach.

10. A thick coating of mucous on the stomach would prevent the action of arsenic for a time.

11. It is very unusual for the sypmtoms to be delayed if the stomach is empty.

12. Inflammation of the gullet is very rare in poisoning by arsenic.

13. Blood staining under the lining of the left chambers of the heart indicates arsenic as the irritant.

14. A large quantity of arsenic will produce early collapse.

15. Arsenic is sometimes an erratic poison.

16. The quantity of arsenic found in the body is no criterion of the quantity taken.

17. In an empty stomach, the larger the quantity of arsenic taken, the sooner will the symptoms appear.

18. Arsenic is eliminated chiefly by the urine, alimentary canal, sweat, saliva, bile, milk, tears, and hair.

19. Examination of the urine is a means of diagnosing arsenic poisoning in suspected cases.

20. In acute poisoning by arsenic the interval between the taking of the poison and the onset of symptoms, ranges from ten minutes or even less, if a strong solution be taken on an empty stomach, to twelve hours or more if the drug is taken in solid form and the stomach is full of food.

21. The usual interval between the taking of arsenic and the onset of symptoms of poisoning, is from half to one hour.

22. Under the most favourable circumstances the dead human body does not acquire an impregnation of arsenic from contact with arsenical earth.

23. Arsenic found in soil is not soluble in water.

Corrosive sublimate.

1. Corrosive sublimate is also known as, perchloride, bichloride, chloride and oxymuriate of mercury.

2. Corrosive sublimate is soluble in about sixteen parts of cold water and in three of boiling water. Easily soluble in alcohol.

3. The liquor hydrargri perchloride of the B. P. contains half a grain of corrosive sublimate in one ounce of water.

4. Poisoning may be caused by intra-uterine or vaginal injections of corrosive sublimate solutions.

5. Poisoning by corrosive sublimate may be caused by the application of the drug to ulcers and open surfaces.

6. The irritant symptoms of corrosive sublimate poisoning are variable. There may be no pain in the stomach and no purging.

7. Salivation in poisoning by corrosive sublimate may or may not be present.

8. In acute poisoning by corrosive sublimate there is intense gastro-intestinal inflammation, with vomiting, frequent rice-water stools and early collapse.

9. Poisoning by corrosive sublimate differs from that of arsenic as follows : Corrosive sublimate has a distinct metallic taste, arsenic none, symptoms of the former supervene immediately the poison is swallowed, in the latter there is a short delay, diarrhœa is more bloody in corrosive sublimate than in arsenic poisoning.

Opium.

1. Children are very susceptible to opium and death may follow the administration of extremely small doses.

2. Tolerance toward the action of opium is rapidly obtained with habitual use.

3. The rapidity with which the symptoms of poisoning make their appearance will depend upon the form in which the poison is taken and the state of the stomach. If taken in solution the activity of the drug will be increased.

4. Remissions sometimes occur in the symptoms of poisoning by opium.

5. It is possible for a person to carry on his occupation for one or two hours after taking a poisonous quantity of opium.

6. Symptoms of acute poisoning by opium are not easy to distinguish from those produced by alcohol, cerebral hæmorrhage, etc.

7. In opium poisoning, the victim has a cold and clammy skin, livid lips and ear-tips and pin-point pupils.

8. Opium, administered by the mouth or morphine hypodermically, may cause vomiting.

Dhatura.

1. Dhutura seeds are often mixed with alcohol to make it more intoxicating.

2. A person has recovered after taking more than five hundred dhatura seeds. A decoction of one hundred and twenty-five seeds caused the death of an adult in seven hours.

3. One hundred seeds of the white dhatura weigh about twenty-one grains, of dhatura stramoinum, about twelve and a half grains and of dhatura fastuosa, about ten grains,

4. It is impossible to state definitely the number of dhatura seeds required to cause death, because the alkaloidal content varies within wide limits, and much depends on the amount of chewing done before swallowing to liberate the alkaloid.

5. There is a widespread belief in India that the seeds of dhatura are simply intoxicating and not poisonous, as poisoning by them is not commonly fatal.

6. The delirium of dhatura poisoning is characteristic ; movements are ludicrous, constantly grasping at imaginary objects or pulling imaginary threads out of the ends of the fingers.

7. In dhatura poisoning, the pupils are widely dilated throughout the illness.

8. The leaves of dhatura are sometimes used. They are dried and mixed with tobacco leaves and smoked ; the result is rapid loss of consciousness.

9. Symptoms of dhatura poisoning may come on immediately or there may be an interval of half an hour or a little longer.

Aconite.

1. Aconite root may easily be mistaken for jalap or horse radish root, unless compared.

2. The powdered root is frequently used as an aphrodisiac.

3. The fresh root becomes pink when scraped and exposed to the air.

4. The outstanding features of aconite poisoning are, tingling, numbness and loss of muscular power.

5. Aconite is one of the most virulent poisons known.

Strychnine.

1. Strychnine is intensely bitter, even in minute quantities, hence, it may be administered as quinine.

2. The time of onset of symptoms of poisoning, very greatly, depending on the form in which the poison is administered and the condition of the stomach.

3. During the interval between the taking of the poison and the onset of symptoms, the victim is capable of carrying on his ordinary occupation.

4. Death in strychnine poisoning generally takes place within two hours after taking the poison. The period is the same for nux vomica.

5. Strychnine poisoning resembles tetanus in some respects.

6. It is asserted that in death from strychnine poisoning the muscles of the throat and gullet are of a dark violet colour.

Oleander.

1. Twigs of the oleander are frequently employed for the purposes of procuring abortion, by inserting them within the uterus.

2. All parts of the oleander plant are poisonous.

Post Mortem.

1. The presence of food in the air passages is a very common appearance during post mortem examinations in India. It is usually the result of the emptying of the stomach which occurs from the pressure of gases deve-

loped in the stomach and intestines by putrefaction. When suffocation is due to vomit, the latter is found drawn into the small bronchi.

2. Ordinary patchy areas of hypostatic congestion coalesce in about twelve hours after death, and are of constant occurrence in all bodies. They occur in the viscera as well as in the skin.

Pregnancy.

1. The earliest recorded age for pregnancy is eight years and ten months. She menstruated at twelve months. The latest recorded age is seventy-two years. Pregnancy usually ceases between forty and fifty years.

2. A premature delivery is one under 266 days; a protracted delivery over 280 days. A seven months child is capable of living, but requires extra special care. A living child has been born at four months. Children may be born alive at any period between 6 and 7 months.

3. An imposter feigning pregnancy may be detected by placing her under the influence of chloroform. Spurious pregnancy may occur in hysterical persons.

4. A woman may be pregnant and be unaware of the fact; an important point with reference to unconscious delivery in cases of alleged infanticide.

5. Quickening is the name applied to peculiar sensations experienced by a pregnant woman about the fourth month of pregnancy; it is ascribed to the first perception of the movements of the fœtus.

6. Before the sixth month of pregnancy it is impossible to form a certain opinion that a woman is pregnant.

7. The placental site will indicate a recent pregnancy.

8. The birth of a mature child may follow the birth of another mature child after a period of three months (superfœtation).

9. Spermatozoa may remain alive in the upper part of the vagina for a fortnight, even through a menstrual period.

10. If pregnancy should be protracted the child will not be more developed than one born at the usual period. A child does not increase in size in proportion to the length of gestation.

11. A child may weigh two pounds or even less at birth and live to grow up.

12. The usual weight and length of a child at full term (9 months) are ; six to seven pounds, and eighteen inches respectively.

13. There is no full or satisfactory evidence of gestation having been prolonged beyond 293 days, but in the case of a lady in Simla a period of 323 days was admitted by the Chief Court, Lahore ; 323 days after cessation of last menstrual period, and 310 days after coitus. The child was not unusually large at birth.

14. Conception may occur before menstruation has appeared and long after it has ceased.

15. The sex of a child has no influence on the duration of pregnancy.

16. Children born at the seventh month of gestation are capable of living but require greater care and attention.

17. Children may be born alive and reared, at any period between the sixth and seventh month of gestation. A child has been born alive at the fourth month, several have been born alive at the fifth month, but all have died shortly after birth.

Putrefaction.

1. A temperature of between 90 and 100F. is most favourable for putrefaction, especially when combined with abundant supply of moist air. A temperature of 32 F. or 212 F. stops putrefaction.

2. Putrefaction is hastened by heat, moisture, corpulence and acute diseases.

3. Newly born infants are not so prone to putrefaction, owing to their containing few organisms (not having breathed to any extent nor swallowed food) and when exposed to a dry atmosphere, or when wrapped in absorbent material, they frequently mummify instead of undergoing the usual putrefaction.

4. Putrefaction advances rapidly in the head in drowning.

5. Putrefaction advances more rapidly in the air than in water, but the progress of putrefaction in the latter as in the air varies greatly according to the conditions of the individual body, temperature, kind of water, whether wholly or partially submerged.

6. The time at which putrefaction sets in, in water, is about doubled by complete submersion.

7. Putrefaction is rapid after death by strangulation.

8. The lungs, if congested at the time of death, putrefy rapidly, the tissue softens, becomes friable, the blood and fluids transude and collect in the pleural cavities.

9. In India, signs of putrefaction generally appear before rigor mortis has passed off and not infrequently putrefaction is well advanced in a still rigid body.

10. The pressure of advancing putrefaction forces the serum from the blood capillaries into the serous cavities, more especially into the pleural cavities. The serum is brownish red in colour, offensive in odour, does not coagulate and is tinged with blood. It never occurs during the first week after death.

11. Owing to the pressure of the gases of putrefaction in the blood of a hypostasis, this may be displaced in any direction.

Rape.

1. The question for determination in cases of rape is whether the woman was or was not a consenting party. The first and foremost circumstance that can be looked for in cases of this kind is the evidence of resistance, which one would naturally expect from a woman unwilling to yield to sexual intercourse forced upon her. Such resistance may lead to the tearing of clothes, the infliction of personal injuries, and even injuries to her private parts.

2. The resistance of the female must be to the utmost of her ability when she is in a position to oppose the act. But physical resistance may be wanting owing to extreme

terror or threat of death. The exercise of the will need not be till after the act.

3. Every female always possesses either an intact hymen or the traces of this membrane.

4. The presence of an unruptured hymen affords presumption but not an absolute proof of virginity.

5. An intact hymen is not necessarily proof that a male organ has not penetrated the vagina.

6. The hymen may be ruptured by an adequate force of any kind, apart from sexual intercourse.

7. The presence of the signs of virginity is not infallible evidence of the female never having indulged in coitus.

8. There are authentic virgins who can easily be examined with a speculum without tearing the hymen, which easily spreads out before the blades of the instrument.

9. So long as there are facts which show that women have actually conceived with the hymen still in its normal state, it is inconsistent to apply the word "virgo intacta" to females merely because this membrane is found entire.

10. The characteristic of a deflorated hymen is a tear (or tears) which passes through its whole thickness and down to the vaginal wall. Such tears are permanent.

11. Vulval penetration however slight, whether with or without violence, is as much a rape as vaginal penetration.

12. The least touch of the vulva with the male organ constitutes penetration in the crime of rape.

13. The emission of semen constitutes no part of the crime of rape, neither positively nor negatively.

14. The absence of marks of violence in an alleged rape on a child would not justify a medical witness in denying the perpetration of the crime.

15. Though puberty commences at or about the age of fourteen years, the power of erection and therefore sexual intercourse may be present at a much earlier age.

16. There is no specific age at which the power of erection and ability to perform the sexual act may disappear.

17. Impregnation is independent of volition on the part of the female, and hence pregnancy may undoubtedly follow rape.

18. From coitus with a female suffering from gonorrhœa, the male does not always become infected. Mr. Hutchinson estimates that probably not one in a hundred acts of coition with a syphilitic partner, is a chancre contracted.

19. Gonorrhœa in the male usually manifests itself within three to five days after intercourse.

20. Unhealthy children and those recovering from debilitating diseases may suffer from purulent vaginal discharges.

21. Gonorrhœal vulvo-vaginitis is attended by very acute inflammatory symptoms, which are apt to come on suddenly in from one to seven days after exposure. The urethra seldom escapes infection.

22. Vulvo-vaginitis may be the result of injury. A

common cause is a lack of cleanliness; any infectious disease may cause it; so also skin diseases; scratching with the nails; and excessive masturbation.

23. Ordinary vulvitis in children may be caused by the round or thread worm that migrates from the rectum to the vulva.

24. The incubation period of syphilis may be shorter than the usual period of twenty-one days. It may, however, be accepted as a practical rule, that true chancre does not appear before the tenth day. Any sore appearing prior to that time is probably chancroid, a mixed sore, or some simple affection, while any appearing later is quite likely to prove to be true chancre.

25. The non-discovery of spermatozoa in a given stain does not prove that the stain is not seminal.

26. Seminal stains, when found on the clothes of girls and infants afford a strong corroborative proof of the perpetration, or of the attempt to commit rape.

27. A separation of the thighs in a married woman will cause such a dilitation of the parts, as to render it easy for the male organ to penetrate the vagina without leaving any traces of violence on the labia or the female organs generally.

28. The examination of a female can only be conducted with her consent or the consent of her guardian if under age, whether the results of the examination are needed in evidence in rape, criminal abortion, infanticide or for any other purpose.

29. There is a great difference between consenting

and submitting to the examination. Let the examiner see to it therefore.

Sex.

1. In bodies where the genitals have been destroyed, determination of sex becomes difficult. Evidence will be afforded by the distribution of the pubic hair which in the male reaches as high as the umbilicus, but is horizontal, with few exceptions, in the female. Males have more hair on the body generally.

2. The breasts if present will denote the sex, also the uterus, which withstands putrefaction and burning to a marked degree.

3. The white lines due to pregnancy found on the abdomen, buttocks and breasts will indicate the female sex.

4. In some cases of hermaphroditism the true sex is difficult to ascertain before puberty. After puberty the onset of menstruation may solve the difficulty. Bodily conformation may also assist.

5. The identity of sex in the skeleton before the age of puberty is almost impossible as there is very little difference between the male and female skeletons at that period.

6. The difference between the male and female pelvis is very striking, so much so, that the sex can be easily distinguished.

7. In a well formed male skeleton the angle formed by the rami pubis with the symphysis is about 73 degrees; in a well formed female about 90 degrees.

Shock.

1. Shock is a condition of reflex depression of the vital functions which occurs after injuries, but may apparently result also from mental excitement induced and accompanied by comparatively slight injury. Shock may vary in intensity from a transient state of weakness to the most profound condition of vital depression.

2. A medical witness is not justified in attributing death to shock, except in the absence of physical signs of any other cause of death, combined with a reliable history of some recognised accident capable of giving rise to fatal shock.

3. The post mortem appearances in death from shock are negative, the opinion that death was due to this cause is necessarily inferential.

Sodomy.

1. Anal chancre in men, implies the presumption of relations contrary to nature, but only a presumption ; in women, in no way does it imply this presumption even.

2. It is impossible to consummate the act of sodomy against the will of the passive agent, while the latter is in his or her senses. The slightest resistance is enough to prevent it, and it almost goes without saying that the crime cannot be committed whilst the passive agent is asleep. An infant must be excluded.

3. A normal state of the parts of the passive agent may be found even when the act of sodomy has been repeatedly committed.

4. If a moderate sized penis is inserted without violence and with care, the anus which is much more dilat-

able than the vagina may dilate sufficiently without laceration, and the act may be completed without leaving any trace of evidence.

5. In a confirmed sodomist if traction be made on both sides of the anus the sphincter will relax and expose the mucous membrane. In a normal person such traction will cause strong contraction of the sphincter ani.

Spine and Spinal Cord.

1. A sprain of the spine may occur as a result of a severe blow on the head. After the injury the head and neck are held immovable and rigid, with often considerable loss of power.

2. Sprain of the spine in the lumber region may be the result of railway injury, when it is often associated with nervous symptoms. The reason why railway accidents are so often responsible for this state, is that the forces concerned are very great and the collision is unexpected, so that, the muscles and ligaments being off their guard are taken at a disadvantage, whilst the shock, terror and mental disturbance are also important factors.

3. Dislocation of the spine can only occur in the cervical region, and any part of this region may be the seat of a dislocation.

4. Immediate death may be caused by a blow in the cervical region.

5. Severe injuries to the spinal cord above the third cervical vertebra, are immediately fatal from paralysis of the muscles of respiration.

6. Concussion of the spinal marrow commonly produces paralysis, affecting the bladder, rectum and lower extremities. The symptoms may appear at once or after some hours or days. After death no traces of mechanical injury may be discovered.

7. A slight injury may cause death by giving rise to inflammation of the spinal marrow.

8. The spinal marrow is liable to compression from slight causes.

9. In cases where death is alleged to have been caused by violence and no traces of it are perceptible, always carefully examine the spinal column.

Spleen.

1. If the spleen is enlarged and soft, a slight blow, such as that produced by a flat open hand, a kick, even a simple push may cause rupture and death within twenty-four hours. An enlarged spleen may be ruptured simply owing to palpation through the abdominal wall.

Strangulation.

1. In cases of strangulation medical opinion should rest upon the clear and obvious effects produced on the neck and structures beneath the skin, and not upon the mere presence of a cord or ligature round the neck.

2. The act of strangulation should be, medically speaking, as distinctly provable without the production of a cord or rope, as the act of stabbing without the production of the knife which inflicted the stab.

3. In cases of strangulation, the ligature or cord

should always be carefully examined for blood, hair or other suspicious substances.

4. If you find emphysema and hæmorrhages into the lung, punctated petechiæ in the skin, prominence of the eyes and protrusion of the tongue, or its pressure against the teeth with a bloody froth and mucus in the windpipe in an alleged case of strangulation in an undecomposed body, you can positively answer that death was due to asphyxia. However, their absence is of no value as proving a negative reply.

5. There may not always be an ecchymosed circle round the neck in cases of strangulation.

6. A sudden and violent compression of the windpipe will render a person powerless to call for assistance, and cause almost immediate insensibility and death without convulsions.

7. With incomplete closure of the windpipe convulsive movements sometimes occur; occasionally there is bleeding from the ears, nostrils, mouth and throat. The face usually becomes, in the first instance black, the hands are clenched; as a rule, insensibility is so rapid that there is no pain.

8. In strangulation, if a soft, thick cloth be used, and be removed immediately after death, no sign of the strangulation will be perceptible at the time of the post mortem examination, though at first a faint impression may have been present.

9. If the ligature be still round the neck, note the position of the knot or knots; if tied in two or three

knots at the back of the neck, the presumption is assuredly in favour of homicide.

10. If much force has been used in producing the constriction, the windpipe and muscles and vessels in the front part of the neck may be found lacerated and even the neck broken.

11. It is not probable that homicidal strangulation can be accomplished without the production of some appearances of violence on the neck.

12. In death by strangulation, of a female, always examine the sexual organs, to ascertain, if rape has been committed.

13. In a decomposed body, indistinct marks on the neck, or patches of discolouration, cannot be relied upon as evidence of homicide.

14. In strangulation, ecchymoses and large sub-pleural hæmorrhages the size of beans are common on the lungs, and sometimes silvery looking spots under the pleural surface due to ruptured air cells. These are signs of violent death from asphyxia.

Starvation.

1. When both food and water have been cut off, the duration of life is not more than ten days, but varies with the age and physical condition of the individual. When only food is cut off, life may be maintained for six weeks or even longer.

2. Exposure to cold in conjunction with starvation, hastens death.

3. There may be pathological causes for starvation, such as, stricture of the gullet etc.

4. Infants may die from insufficient food or the administration of improper foodstuffs which cannot be assimilated.

Suicide.

1. Suicide is held by law to be murder, yet an attempt to commit suicide is not an attempt to commit murder.

2. In the case of a child, it is an important part of a practitioner's responsibility to notify sudden death, but he is not obliged to notify attempt to commit suicide. If, however, death occurs after the attempt, he should acquaint the authorities.

Suffocation.

1. The body of a person suffocated, presents so little that it is peculiar that, unless your suspicions have been aroused you would say that death was due to natural causes. There is no anatomical appearance in any of the organs which can be considered as characteristic of suffocation.

2. The presence of ecchymoses on the surface of the lungs may justify a strong opinion of death by suffocation when no other cause is apparent.

3. A small particle of material, insufficient in itself to block the larynx, may nevertheless, cause death by setting up laryngeal spasm if it lodges on or between the vocal cords.

Thorax.

1. Incised and penetrating wounds of the chest cause expectoration of blood whether the lungs are involved or not.

2. Pneumonia following contusion of the thorax usually appears within the first four days (an important medico-legal point).

Wounds and Contusions.

1. Severe blows are not always attended with external marks of violence.

2. The slightest contusions may be attended with fatal consequences, while fractures accompanied by great depression of bone and an absolute loss of substance of the brain, are often followed by perfect recovery.

3. The presence of bruising is commonly presumptive evidence of the infliction of violence, but its absence does not negative this presumption.

4. In parts of the body where the skin is stretched and separated from the underlying bone, by a layer of tissue comparatively thin and of uniform structure, the blow of a blunt smooth object, or a fall, may cause a wound presenting an appearance closely simulating an incision.

5. The edges of an incised wound are clean cut, regular, and well defined, begin abruptly, bulge in the centre, and terminate gradually; it usually bleeds more things being equal, than other kinds of wounds.

6. In an average sized bruise, the blue colour appears about the third day, the greenish from the fifth to the seventh day, the yellowish from the eighth to the tenth, while the normal colour will probably be restored between the thirteenth and eighteenth day.

7. Wounds with ill defined, or ragged edges, which

may be connected by bridges of connective tissue or nerve filaments, are always caused by forcible contact with a blunt weapon.

8. A wound which shows vascular congestion and accompanying œdematous swelling, but absence of connective tissue elements, may be deemed to be less than forty-eight hours duration.

9. A wound which begins to show evidence of tissue regeneration may be reckoned to be from five to eight days old.

10. Pus usually appears in a wound from the third to the fourth day after production.

11. Every wound should be examined with a lens. Sharp, clean cut univerted edges indicate the use of a sharp edged weapon; tearing and inversion indicate the employment of a blunt weapon, or production without a weapon.

12. In small wounds a scab forms in about thirty-six to forty-eight hours. On removal of the scab, if some granulation tissue or attempts at scarring be found, then the wound was inflicted at least four or five days previously.

13. The time required for the formation of a scar is, in clean incised wounds kept aseptic, about five or six days. In suppurating wounds, from seven days to two or three months according to size and treatment.

14. When once a scar has become firm and white, you cannot say when the wound producing it was inflicted.

15. In about two months or so, a scar acquires permanent characters. No scar can be removed without leaving another behind.

16. The weapon with which a wound has been inflicted, need not necessarily be covered with blood.

17. A first stab through the clothing may not present any blood on the outside but in a second stab with the same weapon the outside of the clothing should show marks of blood unless the weapon had been wiped before the second stab had been delivered.

18. If coagulated blood be found on a weapon, it is probable that it had issued from the body of a living person or animal, or from a body quite recently dead.

19. The presence of spots of blood on clothing and weapons in possession of a person accused of murder may be quite consistent with innocence.

20. The presence of ecchymosis, does not necessarily indicate that the injury was inflicted during life.

21. Small punctured wounds, the result of some dirty sharp pointed object, are infinitely more dangerous to life than many open wounds.

22. A large quantity of blood, firmly coagulated, widely distributed over the body and surroundings, marks of arterial spirting, and signs that the blood flowed against gravity, are decisive proof that the wounds from which the blood came, were inflicted during life.

23. When a sharp pointed edged weapon is applied perpendicularly to the body, the wound is less in length than the breadth of the weapon, and broader than the

thickness of the blade. When the same weapon enters the body obliquely, the edges of the wound appear unequal, one edge appearing to be straight and the other curved.

24. It is of prime importance where wounds are found upon a part of the body usually clothed, to examine the different superimposed garments, together and separately. All evidences of the passage of an instrument through the fabrics must be carefully noted and measured as well as their relation to the situation of the lesions of the body.

25. It is a well ascertained medical fact, that a number of injuries each comparatively slight are as capable of operating fatally as any single wound whereby some blood vessel or organ important to life is directly affected ; death is commonly referred to exhaustion.

26. When several wounds are found on a dead body, and one is, what is commonly termed mortal and the others not, it is probable that the latter were inflicted first. This applies to both homicide and suicide.

27. In some cases slight blows have been followed by fatal consequences even when no disease existed to account for the result.

28. There are no rules by which, in unknown cases, the instantaneous mortality of wounds can be accurately determined.

29. A wound which accelerates death causes death.

30. Comparatively slight wounds sometimes prove indirectly fatal owing to the person being in an unhealthy condition at the time of their infliction ; and compound

fractures, or slight wounds, which in a healthy person would have a favourable termination, are followed by gangrene, fever, erysipelas, proving fatal.

31. Lacerated wounds are generally the result of accident.

32. A post mortem lacerated wound occurring as the result of an accident, may be attended with such an effusion of blood as to be mistaken for one inflicted during life.

33. Blows inflicted on a dead body not more than two hours after death give rise to appearances on the skin, similar to those which resulted from blows inflicted on person recently before death.

34. If there be found about a wound any swelling, effusion of lymph or pus, adhesion of edges, it is certain that the wound was inflicted during life.

35. Blood effused from a wound ten minutes after death may be found in a coagulated state.

36. Blood may remain fluid in a dead body from four to twelve hours after death. It rarely begins to coagulate until after the lapse of four hours; but if drawn from a blood vessel and exposed to air it would coagulate in a few minutes after its removal,

37. The circumstance of the blood effused under a contused wound being liquid, is not a proof that the effusion took place after death; if the post mortem examination be performed very soon after death, or if there be long delay, when it may have become again fluid from decomposition.

38. In a bruise without broken skin the blood has to escape under a certain amount of resistance. The force that overcomes this resistance is supplied by two factors : the beat of the heart ; the elastic force of the arteries and veins. At the moment of death the first of these factors sinks at once to zero, and in the veins the second factor is always very small ; the second factor, in the arteries too, sinks very rapidly, and probably in, at the outside, half an hour, becomes nil. It follows from this that the amount of blood effused in a bruise becomes at once the most important point in determining whether the violence was inflicted before or after death.

39. If from any cause the quantity of blood lost cannot be estimated then the presence of small clots entangled in the tissues at the edges of the wound constitutes good evidence that the wound was inflicted during life.

40. Remember that accident may lead to the sprinkling of blood from a small vein which has been wounded, while blood may be poured out in considerable quantity from an artery especially if large ; and if it fall on one spot at a short distance it may produce a soaked appearance. The sprinkling may be expected only when the wounded artery is small, and the blood is effused at a distance.

41. The skin is elastic, and is, in a living healthy state slightly on the stretch in all directions parallel to its surface. Hence in punctures with a blunt instrument the hole must be, as a rule, a little smaller than the diameter of the weapon.

42. If it is asserted that a punctured wound was produced by a fall on some sharp body, it is to be remembered that it is almost impossible for the wound to be of any great depth without a part at least of the material, being found broken off, in the wound.

43. The edges of a stab wound are sometimes everted, owing to the rapid withdrawal of the instrument.

44. Incised wounds affecting the scalp, unless of great extent, rarely produce any serious effects.

45. Wounds of the head are dangerous in proportion as they affect the brain, but it is scarcely possible to predict from external appearances, the degree of mischief which has been produced within.

46. In contused wounds, if the marks of violence are on the summit of the head, it is highly probable that they have been caused by a weapon, since this is not commonly a part which can receive injury from a fall,

47. Contusions of the face cause blackeye.

48. Wounds of the face, owing to the great vascularity of the parts readily and rapidly heal.

49. Wounds of the face, when at all extensive are always followed in healing by greater or less deformity.

50. Posterior wounds of the neck are rare in suicide, but a suicide has succeeded in reaching the spinal canal between the occiput and atlas by a transverse cut with a razor.

51. A blow or kick might be inflicted on the abdomen, sufficiently severe to rapture one of the viscera, or a great blood vessel and yet no external mark be left.

52. In a punctured wound of the spleen, the blood is bright red; of the liver, dark in colour; of the lung, bright and frothy, of the heart, there is sudden and extreme collapse; of the stomach, the blood is mixed with the acid contents.

53. Contusion of the testicles produce shock, faintness with great pain, nausea and vomiting, and may be fatal.

54. Contusion of the external genitals of the female are specially prone to extensive bruising and hæmorrhage under the skin, specially if the woman is pregnant. This hæmorrhage, if, into one of the outer lips, may give rise to a very large blood tumour.

55. Kicks or blows on the vulva, if they destroy life at all, cause death by copious effusion of blood. Violence to this part after death would not produce such an effusion as would account for death.

56. A contused wound on the vulva may occasionally be mistaken for an incised wound. When the soft parts of the body are struck by a blow, or kick, if there is a bony surface beneath, a longitudinal rent may appear as a result of the force being received by the bone. Unless carefully examined, it may lead to the inference that a weapon had been used for its production.

57. If severe injuries are discovered on a deadbody and they are ascribed to a fall, carefully examine the insides of the arms and thighs which may present marks of injury which could not possibly be explained on the supposition of an accidental fall.

58. Children bear the loss of blood badly but recover rapidly ; old people stand the loss better but the effects are more lasting.

59. Constitutional conditions have a great influence on injuries. Wounds heal with difficulty in drunkards, in whom septic conditions are common, the arteries are generally unhealthy, especially those in the brain, and rupture may follow a slight blow, or even from mental excitement. Disease of the arteries is common in the aged, and fatal hæmorrhage of the brain may occur during a quarrel.

60. Violence inflicted on a livingbody may show itself under the form of a bruise until after death.

61. The effect of hæmorrhage varies according to the amount of blood lost and is more marked when the blood is rapidly poured out from a large vessel than when it escapes slowly from small vessels. In fatal cases, when the blood is rapidly poured out death takes place in a few minutes from syncope. When bleeding is less severe the face and general surface become blanched and cold. The pulse is feeble, fluttering and rapid ; the skin is bathed in profuse perspiration ; the breathing is sighing, the sight dimmed and the mind wanders. Then follows syncope, twitching of the muscles or convulsions and death.

Wounds self-inflicted.

1. Self-inflicted injuries are generally cuts or stabs, not contused wounds.

2. Self-inflicted wounds are generally of a superficial character, situated on the front part of the body, are

numerous, are widely scattered, have marked parallelism ; the hands are seldom wounded ; (the hands usually suffer in resisting homicidal attempts), all vital parts are avoided ; and there is usually an absence of correspondence between the situation of the wounds on the body and the cuts or other marks of the dress.

X-rays.

1. In all cases of alleged fracture of bones, an X-ray photograph should be demanded as a confirmatory proof. This will obviate corruption and injustice.

2. In medico-legal cases requiring X-ray examination it is necessary to examine both sides of the body for necessary comparison.

3. For the determination of age by the progress of ossification, the aid of the X-rays is essential.

4. In gun-shot wounds, where the bullet has not completely traversed the body, the X-rays will locate, and also indicate the direction of the bullet.

PART III

GENERAL GLOSSARY

Abortion—isqat-i-haml, pet girná
Abrasion—ragar
Accumulation—jamáo, dhar, ijtimá
Acephalous—be-sír
Active—faíl
Acute—tez, shádíd
Adipose—farbíh
Adolescence—bulugat
Aëration—phipera me háwá ká khún se milná
Agglutinate—miláná, páiwastá k
Aggregate—majmuí
Anencephalous—be-dimag, be-magz
Angular—goshedár, nokila, zawiyadáar
Annular—golái, challe-kí-tarah
Antenatal—jamne se peshtar
Apoplexy—sakhtá-kí-bimarí
Arterial—shiríyán
Artificial—masnuí
Asphyxia—dam ghutná
Assailant—hamlá-awár
Assault—hamlá
Asthma—dhamá
Attention—tawajjuh
Automatic—khud-bá-khud
Axis—dhurí
Bent—sadmá

Birth—paidáish
Block—rok
Bloodless—be-lahu, be-khun
Blotchy—muhasa, dadorá
Bore—chhed, surákh
Branding—garm lohe se dágná
Breech—píchha, pendá
Brittle—tumák, juldi tut jane-wala
Bruise—chot
Bullæ—chhale
Bump—dhamak, ubhár
Burst—phutna, tarakna
Calibre—bandúk kí nál ká chauran
Cardiac—dil ke mutalliq
Cardinal—asli, azim
Cardio-respiratory inhibition—dil aur phipere harkat ká rukná
Causation—sabab, wajh, mujib
Cavity—garha, gharáo
Characterise—tashkhís k
Choke—galá ghutna, dam ká rúkná
Chronic—púráni, der-pá
Cicatrise—mundamil k
Cinnabar—shingráf
Circular—gol, halqadár
Circulation—khun ká daurà
Circulatory organs—díl, shiriyán aur viridián
Clammy—lesdár, chipchipá
Classification—tartíb, jinswari
Clonic—phailna aur sukarna
Closure—rok, band honá

Clotted—jamá huá

Coagulate—jamáná, bastá k
Cohabit—mujamá 'at
Colic—dard-i-kulnaj
Collapsed—kamzorí se rai jáná
Coma—be-hoshí
Combined—mila hua, paiwasta
Compatible—mutabiq
Comparatively—muqábilatan
Compound—murakkab
Compressed—dabá huá
Compression—dabáo
Concave—mujawwaf, muqáar
Concussion—jumbish, harákat
Conduct—rawaiya, tariq-i-amal
Configuration—tarkíb
Congenital—ham-zád
Congestion—ijtimá-i-khun
Consciousness—hosh
Consistency—mutabiqat
Constitutional—tabi'e
Constrict—sikorná
Constriction—sikor, kashish
Consumate—takmil
Contour—naqsha, shakl, súrat
Contused—kuchla h
Convulsion—ainth
Corresponding—barábar h, muqábil h
Corrode—burish, badan ká khayá jáná
Corrosion—burish
Cramp—akarpan, tashanuj

Crush—kuchalna, masalna
Crystal—billaur
Crystalline—billauri
Culpable—mújrim
Custom—rawáj
Cuticle—chamrá, chhilká, kharind
Cyanosed—nilá gún hálat
Cylindrical—nál ka muáfiq
Dead body—lásh
Debilitated—kamzor, naqih
Debris—malbá
Decisive—qáti, kamil, sáf
Deduce—natija nikálna
Defæcation—hagná
Deflorate—be-hurmati k
Deformity—kaji, bad-shakli
Delicate—názuk
Delivered—janaya huá
Delivery – waza hamal
Delusion—tawahhum
Dementia—fatirulàqál
Depression—udasi, magmum
Deprivation—mahrum
Devious—tehrá
Diameter—qutr
Differentiate—imtiáz
Digestive tract—jis rastá se khurák hazm ho kar pet se neche játá
Dilated—phailá huá
Discolouration—bad-rangí
Disfiguration—bad-shakli

Dislocation—hata huá jor
Distension—phailáo, was'at
Distort—bigárná
Distil—arq nikálná
Dull—be-áb
Dyspnœa—dam rukná, dam lene men taklif
Ecchymosis—khun ke nikalne se rangat ká paidá honá
Ectocardiac—dil ká apní aslí jagáh se báhar ho janá
Effervescence—josh
Effusion—baháo, rezish
Egoism—khud sanai
Elastic—damdár, lachakdár
Elimination—ikhraj
Emaciation—dúbla-pan, lagari
Embarrass—ghabráná, hiarangi
Emetic—awar dawá
Emotion—josh-i-dil, iztirab
Emphysema—banáwat howá se bhari
Endanger—khatre men d
Engorged—nák-o-nák bhara
En masse—ek sáth, ekathá
Entrance—dakhilá
Epileptic—mirgí
Erratic—be-qaidá
Erruption—amas
Evaporation—bukhárat, tabkhir
Everted—ultá huá
Excoriation—ragar
Excreta—alaish
Exhibit—záhir, karná
Exit—báhar ká

Expanding—phailne walá
Expectoration—kaff
Expulsion—ikhráj
Exudation—khun ká shiriyán ya veridián se nikal kar jild ke neche janá

Exude—choná, risna, tarasho
Faculties—qúwa
Fæces—paekhana
Fainting—gash
Fibrous—reshe-dár
Fissure—shigáf, chák
Flabby—pilpila
Float—tairná
Fœtal—pet ká bachá ke mutalliq
Fœtus—bachá jo abhi rahm me hai
Foreign—ajnabi mada
Fontanelle—bache ke sir ká aglá aur pichhlá khula hissá
Fracture—skikastá, tút
Frenzy—diwanagi
Friable—bhurbhura
Froth—phen, jhág
Function—kám, udha, amal
Funnel—pík
Furrow—nishán
Gaping—phailá huá
Gas—hawá, gás
Gastric—meda ke mutalliq
Genitals—sharm-gah
Gestation—hamal
Gesture—harkat, waza
Gidiness—sir men chakar áná

Glistening—chamakta
Gloomy—udás
Grievous—shadíd
Grandeur—azmat, shandar
Gripe—maror, pechish
Grit—kir kir, sang-reza
Habitual—ádi
Hæmorrhage—jiryan-i-khun
Hallucination—waham
Hanging—phansi
Hemicephalous—ádhá sir
Herbivorous—gás-khor
Homicidal—qátil, khúni
Homicide—qatl
Horizontal—hamwar, barábar
Hue—rang
Hymen—pardá, bakárat, kawára-pan
Hyperæmia—gait darjá kí surkhí
Hysteric—marz-i-sanda
Idiot—fatirulaqal
Immaturity—kachcha-pan
Immunity—mufúz
Impact—takkar
Impair—bigarná, túlná
Imperception—adam-ashas
Imperforate—be-ched
Impervious—be-guzar
Impotent—ná-mard
Impulsive—jald-bázi
Incised—katá huá
Incoherent—be-mel, ná-bastá

Indurated—sakhti, karapan
Infanticide—bachá-kúshí
Infection—mutaddi
Infer—tajwízá, nikálná
Inferential—hásil, natijá
Infirmity—naqáhat, kamzorí
Inflammation—sujan, sozish
Inflation—phúl jáná
Infliction—zarab pahunchánà
Inherent—zati, batini
Inhibition—rokná
Injected—súrkh
Inquisition—daryàfat, tashkísh
Insane—diwana, majnúm
Insanity—fatirulaqali
Insensibility—be-hoshí
Insomnia—be-khwábi, nind ká ná áná
Instantaneous—ek dam, fauri
Instinct—aql-i-haiwani
In Situ—apni asli jagá par
Insufficiency—kami, ná-káfi
Intact—asli hálat
Integument—insani badan ká chamrá
Intellect—aqil, hosh
Intellectual—aqil
Intense—zíyádá
Intermediate—darmiyání
Interpretation—tabir
Interstitial—darmiyání
Intoxicate—madhosh karná
Intra-uterine—rahm ke andar

Intromission—darámad, dákhl
Inverted—ultá huá
Investigate—taftísh karná
Inveterate—puráná, a'di
Involve—uljhaná
Irritability—zud-ranji, atash-mizáj
Jagged—dandanedár
Kneel—ghutná tekná
Knotted—girahdár
Knuckle—ungli aur hath ká darmiyáni jor
Labiate—do-barábar-hissá
Lacerated—phatáh, phárah, chak kiáh
Langour—thakáwat kí sústi
Lax—dhilá
Lesion—zarab, chot
Leucorrhœa—safaed páni
Ligature—rassi, dora
Limb—azú
Linear—khatti, lakír jaisa
Livid—nilá, bad-rang
Lividity—nilápilá-pan
Locomotion—qúwat, naqli-maqám
Longitudinal—lambái, darjá-i-túl
Loop—phandá, halqá
Lucidity—dimág kí dúrúst hálat
Magma—chikní bachat
Magnify—barrháná
Malaise—be-arámi, mizáj kí be-aitidali
Malignant disease—nasur
Malinger—bahána-sázi
Malingerer—bahána-sáz

Mannerism—hamatwári
Marbled—sang mármár kí misl nishán
Mass—dher, ijtimá
Maturity—bulugat
Meconium—janam gúh
Membrane—pardá, jhillí
Memory—hafiza, yád
Meningeal—dimág ká pardá ke mutalliq
Menses—háiz, phúl-áná
Menstruation—háiz
Mental—aqli
Mesentery—ántrarián ko apní jaggáh qaim rakhne wálí chíz
Metallic—dhát ká
Micturate—peshább kar
Mineral—dhát, jamadát
Minimal—kam-se-kam
Missile—mutaharrik shaí
Mode—taríqà, taur
Moist—namí
Momentum—zor-í-harkat
Monstrous—haulnak
Mood—tabiat, mizáj
Moral—akhlaq
Morbid—fasid
Motive—wajáh-í-múharrak
Mucous—áon, rezish
Mucous membrane—andar kí jhillí
Murder—qatl, khúnresí
Murderer—khúni, qátil
Muscular—patthe ká

Muttering—bárbaráná
Narcotic—nindáwar
Nausea—jí matláná
Noose—phandá, kamand
Notch—khandáná
Nubile—shadí ke qábil úmar
Numbness—súnn
Obsession—kisí bát ká waham ho jáná
Odour—bú
Orifice—múnh, chhed, súrákh
Ossify—haddí ho jáná
Over-lying—úpar letná
Pallor—zardí, pílá-pan
Palpitation—his
Parallel—mútwazí
Paralysing—falig
Paralysis—rashá, laqwá, jholá
Parchment—chamre kí waslí
Parturition—janepa
Passion—josh-í-háiwání
Passive—mafaul
Patch—páiwand
Peculiarity—khasúsiat
Penetrate—ghúsna, dákhl karná
Penetration—dákhul
Penis—indrí, lulli
Peripheral—sirá
Permanent—mústaqil
Persecution—iza-dahi
Petechial—khún ke dág
Placid—halim, narm

Pleural—phiphere kí jhillí ke mutalliq
Pliancy—narmí, damdárí
Plug—dát
Plump—mótá-tázá
Precipitate—barí jaldí se
Pregnant—hamila
Presumptive—qiyasi, sabút
Privation—tangí, iflas
Prognosis—*alámat-i-ariza*
Projectile—mutaharrik shai
Prolapse—*báhar ájaná*
Prominent—*numayan*
Prostration—kamzorí, naqáhat
Protrude—age ko úbhrá huá
Pulmonary—phiphere ke mutalliq
Punctiform—nuqtá bindí ki taráh
Putrefaction—sarahat
Rapidity—tezi
Rare—nádir, kamyáb
Reaction—rukáo, harkat-i-nafsí
Reflex—mua'kas
Relaxation—dhíl
Rent—shigáf, chák
Resistance—muqábalá
Respiratory—tanáffus
Responsibility—zimmawárí
Rususcitate—hosh me láná, tázá ján karná
Retraction—inhiraf, sukarná
Rheumatism—bai, gathiyabai
Rickets—girih-bad
Rigid—kara, sakht

Rigidity—akrahat
Rupture—shigáfi, darár
Saturated—alúdá
Secretion—rezish
Semilunar—nisf chánd
Senile—burhapá
Senses—hiwas-i-khamsa, hosh
Sensory—hissí
Separation—iladhigi, judái
Serum—khún ká páni
Sexual—jinsí
Sheath—giláf
Shock—sadmá
Shrivelled—sukora huá
Simulate—naql karná
Simultaneous—ekhi waqat
Singe—jhulsáná
Site—mauqám
Slenderness—baríki
Slit—chír, chák
Smooth—hamwár
Sodomy—iglam, launde-bázi
Spasm—jakar, maror, tashannuji
Spirt—zor se pichkári ki taráh nikalná
Starvation—fáqa-kashi
Sterterous—ghúrárá
Stolidity—kund-zihn
Strangulation—gala ghútná
Striated—dhárí dhár
Structures—banáwat
Struggle—kash makash

Stupefaction—be-hoshi
Sub-cutaneous—zer-chamrá
Sub-pericardial—dil kí jhillí ke neche
Sub-pleural—phiphere kí jhillí ke neche
Submersion—gotazani
Suffocation—habs-í-dam
Suggestion—ima, kinaya, tajwíz
Suicide—khúd-kúshí
Symptoms—alámat
Synonymous—hammáni
Syphilis—atshak, garmí
Systematise—bá-qáidá karná
Temperament—hálat, mizáj, tabíat
Tendinous—nas-dár
Term—arsa
Texture—bináwat
Throttling—galá dabáná
Tough—damdár, sakht
Toxic—záhirilá
Translucency—shaffáf, sáf
Transmission—irsal, dusrí ko lagáná yá dená
Transverse—árá, tirchá
Traverse—taí karná
Traumatic—zarab ke bais
Turbid—gadla, alúdá
Twitching—jhatká
Undermined—kamzor kiá
Uniform—yaksán
Union—itihád
Urine—pesháb
Unnatural—khilaf-i-fitrí

Velocity—tezí
Venereal—burí bimarían jo badfiálí se paida hotí hain
Venous—veríd ke mutalliq
Ventricle—dil ká nichlá garhá
Vertical—sidha, amudí
Viable—zindá rahne ke qábil
Victim—mazrúb
Violence—tashadad
Violate—bigárná, pardá-dari
Violator—pardá-dár
Viscera—azai raisa
Vision—nazar
Vitality—zindagání, ján-dári
Volition—marzi
Voluntarily—qasdan
Vomit—qai
Vulva—fúraj kí surákh
Wad—dát, tikiá
Wasted—ghatá huá
Will—quwat-i-irádá, wasiyat
Womb—rahm
Wrinkle—jhúrí
Yielding—lach-lá-chahat
Zone—mintáqá

ANATOMICAL GLOSSARY

Abdomen—pet, shikam
Adam's Apple—galle kí gandhí
Alimentary—hazme ke mutalliq
Ankle—takná
Anus—gánd, makkad, dhúi

Areola—pistán ká siyáh hissá
Arm (upper)—bázú ká úpar hissá
Armpit—bagal
Artery—shiryán
Auditory meatus—kán ká súrákh
Back—pith, púsht
Backbone—rirh
Back (small of)—kamar
Beard—dárhí, rish
Bile—pit
Bladder—masánná
Body—badan, jism
Bone—haddi
Bowels—ántríyán
Brain—bhejá, dimágh, magz
Breast—síná
Breast (female)—pistán
Bridge of nose—bansá
Bronchi—piphere kí barí nalí
Buttock—chútar
Calf—pindlí
Canthus inner—ko
Canthus outer—kor
Capillary—chote shiríyán
Caput succedaneum—bacche ke padáish ke waqat sir par khún ke ijtimá se ubhar
Carotid—gale kí barí shiríyán
Cartilage—chabní haddí, kúrkúrí
Caul—jhillí
Cervical—gardan kí mutalliq
Cheek—gál, rúksar

Chin—thúddí
Chyle—kailus
Clavicle—hanslí
Coil of bowel—ántríyán kí kúndlí
Colon—qulun, bari ánt ká akhri hissá
Coccyx—dúmchí kí haddí
Conjunctiva—ánk kí jhillí
Costal—paslí ke mutalliq
Cranium—khopri
Death—maut
Deceased—mutawaffí
Diaphragm—siná áur shikam ká darmíyaní pardá
Dura mater—dimág kí baruní jhillí
Ear—kán
Ear, cartilage of—kurkuri haddi
Ear, lobe of—lo, kán ká nichlá narm hissá
Ear wax—kán kí mail
Expectoration—balgam, kaf
Eye—ánk, chasm
Eye ball—dhelá
Eye brow—abrú
Eyelash—palak ke bál
Eyelid—palak
Face—múnh, chehrá
Fæces—paikháná
Fibre—reshá
Finger—únglí
Finger, little—chotí únglí
Finger, middle—darmíyaní únglí
Finger, ring—ísrí únglí
Finger, index—kalme kí únglí

Fist—múthi
Flesh—gosht
Fluid—riqiq mada
Fœtus—rahm ká bachchá
Foot—paun
Forearm—bázú ká nichlá hissá
Forehead—peshani
Foreskin—khulri, topi
Gall bladder—pitta
Gland—giltí
Groin—chaddha
Gullet—halaq
Gums—masúrá
Hand, dorsum of—háth kí púsht
Head—sir
Heart—dil
Heel—eri
Hernia—fataq
Hiccup—hichkí
Hip—chúla
Hymen—pardá
Hyoid bone—galá ká sámne kí haddí
Instep—paun ká úpar ká hissá
Intellect—aql, hosh
Intestines—antríyán, ántrí
Iris—ánk ká rangdár hissá
Jaw—jabrá
Joint—jor
Kidney—gúrdá
Knee—ghútná
Knee cap—chapní

Knuckle—band, girih
Lap—god
Larynx—janjara
Leg—táng
Life—ján
Limb—ázú
Lip—honth
Liquor amnii—janam páni
Liver—jigar, kaleja
Lobules—phiphere ke chotá hissá
Loin—kamar
Lungs—phiphere
Marrow—gúdá
Meconium—janum gúh
Membrane—pardá, jhillí
Meninges—bheje ká pardá
Menses—haiz, kapre
Mesentery—gherindá
Milk tooth—dúdh ká dánt
Moustache—múchh
Mucous—áon
Muscle—patthá
Nape of neck—manka
Natural death—apní máut
Navel—naf, tondi
Navel string—nál, nálá
Neck—gardan
Nerve—nas, rag
Nipple—sari pistán
Nose, septum of—buláq
Nostril—nathna

Notched hymen—khandáná pardá
Occiput—gúddí
Œsophagus—halaq
Omentum—pet ká pardá
Orifice—múnh, ched
Ovary—baiza-dán, kúshiá tul rahm
Palate—talu
Palm—hatheli
Pancreas—lablabá
Parietal—sir kí janab kí haddí
Parturition—bache ká paidá honá
Patella—chapní
Pelvis—chula
Paricardium—dil kí thelí
Peritoneum—ántríyán kí jhillí
Perspiration—pasíná
Pharynx—múnh ká pichlá hissá
Phlegm—balgam, kaf
Pit of stomach—kaurí
Placenta—ojhrí
Pneumogastric—phiphere aur medá kí barí nás
Pregnancy—hamal
Pregnant—hamila
Puberty—bulugat
Pulmonary artery—phiphere kí shiríyán
Pulse—nabz
Pupil—ánk kí pútlí
Pus—píp
Putrefaction—saran
Rectum—maqad
Respiration—tanaffus

Rib—paslí
Sacrum—chútar kí haddí
Saliva—thúk
Salivary gland—thúk kí giltí
Scalp—koprí ká chamrá
Scapula—sháná kí haddí
Scrotum—kash kashá, fotá, potá
Secretion—rezish
Secundines—jhillí jis me bachá páidá hotá hain
Sense—hiss (pl. hawass)
Serum—khún kí pání
Sex—jins
Shin—pindlí
Shoulder—kandhá, sháná
Side—pahlu
Sinew—pathe kí nár
Skeleton—dhánchа
Skull—kopri
Smell, sense of—púwat-i-shammá
Sole—talwa
Speech—qúwat-i-goyai
Spinal cord—rirh ká tánt
Spine—rirh
Spleen—tilí, pilai
Sternum—sar-i-sina, chátí kí haddí
Stomach—medá, shikam
Suppuration—píp ká nikalná
Tears—ánsú
Teeth, canine—sue
Teeth, incisor—dánt
Teeth, wisdom—aql-dár

Temple—kan pattí
Testicle—khaya, kaurí
Testicles—kúshiá
Thigh—rán
Thorax—chhátí
Throat—halaq
Thumb—angútha
Tip of finger—tondí
Tip of ear—lahar
Tip of tongue—zubán kí nok
Toes—páon kí únglián
Tongue—zúbán
Tonsil—kauri, gilti
Trachea—sáns kí náli
Trunk of body—dhár
Tympanum—kán ká pardá, dhol
Umbilicus—naf, tondi
Urine—pesháb
Uterus—rahm
Uvula—kawwa
Vagina—farj
Vena Cava—sab se bara verid jo dil me jathá hain
Vein—verid
Ventricle—dil ká nichlá khuláo
Vertebra—rirh kí haddí
Virgin—bákira
Vulva—farj ká surákh
Waist—kamar
Wrinkle—jhúrian
Wrist—kalai
Yawn—jamai lena

TECHNICAL TERMS EXPLAINED

Abortifacient—causing abortion ; also a drug so acting.

Abrasion—a spot rubbed bare of skin or mucous membrane.

Acetabulum—cup-shaped cavity that receives the head of the thigh bone.

Acromion—the outer extension of the spine of the shoulder blade, forming the point of the shoulder.

Adipocere—grave wax ; a waxy substance from dead bodies.

Adipose—of a fatty nature ; fatty.

Adult—mature ; between youth and old age.

Aërated blood—the arterial blood.

Aëration—the purification of blood in the lungs.

Afebrile—without fever.

Afterbirth—placenta with the umbilical cord.

Ala nasi—the flap of cartilage on the outer side of either nostril.

Alimentary canal—the digestive tube from the commencement of stomach to the anus.

Alveolus—(1) the bony socket of a tooth, (2) an air vesicle in the lung.

Alvine discharges—the fæces.

Amenorrhœa—suppression of the monthly flow or menses.

Analgesia—insensibility to pain.

Anal—pertaining to the anus.

Ankylosis—union of bones forming a joint, resulting in a stiff joint.

Annular—ring shaped.

Anorexia—an absence or a loss of appetite.

Ante-natal—previous to birth.

Antepartum—before childbirth.

Antidote—an agent counteracting the action of a poison.

Aphrodisiac—stimulating the sexual passion.

Apoplexy—sudden paralysis etc. caused by bleeding from an artery of the brain or its membranes.

Aorta—the great artery springing from the heart.

Arachnoid cavity—the space between the arachnoid membrane and the dura mater.

Arachnoid membrane—the delicate middle membrane of the brain coverings.

Areola—the pink, brownish or black coloured halo surrounding the nipple of the female breast.

Arterial—pertaining to an artery.

Arteriole—any minute arterial branch.

Artery—a vessel that conveys blood from the heart.

Articular—pertaining to a joint.

Articulation—a joint.

Asphyxia—the effect upon the body produced by preventing due oxygination of the blood.

Asphyxial—marked by asphyxia.

Atlas—the uppermost bone of the spinal column.

Atrophy—a wasting of a part from lack of nutrition.

Aura—a peculiar sensation preceding an epileptic fit.

Auricle—(1) the external ear, (2) one of the upper cavities of the heart.

Automatism—a condition in which actions are performed without consciousness or intention.

Autopsy—a post mortem examination.

Axilla—the arm-pit.

Axillary—pertaining to the arm-pit.

Axis—the second bone of the spinal column next to the atlas.

Basilar—pertaining to the base of the skull.

Bicuspid—having two points or fangs, as teeth.

Brachial—pertaining to the arm.

Bronchi—the two main branches of the windpipe leading to the lungs.

Bulla—(plevral—bullæ) blister, vesicle.

Cadaver—the dead body, a corpse.

Cadaveric—pertaining to a corpse.

Cadaveric rigidity—stiffening in the dead body.

Callus—the bone material by which union between ends of a fractured bone is effected.

Canine teeth—the pointed eye teeth.

Canthus—the angle formed at the ends of the eyelids.

Capillaries—minute blood vessels.

Caput succedaneum—a swelling of the scalp over the presenting part of the head of the fœtus at birth.

Cardiac—pertaining to the heart.

Carotid—the principal artery of the neck.

Carpal—pertaining to the wrist.

Carpal bones—the eight small bones forming the wrist.

Cartilage—gristle ; softer than bone.

Cæcum—the blind pouch at the head of the large intestine,

Carunculæ myrtiformes—the relics of the ruptured hymen.

Cellular—composed of cells.

Cerebellum—the inferior or lesser brain.
Cerebrum—the chief portion of the brain.
Cervical—pertaining to the neck.
Cervix uteri—the narrow lower end of the womb.
Chaneroid—a non-infecting venereal ulcer.
Cicatrix—a scar ; mark left by a sore or wound.
Cicatrisation—the healing process which leaves a scar.
Clavicle—the collar bone.
Clitoris—the female organ corresponding with the penis of the male.
Coccyx—the tail bone.
Coitus—sexual connection or intercourse.
Colon—the part of large intestine from cæcum to rectum.
Coma—a deep state of unconsciousness.
Concha—the outer ear.
Congential—existing at birth, as disease or deformity.
Conjunctiva—the mucous membrane of the eye.
Connective tissue—the tissue which binds together, and is the basis of the various parts and organs of the body.
Contusion—a bruise. A lesion from a blow with a blunt body without apparent wound.
Cornea—the transparent anterior part of the eye.
Corrosive—a substance that eats away or destroys.
Cortex—the external layer of the brain.
Costal—pertaining to the ribs.
Cranium—the skull.
Cuticle—the outer layer of the skin.
Cyanosis—bluish discolouration of the skin due to deficient oxygenation of the blood.
Defæcation—the discharge of fæces.

Deflowered—deprived of virginity.

Defloration—the act of depriving of virginity.

Delirium—disordered mental state with excitement and illusions.

Delivery—child-birth.

Delusion—an insanely erroneous belief or fancy.

Diaphragm—the muscular wall between the thorax and abdomen.

Diaphysis—the shaft of a long cylindrical bone.

Dorsal—pertaining to the back.

Duodenum—the first part of the small intestine.

Dura mater—the outer membrane of the brain and spinal cord.

Dyspepsia—indigestion.

Dyspnœa—difficult breathing.

Ecchymosis—an extravasation of blood into the tissues.

Effusion—extravasation of fluid into body tissues or cavities.

Emasculation—removal of testicles ; castration.

Embolism—obstruction of a blood-vessel by a blood clot or other body.

Emphysema—a distension of the tissues with air or other gases.

Endocardium—the lining membrane of the heart.

Epiglottis—the small flap that covers the opening of the wind pipe.

Epiphysis—a process of bone attached to another by cartilage.

Excoriation—an abrasion of the outer layer of the skin.

Excreta—the natural discharges of the body.

Expectation of life—the average number of years that persons of a given age live.

Expiration—the act of expelling air inhaled during respiration.

Extra-dural—outside the dura mater.

Extra-genital—beyond the genitals.

Extravasation—an effusion of fluid into the tissues.

Exudation—a morbid oozing out of fluids.

Fauces—the throat from the mouth to the pharynx.

Fibula—the outer bone of the leg.

Foramen—a passage or an opening.

Finger—first or index finger; second or middle finger; third or ring finger; fourth or little finger.

Fossa—a depression or furrow.

Fourchette—a transverse fold of mucous membrane connecting the posterior ends of the inner lips of the vulva.

Fracture—compound—fracture with a communicating wound of the skin.

commiunted—fracture with shattering of the bone

greenstick—one side of the bone is broken the other bent.

Gait—a mode of walking.

Gangrene—death of soft tissue in the living body.

Gastric—pertaining to the stomach.

Genitalia—the organs of generation.

Glans—the bulbous extremity of the penis in the male and the clitoris in the female.

Gluteal—pertaining to the buttocks.

Gravid—pregnant, being with child.

Helix—the margin of the external ear.

Humerus—the bone of the upper arm.

Hymen—a fold of mucous membrane at the vaginal entrance.

Idiosyncrasy—individual peculiarity.
Ileum—the lower half of the small intestine.
Iliac—pertaining to the ileum or flanks.
Ilium—the upper part of the pelvic bone.
Inanition—exhaustion from starvation.
Incisor teeth—the four front teeth in each jaw.
Inguinal—pertaining to the groin.
Injected—congested; with full vessels.
In situ—in a natural position.
Intercostal—between the ribs.
Intromission—the introduction of one body into another.
Irises—the plural of iris.
Iris—the coloured membrane of the anterior part of the eye.
Jejunum—the upper two-fifths of the small intestine.
Jugular—pertaining to the neck.
Labia—the lips.
Labia majora—the external lips of the female genitals.
Labia minora—the inner lips of the female genitals.
Labour—child birth; bringing forth young.
Lacrymal—pertaining to tears.
Lactation—the time of sucking.
Lanugo—the downy hair on the fœtus.
Laryngeal—pertaining to the larynx.
Larynx—the upper part of the windpipe; the organ of voice.
Lesion—structural tissue-change from injury or disease.
Ligament—a band of fibrous tissue binding parts together.
Linear—of or pertaining to a line.
Lingual—pertaining to a line.
Lochia—a vaginal discharge after labour.

Lumber—pertaining to the loins.

Loins—the lower part of the back.

Lumen—the cavity of a tubular structure, such as a blood vessel.

Lymph—a colourless alkaline fluid in the lymphatics.

Lymphatics—the lymph tubes of the body.

Malar—pertaining to the cheek bones.

Malar bones—the cheek bones.

Mamma—the breast.

Mammary—pertaining to the breasts.

Manubrium—the first or upper piece of the breast bone.

Maxillary—pertaining to the jaws.

Meatus—a passage ; an opening.

Meconium—first fæcal discharge of the new born.

Medulla—the spinal cord.

Membrane—a thin enveloping or lining substance.

Meninges—the membranes of the brain and spinal cord.

Menopause—the end of the menstrual life.

Menses—the monthly flow from the womb.

Menstrual—pertaining to the menses.

Mesentery—the fold of tissue which attaches the intestines to the posterior abdominal wall.

Metacarpus—the bones of the palm of the hand.

Metatarsus—the bones of the arch of the foot.

Mons Veneris—the rounded prominence in front of the pubes of a woman.

Moribund—dying ; in a dying state.

Mucosa—a mucous membrane.

Mucus—the viscid liquid secretion of mucous membranes.

Naris—the nostril.

Nates—the buttocks.

Nævus—a birth mark.

Nulliparous—never having given birth to a child.

Occiput—the back part of the head.

Olfactory—pertaining to the sense of smell.

Os Uteri—the mouth of the womb.

Ossify—to change into bone.

Palate—the roof of the mouth and floor of the nose.

Pancreas—the sweet bread.

Parous—bringing forth; bearing.

Parturition—the act of giving birth to young.

Patella—the knee-cap.

Patulous—expanded; open.

Pectoral—pertaining to the chest or breast.

Penile—pertaining to the penis.

Penis—the male organ of copulation.

Pericardium—the membranous sac around the heart.

Perineum—the space between the thighs from anus to genitals.

Periosteum—the membraneous covering of bones.

Peritoneum—the membrane lining the abdomen.

Petechia—a small spot of ecchymosis beneath the skin.

Pharynx—the space behind the mouth.

Pia Mater—the innermost membrane covering the brain and spinal cord.

Pit of stomach—part of abdomen just below the chest bone.

Placenta—the after-birth.

Process—a prolongation or prominence of a part.

Prone—face downwards.

Psychic—pertaining to the mind.

Psychosis—any disease of the mind.

Pudendum—the female external genitals.
Puerperal—following child-birth.
Pulmonary—pertaining to the lungs.
Purulent—having the character of pus.
Pus—the fluid product of suppuration.
Pyloris—the opening of the stomach into the intestine.
Pyrexia—fever.
Radius—the bone of the forearm on the thumb side.
Retina—the internal membrane of the eye.
Rigor Mortis—rigidity after death.
Risus Sardonicus—a peculiar grin in tetanus and strychnine poisoning.
Rugose—wrinkled.
Sacrum—the large triangular bone above the tail bone.
Sagittal Suture—the suture between the parietal bones.
Scapula—the shoulder blade.
Scrotum—the pouch containing the testicles.
Serous—having the nature of serum.
Serum—the fluid portion of the blood separated by coagulation.
Skiagram—the finished printed X-ray picture.
Smegma—the secretion under the foreskin.
Sordes—decomposed accumulation about the teeth in sickness.
Sputum—expectorated matter.
Sternum—the breast bone.
Sterterous—breathing with a snoring sound.
Stupor—the condition of insensibility.
Superfætation—conception by a pregnant woman.
Supine—lying flat or on the back.
Suture—the junction of the bones of the skull.

Suspended Animation—temporary cessation of vital functions.

Syncope—fainting.

System—the animal economy.

Tendon—a white fibrous tissue; the attachment of muscles.

Thenar—the palm of the hand or sole of the foot.

Thenar Eminence—the eminence of the palm at the base of the thumb.

Thoracic—pertaining to the chest.

Thorax—the chest.

Toxæmia—a poisoned state of the blood.

Trachea—the windpipe.

Trauma—a wound; an injury.

Traumatic—pertaining to a wound or injury.

Trunk—the body except the head and limbs.

Tuberosity—a bony protuberance.

Turgid—swollen.

Ulna—the bone of the forearm on the little finger side.

Unwell—a popular term for the occurrence of the menses.

Umbilicus—the navel.

Ureters—the tubes carrying urine from kidneys to bladder.

Urethra—the passage through which urine is discharged from the bladder.

Urinary—pertaining to the urine.

Uterine—pertaining to the womb.

Uterus—the womb.

Uvula—the little tongue hanging from the palate.

Vaginal—pertaining to the vagina.

Varicose—swollen; knotted.

Vascular—pertaining to blood vessels.

Venæ Cavæ—the large veins emptying into the right side of the heart.
Venous—pertaining to the veins.
Ventricle—a small belly-like cavity.
Vertebra—a bone of the spinal column.
Vertex—the crown or top of the head.
Vertigo—giddiness ; dizziness.
Vesical—pertaining to the bladder.
Vesicle—a small blister or sac.
Vessel—a tube conveying fluids of the body.
Viable—capable of living.
Virile—manly ; strong.
Viscera—the contents of the body cavities.
Vulva—the external female genitals.
Zygoma—the arch formed by the union of the temporal bone with the cheek bone.

POST MORTEM NAKED EYE APPEARANCES OF DISEASED ORGANS.

Tuberculosis.

For tuberculosis, carefully examine the lungs, larynx, and intestines, the peritoneum, pleurae, pericardium, and the genito-urinary tract, the adrenals, lymph glands and joints.

Lungs.—The appearances in the **lungs** will vary in relation to the duration of the disease. The oldest mischief is almost always at the apex, more often, perhaps, of the left lung ; may be at the root of the lung in children.

A common occurrence is to find caseous masses of

very variable extent at the apex, more or less riddled by cavities: lower down caseous material not yet broken down; and, still lower, grey miliary tubercle. The tubercular products vary according to the chronicity of the disease. In rapid cases, tubercle quickly undergoes fatty degeneration, caseates, and breaks down: in the other case the tubercle undergoes a fibroid change. Cavities of variable size, from the smallest possible up to the size of a whole lobe, are found, and when recent, have soft, irregular ragged walls composed of yellow caseous material. Some of the cavities formed are due to dilated tubes.

Intestine.—It affects both small and large intestine, one or both, most commonly the cæcum. **Typhoid** affects usually the **small intestine, dysentery** the **large intestine.**

Commences as deposit of grey tubercle in the solitary glands and Peyer's patches. Typical tubercular ulcers of intestine are generally :—

1. Irregular, circular, and running round the transverse axis of the bowel.

2. Edges are thickened and nodular and **not undermined.**

3. In the base of ulcer, on peritoneal surface, may be seen small miliary tubercles.

These ulcers **rarely perforate**, and do not often bleed.

Peritoneum, Pleura, Pericardium.—Tubercle here is of the miliary variety. These membranes are found studded with more or less numerous grey tubercles, which, however, also become yellow and caseous. This

form of tuberculosis is accompanied by much fluid effusion, so that serous cavities become distended with clear yellow serum, often with flakes of lymph floating in it.

Larynx.—After the intestine, the larynx is probably most often affected. It generally occurs at the end of a case of pulmonary phthisis.

There is a deposit of grey granulations in the mucus membrane, with much swelling and injection of the air passages. In a second form an ulcer starts at the back of the arytænoid cartilage, and may spread laterally and in depth, and lead to necrosis of the cartilages.

Genito-Urinary.—Seen in the early stage there is a deposit of round caseous nodules, of variable size at apices of Malpighian pyramids, or at their bases, between pyramids and cortex. These nodules by aggregation increase in bulk, soften in the centre and form vomicæ. Coincidently the pelvis of kidney undergoes tuberculosis; the tubercular disease leads to obliteration of the lumen of the ureters, with dilitation of pelvis and calices, and flattening out of the Malpighian pyramids; the final result is a large, often very large, organ, with dilated pelvis and calices, and riddled in all directions by cavities containing caseous debris.

Spleen.—Tubercle of spleen is part of a general tuberculosis. It is found studded with round, yellow nodules, about the size of a millet or hemp seed, and said to be washed away by a stream of water, whereas Malpighian granules are not (it is doubtful if this be true).

Liver.—Tuberculosis of the liver is likewise a part of a general tuberculosis. It may be studded with numberless grey granulations; in a later stage yellow tubercles are met with, the nodules varying in size from a hemp seed to a hazel nut, or larger.

Brain, spinal cord.—As primary disease limited to **young children**, but may occur in adults as secondary effect of phthisis. The most common seat is the **cerebellum,** after this the **pons,** medulla, crura cerebri, optic thalamus, corpus striatum, and the central hemispheres and the cord.

The growth is often **solitary,** but there may be several. It varies greatly in size, from the smallest possible to the size of a billiard ball, or larger. Is a more or less rounded mass of firm consistency, and yellow and caseous throughout; there is **very rarely** softening in the centre.

Supra-renals.—The earliest appearance is a greyish deposit in the medulla of the supra-renal capsule. Then the deposit invades the cortex, and the organ becomes enlarged to two or three times its bulk, or even more. The deposit then undergoes fatty degeneration and cascation. At first yellow caseous nodules of the size of a pea are seen, but ultimately the capsule is converted into a yellow caseous mass.

Upon this a stage of atrophy supervenes, and the capsule becomes small and contracted, and even converted into a little fibrous body without any trace of the original structure.

Lobar Pneumonia.

May be seen in one of three stages.

First stage—Engorgement—Lung is more bulky than normal, pits on pressure, is of a deep red colour, and on section abundant blood stained frothy fluid escapes ; and it is more readily broken down than is usually the case.

Second stage—Red Hepatisation.—Lung is bulky and much heavier than normal ; invariably there is some amount of pleurisy, varying in degree from a mere loss of polish of pleural surface to a thick layer of plastic lymph. On section the colour is red, mottled with pigment of very great intensity. (**Note.**—This colour is not a post mortem change). The surface is not smooth, but minutely granular. The lung tissue breaks down with very little pressure. Portions of lung sink in water. The swollen bronchial tubes are full of muco-pus.

Third stage—Grey Hepatisation—The lung is bulky, heavy, yellowish grey in colour, mottled with pigment. Pleurisy still present. On section, the colour is yellowish grey mottled with pigment ; the surface is granular, the lung breaks down on pressure more readily, and the tubes copiously exude muco-pus.

Lobular or Broncho-Pneumonia.

Broncho-Pneumonia occurs in the extremes of life, in children and in old people.

Appearances as seen in the child's lung are :—

(a) The lobules, or groups of them, are distended with inflammatory products, so that on the surface they project and render the surface uneven.

(b) The bronchioles and bronchial tubes are full of pus and mucus.

(c) Scattered between the pneumonic lobules are collapsed portions. These are of a slate blue colour, pyramidal in shape, airless so that they sink in water, and are incapable of inflation. These lobules are depressed below the surrounding lobules and make the irregularity of the surface on section more marked.

(d) The lung tissue surrounding the collapsed or pneumonic parts is in a state of hyperdistension. It is not emphysematous, because the alveolar septa are in no case broken down.

Acute Bronchitis.

Naked eye appearances are :—

(a) Injection of mucus membranes.
(b) Tubes filled with muco-pus.
(c) Hyper-distension of alveoli (often). Owing to the accumulated secretion, and perhaps because the large tubes have their walls softened, these tubes are unable to collapse and allow the air to escape. There is no destruction of alveoli, etc., no true emphysema.

Emphysema.

Interstitial emphysema is characterised by the fact that the air is extravasated into the connective tissue of the lungs, so that the lobules are surrounded by bead-like rows of air bubbles.

Sometimes in extreme cases the air passes inwards

to the root and reaches the connective tissue of the mediastinum or even the neck.

This form only occurs in a case in which the connective tissue is abundant, that is in children, and it is most commonly found in whooping cough.

Vesicular Emphysema.

(a) Lungs are excessively bulky, and retain their size when removed from the body ; *i.e.*, they will not collapse.

(b) They pit on pressure and do not crepitate. They are described as feeling like a down pillow. The absence of collapse and the pitting on pressure are due to loss of elastic tissue.

Acute Endocarditis.

(a) A row of small bead-like granulations along the contact edges of the valves, towards the blood stream. This is on the auricular surface of the mitral and the ventricular of the aortic.

(b) These granulations may be single, or have run together into warty masses of variable size. Upon these may be a deposit of fibrin, as a little cup, or in long branching clots.

(c) The valve may be softened, or there may be an ulcer, or an aneurism of the valve, or even perforation.

Chronic Endocarditis.

Naked eye changes in Aortic valves :—

(a) They become more or less deformed on account of cicatricial contraction, so that—

(b) They may be little functionless masses projecting like shelves.

(c) A cusp may be torn away at one side and hang down.

(d) Eversion of the edges of the cusps may take place.

Naked eye changes in a cuspid valve :—

(a) The cusps of the valve become thickened and contracted.

(b) The chordæ tendineæ become thickened, often adherent to one another (so as to form large, thick bundles), and shortened.

(c) The musculi papillares due to fibroid changes at the apex increase the contraction.

(d) The cusps may be adherent at their edges causing contraction of the orifice—stenosis —("button-hole mitral").

Tricuspid disease (excessively rare).

(a) The heart is described as square.

(b) The right ventricle takes part in the formation of the apex, equally with, if not more than, the left.

Backward effects of heart disease.

Lung.—"Brown induration." The organs are firm and dense. On section they are dark brown in colour, more or less airless, and frequently there is coincident bronchitis. The tissue is very dense, scarcely breaking down even under extreme pressure.

Liver.—Nutmeg liver. The liver is enlarged, extremely hard, and on section has the nutmeg pattern. A lobule of the nutmeg liver shows three zones :—Red in centre, white surrounding, yellow at periphery.

Kidney.—Granular kidney (moot point). The organs are extremely hard and elastic, deep red in colour.

Spleen.—Is small, hard, and of a dark purple colour.

Pericarditis.

(a) There is hyperæmia and minute injection of vessels.

(b) There is exudation of plastic lymph containing fibrin factors. This is deposited on the surface of the pericardium, and on account of the movements of the heart becomes deposited in various ways :—

(1) Ridged like the sea-shore.

(2) As if two surfaces, covered by a sticky substance, had been pulled apart.

As a rule the amount of fluid is small.

(c) Adhesions form, if so, the heart may be found as follows :—

(1) A very large heart.

(2) Thick adherent pericardium.

(3) All cavities dilated and hypertrophied.

(4) Valves probably thickened.

Lardaceous Liver.

Weight is often very great, a hundred and eighty ounces being a common weight. Surface is quite smooth. Consistence is doughy and inelastic. Instead of displacing organs in its growth, it moulds itself around them, often receiving the impress of the ribs. It takes and retains the impress of the fingers. On section it is quite dry, or at most a reddish blood-stained fluid escapes from the vessels.

Fatty Liver.

Moderately and uniformly enlarged ; pale buff colour ; anterior border rounded off ; consistence soft and flabby. On section either uniformly pale buff without lobulation, or if the change is partial the outer parts of the lobule will be yellow, the inner normal in colour. It will be distinguished from the nutmeg liver by being very readily lacerable.

Acute Yellow Atrophy of Liver.

Liver soft and withered. Weight sixteen to twenty ounces or even less. Does not retain its shape. The capsule is thrown into wrinkles. On section—Two parts are more or less blended :—(a) A yellow part—acute, and (b) A red part—more chronic. The general colour is bright yellow. Lobulation gone. The gall-bladder and ducts are either empty or full of colourless or slightly bile-stained mucus. Note—contents of the intestine are clay coloured usually, but often black.

Acute Nephritis.

Size and weight greatly increased, sometimes twice the

normal size. Shape normal. Colour blood-red. Capsule strips easily, leaving a smooth surface. Section highly vascular, blood dripping away (blood dripping kidney). Cortex greatly swollen.

Parenchymatous Nephritis.

Large white kidney—Fatty kidney.

Size and weight greatly increased (thirteen to nineteen ounces). Shape normal. Colour more or less uniform, opaque, yellowish white. Sometimes the stellate veins on the surface are full of blood, and constitute a conspicuous feature, (mottled). The capsule strips easily, leaving a smooth surface. On section the cortex is found greatly swollen. The normal pattern is lost, and the cortex is blurred.

Chronic Interstitial Nephritis.

Contracted granular kidney—gouty or cirrhotic kidney.

Size and weight often more or less diminished, sometimes extremely so, may not weigh more than two ounces ; half the normal weight is common. Shape is much altered. Reniform shape more or less lost. Form irregular. Surface granular. Colour is normal. The capsule is thickened, and adherent ; when removed tears away part of kidney substance. On section the cortex is found greatly diminished in thickness, in extreme cases to a mere shell. Pattern of structure lost. Tissue blurred and indistinct. Cysts may be found on the surface or in the substance of the cortex, some the size of a pea or larger. There may also be a thickening of the arteries throughout the

organ, and often atheroma of the main renal artery, the smaller branches of which stand out like quills on section.

Cystic Kidney.

Size and weight often enormously enlarged (three to four pounds common, eight to nine pounds sometimes). Shape is more or less irregular. The general shape is maintained frequently, but is often lost by the irregular projection of cysts from the surface. The capsule is thickened and adherent. Section—The organ is converted into a mass of cysts.

Surgical Kidney.

Better called acute suppurative nephritis. Bright's disease never leads to suppuration. This kidney results from the inflammatory condition of the urinary passages.

The size of the organ is increased. The capsule strips readily. The surface is smooth, but dotted all over with small yellow points corresponding to minute abscesses. On section—Cortex is swollen, and kidney is yellowish white in colour. If many sections are made the yellow dot on the surface is seen to correspond to the linear collection of pus corpuscles passing in a radiating way through the cones and cortex.

Cerebral Hæmorrhage.

Blood may be extravasated within the cavity of the skull in four situations :—

(a) Between the dura mater and bone.
(b) Arachnoid cavity.
(c) Substance of brain.
(d) Ventricles.

(a) Between the dura mater and the bone hæmorrhage is generally the result of injury, and is usually accompanied by fractured skull and rapture of middle meningeal artery.

(b) Into the arachnoid cavity it may result from hæmorrhage into the brain bursting into it. But true cases of arachnoid hæmorrhage occur :—

1. In whooping cough.
2. In infants, the result of difficult labour.
3. In adults, the result of chronic bronchitis.

The blood is supposed to come from ruptured vessels passing between dura and pia mater.

(c) Into the substance of the brain. This may occur in any part, but the most common is the corpus striatum. According to Charcot there is an artery which runs through this body, and which is particularly large and unsupported, and which is the source of hæmorrhage, "the artery of cerebral hæmorrhage."

Meningitis.

Meningitis from injury almost always affects the vertex. Tubercular meningitis, except in very rare cases, affects the base, **and the base only.**

Simple Meningitis—Naked eye appearances are :—

1. Large effusion of greenish yellow pus in the sulci of the vertex, and often of the base, sometimes sufficiently copious to hide the convolutions.

2. Pia mater when stripped drags away the softened cortical grey matter.

3. The effusion of turbid fluid into the lateral ventricles usually is not great in amount.

4. White softening of boundaries of the lateral ventricles, chiefly marked in corpus callosum and fornix.

Tubercular Meningitis.

1. Convolutions flattened as the result of intra-ventricular pressure.

2. Membrane tears away the softened cortex.

3. Presence of tubercles. These are found about the middle cerebral artery ; but they may spread further, and even invade the vertex. These tubercles may be very obvious as grey or yellow grains, about the size of a millet seed downwards.

4. The amount of lymph is not usually great, and is found in :—

(a) The sylvian fissure,

(b) Diamond shaped space at base of brain, and

(c) The extremity of the vermiform process, just where the veins of Galen join the straight sinus.

5. The lateral ventricles are usually distended.

6. White softening of surrounding brain substance, especially fornix and corpus callosum.

EXAMINATION OF MENTAL CASES

When examining mental cases observation proceeds as follows.

Great patience is required ; he must be allowed to

have his say. Wish him "good morning" or "salaam"; offer your hand, and notice whether the handshake is of the maniacal (from the shoulder), melancholiac (from the wrist), or præcox variety (held out stiffly and straight and rudely withdrawn). If he refuses to shake hands endeavour to find the reason.

Ask his name, age, and occupation. With the object of making a preliminary test of his memory and of ascertaining the length of his illness, ask him when he was last engaged at his usual occupation.

"How are you"? (If in jail) "why have you been brought here"? (In private) "Why have I been called to see you"? The answers to these questions will reveal whether he has any insight into the nature of his illness, and whether he has any delusions.

Test his orientation in space :—

"Where do you live?" "Do you know what place this is?" Where is it situated?" "How far is it from your home?" "By which way did you come here?"

Orientation in time :—

"How long have you been here?" "What is the day of the week?" "Of the month?" "What month is it?" "What year?" "What century?" "What time do you think it is?"

Associative memory :—

"Who brought you here?" "When did you arrive?" "What were you doing a week ago?" "A month ago?"

Now ask him to give you an account of his illness.

Recognition :—

"Have you ever been here before ?" "Do you know who I am ?" "Do you know any of these people present ?"

Perception :—

"What sort of a place do you think this is ?" "Is it a mosque ? bazaar ? hospital ? dharamsala ? jail ?"

Now ask him to name certain objects that you will show him, such as a bunch of keys, a pencil, penknife, button and so on.

Auditory Perception :—

Ask him to recognise some familiar sound made behind his back, such as clapping the hands, a rattle of keys etc. Auditory word-perception is tested by giving some simple command in a monotone and without gesture, e.g. "Put your left hand on your right shoulder." Taste and smell perceptions may be examined with test solutions such as for the former, dilute solutions of salt, sugar, quinine, and for the latter, oil of cloves, oil of peppermint, tinct. of asafœtida. Cutaneous anæsthesia may now be examined.

Hallucinations :—

"Are you ever troubled by lights or visions of any kind, such as faces appearing before the eyes, especially at night when your room is dark ?" "Do they occur during sleep or when you are awake ?"

"Do you suffer from noises in the ears ?" "Do you ever hear sounds which seem like people talking, especi-

ally during the silence of the night when there is nobody present ?" "Do you recognise the voices ?" "What do they say ?"

"Do you experience unpleasant or otherwise strange and unaccountable sensations of taste ?" "Or of smell ?" "Have you any pain or discomfort anywhere ?"

Delusions :—

"How do you account for these visions, voices, odours and other sensations ?" Do you realise that they are the outcome of your present nervous condition ?" "Do you think there is anybody who wishes to do you any harm, who exercises any occult influence over you or reads your thoughts ?" "Do you suffer from a feeling that something dreadful is going to happen ?" Are you particularly worried over religious matters "? "Do you sometimes feel that you have led a wicked life ?" "And that your soul is lost ?" "Are your financial affairs sound ?"

Take particular notice of the general attitude and behaviour, ascertain whether the prevailing emotional tone is one of depression or exaltation. Inquire from attendants concerning his habits.

Now proceed to ask him about his physical health as in an ordinary medical case endeavouring to elucidate symptoms of disorders of the circulatory, respiratory, digestive and other systems, and incidentally note, whether he appears to be suffering from hypochondriacal delusions or has distorted views of the nature of his illness.

Then carry out the ordinary systematic physical examination. Note the general aspect and complexion,

the colour of the skin and mucus membranes, the presence or absence of wounds, bruises, scars and skin eruptions.

Observe the facial expression, and note physical stigmata, and other obvious deformities.

Examine the general nutrition, note signs of wasting, and have the weight and temperature taken. Observe whether the extremities are cold, cyanosed or œdematous. Note frequency and other characters of the pulse and respiration. Look at the tongue, and see whether it is tremulous, tooth indented, furred white or brown, dry or moist.

Examine the chest and abdomen and test the urine.

If he suffers from headache, make inquiries as to its position, character and associations. Find out during which part of the night he sleeps and for how many hours.

If he suffers from fits get a description of them. Is there any assignable cause for them? When did they begin? What were the longest and shortest intervals between them and when did those occur? Is there any aura? If so, how long after the aura does the convulsion begin? Is the onset sudden or gradual? Does he scream at the onset or during the fit? Does he bite his own tongue or other people or things? Does micturition or defæcation take place? Is restraint necessary? If so, is it to prevent accident or violence? What is the duration of the fit? Is the termination spontaneous or induced? What symptoms occur afterwards—sleep, headache, or automatism?

In the physical examination of the nervous system,

special attention should be devoted to the eyes. The vision should be tested. Examine the fundus oculi with the ophthalmoscope and note whether there is any swelling of the optic disc. Test the movements of the eyes and note whether there is any nystagmus. Note the size and outline of the pupils, their reaction to light and the consensual and sympathetic reflexes. Do they contract on convergence ?

Is there any defect of hearing as tested by the tick of a watch ? Are the muscles or nerves of the limbs tender to pressure ?

Observe the position of the trunk, head and limbs while at rest. Test whether there is any rigidity of these, and whether there are any abnormal movements, such as tremor. Tremor, otherwise unobserved, may often be noticed in the fingers by getting him to hold out his hands, dorsum upwards, with the wrists extended and the fingers widely separated. Examine for flexibilitas cerea and echopraxia, and note signs of negativism.

Test the superficial reflexes, especially the epigastric, cremasteric and plantar. Examine the tendon reflexes, especially the knee-jerk. Test for rectus clonus and ankle clonus. Note disturbances of organic reflexes—deglutition, appetite, vomiting, defæcation and micturition.

Note vaso-motor and trophic changes and observe whether perspiration is excessive or deficient. Observe the gait.

Is speech excessive or deficient ? Is it coherent ? Is it abusive ? Note verbigeration, echolalia and pseudolalia.

DIAGNOSIS OF ORDINARY DRUNKENNESS.

A Committee was appointed by the Council of the British Medical Association to report on the tests of drunkenness, and the opinion expressed by this Committee is as follows :—

The word "drunk" should always be taken to mean that the person concerned was "so much under the influence of alcohol as to have lost control of his faculties to such an extent as to render him unable to execute safely the occupation on which he was engaged at the material time."

The adoption of this formula is recommended by the Committee of representatives of general practitioners, police surgeons, magistrates, scientists, and the services which were appointed 17 months ago by the Council of the British Medical Association to review the tests at present used for drunkenness.

The Committee emphasise that there is no single symptom which may not also be a sign of some other pathological condition.

The Committee hold that in the absence of any pathological conditions a person is definitely under the influence of alcohol if there is a smell of alcohol in a breath, provided there is a combination of all or most of the following :—

A dried furred tongue, or conversely, excessive salivation ; irregularities in behaviour, such as insolence, abusive language, loquacity, excitement or sullenness, and disorder of dress ; watery and redness of the whites of

the eyes and reaction of the pupils. The pupils may vary from extreme dilitation to extreme contraction, and may be equal or unequal; loss or confusion of memory, particularly as regards recent events and appreciation of time; hesitancy and thickness in speech and impaired articulation; tremors and errors of co-ordination and orientation.

The following are tests upon which taken by themselves, it is advised that little stress should be laid :—

Rapid pulse; repetition of set words or phrases; character of handwriting; walking along a straight line; failure of convergence of the eyes.

In ordinary circumstances, the Committee recommend, any person accused of drunkenness should be able to rely upon being seen by a doctor, if he so desires, within half an hour of the time at which he is charged.

At an Edinburgh conclave of the British Medical Association Dr. Emil Bogen, on the subject of tests, stated that a novel method employed at the Cincinnati General Hospital U. S. A. was :—The patient had to blow up a football, and the air, while still warm was then bubbled at a moderate rate through a hot solution of potassium dichromate. The colour—change from reddish yellow to greenish blue, was then measured. The concentration of alcohol in the breath was the simplest test.

In refusing to convict a motorist of drunkenness, Mr. Bingley, the magistrate at Marylebone, relied on a ruling by the Lord Chief Justice of England. Mr. Bingley

decided in defendant's favour, because the acting police surgeon only certified that :—

The man was sufficiently under the influence of drink to make it unsafe for him to be in charge of a motor car. The magistrate pointed out that many a man might have a glass too much and not be quite in control of himself but the Lord Chief Justice quite rightly stated magistrates must follow the Act of Parliament and find whether the accused person was drunk or not. Drunk, maintained the Lord Chief Justice, meant drunk. Dr. Monkhouse, the acting police surgeon referred to, stated that he did not say that the motorist was drunk, as he did not wish to make it worse than necessary. "Drunk" he added, might mean that the man was comatose and lying on the floor."

From the medical point of view, there is no single test or group of tests from which a positive diagnosis of drunkenness can be made. Each sign considered singly might have been produced by another condition. For this reason an opinion must be formed on the whole clinical picture.

If a person's breath smells of alcohol it conclusively proves that he has taken alcohol. The absence of the smell of alcohol, unless the smell has been obscured by some other powerful smelling substance, the presumption will be against alcohol.

An alleged drunken person may be tested in the following way :—

1. Make him repeat some well known test words.

2. Make him pick up pins, match sticks or any small object.

3. Make him try and stand steady with the eyes shut.

4. Make him walk along a chalked line.

What appears to be intoxication may arise from many different causes, for example, epilepsy, fracture of the skull, bleeding within the skull, the poison of diabetes and uræmia, and even intense cold. As a rule the phenomena of drunkenness are actually due to excessive alcohol.

In the case of alcoholic intoxication the senses gradually become hazy, speech difficult, a slight haze obscures the vision, equilibrium becomes unstable. Soon the co-ordination of the eyes fail when objects appear double, judgment decreases till it ceases, the victim becomes loquacious, perhaps quarrelsome or violent till eventually he falls to the ground insensible. He is then said to be dead drunk, the condition being alcoholic coma.

CRIMINAL LIABILITIES

Nothing is an offence which is done by a person who, at the time of doing it, is, by reason of intoxication, incapable of knowing the nature of the act, or that he is doing what is either wrong, or contrary to law: provided that the thing which intoxicated him was administered to him without his knowledge or against his will. *(Section 85 I. P. C.).* In cases where an act done is not

an offence unless done with a particular knowledge or intent, a person who does the act in a state of intoxication shall be liable to be dealt with as if he had the same knowledge as he would have had if he had not been intoxicated, unless the thing which intoxicated him was administered to him without his knowledge or against his will. *(Sec. 86 I. P. C.).*

Thus voluntary intoxication is not a valid plea for an offence[1], but it may be taken into consideration when the question of sentence is being considered, especially where the quarrel was started by the deceased himself.[2] Unless drunkenness either amounts to unsoundness of mind so as to enable insanity to be pleaded by way of defence, or the degree of drunkenness is such as to establish incapacity in the accused to form the intent necessary to constitute the crime, drunkenness is neither a defence nor a palliation.[3] Under Sec. 84 I. P. C., unsoundness of mind producing incapacity to know the nature of the act committed or that it is wrong or contrary to law is a defence to a criminal charge, but by Sec. 84 I. P. C., such incapacity is no defence, if produced by voluntary drunkenness. If, however, voluntary

[1] *Queen* v. *Bodhee Khan*, 5 W. R. 79 (Cr.).

[2] *Nga Chit So* v. *The King*, 39 Cr. L. J. 117=172 I. C. 197=A. I. R. 1937 Rang. 467. *See also King Emp.* v. *Tincouri Dhopi*, 27 C. W. N. 290=39 C. L. J. 34; *Jugdai Mallah* v. *Emp.*, 31 Cr. L. J. 243 (247)=121 I. C. 452=8 Pat. 911=A. I. R. 1930 Pat. 168=1930 Cr. C. 264. *But see Nga Ohn Pe* v. *Emp.*, A. I. R. 1936 Rang. 477=1936 Cr. C. 967=165 I. C. 762.

[3] *Waryam Singh* v. *Emp.*, 27 Cr. L. J. 764=95 I. C. 284=7 Lah. 141=A. I. R. 1926 Lah. 428=27 P. L. R. 332.

drunkenness causes a disease which produces such incapacity, then Sec. 84 I. P. C., applies, though the disease may be of a temporary nature.[4] In cases of voluntary drunkenness an intoxicated person shall be dealt with as if he had the same knowledge as he would have had if he had been sober ; but evidence of drunkenness which renders the accused incapable of forming the specific intention necessary to constitute the crime with which he is charged ought to be taken into consideration in order to determine whether he had that intention, and in such cases the question of intention must be determined in each individual case according to the actual facts proved in accordance with accepted principles, but, further, evidence of drunkenness falling short of a proved incapacity in the accused to form the intention necessary to constitute the crime does not rebut the presumption that a man intends the natural consequences of his acts.[5] A person doing an act in a state of intoxication voluntarily incurred, must be taken that he had the same knowledge as he would have had if he had not been intoxicated. There is, however, no such presumption with regard to intention.[6] The leading case on the subject is

[4] *Emp.* v. *Bheleka Aham*, 29 Cal. 493 (495).

[5] *Nga Sein Gale* v. *Emp.*, A. I R. 1934 Rang. 361 (363)=1934 Cr. C. 1326=12 Rang. 445=152 I. C. 1054=36 Cr. L. J. 228, following *Baw* v. *Emp.*, 6 L. B. R. 100=17 I. C. 800=13 Cr. L. J. 864=5 Bur. L. T. 175 ; *Re Mandra Gadaba*, A. I. R. 1916 Mad. 489=30 I. C. 451=16 Cr. L. J. 627=38 Mad. 479 ; *Judagi Mallah* v. *Emp.*, 31 Cr. L. J. 243 (245)=121 I. C. 452=8 Pat. 911=A. I. R. 1930 Pat. 168=1930 Cr. C. 264.

[6] *Manindra Lal* v. *Emp.*, 41 C. W. N. 1187. *See also Re Mandra Gadaba, supra.* and *Abdul Karim* v. *Queen Empress*, (1872-92) L. B. R. 650.

the Full Bench ruling in *Tun Baw v. Emp.*,[6a] where it was held that it was left open to the Court to deal with the question of intention on the general principles of law; that intoxication should be taken into consideration in cases where intention on the part of the accused was necessary to constitute the offence charged and that the intention which would be ascribed to a sober man in connection with that act must not necessarily be ascribed to an intoxicated man who does the same act. It was remarked that there was no reason to suppose that the framers of the Code proposed to introduce a different rule from that of the English Law, and that it was clear that the English Law in a case like this would be that if the accused was so drunk as to be unable to form the intent to kill the offence would be one of manslaughter only: Vide the cases quoted *Rex v. Meade*, (1909) 1 K. B. 895 = 78 L. J. K. B. 476 = 73 J. P. 239 = 53 S. J. 388 = 25 T. L. R. 359 and *Reg. v. Doherty*, (1887) Cox. C. C. 306.[6b]

On the question as to the extent to which drunkenness can be pleaded in mitigation of the offence, three propositions which were laid down by Lord Birkenhead, L.C.[7], have been adopted in the Courts in India. These propositions are: (1) that insanity, whether produced by drunkenness or otherwise, is a defence to the crime

[6a] *Tun Baw* v. *Emp.*, 6 L. B. R. 100 = 17 I. C. 800 = 13 Cr. L. J. 864 = 5 Bur. L. T. 175 (F. B.)

[6b] *Nga HPbik* v. *The King*, 39 Cr. L. J. 689 = 176 I. C. 103 = A. I. R. 1938 Rang. 219.

[7] *Director of Public Prosecutions* v. *Beard*, (1920) A. C. 479 = 89 L. J. K. B. 437 = 122 L. T. 625 = 14 Cr. App. Rep. 169 = 81 J. P. 129 = 36 T. L. R. 379.

charged, (2) that evidence of drunkenness which renders the accused incapable of forming the specific intent essential to constitute the crime should be taken into consideration with the other facts proved in order to determine whether or not he had this intent, and (3) that evidence of drunkenness falling short of a proved incapacity in the accused to form the intent necessary to constitute the crime and merely establishing that his mind was affected by drink so that he more readily gave way to some violent passion, does not rebut the presumption that a man intends the natural consequences of his acts.[8]

SHOCK

The phenomena of shock are caused by exhaustion of the vaso-motor centres (causing constriction or dilitation of blood vessels) in the medulla (organ of the brain, next to the spinal cord) and spinal cord, as a result of which these centres no longer control the pressure of the blood in the arterial system of the body, and the pressure in different parts of the arterial system becomes dependent upon the force of gravity and the pumping action of the heart. As a matter of fact, the blood pressure in the

[8] *Ramsingh* v. *Emp.*, 39 Cr. L. J. 72=A. I. R. 1937 Nag. 386, following *Sheru* v. *Emp.*, 7 Lah. 50=94 I. C. 406=A. I. R. 1926 Lah. 232=27 Cr. L. J. 630=27 P. L. R. 294 ; *Judagi Mallah* v. *Emp.*, 8 Pat. 911=121 I. C. 472 Ind. Rul. 1930 Pat. 148=31 Cr. L. J. 243=A. I. R. 1930 Pat. 168 and *Naga Sein Gale* v. *Emp.*, supra, *See also Bishnu* v. *Emp.*, 33 Cr. L. J. 378=137 I. C. 86, 33 P. L. R, 130=A. I. R. 1932 Lah. 244=Ind. Rul. 1932 Lah. 283=1992 Cr. C. 256.

arteries which, in a normal individual is equal to about one hundred and thirty millimetres of mercury, falls in an extreme case of shock to about forty or fifty millimetres of mercury or even lower. Such a condition of the blood pressure is incompatible with life for more than a very short period, as the circulation in the brain cannot be adequately maintained with so low a pressure.

The direct cause of this great fall in blood pressure is dilitation of the arterial system (owing to the lack of control by the vaso-motor centres which normally keep the vessels contracted) and collection of the blood in the large visceral veins in the abdomen.

The following is the course of events in a case of shock. As the result of repeated severe traumatic stimuli reaching the brain from the injured part of the body, the vaso-motor centres controlling the blood pressure become exhausted and the blood pressure tends to fall. At first this is partly compensated for, by increased frequency in the action of the heart, hence the fast pulse found in shock. Soon a time arrives, when in spite of the increased frequency in the heart's action the blood pressure falls below the normal level. Directly this occurs the circulation becomes partially inefficient, and not only will the circulation in the brain be impaired, but the blood itself will not be properly oxygenated, owing to the pressure not being maintained in the lungs. This naturally affects the vaso-motor centres and completes their breakdown, with the result that the blood collects in the dilated vessels throughout the body and especially in the abdominal vessels while the brain becomes anæmic from the inadequate amount of blood which reaches it.

Owing to the failure of the circulation the temperature of the body falls and the breathing becomes feeble owing to secondary exhaustion of the breathing centres. As a secondary cause of the fall in blood pressure the specific gravity of the blood is lowered owing to transudation of fluid from the tissues into the blood stream.

The brain cells controlling the blood pressure become unable to perform their allotted function owing to their stored up energy (or food) being exhausted from their being overworked. They will, however, recover, if they are allowed to rest and if in the mean time the circulation can be maintained at a level compatible with life.

Shock may vary in intensity from a transient state of weakness which reacts readily to stimulation, to the most profound condition of vital depression, which resists all efforts at alleviation and is the cause of death.

SUDDEN DEATH

In many cases of sudden death, the cause cannot be satisfactorily stated, even after a post mortem examination.

Emotion, exercise, and ordinary exertion are frequently the exciting cause of sudden death. The apprehension and fright preceding a surgical operation may be the exciting cause of death and it is not a fair inference to say that many of these cases of sudden death are due to the anæsthetic. In some cases, neither the anæsthetic nor the operation seems a sufficient cause.

The condition, known as status lymphaticus is frequently associated with sudden death from heart failure. It usually occurs in children and is characterised by overgrowth of the lymph glands of the body. The thymus gland in the chest also remains enlarged and the spleen and the bone marrow may be abnormally increased. In such cases, the administration of an anæsthetic, a hypodermic injection, a sudden plunge in cold water and even such minor ailments as bronchitis may result in sudden death.

The following case is of interest :—

Miss Nellie Barratt aged 19 years waa a finely built athletic girl who enjoyed swimming, rowing and cycling. She developed a disfiguring swelling on the chest which affected her so far as her personality was concerned. She complained that people were looking at her and passing remarks, so decided to have it removed by surgical interference. She was placed under chloroform and ether and died when the operation had been completed. Sir Bernard Spilsbury, who made a post mortem examination, stated, in the course of an inquest on the body, that the thymus gland behind the breast bone, which should have disappeared, was present and enlarged. Death was due to syncope from a condition known as status lymphaticus, accelerated by the administration of an anæsthetic. He also added that a person suffering from status lymphaticus would be liable to die from any slight shock. A verdict of death by misadventure was recorded.

Other causes are, diseases of the heart (angina pectoris, valvular disease, degeneration of the heart muscle). Thrombosis and embolism, spasm of the glottis. Exceptionally diseases which commonly are attended by symptoms may cause sudden death without warning. These are ; diabetes, uræmia, latent pneumonia, abscess of the brain, and gall stones.

Sudden death sometimes follows epilepsy, and if no one has seen the fit, the appearances of the victim : blood-shot eyes, cyanosed face, lips stained with blood, may well give rise to suspicion of violence.

In all cases of unexpected and sudden death, a very exhaustive post mortem examination should always be made to ascertain the cause.

An insane who had complained before death of pain and a feeling of suffocation, was suspected of having been ill-treated. Post mortem examination revealed no marks of violence. Over the sacrum there was a bedsore, and in the lungs were septic infarcts from which he had died.

A workman in an altercation with his employer suddenly fell down dead. His employer was arrested and locked up. Post mortem examination revealed, three small pedunculated fibrous tumours on the anterior wall of the fourth ventricle. Thus there had been in this man's brain for some time a menace of sudden death, awaiting only some unusual excitement to bring it about.

A man discharged from hospital, who had been suffering from otitis media, was apparently quite well. On the night of his return home he went to a dance and partook freely of alcohol. The next day while at his work, he fell down unconscious. From this he slowly recovered but died suddenly the following day. At the post mortem examination there was found an abscess the size of a hen's egg in the temperosphenoidal lobe. This abscess must have existed for some time, during which he was apparently in good health.

A woman aged 39 had symptoms of chronic bronchitis

and emphysema, a harsh cough and a somewhat husky voice. She died suddenly. On post mortem examination, a sacculated aneurysm was found, projecting from the posterior wall of the arch of the aorta, passing upwards, backwards and to the right, pressing on and displacing the trachea, and involving the right vagus and recurrent laryngeal nerves.

A female aged 70, in her usual state of health, which was quite good for her age, was stooping to put on her boots when she fell dead. The post mortem examination showed marked engorgement of the lateral sinuses with fatty degeneration and dilitation of the right cardiac ventricle.

A chronic maniac, aged 69, in her usual health was found dead in bed. The post mortem examination showed a rupture of the anterior coronary artery and a pericardium full of blood.

N.B.—In cases of sudden death this lesion should always be looked for, as it may be the sole cause.

As is well known, sudden death frequently occurs in what is known as status lymphaticus, a condition which may not be suspected during life, and which is associated with a general enlargement of the lymphoid tissues of the body. In these cases general anæsthesia and the cold or shower bath have been among the exciting causes of sudden death.

An attendant was accused of having strangled a restless insane in his bed. At the post mortem examination no marks of violence could be made out, but the trachea was

found flattened by a large mediastinal tumour which had caused asphyxiation.

In cases of simple pleural effusion, where the heart is somewhat displaced, sudden death may occur on slight exertion, such as getting out of bed.

Sudden death may be caused by embolism while undergoing an injection of salvarsan etc.

Horror may cause sudden death. During the French Revolution, a young man from the crowd offered to lend the head executioner a hand. The executioner acquiesced, and letting the young man pull the cord of the guillotine, directed him to hold the head up for exhibition to the people. While in the act of doing this he staggered and fell dead.

Fainting attacks, which affect new medical students at operations, and some persons at the sight of blood, are interesting in this connection.

Grief, and especially joy, may cause sudden death. A little girl 7 years of age, attending school, on passing an examination appeared excited and over-joyed at the result. She was found dead on the floor the same day. The medical evidence, after a post mortem examination, was to the effect that the emotional excitement had caused syncope.

A man was attempting to lift a weight when another came up, and jocularly pushed him in the epigastrium, telling him to stand aside and let a better man show what he could do. The man so pushed, dropped down and died on the spot. At the post mortem nothing was found to account for death.

Sudden death may occur from vaginal examination, or from passing an instrument into the nose, ear, urethra or womb.

A boy was struck on the anterior part of the larynx with a stone. He fell dead ; no local or other lesion was found at the post mortem examination.

DYING DECLARATIONS

A dying declaration is relevant under sec. 32 of the Indian Evident Act, the relevant portion of which runs as follows : "Statements, written or verbal, of relevant facts, made by a person who is dead, ...are themselves relevant facts...When the statement is made by a person as to the cause of his death, or as to any of the circumstances of the transaction which resulted in his death, in cases in which the cause of that person's death comes into question. Such statements are relevant whether the person who made them was or was not, at the time when they were made, under expectation of death, and whatever may be the nature of the proceeding in which the cause of his death comes into question."

By signs :—A dying declaration made by signs, given in response to questions put, is admissible in evidence. The questions put to the deceased and the signs made by him, taken together, might properly be regarded as "verbal statement" made by a person as to the cause of her death within the meaning of Sec. 32 of the Indian Evidence Act, and are, therefore, admissible in evidence

under that section.[1] Evidence as to signs made in answer to questions put to the deceased is admissible but statements of witnesses as to what interpretation they put upon the signs are not admissible. But it is difficult to adhere to a clear line of division between the description of signs and the interpretation of signs, and it may be that in some respects witnesses may trespass beyond the line and so usurp what obviously is the function of the jury ; but where the matter complained of was elicited by cross-examination on behalf of the accused, no substantial grievance can be made out in this regard, still less any real or serious miscarriage of justice. It is, of course, true that evidence of signs of an ambiguous or uncertain character ought not to be admitted at all and that in many cases the evidence though admissible might be of little weight. It is no doubt also true that answers to questions of a leading character may be of little weight. At any rate all such matters are matters for the jury, going to the weight and not to the admissibility of the evidence.[2] Where a victim, in a serious condition,

[1] *Buta* v. *Emp.*, 2 P. R. 1886 Cr.; *Queen Emp.* v. *Abdullah*, 7 All. 385=1885 A. W. N. 78=1 Ind. Dec. (N. S.) 692 F. B. ; *Emp.* v. *Sadhu Charan Das*, 77 I. C. 993=A. I. R. 1922 Cal. 409=49 Cal. 600=26 C. W. N. 414=25 Cr. L. J. 529 ; *Ranga* v. *Emp.*, 26 Cr. L. J. 328=84 I. C. 552=A. I. R. 1924 Lah. 581=5 Lah. 305=1 Lah. C. 40 ; *Emp.* v. *Motiram* Raising, 37 Cr. L. J. 1140=165 I. C. 422=A. I. R. 1936 Bom. 372=38 Bom. L. R. 818=1936 Cr. C. 917 ; *Chandrika Ram Kahar* v. *Emp.*, 1 Pat. 401=71 I. C. 353=3 P. L. T. 771= A. I. R. 1922 Pat. 535=1923 Pat. 26=24 Cr. L. J. 129=1 Pat. L. R. 77 Cr.; *Mam Chand* v. *Crown*, 5 Lah. 324=82 I. C. 129=A. I. R. 1924 Lah. 609=1 Lah. C. 127=25 Cr. L. J. 1201.

[2] *Alexander Parera Chandara Sekera* alias *Alisandiri* v. *The King*, 38 Cr. L. J. 281=41 C. W. N. 513=166 I. C. 330=A. I. R. 1937 P. C. 24=45 M. L. W. 78 P. C.

is unable to speak, on being questioned regarding assailants, makes a dying declaration by waving of the hands and movement of the head, it is not the function of the person recording the dying declaration to record merely his interpretation of the signs, but he should record the precise nature of the signs, leaving the interpretation to the tribunal. Where he does not describe the signs more particularly than by stating that they were by waving of the hands and movement of the head and there is a complete absence of any description of the signs stated to have been made by the deceased, the dying declaration so recorded is very unsatisfactory and is indeed inadmissible in law.[3]

Who can make.—Dying declarations are recorded not of persons who are accused of crimes but of persons who are themselves the victims of some one else's crime.[4] The statement of a dying dacoit as to the circumstances of the dacoity resulting in his death giving the names of his associates, is not admissible in evidence against the other dacoits.[5]

Cause of death.—Dying declarations should be made by a person as to the cause of his death, or as to any of the circumstances of the transaction which resulted in his death, in cases in which the cause of that person's

[3] *Darpan Potdarin* v. *Emp.*, A. I. R. 1938 Pat. 153=39 Cr. L. J. 384=173 I. C. 833.

[4] *Hari Krishna* v. *Emp*, 36 Cr. L. J. 1007 (1011)=156 I. C. 819 =1935 O. L. R. 441=1935 C. W. N. 781=A. I. R. 1935 Oudh 477= 1935 Cr. C. 1151.

[5] *Dannu Singh* v. *Emp.*, 26 Cr. L. J. 547 (548)=85 I. C. 613= A. I. R. 1925 All. 227. *See also Nga Te* v. *Emp.*, 7 L. B. R. 33= 6 Bur. L. T. 183=14 Cr. L. J. 510=20 I. C. 990.

death comes into question. Where the cause of death was pneumonia and there was no reason to connect the onset of pneumonia with the injuries inflicted, it cannot properly be held that the statement made by the deceased showing that he had been severely beaten by accused is a statement made as to the cause of his death and is admissible in evidence as a dying declaration.[6]

Language.—There is high authority for the proposition that "when a statement is not the *ipsissima verba* of the person making it, but is composed of a mixture of questions and answers, there are several objections open to its reception in evidence, which it is desirable should not be open in cases in which the person has no opportunity of cross-examination. In the first place the questions may be leading questions, and in the condition of a person making a dying declaration there is always very great danger of leading questions being answered without their force and effect being freely comprehended. In such circumstances the form of the declaration should be such that it would be possible to see what was the question and what was the answer, so as to discover how much was suggested by the Examining Magistrate, and how much was the production of the person making the statement."[7] Where the statement was not given in the

[6] *Wali Mohammad* v. *Emp.*, 31 Cr. L. J. 1025=126 I. C. 511=7 O.W.N. 466=A. I.R. 1930 Oudh 219. See also *Maung Ba Yin* v. *The King*, 39 Cr. L. J. 944 (947)=177 I. C. 710=A. I. R. 1938 Rang. 298.

[7] Per Cave, J., *in R. V. Mitchell*, (1892) 17 Cox, C. C. 503 quoted with approval in *Emp.* v. *Premananda Dutt*, 26 Cr. L. J. 1256 (1261) =88 I. C. 1000=29 C. W. N. 738=A. I. R. 1925 Cal. 876=42 C. L. J. 247=52 Cal. 987. See also *King-Emp.* v. *Mathura Thakur*, 6 C. W. N. 72.

deceased's own words but it was merely a note of the substance of what she told the police, it would not be safe to convict the accused merely on the statement.[8] But whether the statement recorded is read over or not, or whether it is signed, makes no difference. The fact that it has been read over and signed by the deponent only makes its evidentiary value stronger.[9]

Who can record.—It does not matter who records dying declarations. Such statements are relevant even if they were recorded by a Magistrate of the second class,[10] or of the third class,[11] who was not empowered under sec. 164 Cr. P. C., to record statements of witnesses, or by a doctor,[12] or by a police officer.[13] But it is wrong for a Magistrate, who takes the dying deposition, to record the evidence in the committal Court. It means that the accused is in that Court precluded from questioning the Magistrate as to what happened when the dying deposition was taken.[14]

[8] *Emp.* v. *Sikandar*, A. I. R. 1930 All. 532 (533)=1930 Cr. C. 757=125 I. C. 585=31 Cr. L. J. 862=1930 A. L. J. 1405. See also *King-Emp.* v. *Mathura Thakur*, 6 C. W. 72 (75).

[9] *Krishnama* v. *Emp.*, A. I. R. 1931 Mad. 430 (433)=1931 M. W. N. 167=33 M. L. W. 348=1931 Cr. C. 478=54 Mad. 678=60 M. L. J. 404=33 Cr. L. J. 115=135 I. C. 337.

[10] *Rahman* v. *Emp.*, 32 Cr. L. J. 1118 (1119)=134 I. C. 117=Ind. Rul. 1931 Lah. 885=A. I. R. 1932 Lah. 14=33 P. L. R. 8.

[11] *Chandgi* v. *Emp.*, 31 Cr. L. J. 79=120 I. C. 274=A. I. R. 1930 Lah. 60=1930 Cr. C. 28.

[12] *Bullu Singh* v. *Emp.*, A. I. R. 1929 Pat. 249 (253)

[13] Sec. 162, Cl. (2) Cr. P. C. See also *Azimaddy* v. *Emp.*, 28 Cr. L. J. 99 (102)=99 I. C. 227=44 C. L. J. 253=A. I. R. 1927 Cal. 17=54 Cal. 237.

[14] *Nga Chit So* v. *The King*, 39 Cr. L. J. 117 (118)=172 I. C. 197=A. I. R. 1937 Rang. 467.

When an injured person desires to make a dying declaration, the Assistant or Sub-Assistant Surgeon, in the absence of the District Magistrate, Magistrate of the *ilaqua*, in fact any Magistrate, should record the declaration himself. The police should be informed and every facility given to enable them to be present. The declaration should, if possible, be written by the person making it, otherwise it must be taken down in the identical words uttered by the dying man in his own vernacular and read over to him, and then, if possible, signed by him, and attested by the writer, and by two other respectable witnesses. On no account must any leading questions or suggestions be made to the declarant, or anything added. After carrying out the above, forward it in a sealed envelope direct to the Magistrate of the *ilaqua*, who usually tries the case.

The recording of a dying declaration, which may subsequently be produced in a Court of Justice, is a grave and solemn proceeding. Unauthorized persons should not be permitted to crowd round when the declaration is being made. It is the bounden duty of the Magistrate to take every possible step to ensure that no influence is brought to bear on the declarant and that he is not prompted or aided in any way in making his statement. The proceeding should be so conducted that the declarant is as free from personal influence in emitting his declaration as he would be if he were giving evidence in a Court of law.[15]

Proof of death.—Unless the death of the person

[15] *Nem Singh* v. *Emp.*, 36 Cr. L. J. 152 (157)=152 I. C. 741=A. I. R. 1934 All. 908 (913)=4 A. W. R. 5=1934 Cr. C. 1167=1934 A. L. R. 1033=57 All. 267.

making the declaration is proved, sec. 32 of the Indian Evidence Act does not admit such declaration in evidence.[16] But the fact that the declarant has lingered for some days after making the declaration does not render a dying declaration inadmissible in evidence.[17] Where a person making a dying declaration survives, his statement cannot be admitted in evidence as a dying declaration, though it may be relied on under sec. 157 of the Indian Evidence Act to corroborate his testimony when examined in the case.[18]

Expectation of death.—Under the English Law a dying declaration is admitted only if the injured man was aware that he was dying from the result of the injury received by him. The Indian Evidence Act, however, does not use the expression "dying declaration" at all. It is clear that the Indian Legislature deliberately departed from the corresponding English Law on the subject. The wide words used in sec. 32, cl. (1) of the Indian Evidence Act show that it was intended to cover statements other than dying declarations strictly so-called. A statement made by a person who is dead, as to the cause of his death is admissible in evidence even though he was not aware that he was dying when he made it. It is of course, for the Court to consider in each case what value is to

[16] See *Sew Prasad* v. *Radha Mohan Sahay*, 37 I. C. 877 (Pat.); *Hari Krishna* v. *Emp.*, 36 Cr. L. J. 1007 (1001)=156 I. C. 819=1935 O. L. R. 441=1935 O. W. N. 781=A. I. R. 1935 Oudh 477=1935 Cr. C. 115.

[17] *Thakura Singh* v. *Emp.*, 30 Cr. L. J. 65 (66)=113 I. C. 177 =10 Lah. L. J. 463=Ind. Rul. 1929 Lah. 138=A. I. R. 1929 Lah. 64,

[18] *R.* v. *Rama Suttu*, 4 Bom. L. R. 434.

be attached to such a statement.[19] The weight to be attached to it depends not upon the expectation of death which is a guarantee of its truth, but upon circumstances and surroundings under which it was made and very much also upon the nature of the record that has been made of it.[20]

Against whom admissible.—Statements by a deceased person as to the cause of his death are admissible, not only against the person who actually caused the death of the deponent, but also against other persons concerned in the transaction which resulted in the deponent's death, in cases in which the cause of that person's death comes into question.[21]

Admissibility.—A statement of a witness as to what he heard from the deceased when it does not relate to the cause of his death or the circumstances of the transaction which resulted in his death is hearsay and is not admissible.[22] Where the deceased stated several months before the murder about her intention to cancel her will which

[19] *Inayat Khan* v. *Emp.*, 36 Cr. L. J. 1335=158 I. C. 336=A. I. R. 1935 Lah. 94=1935 Cr. C. 92=16 Lah. 589=37 P. L. R. 705.

[20] *Emp.* v. *Premananda Dutt*, 26 Cr. L. J. 1256 (1261)=88 I. C. 1000=29 C. W. N. 738=A. I. R. 1925 Cal. 876=42 C. L. J. 247=52 Cal. 987.

[21] *Nga Hla Din* v. *Emp.*, 37 Cr. L. J. 621=162 I. C. 491=A. I. R. 1936 Rang. 187=1936 Cr. C. 347, following *Emp.* v. *Faiz*, 35 I. C. 998=A. I. R. 1916 Lah. 106=17 Cr. L. J. 438=47 P. L. R. 1917 and *In re Subbu Tevan*, 2 Weir 750 and distinguishing *Fakir* v. *Emp.*, 17 P. R. 1901 and *Nga Te* v. *Emp.*, 7 L. B. R. 33=20 I. C. 990=14 Cr. L. J. 510.

[22] *Queen-Emp.* v. *Surendra Nath Sarkar*, 5 C. W. N. 574.

constituted a motive for the accused to devise her murder, it cannot be deemed to be a statement as to the cause of her death, or as to any of the circumstances of the transaction which resulted in her death and it would therefore be hearsay and not admissible.[23] But statements of the deceased in his first information report and in the dying declaration regarding motive of the accused to commit the murder are admissible as circumstances of the transaction which ended in his death.[24] So also a petition of complaint and the examination of the complainant (i. e. the deceased) under section 200 Cr. P. Code are admissible as dying declarations under sec. 32 (1) of the Indian Evidence Act.[25] A petition of complaint filed by the deceased some days before his murder, containing allegations of his fear of injury, can by no means be said to be not admissible under sec. 32 (i) of the Indian Evidence Act, but, is undoubtedly admissible under sec. 8 of the same Act as evidence of the conduct of the deceased, an offence against whom was the subject of the

[23] *Venkatasubba* v. *Emp.*, A. I. R. 1931 Mad. 689 (692)=61 M. L. J. 608=34 M. L. W. 128=54 Mad. 931=1931 Cr. C. 929=1931 M. W. N. 1177=134 I. C. 1143=33 Cr. L. J. 51. See also *Autar Singh* v. *Emp.*, 25 Cr. L. J. 1140 (1143)=81 I. C. 964=4 Lah. 451= A. I. R. 1924 Lah. 253. *Tharhepedikayil Veeranjutti Haji* v. *Emp.*, 39 Cr. L. J. 947 (948)=177 I. C. 808=1938 M. W. N. 868=(1938) 2 M. L. J. 618=48 M. L. W. 615.

[24] *Emp.* v. *Somra Bhuian*, A. I. R. 1938 Pat. 52=16 Pat. 539= 39 Cr. L. J. 332=173 I. C. 499=19 P. L. T. 86=1937 P. W. N. 897; *Gajjan Singh* v. *Emp.*, A. I. R. 1931 Lah, 103=1931 Cr. C. 167= 135 I. C. 668; *Kapur Singh* v. *Emp.*, 31 Cr. L. J. 475=123 I. C. 120= 31 P. L. R. 83=A. I. R. 1930 Lah. 450.

[25] *Gouridas Namasudra* v. *Emp.*, 36 Cal. 659=13 C. W. N. 682= 10 Cr. L. J. 186=2 I. C. 841.

trial, such conduct being influenced by his fear of injury.[26] A report made by the deceased to the police of an assault upon him by the accused on the previous day in connection with a dispute relating to possession of certain property of which he was in charge on behalf of his employer is admissible in evidence in the trial for murder of the deceased on the following morning over an altercation in the course of which the accused stabbed him in the stomach with a knife causing his death.[27]

Section 32(1) of the Indian Evidence Act is wide enough to include statements made by a deceased person to another, before receiving injuries which resulted in his death, as to the circumstances under which he was accompanying the accused to the place where the murder was committed.[28] The words of the section are very wide and it is not necessary that the charge should be one of homicide. So a dying declaration made by the deceased immediately after the robbery regarding the robbery and also regarding the assault which was committed in the course of the robbery, resulting in his death, is admissible even so far as the charges for the offences under ss. 392 and 397 I. P. C. are concerned.[29] So also in the case of a charge under sec. 330 I. P. C., statements as to

[26] *Golak Behari Takal* v. *Emp.*, 42 C. W. N. 129 (135)=173 I. C. 65=A. I. R. 1938 Cal. 51=66 C. L. J. 225.

[27] *Chunilal* v. *Emp.*, 26 Cr. L. J. 1121=88 I. C. 353=7 N. L. J. 144=A. I. R. 1924 Nag. 115.

[28] *Shivabhai Becharbhai* v. *Emp.*, 27 Cr. L. J. 1140=97 I. C. 660=28 Bom. L. R. 1013=50 Bom. 683=A. I. R. 1926 Bom. 513.

[29] *Lalji Dusadh* v. *Emp.*, 29 Cr. L. J. 106 (111)=106 I. C. 698=6 Pat. 747=A. I. R. 1928 Pat. 162. But see *Nga Te* v. *Emp.*, 6 Bur. L. T. 183=7 L. B. R. 33=14 Cr. L. J. 510=20 I. C. 220.

certain ill-treatment conducing to suicide, before the suicide was committed, were held admissible.[30]

The statement of the deceased that she was confined in the house of an accused, that a person was keeping watch over her, that another accused had raped her on account of which she had become pregnant and that they were then getting ready to give her medicine to miscarry and so put an end to her life is admissible in evidence under sec. 32(1) as a statement made by a person as to the circumstances of a transaction which resulted in her death in a case in which the cause of her death came into question.[31] But if a woman is raped, and decides three days later to commit suicide the rape is not the cause of her death or transaction resulting in her death, though it may be the contingent motive and, in such circumstances, a statement made by her immediately after she has been ravished is not admissible in evidence either under sec. 32(1) or sec. 8 of the Indian Evidence Act.[32]

Proof.—A dying declaration must be proved in the ordinary way by a person who heard it, and the written record of it may be used for the purpose of refreshing the witness' memory.[33] The law is not that the written

[30] *Emp.* v. *Faiz*, 35 I. C. 998=17 Cr. L. J. 438=20 P. R. 1916 Cr.=47 P. L. R. 1917=42 P. W. R. 1916 Cr.

[31] *Wahid Bux* v. *Emp.*, A. I. R. 1929 Sind 250 (252)=30 Cr. L. J. 1121 (1123)=120 I. C. 81=1929 Cr. C. 678=Ind. Rul. 1929 Sind 225. See also 6 W. R. 75.

[32] *Kappinaiah* v. *Emp.*, A. I. R. 1931 Mad. 233=1930 M. W. N. 702=1931 Cr. C. 329=131 I. C. 456=32 Cr. L. J. 751.

[33] *Empress* v. *Samiruddin*, 8 Cal. 211=10 C. L. R. 11; *King-Emp.* v. *Mathura Thakur*, 6 C. W. N. 72 (75); *King-Emp.* v. *Daulat*

record cannot be used at all, but that it is not to be used without first examining as a witness the person who heard the statement made.[34] If the witness, who heard that statement made, swears that the written statement correctly reproduces the words used by the deceased, that is sufficient to prove that the deceased did use the words contained in that statement.[35] The evidence of the person who recorded it or in his unavoidable absence some other person who was present and heard it correctly recorded should always be taken to make the written record admissible,[36] even if he happens to be himself the committing Magistrate.[37] The Allahabad High Court has, however, gone to the length of holding that when

Kunjra, 6 C. W. N. 921 (922); *Gouridas Namasudra* v. *Emp.*, 36 Cal. 659 (662)=10 Cr. L. J. 186=2 I. C. 841=13 C. W. N. 682. See also *Sarat Chandra Kar* v. *Emp.*, 26 Cr. L. J. 1244=88 I. C. 860=52 Cal. 446=A. I. R. 1925 Cal. 821.

[34] *Emp.* v. *Somra Bhuian*, A. I. R. 1938 Pat. 52 (53)=16 Pat. 593=1937 P. W. N. 897. See also *Kunj Lal* v. *Emp.*, A. I. R. 1924 Lah. 12 (14)=6 L. L. J. 115=23 Cr. L. J. 417=67 I. C. 577.

[35] *Emp.* v. *Balaram Das*, A. I. R. 1922 Cal. 382 (384)=71 I. C. 685=49 Cal. 358=24 Cr. L. J. 221. (In this case the Magistrate who recorded the statement was dead and the written record was proved by the doctor in whose presence it was made).

[36] *Krishnama* v. *Emp.*, A. I. R. 1931 Mad. 430 (434)=1931 M. W N. 167=33 M. L. W. 348=1931 Cr. C. 478=54 Mad. 678=60 M. L. J. 404=33 Cr. L. J. 115=135 I. C. 337. See also *Nga Po.* v. *Emp.*, 14 Cr. L. J. 396=20 I. C. 220=6 Ben. L. T. 68; *Taflz Pramanik* v, *Emp.*, 31 Cr. L. J. 916 (917)=125 I. C. 713=50 C. L. J. 584=A. I. R. 1930 Cal. 228=1930 Cr. C. 196. *Hanif Gul Rahim Gul* v. *Emp.*, 39 Cr. L. J. 744=176 I.C. 471=A.I.R. 1938 Pesh 33.

[37] *Ghazi* v. *Emp.*, 14 Cr. L. J. 131=18 I. C. 883=232 P. L. R. 1912; *Ghazin* v. *Emp.*, 13 Cr. L. J. 225=14 I. C. 417=48 P. W. R. 1911 Cr.=17 P. R. 1911 Cr.

a dying declaration is made before a Magistrate who records it, it is evidence and can be admitted without proof under sec. 80 of the Indian Evidence Act.[38] It is unnecessary that the person who recorded it should repeat exactly what was said. It is enough if he proves the record of that statement.[39]

To summarize, under sec. 32 of the Indian Evidence Act, a dying declaration may be either oral or written. If it is oral, the person who heard it must be called and examined. If it is a written declaration, i.e, a statement made in writing by the deceased himself, or recorded from his own dictation and signed by him, the statement itself must be produced (S. 64, Evidence Act). This is substantive evidence. It must, of course, be proved that the statement was written by the deceased himself or recorded from his dictation and signed by him as the case may be (S. 67 Evidence Act). If the deceased himself does not write the statement with his own hand or if the statement is not recorded from his dictation and signed by him, it cannot be the "written declaration" of the deceased. It will simply be the record of the person who heard the deceased make that statement and cannot in consequence be used as substantive evidence. The witness can refer to it to refresh his memory (S. 159, Evidence Act). If the statement of the deceased is taken on oath

[38] *Suraj Bali* v. *Emp.*, 36 Cr. L. J. 65=152 I. C. 249=A. I. R. 1934 All. 340=1934 Cr. C. 418=56 All. 750.

[39] *Pratap Singh* v. *Emp.*, 92 I. C. 167=7 Lah. 91=27 Cr. L. J. 215=A. I. R. 1926 Lah. 310; *Kapur Singh* v. *Emp.*, 31 Cr. L. J. 475=123 I. C. 120=31 P. L. R. 83=A. I. R. 1930 Lah. 450. See also *In re Karuppan Samban*, 16 Cr. L. J. 759=31 I. C. 359=A. I. R. 1916 Mad. 1211.

by a Magistrate and in the presence of the accused, who is given an opportunity to cross-examine the deceased, it will then become a deposition and can go in without further formal proof. (Ss. 32, 33 and 80, Evidence Act, and S. 164 Cr. P. Code).[40]

Evidentiary value.—Usually a dying declaration which records the very words of the dying man unassisted by interested persons is most valuable evidence but the value of a dying declaration altogether disappears when parts of it have obviously been supplied to the dying man by other persons whether interested parties or Police Officers.[41] A dying declaration made at a time when the person making it was well aware of the fact that the accused had been named as the actual assailant does not carry any weight.[42]

A dying declaration has been held to be sufficient on which to found a conviction if, after applying the accepted tests, it is held to be true and genuine. It is not necessary that like an approver's statement, it should

[40] *Nga Mya Da* v. *Emp.*, A. I. R. 1936 Rang. 42 (45)=37 Cr. L. J. 299=160 I. C. 597=1936 Cr. C. 41 See also *Empress* v. *Samiruddin*, 8 Cal. 211=10 C. L. R. 11 ; *Public Prosecutor* v. *Bala Nagi Reddi*, 13 Cr. L. J. 468=11 M. L. T. 214=1912 M. W. N. 405= 22 M. L. J. 453=15 I. C. 308 and *Bhagawan* v. *Emp.*, 15 Cr. L. J. 243=23 I. C. 195=10 N. L. R. 19.

[41] *Dial Singh* v. *Emp.*, 36 Cr. L. J. 427=153 I. C. 810=1934 Cr. C. 1126=36 P. L. R. 24=A. I. R. 1934 Lah. 805 ; *Bishen Singh* v. *Emp.*, 27 Cr. L. J. 903=96 I. C. 215=8 L. L. J. 296=A. I. R. 1926 Lah. 496=27 P. L. R. 484.

[42] *Muzaffar* v. *Emp.*, 28 Cr. L. J. 114=99 I. C. 322=8 L. L. J. 410=27 P. L. R. 632.

be corroborated otherwise.[43] There are many cases in which it is quite safe to convict on a dying deposition, but these are cases in which there is absolutely no doubt that the deceased had a good opportunity of knowing who the assailant was and could not have been mistaken, and at the same time there is no possible reason why he should be falsely accusing the alleged assailant.[44] It becomes almost always a question of fact as to whether it should be relied upon or not.[45] But when the statement was not given in the deceased's own words but it was merely a note of the substance of what she told the police, it would not be safe to convict the accused merely on that statement.[46]

As regards a dying declaration, to accept a portion and reject the rest is entirely out of the question: there

[43] *Masti Khan* v. *Emp.*, A. I. R. 1935 Pesh. 41(43)=36 Cr. L. J. 800=155 I. C. 276=1935 Cr. C. 250; *Karim Khan* v. *Emp*, 9 Cr. L. J. 156=1 I. C. 100=4 P. W. R. 1909 Cr.; *Pattam* v. *Emp.*, 12 Cr. L. J. 528=12 I. C. 296=1911 M. W. N. 188; *Ahmad Yar Khan* v. *Emp.*, 11 Cr. L. J. 171=5 I. C. 602=1 P. W. R. 1910 Cr. But see *Bullu Singh* v. *Emp.*, A. I. R. 1929 Pat. 249 (253)=120 I. C. 474; *Bakhshish Singh* v. *Emp.*, 26 Cr. L. J. 890=86 I. C. 826=A. I. R. 1925 Lah. 549.

[44] *Nga Po Si* v. *Emp.*, 37 Cr. L. J. 990=164 I. C. 139=A. I. R. 1936 Rang. 324=1936 Cr. C. 696; *The King* v. *Maung Po Thi*, 39 Cr. L. J. 771 (772)=176 I. C. 683=A. I. R. 1938 Rang. 282. But see *Mohammad Anis* v. *Emp.*, 37 Cr. L. J. 955(959)=164 I. C. 482=1936 O. W. N. 691=1936 O. L. R. 459=A. I. R. 1936 Oudh 405=1936 Cr. C. 1086.

[45] *Emp.* v. *Premananda Dutt*, 52 Cal. 987=29 C. W. N. 738=26 Cr. L. J. 1256=88 I. C. 1000=A. I. R. 1925 Cal. 876=42 C. L. J. 247.

[46] *Emp.* v. *Sikandar*, A. I. R. 1930 All. 532 (533)=1930 Cr. C. 757=125 I. C. 585=Cr. L. J. 862=1930 A. L. J. 1405.

must be absolute guarantee of the accuracy of the record and the truth of the entire statement before it can be acted upon.[45] There is, however, no reason to introduce such an artificial rule. The statement should be looked upon from the point of view of its own value and nothing else. It seems that it is absolutely impossible to say that the tribunal responsible for coming to the decision upon the facts is not allowed to take into consideration what is admittedly part of the evidence and which it actually believes to be true. Of course any sensible tribunal after reaching the conclusion that a part of the statement has been deliberately concocted, would decline to believe the rest of it without corroboration and, no doubt, in such cases the jury ought to be suitably cautioned. Again if certain statements are untrue owing to failure of memory or lack of powers of observation and so on, it would be ridiculous to say that because a man made a mistake with regard to one statement of fact, the jury was debarred from accepting the rest.[47] But it is doubtful whether a dying declaration which contradicts itself in its various parts is even admissible in evidence. But supposing for the sake of argument, that it is admissible in evidence then the evidentiary value of such declaration is for all practical purposes negligible.[48]

A difference between the dying declaration and the initial report no doubt renders it necessary to examine

[47] *Naimuddin Biswas* v. *Emp.*, 166 I. C. 625=40 C. W. N. 1377=38 Cr. L. J. 243=A. I. R. 1936 Cal. 793=1936 Cr. C. 1129; *Prankrishna* v. *Emp.*, 36 Cr. L. J. 1322 (1330)=158 I. C. 176=A. I. R. 1935 Cal. 580=39 C. W. N. 188=1935 Cr. C. 1004.

[48] *Inayat Ali* v. *Emp.*, 29 Cr. L. J. 418 (419)=108 I. C. 526 (Lah.).

both pieces of evidence with extra care, but such a difference alone does not necessarily render a dying declaration wholly unworthy of evidence.[49] But a dying declaration is useless if it is inconsistent with the other prosecution evidence and full of contradiction and discrepancies.[50]

Will.—The state of mind of the declarant at the time when making the declaration is of the utmost importance.

In the case of a will, if no Magistrate is available the medical attendant may record it. Be very careful in such a case, to add the following attestation clause and see that its conditions are strictly complied with—"Signed by the testator XYZ, in the presence of us (there must always be two witnesses), present at the same time, who at his request, in his sight and presence, and in the presence of each other, have attested and subscribed the same. All alterations must be initialled by both testator and witnesses, as well as each page and the foot or end should be signed by the testator or by some other person in his presence and by his direction. The testator must be conscious at the time when the witnesses attach their signature.

[49] *Mula Singh* v. *Emp.*, 1 A. I. R. 1924 Lah. 413 (415)=71 I. C. 593=24 Cr. L. J. 177.

[50] *Shah Din* v. *Emp.*, 11 Cr. L. J. 131=4 I. C. 993=20 P. W. R. 1909 Cr.

DIGESTION

The speed with which the stomach empties itself depends to a great extent on the nature of the food. Plain water leaves the stomach almost at once, salt and sugar solutions at a somewhat slower rate. On a mixed diet, emptying of the stomach in man proceeds very slowly, requiring about four hours. Cannon, by feeding with food impregnated with bismuth and using X-rays, showed that carbohydrates leave most rapidly, then mixtures of carbohydrates and proteins, then proteins, then fats and finally mixtures of fats and proteins. The diet which remains longest in the stomach is a mixture of fats and proteins.

It is of the greatest medico-legal importance to know the exact time at which a deceased person died. One method of estimating this is by the state of digestion of the food in the stomach, presuming that the hour at which deceased took his last meal is known.

Indians use rice, wheat, or other grain as their staple food, with the addition of pulses. Rice is consumed largely by the inhabitants of Madras, Bengal and Burmah, along with vegetables, fish and pulses. In the United Provinces and the Punjab rice is but little used. The people of these provinces eat chiefly, wheat, maize, millet and other such cereals, made into chappatties.

The rice eaters consume about 36 ounces of the cooked grain at a meal, plus dal and vegetables, and a fair quantity of cold water. The bulk of this is enormous, and must need **"some"** digesting.

Assuming the stomach to be healthy the rapidity of digestion will depend on the amount eaten.

Dr. Beaumont had for many years a young man who had the stomach opened by a musket shot, which carried away the surrounding integuments and left it open for inspection, by simply raising a kind of trap door made by folds of the integuments that remained. This gave him an opportunity which no other physiologist ever had, of witnessing the process of digestion under all circumstances, in sickness or health and noting many phenomena not before known in regard to the use of the gastric juice and its effects on different articles, liquids and solids, the time required for digesting different articles, the first process of digesting liquid nourishment, etc.

He found that in febrile diseases very little or no gastric juice is secreted. In this condition food taken remains undigested for twenty-four or forty-eight hours.

Drinks received are immediately absorbed, or otherwise disposed of, none remaining in the stomach ten minutes after being swallowed.

The first process of digesting liquid food is to absorb the liquid and leave the solid in the stomach ; both liquid and solid food are digested by first being brought into a semi-liquid state. If too liquid, by the process just described of carrying off the liquid ; if too solid, by bringing into the stomach from the system, unless they are supplied from without, the liquids necessary.

Digestion is delayed during sleep and is probably in abeyance during coma.

Dr. Beaumont found that rice was digested in one hour (in his experiments the amount of rice ingested was apparently small compared with the quantities consumed at a meal by Indians); barley, milk, fish, in two hours. Other authorities have given periods of from two and a half to five hours as required for the stomach to become empty after an ordinary meal consisting of meat, vegetables, bread, etc. Meat and other highly nitrogenised foods take longer to undergo gastric digestion than starchy foods as rice, wheat, etc. For a meal of rice and chappatties, a shorter time must be allowed. As I have stated, sleep retards digestion, though it is impossible to express this retardation in hours. Digestion is more active **in the young.**

Normal digestion depends on many conditions; e.g. **general bodily health.** As previously mentioned little or no gastric juice is secreted in febrile conditions; solid food is not tolerated.

Regularity in time of eating food.—For the stomach to function normally like other organs, it must have its time for labour and its time for rest. It is, however, very accomodating, and will furnish the requisite juices, and perform the requisite labour of digesting food, once, twice, even four or five times a day, if its task is given it at regular hours; but it must have rest; and to ensure vigorous digestion, that rest must be as long and continuous as the regular hours of sleep. Digestion will go on during sleep though more slowly, unless the powers of the system are greatly exhausted by the labours of the day.

Whether thoroughly chewed or bolted. The bolting of food must be productive of indigestion, and is made apparent by considering the object accomplished by masticating food. One great object is to keep in the mouth, in contact with the nerves of taste the morsel till its flavour has aroused the secretion of the juices, which are the principal agents in the process of digestion, and gathered them not only in the mouth, but also in the stomach. Another object in chewing the food well is to comminute it, so that, when received into the stomach the gastric juice will be admitted at once to every particle, and the process of digestion be commenced at once in every part of the morsel. But how different from this condition is the food in the stomach of the person who bolts his food in morsels as large as can be made to pass down, and, in the time necessary to prepare a single ounce for easy digestion, has filled his capacious maw with these enormous masses of indigestible food.

Mental condition at time of meal. Nothing is better understood than that there is a connection between cheerfulness and good digestion; and the trite expression, "to laugh and grow fat," undoubtedly had its origin in observation, if not in philosophy. What an astonishing amount and variety of food can be disposed of, and perfectly digested, by a company of cheerful and happy, old friends. I venture to say more than three times as much as the same individuals could eat and digest in the same time if each took his meals by himself. This shows the dependence of the digestive powers on the state of the mind.

Experiments have been carried out on Indians for the

purpose of discovering the average period of this act, with the result that the presence of food in the stomach does not justify the opinion that the deceased died within six hours of taking his last meal.

All circumstances must be carefully considered before giving an opinion in such cases.

The following Indian observations on digestion times were undertaken by Assistant Surgeon Purno Chander Singh at the suggestion of Major F. P. Maynard I.M.S.:—

A. Presence of food in the stomach noted at the time of post mortem examination.

(1) Healthy man 35, meal of stale rice and dal taken between 7 and 8 a.m. Injured at 10 a.m. Died at 2 p.m. same day. Stomach contained large quantity of undigested and partially digested rice and dal. Digestion might have been retarded or suspended by internal hæmorrhage.

(2) Hindu male, 22. Meal taken between 8 and 9 p.m. Took opium to commit suicide. Died between 5 and 6 a.m. next morning. Never regained consciousness. Stomach was full of undigested rice. Digestion was probably in abeyance during the coma of opium poisoning.

(3) Mahomedan lunatic, 28. Meal taken between 10 and 11 a.m., rice, dal, and vegetables. At 2 p.m. had an epileptic fit; was in state of coma till death at 5 or 6 p.m. next day. Stomach contained a large quantity of partially digested and undigested rice and dal. Here again digestion was probably in abeyance during the coma.

(4) Stout healthy Hindu. Meal taken about 10 p.m. Death between 5 and 6 a.m. next day. Stomach contained a small quantity of undigested rice about an ounce in weight with a few pieces of potato skin.

B. Observations on washings of stomach of healthy men a few hours after their meals :—

(1) Hindu, 25. Meal taken at 12-15 p.m. 48 ounces boiled rice 16 ounces of cooked dal and 4 ounces of vegetables. Stomach washed with rubber tube at 3-15 p.m. Half ounce of undigested rice withdrawn. Openings of tube blocked with particles of undigested food.

Another meal taken at 11-10 a.m. 48 ounces boiled rice, 12 ounces dal, 8 ounces vegetables, 16 ounces of water. Stomach washed at 3-15 p.m. About one ounce of undigested rice withdrawn.

Another meal taken at 11-32 a.m. 48 ounces boiled rice, 8 ounces dal, 8 ounces vegetables, 16 ounces water. Stomach washed at 4-45 p.m. Two hundred and fifty entire and broken grains of rice withdrawn. The openings of the tube were blocked with rice.

Another meal taken at 10-50 a.m. 48 ounces of of rice, 8 ounces dal, 4 ounces of vegetables and 16 ounces of water. Stomach washed at 5-15 p.m. About 200 undigested grains of rice with some water withdrawn. Openings of tube blocked with rice.

Another meal taken at 9-25 a.m. 48 ounces of rice, 8 ounces dal, 4 ounces vegetables, and 16 ounces of water. Stomach washed at 4-50 p.m. A few entire and broken grains of rice and a soft pulpy mass of rice and mucus withdrawn. The openings of the tube were blocked by this material.

Thus in from 3 hours to 7 hours 25 minutes the stomach failed to completely empty itself.

(2) Tall stout Hindu, 32. Meal taken at 11-32 a.m. 48 ounces of rice, 8 ounces dal, 8 ounces vegetables, 16 ounces of water. Stomach washed at 4-34 p.m. About 200 entire and broken grains of rice withdrawn. Openings of tube blocked with particles of rice. (5 hours 2 minutes).

(3) Healthy Hindu. Meal taken at 12 noon. 34 ounces rice, 9 ounces dal, 4 ounces vegetables, water 12 ounces. Stomach washed at 3-20 p.m. About one ounce of undigested rice withdrawn.

Another meal taken at 11 a.m. 34 ounces rice, 9 ounces dal, 4 ounces vegetables, 16 ounces water. Stomach washed at 5-5 p.m. About 2 drachms of undigested rice withdrawn.

Another meal taken at 10-30 a.m. atta 16 ounces, 9 ounces dal, 5 ounces vegetables, 16 ounces water. Stomach washed at 5-5 p.m. Soft bits of vegetables and, a small soft lump of semi-digested chappati with water withdrawn.

Thus in from 3 hours 20 minutes to 6 hours 35 minutes the stomach failed to completely empty itself.

(4) Healthy Hindu, 25. Meal taken 12 noon. 34 ounces rice, 9 ounces dal, 4 ounces vegetables, 16 ounces water. Stomach washed at 3-25 p.m. During this operation he vomited up about two ounces of undigested rice.

At 11 a.m. next day, same quantity of food was given and stomach washed at 5-10 p.m. Two drachms of undigested rice withdrawn. Openings in tube were blocked. During the reintroduction of tube he vomited up about 3 drachms of rice.

Thus in from 3 hours 25 minutes to 6 hours 10 minutes the stomach failed to completely empty itself.

(5) Hindu, 22. Meal taken at 10-30 a.m. 16 ounces atta, 9 ounces dal, 5 ounces vegetables, and 16 ounces water. Stomach washed 6 hours 40 minutes after taking the meal. Four small bits of semi-digested chappati withdrawn. He vomited up a few bits; when tube was withdrawn its openings were found blocked.

(6) Hindu, 20. Meal taken at 11-45 a.m. 16 ounces atta, 4 ounces dal, 4 ounces vegetables, 12 ounces water. Stomach washed at 4-15 p.m. Two large and a few small soft lumps of chappati with water withdrawn.

(7) Mahomedan, 20. Meal at 10-30 a.m. 35 ounces

rice, 9 ounces dal, 4 ounces vegetables, 16 ounces water. Stomach washed at 4-15 p.m. A few entire grains of rice (about one drachm) withdrawn. Openings of tube found blocked.

Thus in from 4 hours 30 minutes to 6 hours 32 minutes the stomach failed to completely empty itself.

N. B.—In all cases a little more than a pint of warm water was passed into the stomach. When the tube was withdrawn its openings were found to be blocked with particles of food, showing that further quantities of food remained in the stomach. Indian Medical Gazette, 1902, page 235 et seq.

SIMULATED BLINDNESS

Persons sometimes pretend to be blind in one eye in order to recover damages for alleged injury, or to bring the charges of assault under Section 320 of the Indian Penal Code.

The detection of pretended monocular blindness is usually easy. One of the following tests may be employed :—

1. Place a lighted candle 15 or 20 feet in front of the person, and put a prism of 6 degrees, base upward or downward, before the sound eye ; if the patient admits seeing double, it is an indication that vision is present in both the eyes.

2. Place a convex lens (12 D) before good eye the

and a weak concave lens (0. 25 D) in front of the supposed blind eye, and direct him to read the distant test types; if he succeeds, it is proof of malingering, since it is impossible for him to see with the sound eye when it is covered by a strong lens.

It is rare for a person to simulate blindness in both eyes, and of course it is more difficult to detect it. A diminution in acuteness of vision of both eyes is more frequently feigned than binocular blindness.

In feigned binocular blindness a close watch must be kept on the malingerer when he thinks he is free from observation, and the following test may be employed :—

Place a lighted candle in front of him ; hold a 6 degree prism, base outward, before one eye, if both eyes see, the one covered by the prism **will move inward** in order to avoid diplopia ; on removing the prism, it **will move outward**, the other eye remaining fixed.

When preparing a report upon the case, facts should first be stated definitely ; opinions and inferences should then be stated as such and you should be prepared to give reasons for them. In Court, such a statement as "The patient suffers from headaches" would certainly be met by the question. "Do you know this is a fact, if so, how do you know ?"

SIMULATED DEAFNESS

Severe mental strain or worry without proper rest will cause deterioration of hearing, but it will be only tem-

porary. In punctured wounds, or fracture of the base of the skull uniting the labyrinth will cause permanent deafness on that side. Deafness often follows inflammation of the labyrinth. An injury to the head resulting in meningitis may cause permanent deafness, and in children may lead to deaf-mutism.

To test the hearing

First see that there is no wax in the ear.

Supposing the right ear to be the one complained of; let the person see that your interest is concentrated on that ear. Then produce a watch—one with loud tick is preferable—and place it against the sound ear, and ask him if he hears it ticking, if he replies in the affirmative, gradually withdraw it, asking him to say when he can no longer hear to tick. Then place the watch against the deaf ear and ask him if he hears it. Naturally the answer will be: No. Now stand behind him and ask him to shut his eyes. Place something metallic—that will lead him to believe it to be the watch—against the mastoid process of the alleged deaf ear, and hold the ticking watch very close to, but not actually touching the back of the sound ear and ask him if he can hear the watch ticking; if his reply is in the negative, his complaint is fraudulent.

Normally aerially conducted sounds are louder to the person than when conducted through bone. In middle ear disease, aerial conduction is diminished or lost, while bone conduction remains more or less normal (the vibra-

tions of the tuning fork). When the auditory nerve is affected, both air and bone conduction are diminished or lost.

Strike a tuning fork and place the end of it against the centre of the patient's forhead. If the deafness discovered by the watch be due to an affection of the middle ear the patient will hear the tuning fork louder on that side than on the healthy one. If the deafness be due to the auditory nerve, the tuning fork will only be heard on the healthy side.

TESTS FOR THE COMMONER POISONS

Alkaloids.—Before testing for the following alkaloids they must be extracted from the stomach contents. A simple process for this is as follows :

Otto's Method.—Acidify the vomit with weak sulphuric acid to convert the alkaloid into the sulphate. Strain through muslin. Agitate the filtrate with ether to remove all fat. Pour off the ether ; render the residual watery solution alkaline with potassium carbonate to liberate the alkaloid. Shake up with ether again ; the sulphate of the alkaloid was insoluble in ether, but the alkaloid itself is soluble. Concentrate the ethereal solution, and test it as follows :—

Belladonna.—Add a little fuming nitric acid ; dry upon a water bath ; cool, and moisten with a drop of potash dissolved in absolute alcohol. **Atropin will give a violet colour changing to red.**

Opium.—Evaporate the ethereal solution to dryness; dissolve in cold strong sulphuric acid, and add a drop of strong solution of bichromate of potash. **Morphia gives a bright green colour.**

Strychnine.—Evaporate the ethereal solution to dryness; to the residue add two drops of sulphuric acid, and then two drops of strong bichromate of potash solution. **Strychnine will give a beautiful purple-blue colour changing to crimson, and finally to a light red.**

Arsenic.—1. **Marsh's Test.**—Put a piece of pure zinc into a flask, cork, and through the thistle funnel (this refers to the apparatus usually used for the carrying out of this test) pour a little distilled water. Add pure sulphuric acid until there is brisk evolution of hydrogen. Collect a little of the gas escaping from the side tube in a test tube, and ignite it. If it burn in the test tube without explosion, all the air has been expelled from the flask. Ignite the hydrogen jet. Hold a cold porcelain dish in the flame. **No stain should be deposited on the white surface if the hydrogen be pure.** Now pour in some of the suspected stomach contents through the thistle funnel, and presently hold the cold porcelain dish in the flame again. If arsenic be present it will be coming off as arseniuretted hydrogen, and will be deposited as a **shining black metallic stain** on the white dish.

Antimony will give a similar black stain, but it lacks the metallic lustre.

2. **Reinsch's Test.**—Strongly acidify the stomach contents with hydrochloric acid, and allow to stand one

hour. Filter. Introduce into the filtrate a brightly polished strip of copper foil and boil. If arsenic be present, **a steel-grey coating will appear upon the copper.** This may be tested further by dissolving in nitric acid and evaporating to dryness. On adding silver nitrate to the residue a **brick-red precipitate** of arsenate of silver will appear.

The difficulty of the test is to ensure both the acid and the copper being free from arsenic to begin with.

When arsenic has been taken by a person over a long period, the fact can be determined by applying the tests for arsenic to the **hair and the nails,** which ordinarily contain only minute quantities of the metal.

Carbolic Acid.—Just acidify the gastric contents with hydrochloric acid. Filter. To the filtrate add bromine water. **Carbolic acid gives a dense yellow precipitate of tribromophenol.**

Copper salts.—With a platinum wire hold a little of the suspected fluid in a spirit flame. **Copper gives a bright green colour to the flame.** Add HCl, and evaporate the stomach contents to small bulk. Filter. Add potassium ferrocyanide to the filtrate. **Copper will give a characteristic chocolate precipitate.**

Corrosive sublimate.—Mix the gastric contents with an equal bulk of ether, and shake up well. The ether will dissolve the corrosive sublimate. Pour off the ethereal solution ; concentrate it by evaporation, add iodide of potassium. **Mercury will give a scarlet precipitate of iodide of mercury, soluble in excess of potassium iodide.**

DIFFERENTIATION OF SEEDS OF COMMON WHITE DHATURA AND THE SEEDS OF THE COMMON CAPSICUM.

SEEDS OF COMMON WHITE DHATURA.	SEEDS OF COMMON CAPSICUM.
1. Almost kidney shaped, but one end much smaller than the other.	1. Kidney shaped.
2. Outline angular.	2. Outline rounded.
3. Size—rather more than a quarter of inch long, and rather less in width.	3. A little shorter and wider than the Dhatura.
4. Colour greenish brown when fresh, changing to yellow when dry.	4. Yellow.
5. Attached to the placenta by large white fleshy mass, which separates easily, leaving a deep furrow along half the length of the concave border of the seed.	5. Attached to the placenta by a thin cord from a prominence on the concave border of the seed.
6. Surface rough to the touch, almost reticulate (having veins crossing like net-work) except on the two compressed sides, where it has become seagreen or greyish blue from pressure of the neighbouring seeds.	6. Surface uniformly rough to the touch, the sides being equally rough with the borders.
7. Convex border thick and bulged with a longitudinal depression between the bulgings caused by the compression of the two sides.	7. Convex border thickened, but uniformly rounded.
8. When divided into two, by cutting with a knife placed in the furrow on the convex border, the outer integument is seen irregular and angular in outline, the embryo is seen lying curved and twisted in a fleshy albumen. The narrow end of the embryo curves downwards and slightly outwards away from the main curve.	8. When similarly divided the outer integument is more uniform in outline, the embryo is seen lying in a fleshy albumen, curved like the figure 6. The narrow end curves inwards and slightly upwards toward the main curve.

COMMON POISONS WITH THEIR VERNACULAR NAMES

English Name	Vernacular Name	Remarks.
Sulphuric Acid	Gandak ka tezab	Rarely used
Nitric Acid	Shora ka tezab	do.
Hydrochloric Acid	Namuk ka tezab	do.
Soda Carbonate	Sajii matti	do.
Potash Carbonate	Jaokhar	do.
Sulphate of Zinc	Safaid tutia	do.
Sulphate of Copper	Nila tutia, nil bang	do.
Acetate of Copper	Zangal	Sometimes used
Sulphate of Antimony	Surma	do.
Oxide of Lead	Murda sang	do.
Carbonate of Lead	Saffaida	do.
Arsenious Acid white	Sankhia safaid	Very often used
Orpiment e Arsenious Acid	Sankhia gulabi	do.
Regular e Suboxide of Arsenic and Arsenic	Sankhia kala	do.
Realgar	Mansil	do,
Orpiment	Hartal pili, harryawal	do.
Cinnabar	Shingraf	Seldom used
Corrosive Sublimate	Dar chikna	do.
Ditto with Calomel	Ruskapur	do.
Aconite Ferox	Mitha bish	Often used
Opium	Afim, Afiun	do.
Hyoscyamus Niger	Khorasani ajwain	do.
Dhatura Alba	Safaid dhatura	do.
Dhatura Fastuosa	Kala dhatura	do.
Nerium Odorum	Kanair	Used for Infanticide
Cerbera Manghas Thevetia Neriifolia	Zard kanang	do.
Strychnos Nux Vomica	Kuchela	Rarely used
Steychnos Ignatii	Papeeta	do.
Calotropis	Ak. madar	Infanticide
Croton Tiglium	Jamalgota	Abortion
Plumbago Rosea	Lal chita	do.

FATAL DOSE OF POISONS

NAME OF POISON.	FATAL DOSE.
Sulphuric Acid ...	1 drachm or even less.
Nitric Acid ...	2 drachms, smallest on record.
Hydrochloric Acid ...	4 drachms.
Carbolic Acid ...	1 drachm.
Oxalic Acid ...	60 grains.
Corrosive Sublimate ...	3 grains.
Arsenic	2 grains.
Antimony	2 grains.
Phosphorus Yellow ...	1½ grains.
Copper { Subacetate ...	½ ounce.
Copper { Sulphate ...	1 ounce.
Zinc { Sulphate ...	1½ ounce.
Zinc { Chloride ...	1 ounce.
Opium { Infant ...	one-nineteenth of a grain.
Opium { Adult ...	4 grains or 1 grain of Morphia.
Hydrocyanic Acid ...	½ drachm B. P.
Potassium Cyanide ...	3 or 4 grains.
Chloroform ...	4 drachms swallowed, less for infant.
Strychnine ...	¼ grain.
Aconite	1 drachm root, 4 grs. extract.
Belladonna ...	1 drachm extract, 2 grs. atropine.
Cocaine	two-thirds of a grain.
Dhutura	about 100 seeds.
Tobacco	½ drachm in enema.
Castor oil seeds ...	2 seeds.
Croton seeds ...	4 seeds have caused death.

SYMPTOMS PRDUCED BY SOME OF THE MORE COMMON POISONS

Poison	Usual symptoms
Arsenic Native names are, Sammul-far, Sankya, Hartal, and Mansil	Vomiting ; burning pain in the stomach ; great thirst ; purging ; sometimes cold skin ; cramps in the limbs, sleepiness.
Opium Native name is, Afim	Sleepiness ; pupils small ; complete insensibility ; skin sweating ; vomiting seldom occurs.
Aconite Native name is Bish	Numbness and tingling in the mouth and throat, afterwards in the limbs ; frothing at the stomach ; sleepiness ; occasionally convulsions or delirium or paralysis.
Dhatura Native name is, Dhatura	Sleepiness ; pupils enlarged ; delirium, insensibility ; vomiting rare.
Nux Vomica Native name is, Kuchila	Twitching in the limbs followed by violent spasms and often lock jaw. The spasms cease for a time and then again return, often without evident cause ; it usually affects the whole body. Shortest time before symptoms, 5 minutes, shortest time before death 1 hour.

Note.—Any one of the above symptoms may be absent, though the poison by which they are usually caused has been administered.

Arsenic ... Ordinary interval between taking the poison and the appearance of symptoms, ½ to one hour. Ordinary time before death, 6 to 12 hours.

Opium ... Ordinary interval before symptoms, ½ to 1 hour.

		Ditto before death, 6 to 12 hours.
Aconite	...	Ditto, before symptoms, 15 minutes.
		Ditto, before death, 1 to 8 hours.
Dhatura	...	Ditto, before symptoms, 5 to 10 minutes.
		Ditto, before death, 6 to 12 hours.
Nux Vomica	...	Ditto, before symptoms, ¼ to 1 hour.
		Ditto, before death, 6 to 12 hours.

THE DUTY OF A MEDICAL PRACTITIONER IN CASES OF SUSPECTED POISONING

(a) Note the time of occurrence of the symptoms, and their character.

(b) Note their relation in point of time to the last partaking of food, drink, or medicine; and the order in which they appear.

(c) Observe whether the symptoms do or do not intermit, or increase steadily in severity.

(d) Inquire into the previous condition of health of the person attacked.

(e) If there has been vomiting, see the vomited matter, and if possible, secure it for purposes of examination on some reasonable pretext, or note whether the vomited matters have been hastily disposed of.

(f) Secure a portion of food, drink, or medicine suspected, and samples of urine for after-examination.

(g) If food or a particular dish is suspected, inquire whether similar food, or dish has been previously eaten with impunity, and note, after inquiry whether or not any other person than the one attacked has eaten of it with impunity or has been attacked simultaneously.

(h) Take mental note of explanations offered or remarks made, regarding the onset of symptoms.

(i) Where the symptoms do not conform to the bodily condition, and where in spite of appropriate treatment, they continue, narrowly watch the whole surroundings of the patient, and the conduct of those attending him.

CLUES TO POISONS

Clues towards some poison or group of poisons is very helpful. There are two sources of information—history and symptoms.

Vomiting, purging, abdominal pains may indicate poisoning by arsenic (brown with blood), antimony (white), digitalis (green), aconite, acids, ammonia, phosphorus, cantharides, copper, iodine, mercury, zinc, etc.

Convulsions may indicate nux vomica, strychnine, arsenic, antimony, brucine, camphor, cyanides, santonine.

Collapse may indicate strong acids, alkalies, aconite, antimony, arsenic, tobacco, antipyrin, antifebrin, and the last stage of most poisons.

Coma may indicate opium, morphia, alcohol, chloral, chloroform, camphor, atropine, carbon dioxide and monoxide, cyanides.

Cyanosis may indicate aniline, antifebrine, benzene, opium.

Dry Skin may indicate dhatura, belladonna, hyosoyamus.

Moist skin may indicate opium, aconite, antimony, alcohol, tobacco, and other poisons in stage of collapse.

Mouth bleached may indicate carbolic acid, corrosive sublimate, caustic acids and alkalies.

Delirium may indicate cannabis indica (charas, bang, ganja), dhatura, belladonna, hyoscyamus, alcohol, camphor, atropine, cocaine.

Dyspnœa may indicate carbon monoxide, cyanide, strychnine.

Rapid Respiration may indicate atropine, cocaine, carbon dioxide.

Slow Respiration may indicate carbon monoxide, opium group.

Contraction of Pupils may indicate opium, physostigmine, chloral, muscarine, pilocarpine.

Dilitation of Pupils may indicate dhatura, belladonna, hyoscyamus in the early stage, opium and aconite in last stage, chloroform, alcohal, cocaine, gelsemium, nicotine.

Paralysis may indicate aconite, arsenic, lead, conium, cyanide, carbon dioxide and monoxide.

Pinkish discolouration may indicate carbon monoxide or cyanide.

Clues obtained at the post mortem examination :—

Corrosive action along the gastro-intestinal tract may indicate alkali cyanides, caustic alkalies, ammonia, corrosive sublimate, mineral acids, oxalic acid, phenols.

White or greyish white articles, arsenic ; other colours may indicate copper, picric acid, etc.

Seeds may indicate dhatura, croton, castor, etc.

HOW TO MAKE A POST MORTEM EXAMINATION

1. **External Examination.**—Make a very searching examination over the whole of the body from vertex to feet, not omitting the most trifling detail. Carefully examine all the apertures of the body ; mouth, ears, nostrils, anus, vagina and urethra. Note everything that will facilitate identification.

2. **Internal Examination.**—Examine the cranial cavity first, and for this purpose make an incision from ear to ear over the vertex. and dissect back the two flaps ; the front one down to the orbits ; the back one down to the junction of the skull and neck. Saw through the skull, an inch above the orbits in front, and the level of the occipital protuberance behind ; then force the skull cap off with the hands. With the aid of forceps and scissors divide the dura mater all round. Carefully remove the brain, and place in a clean dish. First make an examination of the external surface, then open the lateral ventricles. The internal substance is examined by slicing horizontally, commencing at the vertex. Remove the membranes adherent to the skull and examine the bones.

Now open the body by an incision from the point of the chin to the pubes. The incision must not involve a wound of the umbilicus. Dissect back the skin and tissues of the thorax to a point beyond the junction of the ribs with the cartilages. Divide the cartilages near the bony ribs, then draw the sternum upwards till it fractures at the sterna-clavicular joints.

Open the pericardium and examine the interior. Remove the heart and lungs together. Separate the heart and examine the orifices, valves etc. Examine the surface of the lungs, and exposed bronchial tubes, then make long incisions into each lung. Examine the ribs for fracture.

Seperate the soft parts from the inside of the lower jaw cutting close to the bone. Pull the tongue forwards below the chin, dissect back separating the pharynx and gullet with the larynx and windpipe from the spine. Open the larynx, windpipe and gullet.

Examine the abdominal viscera in situ : then examine the particular organ which it is thought to be connected with the cause of death. Now remove the stomach between two ligatures on the gullet and two on the intestinal end, and place in a well washed clean vessel for examination.

Remove the liver and note its weight, appearance on section and condition of gall bladder.

Remove the spleen, and note size, consistence, weight, and appearance on section.

Remove kidneys and note weight and condition of capsules, and examine the supra-renal capsules.

Open the bladder and note its contents and condition of its lining membrane.

Remove the intestines between ligatures, open and examine lining membrane etc.

In women and girls examine vagina, uterus and ovaries.

POINTS TO BE NOTED IN THE FOLLOWING SPECIAL EXAMINATIONS

1. Poisoning.

1. Morbid appearances by which, poisoning is indicated.

2. Class and nature of poison indicated.

3. Post mortem appearances observed which are not common in poisoning.

4. List of substances forwarded to the Chemical Examiner.

5. Nature of vessel sent and description of seal.

2. Wounds or Injuries.

1. Nature of injuries—description.
2. Inflicted before or after death.
3. Injuries, how produced.
4. Foreign matter in wound.
5. Any disease present.
6. Cause of death.

3. Strangulation.

1. External marks of violence.
2. Rope or articles round neck.
3. Marks on neck.
4. Made before or after death.
5. By what article marks produced.
6. Could rope have supported body.
7. Could the strangulation have been self-inflicted.

4. Drowning.

1. External marks of violence.
2. Foreign bodies in hands.
3. Foreign bodies in mouth and air passages.
4. Water in the stomach.

5. Abortion.

1. Marks of external violence.
2. Injuries.
   (a) To vagina.
   (b) To uterus.
3. Evidence of noxious drugs.
   (a) In sexual organs.
   (b) Stomach
4. State of uterus.
5. Size and uterine age of fœtus.

6. Rape etc.

1. Number of days after alleged offence.
2. Age of prosecutrix.
3. Past puberty or not.
4. Injuries inflicted.

(a) On genital organs.

(b) On the body.

5. Hymen ruptured or not.

6. Apparent strength of girl.

7. Evidence of any venereal disease.

(a) On the girl.

(b) On the man.

8. Stained articles of clothing of prosecutrix and accused.

(a) Examination—microscopic and otherwise.

7. Infanticide.

EXTERNAL EXAMINATION.

1. Describe external appearance, condition as regards putrefaction, spots, ecchymoses or injuries, etc.

2. Size, including length of body, and dimensions of head and thorax.

3. Weight.

4. Condition of navel and umbilical cord.

5. Age—(a) Extra-uterine.

(b) Intra-uterine.

INTERNAL EXAMINATION.

(a) *Respiratory organs.*

1. Dimensions and shape of thorax.

2. Situation of diaphragm.

3. Colour, volume, shape, situation, consistency, density, and weight of lungs ; hydrostatic test.

(b) *Organs of circulation.*

1. Condition of heart and cavities (note before removal of lungs).

2. Foramen ovale.
3. Ductus arteriosus, shape and dimensions.
4. Ductus venosus,
5. State of umbilical vessels.

(c) *Abdominal organs.*

1. Liver, size and weight.
2. Stomach and intestines, presence of food, air, melonium, drugs etc.
3. Bladder and kidneys.

(d) *Brain and Spinal Cord.*

1. The cranium should be examined for fractures and punctures.

ORDER OF PUTREFACTION

Putrefaction begins in abdomen first, where a **green discolouration** appears earliest at 7 hours 10 minutes; latest at 41 hours 30 minutes. The average is 26 hours.

Vesication occurs earliest at 35 hours; latest at 72 hours. The average being 49 hours 39 minutes.

Maggots appear earliest at 24 hours 18 minutes; latest at 76 hours. The average being 39 hours 43 minutes. (Mackenzie).

In from 4 to 6 hours after death **dirty red patches appear on the posterior wall of the stomach,** sometimes mistaken for effects of corrosive poison.

The **intestines** follow, then **spleen,** then **liver,** the **brain** follows next, in line of blood vessels.

(In children the brain putrefies first). **Heart** and **lungs** are slow ; **Kidneys** are slower still ; **Bladder** and **Pancreas** still longer ; **Diaphragm** still longer, and **Uterus**, longest of all.

STATURE

The length of the arm doubled, with 12 inches added for the clavicles and sternum, gives the distance between the tips of the fingers when the arms are stretched at right angles to the trunk, and approximately the height ; not reliable in females in whom the legs are relatively short.

The femur equals about ·275 of the stature (Quain).

The length of the middle finger measured from a point opposite the root of the thumb nail to the tip, equals one-nineteenths of the height. Place the hand flat on the table and draw a line transversely from the root of thumb nail.

The length of the forearm from the tip of the olecranon to the tip of the middle finger equals five-nineteenths of the height.

Twice the length of the lower extremity equals the stature.

Don't rely on only one of these measurements, all should be taken and the results compared.

If all, and only the bones are present add an inch and a half for the soft parts. Place the bones in their anatomi-

cal relationship to one another on **a soft bed of potter's clay,** making certain allowances for the soft parts, and then measure it. The height thus ascertained with 1½ inches added, will approximately equal the height of the person.

ANATOMICAL LANDMARKS

The **atlas** is on a line with the hard palate. The **axis** is on a line with the free edge of the upper teeth. The **transverse process** of the **atlas** is just below and in front of the tip of the mastoid process. The hyoid bone is opposite the **fourth cervical vertebra.**

The cricoid cartilage is on a line with the **sixth cervical** vertebra.

The upper margin of the sternum is opposite the disc between the **second and third dorsal vertebræ.**

The junction of the first and second sections of the sternum is opposite the fourth dorsal vertebra.

The tip of the ensiform cartilage is opposite the lower part of the body of the **tenth dorsal vertebra.**

The anterior extremity of the first rib is on a line with the fourth rib at the spine, the second with the sixth, the fifth with the ninth, the seventh with the eleventh.

The scapula covers the second and seventh ribs, its lower angle being oppasite the centre of the **eighth dorsal vertebra.**

The root of the spine of the scapula, the glenoid cavity, and the interval between the second and third dorsal spines are in the same plane.

The most constant landmark from which to count the vertebræ is the **spinous process** of the **fourth lumbar vertebra,** which is on a line with the highest point of the **crest of the ilium**. The umbilicus is near the same plane.

The tip of the coccyx is opposite the lower border of the symphisis pubis.

A CHAPTER FOR THE POLICE

When called upon to investigate a suspicious death, take particular care that the investigation is as minute and meticulous as it is possible for a police officer to make. The following are some of the points about which the fullest information is necessary :—

1. The investigation must be made on the spot. Be careful to see that the body is not moved or disturbed before the investigation is held, as the position may prove to be valuable evidence in the course of the investigation.

2. A most important point to remember in the identity of a body, is, that proof will have to be forthcoming that the dead body examined by the medical officer was the identical dead body found by the police.

3. Date, name of the village where the investigation is carried out, the names of all persons who claim to identify the body.

4. The time when the body was discovered, and by whom ; was it warm or cold ; was it stiff or not ; was it decomposed ?

5. Where, when, and with whom was deceased last seen alive ?

6. In what position was the body when discovered ?

7. Make a note of any articles found near the corpse, and their position.

8. Note the situation and size of any marks of blood on the body, clothing or surroundings ; whether the blood is dry or liquid, whether the clothes are torn or disordered.

9. If a case of suspected poisoning : was deceased in good health previous to the attack ?

10. If not in good health, what was he suffering from ?

11. What medicine was he taking ?

12. What did the last meal consist of ?

13. What was the interval between the last meal and the commencement of the symptoms ?

14. What did the deceased last eat or drink before commencement of the symptoms ?

15. What was the interval between the very last time he ate and drank and the commencement of symptoms ?

16. What were the first symptoms ?

17. Was he thirsty ?

18. Did he become faint ?

19. Did he complain of headache or giddiness ?

20. Did he appear to have lost the use of his limbs ?

21. Did he sleep heavily ?

22. Was he at any time insensible ?

23. Did convulsions occur ?

24. Did he complain of any particular taste in his mouth ?

25. Did he notice any peculiar taste in his food or drink ?

26. Was he sensible in the intervals between the convulsions ?

27. Did he complain of burning or tingling in the mouth and throat, or of numbness and tingling in the limbs ?

28. Was there vomiting ?

29. Was there purging ?

30. Was there pain in the stomach ?

31. Mention any other symptoms.

32. Had the deceased ever suffered previously from a similar attack ?

33. How many other persons partook of the meal, or food or drink by which the deceased is supposed to have been poisoned ?

34. How many were effected by it and in what way ?

35. Did the deceased move from the place where the first symptoms were noticed, if so, how far ?

36. If deceased had vomited before death, secure the vomited matter in a clean glazed earthenware vessel ; fasten it carefully and securely ; seal it ; number and date it ; append your signature, and make it over to a trustworthy guard. Treat any lose evacuation in a similar manner.

37. Make a careful general examination of the body, noting the following :—

Description of clothing worn ; nature of material, colour, character of the buttons etc., description of the ornaments worn ; apparent age of the deceased.

All marks of violence, bruises, wounds etc. ; noting their length, breadth, direction ; any scars, sores, deformities ; length and colour of hair, moustache, beard ; whether dyed or not.

Ears bored or not ; presence of corns on forehead or other parts of the body, the result of praying ; presence of moles and their situation ; nose bored or not ; condition and number of teeth, number missing and their situation ; peculiarity in size and form ; colour ; front teeth bored and filled with gold or not.

Note tatto marks, description and situation ; condition of hands and nails ; stained with henna or aultha ; description of any material found in the hands (hair, grass, sand etc.).

Condition of the natural openings of the body (nose, mouth, ears, vagina, anus) ; injury to, or blood in any of them ; presence of sand or weeds in the mouth ; marks of corrosive poisons.

Presence of a mark of a ligature round the neck ; any bruises or marks of violence on the front of the throat.

Measure the height of the corpse ; note whether well or ill nourished ; carefully collect all bones in case where body has been cremated ; wrap any weapon found, in clean paper, then in cloth and seal it, add number, date and your signature.

In the case of an infant, note the condition of the end of the navel string ; is it tied, clean cut, or lacerated ?

In the case of a person found dead with the throat cut, carefully examine the hands for incised wounds.

Preserve any footprints found near the corpse ; carefully measure them and keep a record of the measurement.

Blood stains on any dark material may be readily detected by artificial light ; that of a lantern or candle will do.

In cases of hanging or strangulation, every sign should be noticed. If the body is in a room, measure the size of the room, the position of the body with reference to the walls ; the length of the ligature ; nature of the knots ; condition of the hands ; marks on the body or clothing.

Was the room locked on the inside ? Any other exit ? Signs of a struggle in the room ; description of the ligature ; weight of deceased. If the ligature is still round the neck, note, or better, still try and make a sketch of its exact position, the number, the character and the method of tying the knots, i.e. whether tied by a right-handed or left-handed person. If the ligature has been removed, secure it, and retain it for evidence ; try and trace the real ownership of the ligature ; make a note of its material, and compare the ligature with the mark on the neck. If possible do not cut the ligature or rope, and do not remove it from the neck.

It is important to note all these facts at your first examination of the body. Evidence which transpires afterwards is of little value compared with that first taken.

In case of alleged suicide, note the height from the ground, the length of the ligature, the way it was fastened, and the distance of the body from the nearest support ; these are of vital importance.

38. Immediately a complaint of rape is made, note the exact hour and date of the complaint, and write down the exact words—employed by the female alleged to have been raped—at the time of making the report. Note the names of the persons who accompany her ; the general behaviour of the complainant : the attitude of her com-

panions towards herself and towards the accused. Make a note of the statements made by her companions.

Send complainant immediately for medical examination to the Civil Surgeon, for every day of delay makes the proof of a true charge more difficult, and of a false charge more easy. Ask the accused what he has to say in his defence. If he admits connection and denies rape, collect evidence of previous relations of the parties. Do it at once, otherwise, there will be opportunity for the connection of false evidence.

39. When submitting clothes for examination, any stains considered to be suspicious, should be surrounded by a pencil mark. Stains on floors or walls, of blood etc., should be carefully cut out and packed in some soft material in a box, to preserve it from injury. Each article sent for examination should be carefully labelled, giving it a number and date, and signed by the Sub-Inspector. The package must be sealed, and the same seal used throughout.

7 Bombay Law Reporter 640. (*Emp.* vs. *Shridhar Nana*).

A Judge who tries cases of murder by poisoning should invariably put beyond the possibility of doubt the identification of everything that is suspected to contain any poison. The evidence should be complete as to the history of such articles, and it should be shown that they have been kept in proper custody throughout, if they are to be relied on as supporting a conviction, and there should be no possibility of any question being raised as to the identity of any such article.

40. In cutting down a body found hanging, if the rope must be severed, then sever it at least two feet from the neck. Unless absolutely necessary, do not remove the ligature from around the neck, before the body is submitted for post mortem examination.

41. As signs of death from drowning tend to disappear rapidly after death, police officers should ensure that the body is submitted for post mortem examination without a moment's delay.

42. Do not cover a dead body, intended for post mortem examination with charcoal. In the manner in which it has been here-to-fore used, it does not retard putrefaction ; on the contrary, it tends to efface external marks of injury and interferes with the satisfactory external examination of the body.

43. Carefully note evrything about a body, not omitting the most trifling detail that will tend to facilitate identification.

44. When a criminal suspected of insanity is accommodated in a thana or lock-up, keep notes of his conversation and behaviour for future reference.

45. When a person is admitted to a lock-up, apparently unconscious and thought to be under the influence alcohol, have him examined by a medical officer, as he may be suffering from fracture of the skull. Should the person die without having been examined, it may give rise to the unfounded suspicion of ill-treatment while in police custody.

46. If an under-trial prisoner in a lock-up is ill and suffering from fever, he should not be removed before the

advice of a medical officer is taken ; his illness might be of a serious nature and the act of moving him might accelerate his death.

47. When reporting on wounds, note carefully their size and situation and the direction in which they run. The same remark refers to bruises.

48. Always place private marks on all articles examined by you, and sign and date them.

49. The body of a Hindu ought not to be cremated until the report on the post mortem examination has been studied by the Superintendent of Police. In a buried body a re-examination can be made, with cremation all evidence is destroyed for ever.

50. Five maunds of wood, is sufficient to reduce an average human body, to ashes. All fuel in excess of five maunds is waste.

51. Preserve the cut ends of bones in cases where—for example—a headless body or a detached limb is sent for examination, otherwise, it may be impossible to judge, with certainty, whether parts sent for examination subsequently, belong to the same or another body.

APPENDIX I

RABIES

(As annunciated by Lt. Col. H. W. Acton, I.M.S., and Lt. Col. R. Knowles, I.M.S. Formerly Directors, Pasteur Institute of India).

Rabies or canine madness is an acute disease of the central nervous system occurring in dogs and other allied animals, and transmitted from animal to animal by means of bites. When the disease occurs in man, it is spoken of as "hydrophobia" signifying **fear of water**. This fear of water is not seen in animals suffering from rabies.

The "virus" or poison is located in the brain, spinal cord and large nerves, and from these it passes into the saliva of the infected animal. The saliva of human beings and herbivora contains practically no poison.

Before the saliva can infect another animal or man, it must gain entrance into the body through some broken surface of skin or abraded mucus membrane. The penetration of the skin by the teeth of the rabid animal constitutes the usual method of introducing the virus into the system of a healthy animal; infection occasionally results from infective saliva coming into contact with a recent cut or abrasion.

It is, therefore, important to know at what stage of the disease in the biting animal the virus enters the saliva. It has been determined that the saliva is **never infectious earlier than 72 hours before definite symptoms appear.**

Once symptoms set in, the animal rarely lives longer than two to four days. Thus, if the biting animal remains alive and well for ten days after biting a human being, the saliva cannot have been infective and treatment in such cases is not necessary.

The interval of time that elapses between the bite of a rabid animal and the onset of the earliest symptoms in the bitten animal is an extremely variable period due to :

1. The variation in the dose of poison inoculated.
2. The situation of the bite, or "the proximity of the bite of the brain."

Multiple, deep bites on bare skin are followed by a shorter incubation period than are superficial bites, or bites through clothing where a good deal of the virus is lost on the clothing.

M. Pasteur considered that the virus travelled along the nerves, and that the nearer the wound was to the brain, the shorter was the path to be traversed by the virus, and consequently the shorter the incubation period. **Bites on the face are specially dangerous.** Depth of the bites, bareness of skin, and multiplicity of bites, are of greater importance than the actual situation of the bites.

In the dog, the incubation period varies from about sixteen days as a minimum to a maximum of ninety days. The majority of cases in the dog shows symptoms between the twenty-fifth and the fifty-fifth day after the bite ; very occasionally the incubation period is longer than three months.

For this reason a dog or other animal which has been bitten by a rabid animal should be segregated for at least

three months and kept under careful observation for another three months.

Two types of the disease occur in the dog, viz. :

1. Dumb or paralytic rabies.
2. Furious rabies.

Sometimes the dog shows furious symptoms and later on dies in a paralysed state ; at other times only paralysis is seen ; more rarely the animal is only restless and off its food and dies in convulsions within a few hours.

In pariah dogs and in young puppies furious symptoms are common. Well-cared-for dogs rarely bite human beings ; in fact in the early stages of the disease they often exhibit an increased affection towards their masters. Therefore all the following signs and symptoms are not to be expected in every rabid dog.

The earliest symptoms observed are those of brain irritation and are as follows :—

Restlessness, as shown by the animal wandering away from home or aimlessly wandering in and out of the room, and every now and then hiding away in dark corners. In well bred dogs this restlessness is often missed, as the dog continually comes up to his master to be petted.

Hallucinations, e.g. snapping at imaginary objects.

Fury. This symptom varies with the type of dog concerned. In well kept dogs fury is, as a rule, only vented on inanimate surroundings, e. g. tearing up its bedding or the ground, or biting the chain or post to which it is attached. Such a dog almost invariably quiets down on the approach of its master. These dogs may attack

other animals, but rarely viciously bite human beings. With the pariah dog the case is different, for they attack all and sundry who happen to cross their path.

Convulsions. The most typical sign of brain irritation is the occurrence of convulsions, affecting the whole body. As a rule these convulsions do not appear until paralysis has set in and is marked. In young animals, convulsions appear early in the disease, and cause death within a few hours from their onset.

Other Signs are :

Fever accompanied by rapid pulse.

Increased salivation, which may or may not be present.

Wrinkling of the forehead and eyebrows, giving the dog a hunted expression.

Redness of the whites of the eyes.

Paralysis generally follows the symptoms of brain irritation and usually commences in the **hind legs** and is shown by the waddling gait of the dog. This may be preceded or followed by paralysis of the throat and laryngeal muscles. The former is shown by the difficulty which the animal has in swallowing ; in such cases the owner usually puts his fingers down the dog's throat to look for an imaginary bone.

The laryngeal paralysis may be shown by the alteration in the timbre of the bark. The bark is noticeably altered in note and pitch. Instead of the normal clear bark, which consists of a succession of sounds, equal in length and intensity, it is raucous, muffled and deeper in tone. The first bark commences with open mouth, followed immediately by several barks which come

from the back of the throat, and during each bark the jaws are not properly closed, as they are in the healthy mark.

The paralysis extends to the muscles of the jaw, and the lower jaw finally droops. The animal gradually becomes entirely paralysed, so that it can neither sit, move nor feel. During this end stage of complete paralysis, convulsions supervene and ends the scene.

Once definite symptoms appear life is rarely prolonged for more than two to five days.

If a jackal attacks a human being without provocation it is certainly rabid.

Rabies in the horse and such like animals is shown by :—

1. Fury. Madly rushing about and smashing up everything with which they come in contact.
2. Biting their own chest, body, etc.
3. Sometimes biting other animals or human beings.
4. Commencing paralysis, as shown by staggering.

Measures to be adopted for animals bitten by a rabid animal.

When the biting animal develops any symptoms of rabies and dies or is killed, all animals which it has bitten must be treated on the assumption that they are liable to develop rabies within three months, and even possibly within six months. If the bitten animals are not valuable, or if there are children in the house, it is better not to run any risks, and to destroy, at once, all animals bitten. As, however, every animal bitten, by a rabid animal does

not develop rabies, the owner of a valuable animal may decide to run the risk of keeping it alive on the chance of its escape. If he does so, especially in the case of dogs **he is morally—if not legally—responsible for any damage done by that animal,** should it develop rabies at a subsequent date.

The quarantine period should last at least three months from the date of bite, and should be followed by strict supervision for another three months.

Under no circumstances should a suspected rabid dog be destroyed, for, by doing so, one of the most important signs of rabies, viz.: the short duration of life (two or three days) is lost. If the animal shows no symptoms and remains alive **and well** for ten days, the saliva cannot have been infective, and, therefore, the person bitten need have no further fear, even should the dog develop rabies at a later date. If the animal should die within these ten days, it may be surmised that it is rabid and treatment therefore becomes necessary.

An indigent person not in the Public Service (together with one attendant, when such indigent person is a woman or is a child under sixteen years of age, or is a man, who by reason of age or other sufficient cause is incapable of travelling alone) will be granted third class tickets free of charge, to a Pasteur Institute.

Only one attendant will be allowed with each patient or each party of patients of the same family.

The requisition for tickets **must have the impression of the official seal of the office from which issued ;** it must be signed by one of the authorities, namely ; Commi-

ssioned Medical Officers, Civil Surgeons, Military Assistant Surgeons, Civil Apothecaries in independent charge of hospitals and, **when there is no Medical Officer present at the station** by Collectors or Commissioners, Divisional Officers, Tehsildars or Taluqdars, Deputy Tehsildars in independent charge, Officers of the Police Department of and above the rank of Deputy Superintendent, Sub-Registrars and Sub-Assistants of Survey. **In the absence of a gazetted officer, the highest civil authority in the place is empowered to issue the requisition.**

APPENDIX II

SNAKE BITE

It appears that the term snake-bite is often used as synonymous with snake poisoning and the mere fact that a man has been bitten by a snake has been the only justification for considering the case as one of snake poisoning. Now in cases of snake-bite, whether the wounds are inflicted by a harmless or a poisonous species, a certain train of symptoms follow, which are the direct result of fright and kindred emotions, pain etc. Some of these are so serious that they end fatally; but whether fatal or not, a great many of these cases are diagnosed wrongly; the symptoms due to fright being misinterpreted as the result of snake poisoning. The gravity of symptoms due to fright does not appear to be sufficiently recognised,

though there is no doubt that fatal cases from this cause are abundant, especially among the timid natives of this country.

Every detail is strictly different in fright and colubrine poisoning. To begin with, fright operating through the nervous system mainly affects the heart. The symptoms may vary from a transient pallor and giddiness to syncope of such a profound nature that unless combative measures are speedily employed the condition may pass insensibly on to death.

Now, if we take the Cobra as the type of a Colubrine snake, the poisoning produced by its bite, exerts its main force upon the nervous system, and principally operates upon the breathing centre, the heart remaining unaffected.

The constitutional effects seen in the two cases are as follows :—

	Fright.	Cobra Poisoning.
1.	Onset of weakness often sudden.	1. Very gradual.
2.	Involuntary prostration.	2. Recumbency voluntary.
3.	Complete or semi-unconsciousness.	3. Consciousness not impaired.
4.	(a) Pallid face.	4. (a) Face natural at first, livid later on.
	(b) Cold clammy skin.	(b) Skin warm.
	(c) Feeble and imperceptible pulse.	(c) Pulse of normal force, regular.
5.	Breathing shallow, sighing, weak, frequent.	5. Breathing gradually becomes more and more laboured and quickened, gasping towards close.

Fright.	Cobra Poisoning.
6. No paralysis.	6. Paralysis. Gradual weakness of legs mounting upwards to trunk and head. Head droops, eyelids droop, swallowing becomes difficult, lower lip falls away from teeth, saliva dribbles from mouth, articulation becomes difficult.
7. Death from cardiac depression.	7. Death from respiratory depression.

The symptoms of fright very speedily declare themselves, far more speedily than is ever the case with snake poisoning.

In this connection it is most important that the following facts be realised :

1. That it is quite possible to be bitten by a poisonous snake without being poisoned.

2. That in case of so fatal a snake as the Cobra it is quite possible to be poisoned but to receive a sub-lethal dose, that is, a dose that will not cause death.

3. It is possible for a person to die from the bite of a harmless snake, death being brought about by the depressing influence of fear or anxiety, on the heart.

Symptoms produced by Cobra Poisoning

The earliest constitutional symptom is a feeling of intoxication but this frequently passes unnoticed. Later the patient feels his weakness (paralysis) insidiously creeping upon him, till uncertain of maintaining the erect

posture, he voluntarily reclines. The paralysis begins in the legs, mounts to the trunk, and finally affects the head, a drooping of the eyelids may be noticed, and simultaneously, the muscles of the lips, the tongue and throat become gradually paralysed. As a result the lower lip falls away from the teeth allowing the saliva to dribble away from the mouth. Speech becomes difficult. Breathing becomes embarrassed, later laboured, and finally impossible ; fluids taken into the mouth run out at the nose. Nausea and vomiting are frequent symptoms. A convulsion often heralds the stoppage of breathing, but the heart goes on beating for a minute or two longer. Consciousness is retained till the end. Death usually takes place in from one and a half to six hours.

Krait poisoning is in the main identical with Cobra poisoning.

Symptoms produced by Viperine Poisoning

The local effects are usually severe. Bleeding is likely to occur in the neighbourhood of the punctures. The tissue cells are destroyed by the virulence of the poison, and a slough forms which, when separated leaves a deep ragged ulcer. Pain is a constant symptom ; it is burning or stinging in character, often extremely acute and comes on immediately.

Snake venom is an extremely powerful local irritant, and as such, causes swelling in the injured parts almost at once. If, however, no trace of swelling accompanies the wound, there is good reason to consider, no poison has gained entry.

One of the chief effects of snake venom **whether**

Colubrine or Viperine in quality, is its power of reducing the coagulability of the blood, and this fact affords valuable information as to whether or not venom has been introduced into a wound, since when it has gained entry **a constant oozing of thin bloody serum** results which often continues for many hours. If lacerations or punctures are seen sealed up with blood within a few minutes of the casualty, there is very strong reason to believe that no poison has been injected.

The tissues below the skin become purple in colour and filled with coagulated purple blood-like fluid. This fades gradually into a pinkish colour, and this again to normal conditions the further you go from the site of the poisoned wound. These changes can take place **within thirty seconds** of the entrance of the poison.

A greenish or bluish tinge is frequently observed in the skin in the immediate neighbourhood of the punctures within a few minutes of the bite, when venom has been introduced.

The tissues in the vicinity of the wounds frequently die, as a result of the powerful action of the poison, and when this dead tissue comes away a deep ragged ulcer is left, which takes a long time to heal.

A very large dose of this Viperine poison would cause the blood to clot within the vessels, and convulsions ending in death would occur almost immediately. But none of the snakes of this class can inject sufficient venom into a human being to bring about this effect, hence in moderate doses the opposite effect is produced in the blood and this accounts for the bleedings that take place.

The poisoning may be acute or chronic. In the acute form there is general depression in which the vital functions of the heart and breathing are profoundly affected. The pulse becomes rapid and weak, and breathing rapid and irregular. General weakness of the muscular system is seen, and there may be unconsciousness. Nausea and vomiting are frequent. The surface temperature is reduced and the skin is cold and often bedewed with sweat. There is no paralysis as seen in Cobra poisoning. There are bleedings from mucous surfaces, beneath the skin or invisible internal bleedings. The watery state of the blood may cause dropsy in the legs or in the lungs. Death from heart failure or failure of breathing may terminate the scene or these symptoms may decline and he appears as if about to recover. A repetition of the symptoms may occur or recovery may pass on to the chronic form.

The chronic form appears to be connected with the local state of the wounds which, from the intensely virulent nature of the poison are very apt to be seen in a sloughing condition favouring the development of septic germs. In the course of a few days, added to the general depression, emaciation sets in, and anæmia, which will depend in degree largely upon the extent of the bleedings. The enfeebled state of the system cannot offer resistance to the invasion of germs into the local wounds and blood poisoning or lock-jaw may result. Diarrhœa may occur with inflammation of the kidneys and the patient dies of exhaustion from bleedings, or from blood poisoning, the result of the wounds.

Harmless snakes have six rows of teeth—two rows in

the lower jaw and four in the upper. These consist of a row of teeth on each side of the mouth in both upper and lower jaws. In addition to these, in nearly all snakes, there is a double row of teeth along the roof of the mouth. They form the longest rows.

The teeth are small and sharp like those of a fish, directed more or less backward.

The teeth of the poisonous snakes differ greatly from those of the harmless ones.

The upper marginal row of teeth is absent. Its place is taken by the poison fang. In poisonous colubrine snakes e.g. the Cobra, the fang is more or less fixed, curving backwards and fitting into a depression in the lower lip. In the Vipers the poison fang is much longer than in the Cobra, too long to be received into a depression in the lower lip. There is an arrangement by which, when the mouth is shut, the fang can be made to lie down along the roof of the mouth. When a Viper opens his mouth to bite, the long fang becomes erect, sticking out almost at right angles to the upper jaw. The fangs, both of Cobras and Vipers have a small canal in them through which the poison from the poison gland is injected into the wound made by the fang.

The common Krait, the Cobra and the Russell's Viper are very deadly snakes, yet a deadly snake does not always inflict a fatal wound. The snake might not be "in good form" for killing, or he may just previously have bitten something else and exhausted his poison, or he may get his fangs in and yet inject no poison.

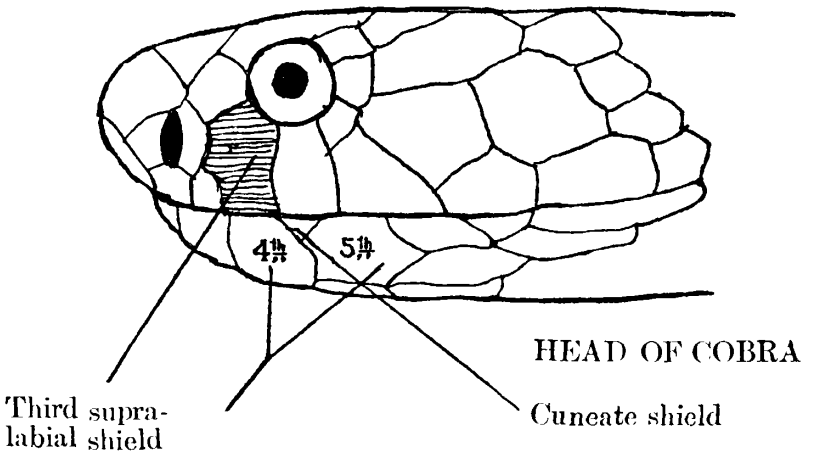
As the Cobra, the Krait and the Russell's Viper are the poisonous snakes commonly met with it is just as well to know how to recognise them.

Let us take the Cobra first, and note the following :—

1. The tail is round.
2. The third supra-labial shield touches the nasal and eye.
3. Between the fourth and fifth infra-labial shields, a small wedge-shaped shield occurs, called the "cuneate." Sometimes there is a second or a third such shield on the lower lip.
4. There is a concavity in the arms of the bracket-shaped pattern (V) of the scales over the back, peculiar to the Cobra.
5. The fourth and fifth infra-labial shields are the largest.
6. The anal shields ars entire ; the sub-caudals are divided throughout.

Dimensions. Over six feet in length is common ; largest, six feet seven inches.

Colour. Very variable. Any shade from buff, wheat, olivaceous brown, or tarry black and even foliage green. These colours are uniform, or more or less variegated. The hood may be without marks, or adorned with spectacle-like device, or an oval spot surrounded by an ellipse or various modifications of these.



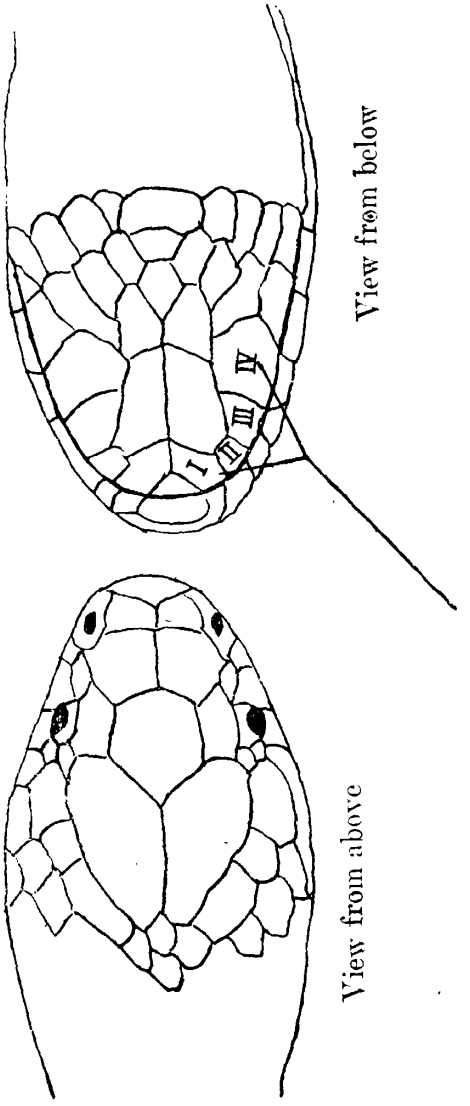
Infra-labial shield

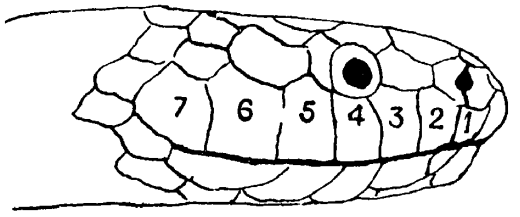
The Common Krait.

1. Linear white arches on back—the white bars are most distinct posteriorly, and often fade away anteriorly, there may be no marks anteriorly.
2. The vertebral row of scales (those down the middle of the back) are about as broad as long; they are hexagonal.
3. The sub-caudal scales are entire.
4. The second supra-labial scale is peculiar in being as broad as the third.
5. There are four infra-labial shields, the fourth the largest. (These two characteristics distinguish kraits from all other snakes).

Dimensions. Usually between two and three feet. Specimens over four feet are rare. Four feet six inches found.

Colour. Glistening black with linear narrow or broad white arches or cross-bars, usually most apparent in the posterior part of the body.





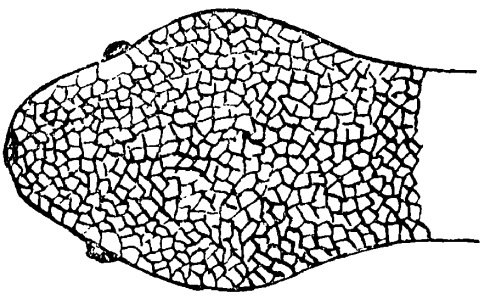
HEAD OF COMMON KRAIT

The Russell's viper.

1. Head completely scaled (not shielded) except three small shields surrounding the nostril and sub-linguals.
2. Head is broad and thick and nostril large.

Colour. Buff or light brown with three longitudinal series of large, dark white edged ring-spots, the middle series often confluent. Head has a pink or salmon V with its apex on the snout. Belly is whitish and spotted.

Dimensions. Grows to five feet.



HEAD OF RUSSELL'S VIPER

APPENDIX III

HINTS ON FIRST AID FOR THE POLICE FORCE IN CONNECTION WITH THEIR DUTIES

How to stop bleeding.

If you happen to arrive soon after the occurrence of an accident, fight or riot, and discover a victim bleeding profusely from a wound, you must do all you can to save him. If a large artery (shiryán) is wounded the sufferer is liable to bleed to death in a few minutes if some energetic steps are not taken to stop the bleeding.

If the bleeding is from an artery, the blood may spout out in jets from the wound. If the bleeding is from a vein or veins (verid) the blood flows out in a continuous stream.

Act immediately. Pass his puggree (or anything in the shape of a ligature you can lay your hands on) round the limb very loosely and tie a couple of knots. Now pass a stick through the loop thus made, and twist it round till the loop tightens, only **just sufficiently to stop the bleeding**. Remember this is but a temporary measure, and that prolonged constriction of this nature is dangerous, as it may lead to mortification (sará) of the part below the ligature. Arrange that the stick, after the bleeding has ceased, is lying parallel with the limb, and then secure it to the limb in this position to prevent it untwisting again. If the wound is on the head or trunk apply pressure with a pad.

What to do for a person who has become insensible after a blow or fall on the head. (Concussion of the brain).

Do not throw cold water over the person or apply ice to the head, as he is very much depressed (kamzor), and by acting thus it would weaken him more.

First, place the sufferer on his back, keeping his head low, cover him up with a blanket, durrie or any clothing you can lay your hands on. Rub his hands and feet gently upwards. He will recover consciousness (hosh) and will probably vomit or feel that he wants to do so if he is to get well quickly. This vomiting is a good sign. After this he may be carried in a lying-down position to his house. If unconsciousness (be-hoshi) continues something serious has taken place and he should be carried to the nearest hospital.

What to do for a person whose leg or arm has been broken.

Whatever you do, do gently, otherwise you may do more harm than good. What is needed in such a case is to place the limb in such a position, that will prevent movement of the broken ends of the bone.

First, place the sufferer in a comfortable position lying down, slowly and very gently stretch the limb and get somebody to hold it so; now apply on either side a splint (kamanch, khapachchi) of bamboo, wood, matting, lathis, or twigs (shakan) rolled up in pieces of cloth or puggree, which should be tied pretty firmly but not so tight as to stop the circulation (dauran-i-khun), of the limb. He may then be removed to the nearest hospital.

What to do in case of snake-bite

The bite inflicted by a poisonous snake shows only **two** punctures. If a person declares he has been bitten by a poisonous snake, and on inspection the punctures are found to be sealed by dried blood, he may with some assurance be informed that though the snake was a poisonous one, it has injected no poison, but on the other hand, if there is an oozing of watery blood from the punctures, it indicates that poison has been infected by the snake.

Immediately apply a loop as described under the head, "how to stop bleeding," pass a stick within the loop and twist it sufficiently **to stop the circulation.** If the bite is on the hand apply the loop round the upper arm ; if on the foot, the loop must be round the thigh.

The bite or punctures may now be sucked by the sufferer or one of his relatives. It must be remembered, however, that this is a dangerous thing to do if there are any abrasions (ragar) ulcers or wounds on the lips or mouth, and whenever it is done, the person doing it, should, immediately afterwards rinse his mouth out with a solution of permanganate of potash, or if out in the jungle, with plenty of water.

After this, make a cut across each of the punctures with a sharp penknife (chakoo) and allow the wound to bleed freely, then remove him with all haste to hospital for treatment.

Whether the snake was a poisonous one or not, be sure that you impress upon the sufferer that the snake in question was a harmless one, because many people bitten by snakes die of sheer fright. Not every person bitten by

a poisonous snake dies ; the fact is that the snake does not **always** inject its poison when it bites.

What to do in the case of a person apparently drowned, who has just been removed from the water.

During the struggles of a drowning person, water enters the windpipe and is churned (mathna) up with mucous (own) saliva (thuk) and perhaps blood, into a froth (phen, jhag) which does not easily escape, but must be slowly squeezed out by pressure to the back, whilst the sufferer is lying face downwards. At the same time artificial respiration (naqli tanaffus) must be maintained, and the best method for these cases is what is known as Bowles' method and this is how it is carried out :—

Undo any tight clothing. Kneel (ghutnoon ke bal baithna) and place the sufferer on his **right side**, and quickly wipe out the mouth and throat. If there are no signs of breathing, spread a cloth on the ground where the person's mouth will come and carry out the following movements :—

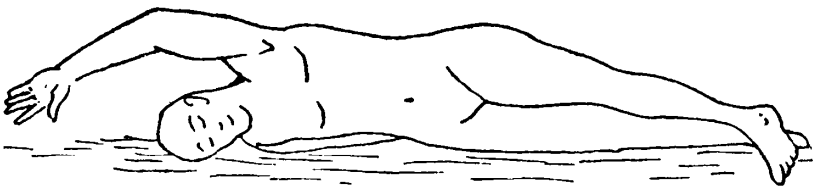
Movement No. 1.—Turn the sufferer flat on his stomach, then spread your hands out widely, press gently but firmly (masbuti) for three or four seconds on the back of the ribs (pasli) on both sides to squeeze out the froth (jhag), fluid (abi) or foul air. Then suddenly (nagahani se) remove the hands to allow the air to enter the lungs by the natural recoil (palatna) of the ribs.

Movement No. 2.—With your right hand take hold of the sufferer's **left shoulder ;** with your left hand take hold of his left wrist (kalai, pahuncha) place it against his hip (chula, puth) and roll him towards you on to

his right side. This movement should take **about two seconds.**

Repeat the movements Nos. 1 and 2 in succession (tawatur) for **ten minutes** or more (if necessary) when some of the froth or fluid will have drained away from the lungs.

Movement No. 3.—Each time the sufferer is rolled from the stomach to the right side, take hold of his left or uppermost arm and raise it above his head in line with the body like this :—



This movement expands the chest still more and allows air to enter the upper left lung. Then bring the arm down to the side, roll the sufferer on to his stomach and begin again at Movement No. 1 and continue each movement in succession as before, for an hour or until signs of natural breathing begin.

Always turn the person on to the right side, never to the left and under no circumstances on the back. From time to time, wipe away froth from the mouth and nose.

The neck should be kept fairly straight and the chin away from the breast bone ; the head may then be left to take care of itself.

Remember that artificial respiration has been successful after five hours apparent (zahir) suspended animation.

When breathing is properly established, cover the sufferer with warm clothes, particularly with warm blankets and rub his limbs upwards. Apply bottles wrapped in cloth, containing hot water, securely corked, to his feet, legs, loins, armpits and pit of the stomach (kauri). Be careful that the bottles do not come in contact with the bare skin.

What to do in the event of a person's clothes catching fire.

Remember that flames rise perpendicularly. Hence to extinguish flames from the burning clothing of a person, throw him to the ground and roll him up in anything you can get hold of such as your own coat, a blanket, rug, mat etc.; such treatment will at once extinguish the flames.

What to do for a person in an epileptic fit.

The fit often commences by a peculiar cry. The person then falls down like a log, quite unconscious. He becomes rigid (sakht) all over, every muscle being contracted (tang, kotah). This stage lasts from thirty to forty seconds. Then the second stage commences. Unconsciousness continues ; but instead of rigidity, convulsions (ainth, laqwa) comes on ; the tongue may be bitten. This stage lasts from one to four minutes. Consciousness is gradually regained.

Remember that these convulsions—contractions of the muscles are involuntary (be-ikhtiyar, be-bas)—and you must not attempt to prevent them by the exhibition of force, for if you do so you are likely to fracture a bone or dislocate (ganth se ukharna) a joint.

All you can do is to roll the person on to his back, loosen the clothes about the neck and chest, and prevent him biting his tongue by placing something (a piece of wood will do) between his teeth. Employ only sufficient restraint (rukao) to prevent him injuring himself, and avoid pressing on his chest. You cannot cut short an epileptic fit.

What to do for a person suffering from sun-stroke or heat-stroke.

Such cases are likely to occur among policemen marching to distant places in full kit during the summer season or to people in densely packed crowds at fairs etc.

The person falls suddenly, generally insensible, sometimes in convulsions, the skin feeling burning-hot to the hand.

Carry him at once to the nearest shade or the coolest available place. Provide plenty of fresh air. Raise the head, and remove the clothes from the neck and upper part of the body. Douche the head, neck, chest and spine, or the whole body with cold water and fan him continuously. Prevent any crowding around him.

What to do for a person in a drunken fit.

Drunken fits are caused by the drinking of a large quantity of alcohol. They occur suddenly, and may not come on for some time after the liquor has been taken. The person falls into a deep stupor (be-hawas, be-hoshi), there is a vacant expression of the face, which is sometimes red. The lips are livid and pupils (ankh ki putli) dilated (phaila h.), and the breath smells strongly of liquor.

Place the person on his side with the head slightly raised and do not allow him to lie on his back, or on his face. On his back, he might vomit and become suffocated; on his face, his mouth and nose might come in contact with loose earth and thus become suffocated. Remove all constrictions from the neck and try to induce him to vomit, by tickling the back of the throat.

What to do when engaged in rescue from fire.

Before entering a building on fire, with a view to rescuing from smoke and heat any individuals within, tie a wet handkerchief over the nose and mouth. Take off any superfluous (ihtiyaj se ziyada) clothing, and have a bucket of water thrown over you. It is imperative to work quickly; avoid being overcome by the smoke by bending low beneath it—the air is clearest near the floor. When carrying persons out from burning buildings, the rescuer must try especially to protect from the flames the head and neck of those he carries.

What to do for a person apparently suffocated by smoke or gas.

Remove the person into the fresh air, and at once proceed to restore breathing by artificial respiration (naqli tanaffus). In mild cases breathing may be stimulated by freely douching the chest with cold water.

What to do for a person apparently choking.

Choking may be caused by something becoming fixed over the entrance to the windpipe, and so causing obstruction to breathing. Whatever you do, do quickly or the person will die. Forcibly open the mouth and pass the

fore-finger to the back of the throat and try to hook up the obstructing body. In the case of children, hold them legs uppermost and thump the back between the shoulder-blades. This should also be attempted in adults if the first mentioned remedy is ineffectual (be-tasir).

What to do in cases of electric-shock.

Touching an electric cable may produce very severe shock, insensibility, and death. The sufferer is unable to extricate (azad k) himself owing to the current depriving him of all powers of moving.

It is imperative at once to get him away from the cable (jazib tar) and the person going to his assistance, does so at great risk of being himself caught by the current. If the current can be switched off, this should, of course, be done, but if this cannot be done, you must try to extricate the person.

Lay hold of a dry wooden lathi without any metal on it, stand upon a piece of dry wooden board and shove the person away from the cable. A puttee or puggree may be thrown over the sufferer's head, then drag him away from the contact.

Commence artificial respiration if breathing has ceased.

What to do in cases of poisoning.

A case of poisoning may be suspected by :—

1. The sudden appearance of the symptoms in a person otherwise healthy.
2. The symptoms coming on soon after food or drink has been taken.

Poisons injure health or destroy life in various ways, according to their nature ; e.g., (a) by actually burning the parts they touch, i.e. the mouth, throat and stomach, and causing shock ; or by making the parts swell up so as to suffocate the person. These poisons are called **corrosives** (bezar k. w. galau). (b) Others by so irritating the parts they touch, such as the throat, stomach and bowels, as to cause inflammation (sozish, sujau), often severe in degree ; this inflammation gives rise to pain, vomiting, and later on to diarrhœa (ishal, dast) which may kill the person by exhausting him. These are called **irritant poisons** (khijanewala zahir). (c) by being absorbed (jazb h.) into the blood and producing their poisonous action on the brain, nerves, heart, blood or other important organ and so interfering with their function (kam) that the person dies. These are called **systemic poisons** (tabiat k zahir). Some of the poisons of this group are called **narcotic poisons** (muskirat zahir) as they cause insensibility.

In cases of poisoning, two main principles must be borne in mind :—

First.—Try to remove the poison already taken.

Second.—Try to lessen the poisonous effects by giving the proper remedy, sometimes called the antidote (zahir-muhra).

Any poison remaining, all vomited matter, or anything likely to prove of importance in the inquiry subsequently, should be carefully preserved for inspection.

The following antidote should be furnished to each thana and when a poison, of which the nature is un-

known, has been swallowed it should be administered as under :—

Carbonate of Magnesia Powdered Charcoal Hydrated peroxide of iron	equal parts

This may be given freely in a sufficient quantity of water. It is harmless, and is an antidote to many of the most common and active poisons. Milk, or flour and water, may also be given,

CORROSIVE POISONS

Symptoms.	Treatment.
Great pain, immediately after taking the poison, in the mouth and throat, which look as if scalded ; mouth and lips stained and blistered. Shock and perhaps difficulty in breathing. Breath may smell very sour.	**Do not give Emetics.** If the smell is sour, probably the poison is an acid, in which case give magnesia-mixture, limewater or chalk and water ; linseed or til oil poured into the mouth help to stop further action. If the breath does not smell acid give some weak vinegar and water or lime-juice. Apply hot bottles to the feet. Scrapings from white washed walls may well be used in an emergency as an antidote for acids. For alkalis, vinegar is the safest acid to administer.

IRRITANT POISONS

Symptoms.	Treatment.
Pain not at first very great; generally a sensation of burning or a strong taste in the mouth and throat, coming quickly if the poison is liquid, and less quickly if it is solid when taken. The parts touched by the poison are not burned, and the pain is not so great as in the case of a corrosive poison, but it gradually increases and vomiting sets in with pain in the stomach, diarrhœa with straining, and sometimes blood in the stools. Shock and exhaustion set in generally.	**Give emetics.** Give warm water and encourage vomiting until water returns clear; then milk or white of egg, oil, or melted butter or ghi to allay the irritation.

SYSTEMIC POISONS

Symptoms.	Treatment.
No sign of burning, redness or pain, but there may be giddiness, dimness of sight, drowsiness (gradually increasing), difficulty in breathing, irregular or weak pulse, delirium, cramps, convulsions. The pupils of the eyes either widely open or tightly closed.	**Give emetics.** The stomach must be emptied. Symptoms must be treated; that is, in case of drowsiness the person must be kept awake by being walked about, cold water being freely used, and hot coffee given. If the drowsiness become greater, or the breathing threatens to fall, artificial respiration should be resorted to sometimes for hours; if there

are cramps, gently rub the limbs ; if there is delirium or convulsions the sufferer must be constantly watched.

The following may be used as **Emetics** (to cause vomiting) :—

1. Mustard in fine powder, half a chattack, to be well mixed in half a seer of water.
2. Common Salt in powder, half a chattack, dissolved in half a seer of warm water.

Remember that an emetic promptly given may save the person's life, but one must not be given in a case of corrosive poisoning.

The following are the common corrosive poisons :—

Sulphuric acid (tez ab gandhak), hydrochloric acid (tez ab namak) nitric acid (tez ab shora) caustic soda, caustic potash, and carbolic acid.

APPENDIX IV

PLATE II

CENTRES OF OSSIFICATION

(I) CLAVICLE (Collar Bone)—

(a) At birth the shaft is bony and the ends are cartilaginous.

(b) The centre near the breast bone appears at 18-20 years, and unites with the shaft at 25 years.

(II) SCAPULA (Shoulder blade)—

(a) The centre in the Coracoid process appears at end of first year and unites with body of the bone about the 18th year.

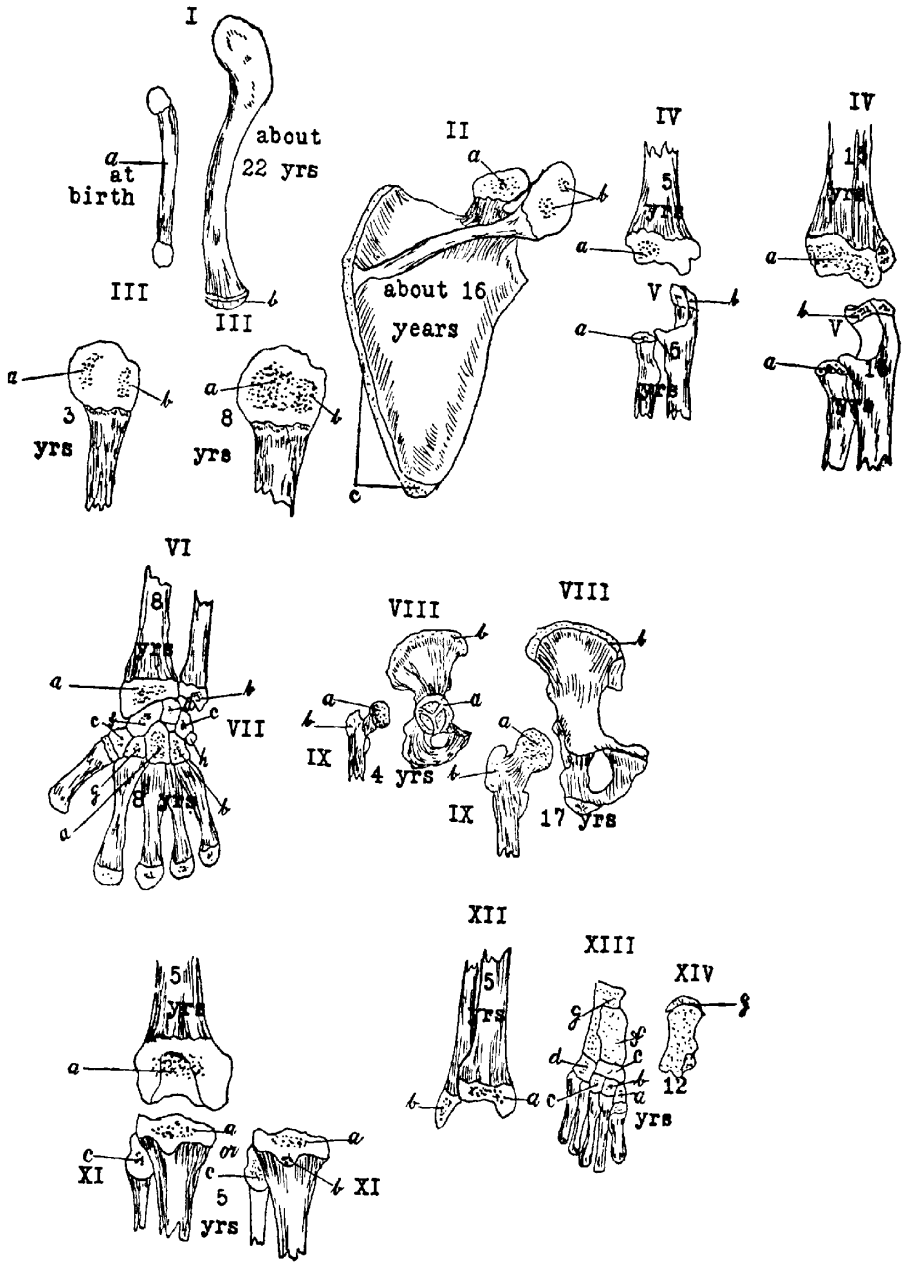
(b) Two centres usually appear about 16-17 years and unite with the body of the bone about 20 years.

(c) A centre at lower angle and a strip along the base about year 16-17 years and unites with body of bone between 20-25 years.

(III) HUMERUS (Upper arm bone)—

(a) The centre of the head appears within the first six months.

(b) The centre in the great tuberosity appears at 2-3 years. These centres join together


I
a
at
birth
about
22 yrs
b
III
III
II
a
about 16
years
b
c
IV
5
yrs
a
IV
15
yrs
a
V
b
a
5
yrs
V
b
a
16
yrs
a
3
yrs
b
a
8
yrs
b
VI
8
yrs
a
b
c
c
VII
b
g
8 yrs
a
b
VIII
b
a
a
IX
4 yrs
b
VIII
b
a
IX
17 yrs
b
XII
5
yrs
b
a
XIII
XIV
g
g
d
c
b
a
c
a
12
yrs
5
yrs
a
c
XI
a
or
c
b
XI
5
yrs

about the 5th year to form an epiphysis (portion of a bone which in early life is distinct from the shaft) which unites to the shaft at about 25 years.

(IV) HUMERUS (Lower end)—

(a) The centre appears at 2-3 years and unites with the shaft at 15-17 years.

(V) RADIUS (Of forearm)—

(a) The centre appears about 5-7 years and unites with shaft at 13-15 years.

ULNA (Of forearm)—

(b) Centre appears about 10 years and unites with shaft at 16 years.

(VI) RADIUS (Lower end)—

(a) Centre appears about 2-3 years and unites with shaft at 20-25 years.

ULNA (Lower end)—

(b) Centre appears about 6 years and unites with shaft at 20-23 years.

(VII) BONES OF WRIST—

(a) Ossification takes place at 11-12 months.
(b) ,, ,, ,, ,, 12-14 ,,
(c) ,, ,, ,, ,, 3 years.
(d) ,, ,, ,, ,, 5-6 ,,
(e) ,, ,, ,, ,, 6 ,,
(f) ,, ,, ,, ,, 6 ,,
(g) ,, ,, ,, ,, 6-7 ,,
(h) ,, ,, ,, ,, 10-12 ,,

If the bone marked (h), (pisiform bone) is found completely ossified the person is 12 or over 12 years of age.

(VIII) PELVIS—

(a) Centres appear about 12 years. Ossification of the acetabulum (depression to receive head of thigh bone) is usually complete by 16th year.

(b) Centre appears at 15th year and fuses with body of bone at 22-25 years.

(IX) FEMUR (Thigh bone)—

(a) Centre appears in the head at early part of first year and unites with shaft at 18-20 years.

(b) Centre appears about 2-3 years and unites with shaft at 18-19 years.

(X) FEMUR (Lower end)—

(a) Centre appears in 9th month of fœtal life and unites with shaft about 20-22 years.

(XI) TIBIA and FIBULA (Bones of leg)—

(a) Centre appears before birth.

(b) May appear independently at 11 years. It unites with shaft about 16 years.

(c) Centre appears about 3-4 years and unites with shaft about 20-24 years.

APPENDIX V

Extract from Rules and Orders of the High Court of Judicature at Lahore, made under the Code of Criminal Procedure

CHAPTER I

PRACTICE IN THE TRIAL OF CRIMINAL CASES

(*o*) *Where the accused is of unsound mind or is unable to understand the proceedings.*

78. When a Magistrate has reason to believe that an accused person is incapable of making his defence by reason of unsoundness of mind, he is bound to hold an inquiry into the question of such unsoundness of mind. If unsoundness of mind is established to the satisfaction of the Magistrate, a finding to that effect should be recorded and further proceedings should be stayed, whether the case is bailable or not, the accused may be released on sufficient security being given that he will be (1) properly taken care of, (2) prevented from doing injury to himself or any other person, and (3) produced when required before the Court, and he may be so released pending the inquiry above-mentioned. If bail is not forthcoming, or the case is one in which the Magistrate thinks that bail should not be taken, the case must be reported, through the usual channel, to the Local Government, and the Local Government may order the accused to be confined in a Lunatic Asylum or other suitable place of safe custody.

79. (i) It should be borne in mind, however, that before action is taken under section 466 of the Code the case for the prosecution should be gone into in order to discover whether any *prima facie* case is made out against the accused person. A reference to section 208 (inquiry preliminary to commitment) and section 252 (warrant-cases) of the Code will show that when the accused appears or is brought before the Magistrate, the first step is to take all the evidence for the prosecution. When this has been done the Magistrate has to form an opinion as to whether any case is established to go to trial or not. If no case is established (sections 209 and 253) the accused person must be set at liberty. If a *prima facie* case is made out (sections 210 and 254), a charge has to be framed either previous to the case being committed to the Court of Session or High Court, or in view to the accused being called upon to enter upon his defence. It is at this stage that sections 464 to 466 come into play.

(ii) If no *prima facie* case is made out against the accused person he should be discharged, whether he be of sound mind or not. If a *prima facie* case is made out, but the accused is found to be of unsound mind, the Magistrate should follow the procedure prescribed in section 466 of the Code.

80. The following rules have been sanctioned by the Punjab Government for the guidance of officers in dealing with criminal lunatics :—

(a) Whenever the papers of a criminal lunatic are sent up to Government for orders, they should be accompanied by a medical history sheet in the form given below, without which a safe decision cannot be arrived at.

FORM OF MEDICAL HISTORY SHEET OF LUNATICS

N.B.—The ultimate responsibility for the preparation of this form rests with the committing officer, who must see that the requisite information is supplied by the Police and the Medical Officer without undue delay.

QUESTIONS TO BE ANSWERED BY POLICE ALONE.

1. Name of patient in full, and caste or race.
2. Name of patient's father.
3. Sex and age of patient.
4. Marks whereby the patient may be identified.
5. Married or single or widowed.
6. Condition of life and previous occupation (if any).
7. Religion.
8. Place of birth and recent place of abode.*
9. Whether homeless or living with relatives.†
10. Previous history and habits.‡
11. Whether any member of patients family has been or is affected with insanity.
12. Whether the attack is the first attack of insanity or not.
13. Age (if known) at onset of first attack.
14. Duration and nature of any previous attacks.
15. Supposed cause of insanity.§
16. Supposed exciting cause of present attack.§§

QUESTIONS TO BE ANSWERED BY POLICE AND MEDICAL OFFICER.

1. Duration of existing attack.
2. Whether suicidal.
3. Whether dangerous to others.

QUESTIONED TO BE ANSWERED BY THE MEDICAL OFFICER ALONE

1. State of bodily health.**
2. Symptoms exhibited.
3. Whether subject to epilepsy or any other disease.

*Here the name of the village, police station and district and length of residence should be stated.

†This heading should show the names and addresses of the relatives or persons legally bound to maintain the lunatic (if any), and whether they are able and willing to take charge of him or to bear the cost of his maintenance in the asylum, and, if not, why not.

‡In this, the mode of life the patient led, history of any particular illness which may have helped to produce this condition of mind, his temperament or any habit of taking or smoking any drug or any grounds for supposing that the insanity is hereditary, should be mentioned; in the case of criminal lunatic, also the nature of the crime, the detailed circumstances under which it was committed, how he came to be arrested by the police, and the section under which the lunatic was charged and the result of trial in addition to other particulars which may be available.

§State here whether he is addicted to any spirits or drugs, and if so, for how long he has been so addicted and what is the quantity habitually taken. Also whether he is a member of any particular religious or political society.

§§Under this heading should be stated whether the lunatic suffered from loss of property, loss of relatives, domestic trouble, or ill-health immediately before the attack.

**In this the general health of the patient as well as any abnormality of feature or development should be entered. It is desirable that special mention be made as to whether the patient is or is not suffering from any tubercular disease.

(*b*) In every case the medical history sheet should be accompanied by an abstract from the Asylum case-book, detailing the chief

events in his history, recorded opinions, with dates, regarding his mental attitude while under observation in the asylum, together with the opinion of the Superintendent of the Asylum on the safety of the proposed procedure.

(*c*) When a remand to jail under section 31(2) of the Prisons Act is recommended, the Superintendent of the Asylum will give specific reasons for thinking that this procedure is a safe one, having due regard to the medical history and length of unexpired sentence to run before final release from jail.

(*d*) When further detained under the Indian Lunacy Act, and the case is brought before the Visitors under section IX, or the Magistrate under section X, of the Act, it will be the duty of the Superintendent of the Asylum to furnish in writing all the details required in the medical history sheet (*supra*) for the information of the said Visitors or Magistrate, together with his own opinion of the safety of releasing the lunatic.

(*e*) In the event of the lunatic having at any time exhibited a tendency to violence, it will be the duty of the Visitors or Magistrate, as the case may be, to satisfy themselves that a sufficient length of time has elapsed since such manifestation to render a recurrence improbable, and that the sureties are in a position to control the actions of the lunatic should they recur.

(*f*) If the crime of which such person is accused be an offence against the person, or if there is reason to believe that he has at any time been aggressive, the Magistrate or Court of Sessions should consult the Civil Surgeon under whose observation the lunatic has been detained, and he should have before him the information detailed in the medical history sheet, as far as possible, before accepting bail.

(*g*) The Magistrate or Court of Sessions should keep in mind that unless the opinion of the Visitors of an Asylum, that the accused is capable of making his defence, is accompanied by a medical history of the lunatic, detailing especially the type and cause of insanity, his mental attitude while under observation and his liability to relapses, there is generally not sufficient ground before them for

making any recommendation to the Local Government for the disposal of such person under section 471. It shall, therefore, be the duty of the Superintendent of the Asylum to forward with every lunatic sent to stand his trial, his medical history sheet carefully filled in, together with an abstract from the case-book, detailing the chief events of his history with recorded opinions of his case for the information of the Magistrate or Court, and for transmission to the Local Government.

(*h*) When a criminal lunatic has never exhibited any tendency to violence, and his crime has not been an offence against the person, or, if so, if it was of a trivial nature and not evincing a decided homicidal tendency, the Local Government will be mainly guided in passing orders under section 474, by the recommendations of the Visitors and of the Superintendent of the Asylum, with whom, therefore, the responsibility of releasing or detaining the lunatic will practically rest.

(*i*) When a recovered criminal lunatic is transferred from an asylum to a jail, the Superintendent of the Asylum will forward to the Superintendent of the Jail a copy of the lunatic's medical history sheet, together with a statement showing the manner in which he has been employed in the asylum up to the time of his transfer.

(*j*) When a recovered criminal lunatic undergoing probation in a jail has a relapse of insanity, he should be immediately returned to the asylum from which he came, in anticipation of the orders of Government. He should in addition to the certificate prescribed in Appendix VII-A of the Punjab Jail Manual, be accompanied by an abstract of his history ticket, detailing the chief events in his history while in jail. Thereafter the Superintendent of the Jail should apply through the Inspector-General of Prisons for the Local Government's confirmation of his action.

(*k*) When a recovered lunatic is detained in an asylum on probation, or is transferred to a jail, he shall, when possible, be given some employment with or without pay, and with such amount of liberty as the Superintendent of the Asylum or officer in charge of the jail may think safe.

81. Attention is called to the following memorandnm, embodying the views of certain experts as to the principles which should apply generally in dealing with the cases of criminal lunatics. This memorandum is only intended to indicate broadly the action which may ordinarily be taken. The case of every criminal lunatic should be considered separately and dealt with on its own merits, and if in any case the opinion of the officers responsible for advice regarding it is that the principles embodied in the memorandum do not apply, the action recommended should the that which the special circumstances of the case suggest to the experience of the officers concerned as the most appropriate.

A.—Recovered Criminal Lunatics.

*1. If the crime be against the person, the cause, the use of intoxicating drugs, and the type of insanity, acute or chronic mania, a period of three years should be spent in an asylum free from all signs of insanity before any action is taken.

†2. If the crime be an offence against the person, the type of insanity, acute or chronic mania, and alleged cause not the use of intoxicating drugs, a period of at least four years of complete freedom from insanity should be spent in an asylum before action is taken.

‡3. If the crime be not an offence against the person, but the lunatic having at any time exhibited dangerous or violent tendencies,

*_Crime_—Offences against the person.
Cause—Intoxicating drugs.
Type—Acute or chronic mania.

†_Crime_—Ofience against the person.
Cause—Other than intoxicating drugs.
Type—Acute or chronic mania.

‡_Crime_—Not an offence against the person, but where mental attitude is aggressive.
Type—Acute or chronic mania.

a period of at least four years should be spent in an asylum before action is taken.

§4 If the crime be not an offence against the person, and there being no history that the lunatic was at any time aggeessive, he may generally be treated much as if he were a non-criminal lunatic. As has been stated in rule 8 of the rules for the guidance of executive officers, the Local Government will generally be guided in such cases by the recommendations of the Visitors and of the Superintendent of the Asylum in which the lunatic is confined.

‖ 5. If the crime be murder and the type of insanity be melancholia, a period of at least six years' complete freedom from insanity should be passed in an asylum before action is taken.

¶ 6. If the crime be attempt to commit suicide, the type melancholia and if the lunatic has not exhibited any violent tendencies while under observation, some relaxations of the rules may be permitted according to circumstances, age, period of detention, etc,

B.—Unrecovered Criminal Lunatics.

**7. If the crime be an offence against the person, the type chronic mania of the irritable aggresive kind, it will seldom be possible to release the lunatic during continuance of insanity except in advanced age and on exceptional security.

***8. If the crime be not an offence against the person, or, if an offence against the person, of trivial nature, and the lunatic has never exhibited aggressive symptoms, he may generally be treated much as if he were a non-criminal lunatic, and the Local Government dealing

§ *Crime*—Not an offence against the person, or, if so, trivial in its nature ; mental attitude not aggressive.

‖ *Crime*—Murder.

Type—Melancholia.

¶ *Crime*—Attempted suicide.

Type—Melancholia.

** *Crime*—Offence against the person.

Type—Chronic mania.

*** *Crime*—Not an offence against the person, or, if so trivial in its nature ; mental attitude not aggressive.

with his case under section 474 of the Criminal Procedure Code, will be guided mainly by the recorded opinion of the Superintendent of the Asylum as to the propriety of releasing him, and by the recommendations of the Visitors.

82. When an inquiry is postponed under section 466, the Magistrate may at any time resume the proceedings in the manner laid down in sections 467 and 468 of the Code and proceed with the case when the accused is found to be fit to conduct his defence.

83. (i) When the accused appears to be of sound mind at the time of inquiry or trial and the Magistrate finds reason to believe that he committed an act, while he was of unsound mind, which but for such unsoundness, would be an offence, the Magistrate should—

(1) if he is competent to do so, try the case against the accused;

(2) if the case is one which should be tried by the Court of Session or High Court, commit the case for trial by such Court, leaving it to that Court to deal with the matter.

(ii) The provisions of section 471 of the Code should be borne in mind in cases in which an accused person is acquited on the ground that he committed an act which would amount to an offence, while he was of unsound mind.

84. (i) If the accused, though not insane, cannot be made to understand the proceedings, as in the case of persons who are deaf and dumb, the Magistrate should proceed with the inquiry, and, in cases triable by the Court of Session or High Court, if a *prima facie* case is made out should commit the accused for trial. In cases

triable by the Magistrate himself, the trial should be proceeded with and a finding come to as to the guilt or innocence of the accused person. If the accused is comitted or convicted, the proceedings should be forwarded to the High Court with a report of the circumstances of the case, for such orders as such Court may deem fit to pass (section 341 of the Code).

(ii) The Magistrate is not authorised to stay proceedings until he has heard the whole of the evidence for the prosecution, and has come to a conclusion as to the innocence or guilt of the accused person. If a *prima facie* case is not established, the accused will be discharged. If a *prima facie* case is established the Magistrate will make an order of commitment or conviction (as the case may be) and then report the case.

(iii) In all cases in which insanity is pleaded or set up as a defence, the Superintendent of the jail in which the convict is confined should be directed to keep the prisoner under observation and to report the result thereof to the High Court before the date fixed for hearing in that Court.

85. The following instructions framed by the local Government are published for the guidance of Magistrates and others dealing with cases under the Indian Lunacy Act, 1912—

(1) *Inquiry as to the domicile of the lunatic*—A Magistrate making a reception order under section 14 or 15 of the Act, shall, after ascertaining that accommodation is available, direct the reception of the lunatic into the Punjab Lunatic Asylum, Lahore. He shall, in all cases make

strict inquiry as to the domicile of the lunatic, and shall see that entry to that effect is made in the medical history sheet (Form 9, page xlvii, in the Appendices to the Punjab Lunatic Asylum Manual) or is communicated as soon as possible to the Superintendent of the Asylum in which the lunatic is to be admitted.

(2) *Procedure to be followed by Magistrate making reception order under sections 5-11 of the Act.* A Magistrate cannot authorise the admission of a lunatic under sections 5-11 of the Act into an asylum or Mental Hospital in another province except under a general or special order of the Local Government made in this behalf (section 85 of the Act). In all such cases he shall satisfy himself that accommodation is available and that the cost of maintenance will be paid (section 11). In order to effect the earliest possible treatment of the lunatic action shall be taken as soon as possible and the Magistrate shall furnish to Government in writing full details as to domicile, reasons for admission, fees agreed to, etc.

(3) *Report to Government in case of lunatics domiciled elsewhere than in the Punjab.*—As soon as it is known that a lunatic, who has been admitted into the Punjab Lunatic Asylum, is domiciled elsewhere than in the Punjab, the fact (with details of the case) should be brought to the notice of the Local Government, so that action for the removal of the lunatic may, if advisable, be initiated early with the Government of the Province of domicile under section 33 of the Act.

CHAPTER VIII

Post-mortem and Medico-legal Examination and References to the Chemical Examiner.

1. The questions to be determined by a post mortem examination vary in different cases, and the possibility of determining them effectually is not in every case equally dependent on the stage which the process of putrefaction has reached.

Thus, in death from drowning, strangulation and various diseases, questions respecting the appearance of flesh tissues and the amount of blood in parts required to be considered, and these can only be determined soon after death, and before putrefaction has made much progress.

But it would be quite possible to determine the existence or absence of a wound or severe bruises of soft parts, even if decomposition were considerably advanced; and injuries of bones, pregnancy, presence of foreign bodies, metallic poisoning, and some profound organic diseases, are ascertainable long after death.

2. In each case the circumstances, so far as they are known respecting the death and the discovery of the body, which are communicated by the Police, will enable the Medical officer to form an opinion as to whether it would be possible by a post mortem examination to throw any light on the cause of death; and wherever such a possibility exists, or whenever nothing is known, it is his duty to make as full an examination as possible.

3. These considerations should guide a Magistrate in determining on the propriety or otherwise of exerting the power given him by law of ordering the exhumation of a body. In cases of doubt the Magistrate should, if possible, consult a Medical officer before passing such an order.

4. (i) The question as to whether any, and, if so, what articles should be sent for chemical analysis, and the transmission of such articles to the Chemical Examiner will rest ordinarily with the Medical officer (usually the Civil Surgeon), who should, however, attend to any requisition made by the Magistrate or the Police in this matter.

(ii) In cases where human subjects are not concerned the Police may send articles to, and correspond direct with, the Chemical Examiner.

(iii) All Magistrates are at liberty to forward any articles connected with any Criminal case before them to the Chemical Examiner, but the desirability of their consulting the Civil Surgeon or other Medical officer before doing so is obvious.

Everything upon which the Chemical Examiner's opinion is necessary should be forwarded to him with the least possible delay.

5. On the subject of the Chemical Examiner's work in India, the careful attention of Magistrates, Medical officers and the Police is directed to the 'Statement of the conditions of medico-legal inquiry in India as compared with such inquiry in England,' prepared by the Chemical Examiner for the Punjab, and annexed hereto as Appendix A.

6. Whenever any article is sent to the Chemical

Examiner, whether by a Magistrate, Medical officer or the Police, it should be accompanied by a statement containing all possible information that may serve to guide the Chemical Examiner in his investigation.

7. All articles should be forwarded in separate bottles, the stomach in one, its contents in another, the liver in a third, dry particles in small phials ; and when any articles liable to decomposition are sent, they should always, whether the season be hot or cold, be immersed in methylated spirits of wine, which should be used in the proportion of one-third of the bulk of the article.

The cork of each bottle should be tied down and sealed, and each bottle should be numbered. To ascertain that it has been securely closed, the bottle should be placed for some minutes with its mouth down.

8. The weight of each article sent, and, where the portion of an organ is sent, the weight of the whole organ, as well as of the part sent, and, in the case of fluids the total quantity of the fluid and the quantity sent, should be stated on a ticket attached to the bottle, and also in the letter of invoice prescribed in paragraph 21.

9. (i) The several bottles containing the articles sent should be enclosed in a tin or wooden box, which should be large enough to allow of a layer of raw cotton, at least three-fourths of an inch thick, being put between the bottle and the box ; the box should be securely fastened and covered with wax-cloth.

(ii) In cases where any of the contents of the bottles might prove offensive, the box must be of tin, and Macdougall's powder or charcoal should be dusted between the box and waxcloth.

10. All articles on being put up by the forwarding officer and sealed and numbered by him, should be packed in his presence and under his immediate supervision, and the package should then be sealed by him, in accordance with the usual rules of the Post office as to parcels, in such a manner that it cannot be opened without destroying the seal. The seal used should be a private seal, and the same throughout.

11. In all cases of transmission of articles to the Chemical Examiner, whether by a Magistrate, Medical officer or the Police, a letter of invoice, giving a full description of the articles sent, should be despatched by post, together with the statement or post mortem report. A duplicate of the invoice should also be placed between the waxcloth and the box to accompany the package. Both copies of the invoice should be stamped with an impression of the seal referred to in paragraph 10.

The Chemical Examiner should be requested to return, if possible, any articles sent to him for examination which is likely to be required at the trial.

12. In inquiries or trials, where reference has been made to the Chemical Examiner, it will be the duty of the Magistrate to examine the official who despatched the articles for analysis with regard to the identity of the invoice and seal, and thereby establish the identity of the subjects reported on with those sent for analysis, and prove that the Chemical Examiner's report refers to the subject connected with the case under inquiry. If the decision of the case turns on the results of the Chemical examination, a copy of the judgment, and of the evidence regarding symptoms and post mortem appearances, will

be supplied to the Chemical Examiner ; such copies being made at the expense of Government as a special charge.

13. In all cases of homicide, where the body is found, the identity of the body with the person said to be deceased must be fully established before the Magistrate trying or inquiring into the case.

In such cases, where there has been a post portem examination, evidence must be recorded by the Magistrate to prove the custody of the body of the deceased after death, and its delivery for the purpose of post mortem examination to the Medical officer.

14. In all cases in which articles are brought up in evidence, the custody of such articles throughout the various stages of the inquiry must be clearly traced and established. Evidence must be recorded on this point, and the evidence should never leave it doubtful as to what person or persons have had charge of the articles at any stage of the proceedings. All such articles must be distinctively marked, and any reference to them in the record must be so clear as to leave no room for doubt as to the special article referred to.

15. Magistrates are warned that the evidence of non-professional witnesses on the subject of blood and of human hairs must be accepted with the utmost caution, and that, where the case rests materially on the proof of such matters, the evidence of a professional witness must be taken, and reference made, if necessary, to the Chemical Examiner.

16. With a view to assisting Magistrates and Police officers in conducting inquiries into cases of suspected

murder and other cases in which medico-legal questions are involved, an Appendix B is hereto annexed, which contains the following :—

(a) Symptoms produced by some of the more common poisons ;

(b) Questions that may be put to medical and other witnesses in certain cases ;

(c) Points to be inquired into in case of death from rupture of spleen.

APPENDIX A

Statement of the conditions of Medico-legal inquiry in India as compared with such inquiry in Europe

Extract from the Report of the Chemical Examiner, Punjab, for 1873.

The investigation and proof of medico-legal cases in India are generally conducted under very different conditions and by very different means from those in most countries of Europe, and it is very necessary for the officers engaged in this country to understand the value and the significance of the various parts of this investigation that each has to perform, and especially for the Magistrate to know how his decision is to be modified by the way in which the investigation has been conducted.

The proof of poisoning, though it may be clear by other evidence, depends mainly on establishing the cause

of certain symptoms, or of death, that is, it rests principally on scientific evidence. Of this evidence there are three parts,—the symptoms, the post mortem appearances, if death occurred, and the chemical evidence from the proper investigation and correlation of which the unknown cause may be established.

In Europe there is a class of qualified medical practitioners, diffused almost universally, who certify to the causes of death, the public registration of which is compulsory. When a person is seized with sudden illness followed or not by death, there is almost always a medical attendant sufficiently skilled in diagnosis to recognise the symptoms as those of some known disease or, if not, he is able in one class of cases to give an opinion that these symptoms are not those of any known disease but that they are those of a certain known injury, or poison ; while in another class of cases he may only be able to say that they may possibly be those of a certain disease, but that they suspiciously resemble those of some poison or injury.

In India, qualified practitioners not being generally diffused among the people the causes of sudden illness or death are not recognised by the ignorant relatives and attendants. In this way many cases of disease may be attributed to poison, or injury, or witchcraft, and from ignorance, doubt or enmity, be reported to the Police. On the other hand, cases of real poisoning may be passed over as cases of disease. This part of the investigation has generally to be conducted by the Police who cannot be supposed to be skilled in the observation and estimation of symptoms. In addition, they have to get an account of the symptoms after they have occurred and

from ignorant witnesses, and they have to contend with a difficulty in getting them to speak the truth unknown in Europe. The evidence so far is, therefore, generally defective, and must be so till there be a class of practitioners spread among the people sufficiently skilled to certify to the causes of deaths. In all possible cases the Police should have the assistance or advice of a Medical officer, and the evidence of attendant hakims, who often show considerable acuteness in observation, should be taken down and signed by them.

The second part of the investigation, the post mortem examination, is generally made in Europe by the medical attendant along with another doctor. In one class of cases an opinion can be affirmed that the post mortem appearances are, or are not, those of the suspected disease, that they are not, or are those of the suspected injury, poison or class of poisons. In another class, in which the post mortem appearances are not so diagnostic, an opinion can only be given expressing probability or uncertainty.

In India the evidence from post mortem examination is also generally less definite from various causes. Not only is the evidence regarding symptoms, which ought to guide in distinguishing suspected and possible causes of death, more imperfect, but very often the autopsy has to be performed without any information at all. The number of possible causes of death being very numerous, it is in such cases only possible to give an opinion of certainty or probability when marked and profound lesions are left by disease, injury and poison, and there is a chance of uncommon lesions or slight appearances which might prove important in evidence being overlooked. Again,

the body often reaches the Medical officer advanced in decomposition, when the slighter appearances left by disease, injury or poison, may not be recognisable. But in all cases it is distinctly to be understood that the examination should be made, as even in such cases many causes of death may be established or negatived. Also, in all cases a complete and not a partial examination is more necessary, in this country on account of the imperfectness of the preliminary evidence as to the possible causes of death. Different causes may afterwards be suggested in the evidence regarding which judicial inquiries may be made.

In order to render this part of the evidence more definite and valuable, it is necessary that the Police, in handing over the body for examination, should at the same time hand over an account of all that is known as to the suspicious circumstances of death, and it should be noted by the Medical officer whether he was in possession of this information or not when making the post mortem examination.

In Europe the third part of the evidence—the chemical—is one of the most definite in its results. The symptoms and post mortem appearances recorded by duly qualified and informed observers are laid before the Chemical Examiner, and the question asked is whether one poison, or at most one of a class of poisons, be present in the substances sent; and he certifies to the presence or absence of those of the poisons indicated, which can be identified by Chemistry.

In India, from the imperfectness of the preceding evidence, the problem proposed is more indeterminate and

often insoluble. As a general rule, substances have hitherto been sent for analysis with no information as to what poisons might possibly have been used. This problem, which is seldom met with in a lifetime by an expert in Europe, resolves itself into a search for the poisons commonly used in the country, unless some suspicious appearances or particles lead to a conjecture in another direction. The number of substances that may cause death being practically indefinite, it would be impossible with a limited amount of material and time to attempt anything else.

In order that the Chemical Examiner's evidence may be as definite as possible, if no poison is found, he should distinctly certify as to the poison he was led to examine for and whose absence he demonstrated.

The position of the Magistrate as regards the scientific witness differs in India and England. In England, the scientific witnesses are really cross-examined by the defence both as to the facts they have observed and the opinions they bring forward and similar witnesses may be brought forward to challenge their statements.

In India, this is very seldom possible. The Civil Medical Officer has practically functions rather resembling those entrusted to him in some countries of Europe. He is a Government official charged with the investigation of facts, regarding which he has to give evidence in the same way as the Police officer. In addition, he has to interpret to the Court the precise value. significance and limits of the scientific evidence ; and it is his duty to bring forward with judicial carefulness any conclusions or opinions connected with the facts. In India, also, it is physically

impossible for the Chemical Examiner to be cross-examined, and his evidence has therefore, to be taken without any other proof of attestation than his signature. He should, therefore, restrict himself to a statement of observed or demonstrated facts, and should on no account make mention of probabilities or opinions, unless specially asked : but it is his duty to reply to any questions regarding the meaning or limits of the scientific evidence which the local Medical officer may wish to be referred, or which the Court may choose to propose.

If the cause of death be not satisfactorily proved by the scientific evidence, the Magistrate has to consider to what extent it proves or disproves anything. It is purely negative in value in the case of poisons not detectible by Chemistry which do not produce symptoms and post-mortem appearances distinguishable with certainty from those of disease of injury. It is also negative in the case of detectible poisons of which the symptoms and post-mortem appearances alone are not decisive, when the Chemical Examiner has not been led to examine for those poisons. In this class of cases the proof principally depends on whether the Medical Officer was in possession of the suspicious circumstances of the death when making the post mortem examination and whether the Chemical Examiner knew both these when examining for poison. If the latter had no information he could only certify to the absence of common poison ; and it is to be remarked that the large number of poisoning cases proved in this country is due to the ignorance of the natives, and that, as intelligence spreads, uncommon poisons will be used more frequently.

If no poison has been found, it should be noted that it may have been administered in the following cases :—

1st—If a poison has been given for which there are no given tests ;

2nd—if a dectectable poison were used for which the Chemical Examiner was not led to examine ;

3rd—if a volatile poison has been used which has been placed in circumstances in which it might have volatilised ;

4th—if certain organic poisons have been used, and a sufficient time has elapsed for their decomposition ;

5th—in the case of most organic poisons it is only the part left in the stomach after death that can be discovered, that which is absorbed into the system becomes chemically changed ; so that it is really the part that does not cause death that is detected. Consequently, if the stomach has been well cleared out by the stomach pump or vomiting, or if sufficient time has elapsed before death to allow the poison to be absorbed, none may be detected ;

6th—even in the case of metallic poisons, which can be detected after absorption, if sufficient time (three weeks to a month) elapse before death, the whole of the poison may be eliminated from the system by the kidneys, etc., and the patient may die from the lesions caused by the poison.

APPENDIX B

(*a*) *A short memorandum by the Chemical Examiner, Punjab, of the symptoms produced by some of the more common poisons.*

Poison	*Usual Symptoms.*
Arsenic *Native Name* Sammal-far Sankhya Hartal and Mansil	Vomiting; burning pain in the stomach; great thirst; sometimes cold skin; cramps in the limbs and sleepiness.
Opium Afim Affium	Sleepiness; pupils small; complete insensibility; skin sweating; vomiting seldom occurs.
Aconite Bish	Numbness and tingling in the mouth and throat, afterwards in the limbs; frothing at the mouth; sleepiness; occasionally convulsions or delirium or paralysis.
Dhatura Dhatura	Sleepiness; pupils enlarged; delirium; insensibility; vomiting rare.
Nux Vomica Kuchila	Twitching in the limbs followed by violent spasms and often lock-jaw. The spasm ceases for a time and then again returns, often without evident cause; it usually affects the whole body.

Shortest time before symptoms, 5 minutes.

Shortest time before death, 1 hour.

NOTE.—Any one of the above symptoms may be absent, though the poison by which they are usually caused has been administered.

Arsenic.—Ordinary interval between taking the poison and the appearance of symptoms, ½ to 1 hour.

Ordinary time before death, 6 to 12 hours.

Opium.—Ordinary interval		before symptoms, ½ to 1 hour.
	Ditto	before death, 6 to 12 hours.
Aconite.—	Ditto	before symptoms, 15 minutes.
	Ditto	before death, 1 to 8 hours.
Dhatura.—	Ditto	before symptoms, 5 to 10 minutes.
	Ditto	before death, 6 to 12 hours.
Nux Vomica.—	Ditto	before symptoms, ¼ to 1 hour.
	Ditto	before death, 6 to 12 hours.

(*b*)—QUESTIONS THAT MAY BE PUT TO MEDICAL AND OTHER WITNESSES IN CERTAIN CASES.

No. I

Questions which may be put to a medical witness in a case of suspected poisoning after post-mortem *examination of the body.*

I.—Did you examine the body of ———, late a resident of ———, and, if so, what did you observe ?

II.—What do you consider to have been the cause of death ? State your reasons.

III.—Did you find any external marks of violence on the body ? If so, describe them.

IV.—Did you observe any unusual appearances on further examination of the body ? If so, describe them.

V.—To what do you attribute these appearances ; to disease, poison or other cause ?

VI.—If to poison, then to what class of poison ?

VII.—Have you formed an opinion as to what particular poison was used ?

VIII.—Did you find any morbid appearances in the body besides those which are usually found in cases of poisoning by———? If so, describe them.

IX.—Do you know of any disease in which the *post-mortem* appearances resemble those which you observed in the case ?

X.—In what respect do the *post-mortem* appearances of that disease differ from those which you observed in the present case ?

XI.—What are the symptoms of that disease in the living ?

XII.—Are there any *post mortem* appearances usual in cases of poisoning by———, but which you did not discover in this instance ?

XIII.—Might not the appearances you mention have been the result of spontaneous changes in the stomach after death ?

XIV—Was the state of the stomach and bowels compatible or incompatible with vomiting and purging ?

XV.—What are the usual symptoms of poisoning by———.

XVI.—What is the usual interval between the time

of taking the poison and the commencement of the symptoms ?

XVII.—In what time does————generally prove fatal ?

XVIII.—Did you send the contents of the stomach and bowels (or other matters) to the Chemical Examiner ?

XIX.—Were the contents of the stomach (or other matters) sealed up in your presence, immediately on removal from the body ?

XX.—Describe the vessel in which they were sealed up, and what impression did the seal bear ?

XXI.—Have you received a reply from the Chemical Examiner ; if so, is the report now produced that which you received ?

XXII.—(If a female adult), what was the state of the uterus ?

No. II

Questions that may be put to a non-professional witness in a case of suspected poisoning.

I.—Did you know————, late a resident of———? If so, did you see him during his last illness and previously ?

II.—What were the symptoms from which he suffered?

III.—Was he in good health previous to the attack ?

IV.—Did the symptoms appear suddenly ?

V.—What was the interval between the last time of eating or drinking and the commencement of the symptoms ?

VI.—What was the interval between the commencement of the symptoms and death ? (If death occurred).

VII.—What did the last meal consist of ?

VIII.—Did anyone partake of this meal with——— ?

IX.—Were any of them affected in the same way ?

X.—Had———ever suffered from a similar attack before ?

(If any of the following symptoms have been omitted in answer to question I, special questions may be asked regarding them as follows.)

XI.—Did vomiting occur ?

XII.—Was there any purging ?

XIII.—Was there any pain in the stomach ?

XIV.—Was———very thirsty ?

XV.—Did he become faint ?

XVI.—Did he complain of headache or giddiness ?

XVII.—Did he appear to have lost the use of his limbs ?

XVIII.—Did he sleep heavily ?

XIX.—Had he any delirium ?

XX.—Did convulsions occur ?

XXI.—Did he complain of any peculiar taste in the mouth ?

XXII.—Did he notice any peculiar taste in his food or water ?

*XXIII.—Was he sensible in the intervals between the convulsions ?

†XXIV.—Did he complain of burning or tingling in the mouth and the throat, or of numbness and tingling in the limbs ?

*This is with reference to Nux-Vomica.

†This is with reference to Aconite.

No. III

Questions which may be put to a medical witness in a case of supposed death by wounds or blows, after post-mortem *examination of the body.*

I.—Did you examine the body of————, late a resident of———— ; and, if so, what did you observe ?

II.—What do you consider to have been the cause of death ? State your reasons.

III.—Did you find any external marks of violence on the body ? If so, describe them ?

IV.—Are you of opinion, that these injuries were inflicted before or after death ? Give your reasons.

V.—Did you examine the body internally ? Describe any unnatural appearance which you observed.

VI.—You say that in your opinion————was the cause of death ; in what immediate way did it prove fatal ?

VII.—Did you find any appearance of disease in the body ?

VIII.—If so, do you consider that, if the deceased had been free from this disease, the injuries would still have proved fatal ?

IX.—Do you believe that the fact of the suffering from this disease lessened his chance of recovery from the injuries sustained ?

X.—Are these injuries taken collectively or is any one of them ordinarily and directly dangerous to life ?

XI.—Have they been caused by manual force with a weapon ?

XII.—Did you find any foreign substance in the wound ?

XIII.—By what sort of weapon has the wound been inflicted ?

XIV.—Could the injuries have been inflicted by the weapon now before you (No.———in the Police charge sheet) ?

XV.—Could the deceased have walked so far, or spoken, &c., after the receipt of such an injury ?

XVI.—Have you chemically, or otherwise, examined the stains or the weapon, clothes, &c., now before you (No.——in the Police charge sheet) ?

XVII.—Do you believe the stains to be those of blood ?

XVIII.—What time do you think elapsed between the receipt of the injuries and death ?

XIX.—What was the direction of the wound, and can you form an opinion as to the position of the person inflicting such a wound with respect to the person receiving it ?

XX.—Is it possible for such a wound to have been inflicted by any one on his own person ? Give your reasons.

XXI.—Give precise direction of the wound. (In gun-shot wounds).

XXII.—Did the appearance of the wound indicate that the gun had been discharged close to the body or at some distance from it ?

XXIII.—Did you find any slug, bullet, wadding, etc., in the body ?

XXIV.—Do you think it possible that you could have mistaken the aperture of entrance for that of exit ?

No. IV

Questions that may be put to a medical witness in a case of supposed infanticide after post-mortem *examination of the body.*

I.—Did you examine the body of a———child sent to you by the District Superintendent of Police on the—— of——19 ? And, if so, what did you observe ?

II.—Can you state whether the child was completely born alive or born dead ? State the reasons for your opinion.

III.—What do you consider to have been the cause of death ? Give your reasons.

IV.—What do you believe to have been the uterine age of the child ? State your reasons.

V.—What do you believe to have been the extra-uterine age of the child ? Give reasons.

VI.—Did you find any marks of violence or other un-

usual appearances externally ? If so, describe them accurately.

VII.—Did you find any morbid or unusual appearances on examination of the body internally ? If so, describe them accuratey.

VIII.—Do you believe the injuries you observed to have been inflicted before or after death ? Give reasons.

IX.—Can you state how they were inflicted ? Give reasons.

X.—Do you consider that they were accidental or not? Give reasons.

XI.—Had the infant respired fully, partially, or not at all ?

XII.—Did you examine the person of———the alleged mother of the infant ? If so, have you reason to suppose that she was recently delivered of a child ? Can you state approximately the date of her delivery ? Give reasons.

No. V

Questions that may be put to a medical witness in a case of supposed death by hanging or strangulation.

I.—Did you examine the body of——, late a resident of—— ? And if so, what did you observe ?

II.—What do you consider to have been the cause of death ? State the reasons for your opinion.

III.—Did you observe any external mark of violence upon the body ?

IV.—Did you observe any unnatural appearances on examination of the body internally ?

V.—Was there any rope or other such article round the neck when you saw the body ?

VI.—Can you state whether the mark (or marks) you observed were caused before or after death ?

VII.—By what sort of articles do you consider the deceased to have been hanged (or strangled) ?

VIII.—Could the marks you observed have been caused by the rope or other article now before you (No.———of the Police charge sheet) ?

IX.—Do you think that this rope could have supported the weight of the body ?

X.—Would great violence be necessary to produce the injuries you describe ? (If strangulation).

No. VI.

Questions that may be put to a medical witness in a case of supposed death by drowning, after post-mortem *examination of the body.*

I.—Did you examine the body of———, late a resident of—— ? And, if so, what did you observe ?

II.—What did you consider to have been the cause of death ? State your reasons.

III.—Were there any external marks of violence upon the body ? If so, describe them.

IV.—Describe any unnatural appearances which you observed on further examination of the body.

V.—Did you find any foreign matters, such as weeds, straw, &c., in the hair, or clenched in the hands, of the deceased, or in the air-passages, or attached to any other part of the body ?

VI.—Did you find any water in the stomach ?

No. VII.

Questions that may be put to a medical witness in a case of alleged rape.

I.—Did you examine the person of Mussammat———? If so, how many days after the alleged rape did you make the examination, and what did you observe ?

II.—Did you observe any marks of violence about the vulva or adjacent parts ?

III.—Are these injuries such as might have been occasioned by the commission of rape ?

IV.—Was the hymen ruptured ?

N.B.—This question only to be asked in the case of the rape of a girl of tender years.

V.—Did you observe any further marks of violence upon the person of the woman ?

VI.—Had she passed the age of puberty ?

VII.—Can you state approximately what her age was ?

VIII.—Did you find her to be a strong, healthy woman, or so weakly as to be unable to resist an attempt at rape ?

IX.—Did you examine the person of the accused ?

X.—Did you observe any marks of violence upon his body ?

XI.—Was he suffering from any venereal disease ?

XII.—Did you find the woman to be suffering from a similar or other venereal disease ?

XIII.—Had a sufficient time elapsed, when you examined the person of the woman, for venereal disease to have made its appearance, in case of her having been infected ?

XIV.—Can you state, approximately, how long the woman had been suffering from this (venereal) complaint ?

XV.—Can you state, approximately, how long the accused had been suffering from this complaint ?

XVI.—Have you examined the stained articles forwarded to you, and now in Court (No.————of Police charge sheet ?

XVII.—What is the result of your examination ?

XVIII.—Do you believe that a rape has been committed or not ? State your reasons.

No. VIII.

Questions that may be put to a medical witness in a suspected case of insanity.

I.—Have you examined——— ?

II.—Have you done so on several different occasions so as to preclude the possibility of your examinations having been made during lucid intervals of insanity ?

III.—Do you consider him to be capable of managing himself and his personal affairs ?

IV.—Do you consider him to be of unsound mind, in other words, intellectually insane ?

V.—If so, do you consider his mental disorder to be complete or partial ?

VI.—Do you think he understands the obligation of an oath ?

VII.—Do you consider him, in his present condition, competent to give evidence in a Court of Law ?

VIII.—Do you consider that he is capable of pleading to the offence of which he now stands accused ?

IX.—Do you happen to know how he was treated by his friends (whether as a lunatic, an imbecile or otherwise) prior to the present investigation and the occurrences that have led to it ?

X.—What, so far as you can ascertain, were the general characteristics of his previous disposition ?

XI.—Does he appear to have had any previous attacks of insanity ?

XII.—Is he subject to insane *delusions ?*

XIII.—If so, what is the general character of these ? Are they harmless or dangerous ? How do they manifest themselves ?

XIV.—Might such delusion or delusions have led to the criminal act of which he is accused ?

XV.—Can you discover the *cause* of his reason having become affected ? In your opinion was it *congenital or accidental ?*

XVI.—If the latter, does it appear to have come on suddenly, or by slow degrees ?

XVII.—Have you any reason for believing that his insanity is of *hereditary* origin ? If so, specify the grounds for such an opinion ; and all the particulars bearing on it as to the insane parents or relatives of the accused ; the exciting cause of his attack ; his age when it set in ; and the type which it assumed.

XVIII.—Have you any reason to suspect that he is, in any degree, *feigning* insanity ? If so, what are the grounds for this belief ?

XIX.—Is it possible, in your opinion, that his insanity may have followed the actual commission of his offence, or been caused by it ?

XX.—Have you any reason to suppose that the offence could have been committed during a *lucid interval*, during which he could be held responsible for his act ? If so, what appears to you to have been the duration of such lucid interval ? Or, on the contrary, do you believe his condition to have been such as altogether to absolve him from legal responsibility ?

XXI.—Does he now display any signs of *homicidal* or of *suicidal* mania, or has he ever done so to your knowledge ?

XXII.—Do you consider it absolutely necessary, from his present condition, that he should be confined in a lunatic asylum ? or again :

XXIII.—Do you think that judicious and unremitting supervision, *out of an asylum*, might be sufficient to prevent him from endangering his own life or the lives or property of others ?

No. IX.

Questions that may be put to a medical witness in a case of alleged causing miscarriage (sections 312—316, Indian Penal Code).

I.—Did you examine the person of Mussammat—— ? If so, when ? What did you observe ?

II.—Are you of opinion that a miscarriage has occurred or not ? Give your reasons.

III.—In what mode do you consider the miscarriage to have been produced, whether by violence *per vaginam*, or by external violence, or by the use of irritants *internally ?* Give your reasons.

IV.—It is alleged that a drug called————was used, state the symptoms and effects which the administration internally of this drug would produce. Do you consider that it would produce miscarriage ?

V.—Can you state whether the woman was quick with child when the miscarriage was produced ? State your reasons.

VI.—Did you see the fœtus ? If so, at what period of gestation do you consider the woman to have arrived ?

Questions that may be put to a medical witness in a case of grievous hurt.

I.—Have you examined ————? If so, state what you have observed.

II.—Describe carefully the marks of violence which you observed ?

III.—In what way do you consider the injuries to have been inflicted ? If by a weapon, what sort of a weapon do you think was used ?

IV.—Do you consider that the injuries inflicted could have been caused by the weapon now shown to you (No. ———of Police charge sheet) ?

V.—What was the direction of the wound, and can you form an opinion as to the position of the person inflicting such a wound with respect to the person receiving it ?

VI.—Is it possible for such a wound to have been inflicted by any one on his own person ? Give your reasons.

VII.—Do you consider that the injuries inflicted constitute any of the forms of grevious hurt defined in section 320 of the Indian Penal Code ? If so, which of them ? Give your reasons.

The Magistrate in putting this question will show the Indian Penal Code to the witness, or the Magistrate may vary the form of the question so as to elicit the required information without calling the witness's attention to the Code.

VIII.—Do you consider that the person injured is now out of danger ?

IX.—It is alleged that the injuries were caused by ———Could they have been caused in the manner indicated ?

X.—Have you chemically or otherwise examined the stains (on the weapon, clothes, etc.,) now before you (No ———in the Police charge sheet)?

XI.—Do you believe the stains to be those of blood ?

N.B.—In case of injuries being gunshot wounds, questions XXI to XXIV under the head of No. III (Death by wounds) may be put to the witness.

(c) *Points to be inquired into in a case of death from rupture of the spleen.*

Report on rupture of the spleen, by Dr. Burton-Brown, late Principal of the Lahore Medical College.

Rupture of the spleen usually occurs from violence affecting the spleen when it is already diseased, but it may occur when the structure is quite healthy if the violence is very great, or it can happen without violence if the spleen is in a very diseased state ; rupture has been known to have occurred either from muscular efforts or straining, coughing or vomiting or even, it is stated, spontaneously in intermittent fever ; but these cases are very rare. It is therefore, of great importace to determine what was the condition of the spleen in all cases in which death has been caused by rupture of its substance.

When the spleen is ruptured by violence the marks of that violence can sometimes be seen on the body but not in all cases, since rupture of the spleen often produces death so rapidly that no effusion of blood can occur, and also sometimes the violence appears only to affect the spleen, and not to injure other parts.

It is, therefore, quite possible that the spleen should be ruptured by violence, and yet no evidence of the injury be seen on the skin or other parts of the body.

The condition of the spleen previous to rupture can generally be determined by its size and consistency after death. A healthy spleen measures about 5 to 5½ inches long, 3 to 4 wide, and 1 to ½ thick, and it weighs about 6 ounces—varying from 4 to 8. When the spleen is so diseased as to render a rupture from slight violence probable, it will often weigh from 10 to 30 ounces, and measure from 7 to 12 inches in length. The healthy spleen does not project beyond the ribs but the diseased spleen does so,—often to a considerable distance.

The consistency of the spleen, when healthy, is moderately firm, so that it may be cut with ease, leaving a sharp edge and smooth surface when divided, but in disease the spleen may become quite soft and pulpy or even diffluent, so as to fall away like a thick liquid when the capsule is divided. The condition, however, may also occur from putrefaction of the body if kept long after death or if the weather is very warm; and therefore these circumstances should also be ascertained.

The enlargement and softening of the spleen from disease is usually a result of previous attacks of intermittent fever or ague; it may also occur in other diseases, especially typhoid fever, scurvy and purpura.

The part of the spleen which is usually ruptured is the concave or inner surface and the extent of the rupture varies greatly; but death usually occurs more rapidly in proportion as the rupture is larger and deeper. When the rupture is small, the patient may live several days, or may even recover entirely.

If the rupture is extensive, the person is usually

incapable of moving from the place where the rupture occurred.

Lastly, in some instances, the spleen is covered with a layer or membrane caused by previous attacks of inflammation ; this may delay or even prevent death by limiting the rupture or preventing excessive bleeding.

The questions, therefore, which appear necessary to ask in cases of death from rupture of the spleen are—

1st.—What appearances of external violence were perceptible on the body ?

2nd.—What was the size and weight of the spleen after death ?

3rd.—How far did it project beyond the ribs ?

4th.—What was the consistency of the spleen—hard, firm, soft, pulpy or diffluent ?

5th,—How long after death was the body examined and what was the temperature of the air ?

6th.—Was the body much putrefied ?

7th.—What was the position of the rupture ?

8th.—What was the length and breadth of the rupture ?

9th.—Is it your opinion that the rupture was caused by external violence or not ? State your reasons for your opinion.

10th.—Were there any adhesions about the spleen ; if so, were they older than the rupture or not ?

CHAPTER IX.

Commitment to the Sessions and the trial of cases by the Sessions Court

(a).—General

9. In cases of homicide, evidence should be taken to identify the body of the person killed; to prove the custody of the body from the moment it is discovered to the time of its delivery to the Medical officer for *post-mortem* examination, and to show that it has not been tampered with during its conveyance from the scene of death to the place of examination. Clothes and ornaments found on the body should, similarly, be identified by proper witnesses, and their removal from the body and custody, until produced in Court, proved in evidence.

10. Similar care is often required in tracing the custody of poisonous substance, poisoned food, blood-stained clothes, etc. The evidence should never leave it doubtful as to what person or persons have had charge of such articles throughout the various stages of the inquiry, if such doubt can be cleared up. This is especially necessary in the case of articles sent to the Chemical Examiner. The person who packs, seals and despatches such articles should invariably be examined.

11. Clothes, weapons, money, ornaments, poisonous substances, food and every article which forms a part of the circumstantial evidence should be produced in

Court, and their connection with the case and identity should be proved by witnesses.

12. Magistrates are reminded that they (and not the Police or any other officials) are primarily responsible for the custody of all such articles and substances, from the time of their first discovery to the time of production in Court and thereafter until produced at the trial, whether such articles have or have not been sent to the Chemical Examiner for report. It is for the Magistrate to insist on the Police taking proper care of all such substances and articles until produced in Court, and to take all necessary measures for the care thereof until the close of the trial.

13. Further, Committing Magistrates must insist on the proper filing of all documents referred to, or which may be required for reference by Medical witnesses, as, for example, correspondence between Medical officers and the Police relating to the cause of death, the forwarding of the corpse, its condition, and so forth, as well as between Medical officers and the Chemical Examiner on letters forwarding to the Chemical Examiner and notes of *post-mortem* examinations. Magistrates are responsible that all such documents are carefully preserved and placed upon the record.

CHAPTER XII.

Expenses of Complainants and Witnesses attending the Criminal Courts

A.—Subordinate Courts.

Rules made by the Local Government, with the previous sanction of the Government of India, under the powers conferred by section 544 of the Code of Criminal Procedure, 1882.

NOTE.—These rules were made under the Code of 1872, and were in force immediately before the 1st day of July 1898; they, therefore, continue in force under section 2 of the Code of 1898. The references to sections of the Code of Criminal Procedure have been altered, those of the Act now in force being quoted.

RULES.

* * * *

4. Government officers summoned as witnesses under circumstances not provided or above are to be treated as private individuals would be.

5. Under the orders of Government, the attendance of the Civil Surgeon at the Criminal Courts of the station for the purpose of giving evidence, is one of his ordinary official duties, and he is not entitled to claim, nor are the Courts authorised to grant, a fee for this duty. When a Civil Surgeon is required to proceed more than five miles beyond the limits of his station, he is entitled to

travelling allowance under the ordinary rules relating to such allowances.

6. Fees for medico-legal work not falling within the ordinary duties of a Medical officer, not being a Civil Surgeon or an officer in medical charge of a civil station, shall be rupees sixteen for conducting a *post-mortem* examination and rupees ten for conducting a medico-legal examination other than a *post-mortem* examination, in cases not falling within the ordinary discharge of his duties, whether or not he is required to give evidence in a Court of Justice in connection with such examination. It is, however, to be distinctly understood that, when such an officer is required, under these circumstances, to give evidence in a Court of Justice he shall not be entitled to any remuneration in addition to the fee above sanctioned other than the usual expenses paid to a witness. This rule applies only to officers of commissioned rank. A fee of rupees four will be paid to a medical subordinate for conducting such examinations when they do not fall within the ordinary scope of his duties. It is, however, to be understood that medical subordinates lent by the Government to Municipalities or Dispensary Committees will be required to perform these examinations as a part of their regular duties without further remuneration. *Government of India, Resolution No. 3050, dated the 11th August, 1882, and letter No. 90 (Home Department), dated the 21st February, 1884.*

7. Assistant Surgeons and Hospital Assistants should when summoned to attend a Court in their official capacity, be paid the actual expenses incurred by them on

account of carriage hire, when their attendance in Court entails such expenditure.

8. In regard to witnesses summoned as "experts" a fee having reasonable relation to the loss of income, inconvenience and trouble occasioned should be fixed. But it must be remembered that a witness ought not to be classed as "expert" merely on the strength of cross-examination. The nature of the evidence is to be determined by the facts to which a witness testifies in examination-in-chief. If they are facts relating to circumstances observed by a person in his or her ordinary capacity the evidence given is ordinary evidence, if they are conclusions drawn by professional witnesses from hypothetical facts not within their special knowledge, or if the conclusions are based on a professional examination, the evidence given is expert evidence. The line taken in cross-examination to test the accuracy of conclusions drawn from facts observed has nothing to do with the nature of the evidence given.

9. Courts are warned to be careful to see before summoning the Chemical Examiner or his Assistant that the evidence of another medical witness whose services are more conveniently procurable will not be sufficient. In any case in which it is absolutely necessary to summon either the Chemical Examiner or his Assistant to give evidence in Court the following fees shall be paid :—

FOR EACH APPEARANCE IN COURT.

	In Lahore.	*Outside Lahore.*
Chemical Examiner ...	Rs. 16	Rs. 100 with 1st class railway fare, and all travelling expenses.

Assistant Chemical Examiner	... Rs. 10	Rs. 50 with 2nd class railway fare, and all travelling expenses.

B.—High Court.

Rules made by the High Court, with the previous sanction of the Local Government, under the power conferred by section 554 of the Code of Criminal Procedure, regulating to the payment of subsistence and travelling allowance complainants and witnesses attending trials before the High Court of the Punjab, in the exercise of its original criminal jurisdiction, in public prosecutions.

NOTE.—These rules were made under the Code of 1882 and continue in force under section 2 (2) of the Code of 1898.

* * * *

4. The Superintendent of the Lunatic Asylum, being the Government specialist in lunacy, is not entitled to any fee for giving expert evidence on behalf of Government in the High Court.

5. The Chemical Examiner or the Assistant Chemical Examiner when summoned to give evidence before the High Court shall be entitled to recover the following fee for each appearance :—

	Rs.
Chemical Examiner	16
Assistant Chemical Examiner	10

CHAPTER XXVI

Distinction between cases of Assault and Hurt.

It has come to notice that Magistrate are apt to confound sections 352 and 323 of the Indian Penal Code, and to issue process and convict under the former section in cases in which the complaint is laid under section 323, and the evidence for the prosecution establishes the fact of violence having been actually used.

2. In some cases this is possibly done purposely, because charges under section 352 are triable as summons-cases, whereas a charge under section 323 must be trial as a warrant case. The procedure in the former class of case is, no doubt, easier to the Magistrate ; but it is less favourable to the accused, for in warrant-cases the Magistrate is bound to call upon the accused for his defence, unless he discharges him (see sections 253 to 256 of the Code of Criminal Procedure), while in a summons case the accused is primarily responsible for the production of his evidence on the day fixed for hearing (section 244).

3. It is accordingly pointed out that section 352 of the Indian Penal Code does not apply to cases where the offender uses criminal force which actually causes hurt to the person against whom it is displayed, and that such cases fall under section 323 of the Indian Penal Code.

4. It has been ruled that section 304-A is inapplicable to cases in which an assault, however petty, is deliberately made, and death ensues, Such cases fall either under section 302, section 304, or section 335, section 325 or section 323.

APPENDIX I

The following notifications issued by the Local Government under the Code of Criminal Procedure, are published for information and guidance :—

NOTE.—The notifications published under the Code of 1882 were continued in force by section 2, sub-section (2), of the Code of 1898.

* * * * *

XV

Punjab Government Notification No. 332, dated the 3rd April, 1905.

The following notification is issued regarding the medical officers authorised to conduct *post-mortem* examinations, in supersession of Notification No. 1067, dated 14th September, 1904 :—

1. In exercise of the powers conferred by section 174 of the Criminal Procedure Code, the Lieutenant-Governor is pleased to appoint the Medical officers hereinafter named to conduct *post-mortem* examinations under that section, and to rule that, except as provided in clauses 3 and 4, bodies for such examinations shall be forwarded to the authorised officer employed within the district where the case arises, to whom they can be brought by rail or otherwise in the shortest time.

2. The authorised officers appointed under this notification are—

(1) all Civil Surgeons ;

(2) all Medical officers holding collateral Civil charges ;

(3) in respect of deaths occurring within the limits of the Montgomery and Multan Central Jails and the Lahore Central, District and Female Jails, the Superintendents of those Jails being Medical officers ;

(4) all Staff Surgeons ;

(5) all Assistant Surgeons.

3. Bodies for *post-mortem* examination shall be forwarded to Staff Surgeons (*a*) when they are those of soldiers, Camp followers or other persons entitled to the professional attendance of the Military Medical Staff ; and (*b*) when they do not come under clause (*a*), but the death occurs within the jurisdiction of the Court of the Cantonment Magistrate and there is no Civil Surgeon or Assistant Surgeon residing in the Cantonment, or within 3 miles of it.

APPENDIX VI

SHAH DOULA'S "MICE"

(Hereditary microcephaly)

In the Punjab are a number of microcephalic idiots, all presenting the same characters. They are called Shah Doula's mice or "chuis" on account of their facial resemblance to these creatures, i.e. flattened skulls and prominent ears. Shah Daula was a Mussulman saint, to whom

these idiots are considered to belong, and they are brought to his shrine at Gujrat from all parts of the country. Their origin is difficult to determine, and the priests who look after them furnish accounts designed to mislead. The opinion among the Indian population is that these microcephalics have been submitted to various forms of mechanical pressure in early childhood, producing the deformity of the cranium. This is utterly without foundation. Common rumour is, however, very persistent on this point, and their charge is obviously a source of gain to those that now retain them. Maternal heredity is frequent, as there is no kind of protection for the microcephalic girls.

There is evidently a grave perversion of what was originally a philanthropic institution, and it would seem to be urgently necessary that these microcephalic idiots be confined to a mental hospital, when the paradoxical race would eventually become extinct.

APPENDIX VII

INSTRUCTIONS FOR THE GUIDANCE OF OFFICERS CONDUCTING MEDICO-LEGAL EXAMINATIONS.

1. The medical officer shall, immediately on receiving from any person for examination a corpse or any other substance, inquire and note down the name and residence of such person, and if he be a district police officer, his number and rank, and shall without delay grant to such

person a receipt for the corpse or other substance delivered by him. The receipt so granted shall contain a list of the articles or substances received by the medical officer and the name of the person from whom they were received and to whom the receipt was given. It shall be the duty of the medical officer to examine all bodies sent to him as soon as practicable after arrival.

2. In cases where the body is sent to him, the medical officer should note the time of its arrival, the date and hour of the post mortem examination, the sex and height and apparent age of the deceased, the state of the body, whether well nourished or otherwise, the existence or absence of any caste or other marks not of recent origin, such as cicatrices, deformities and the like, and whether the marks upon it correspond with those mentioned in the police report.

3. In cases where he has been taken to the place where the body lies, besides the above, he should note the place and nature of the soil (if out in the open country) where he found the body, also its position and the state of the clothes, if any. He should also note, in cases of death from violence, the position of the body in reference to surrounding objects, such as sharp stones and the like, contact with which, it may be alleged, has produced the injury, also whether any blood stains are visible on such objects or anywhere near the corpse, and whether any weapons are lying near it. In cases of suspected death from poisoning. he should note whether any appearance as of vomited matters, etc., is present in the neighbourhood of the body.

4. In every case he should describe the condition in

which he found the body, noting the degree of coldness, warmth, rigidity and putrefaction, and the amount and nature of the clothing or covering on it.

5. Commencing at the skull and terminating at the feet, he should examine the bones to determine whether any of them are fractured or dislocated and inspect the vertebral column throughout, also, the teeth, hair, orifices of the body and general surface, and also the state of the pupils, whether contracted or otherwise and whether any substances are grasped in the hands.

6. If there be any wound or contusion of the body, he should describe its position, length and breadth. He should note the depth and direction of all wounds, whether there are any cuts on the clothes, corresponding to them, and examine the wounds carefully for the presence of foreign bodies, preserving such as are found. He should also state whether, in his opinion the wound was mortal, giving his reasons for such opinion, and he should be specially careful to examine the neck for marks of compression.

7. He should state his opinion as to whether the wounds, if any, could have been self-inflicted, or whether, they might have been the result of accident, giving reasons for his opinion.

8. He should carefully examine any gun, sword, blood-stained instrument, stick or stone, by which the wounds may have been inflicted, and mark such instrument, so as to be able to recognise it if asked to do so. He should also compare the weapon with the wound alleged to have been caused by it and state whether, in his opinion, it was possible for the wound to have been produced by it.

9. He should commence his dissection of the body by removing the top of the skull in the usual way with a saw and note anything that may appear unusual.

10. He should then make an incision from the chin down to the pubes, so as to be able to examine the windpipe, heart, lungs, liver, stomach, spleen, kidneys, and intestines, also the urinary bladder, and note whether any of these organs appear diseased, and whether any wound on the outside of the body communicates with the contents of the chest or abdomen.

11. In making his examination he should disturb as little as possible any organ which may communicate with an external wound, if he has reason to think that the body may be re-examined by another medical man.

12. In the case of females he should examine the ovaries and uterus, bearing in mind that abortion is sometimes caused by the introduction into the uterus, of pointed instruments which may cause death. He should note the presence or absence of pregnancy, the probable period to which pregnancy has advanced, and examine the external generative organs for marks of violence.

13. In the case of infants, he should note the condition of the umbilicus and cord, if any of the latter remain. He should also remove the lungs and try whether they sink or nearly sink or float, in water.

14. In cases of suspected poisoning he should examine every organ of the body.

15. He should bear in mind that death may possibly have been the result of starvation, exposure to cold or heat, smothering, drowning, lightning, strangulation,

poisoning or disease, and state whether death was due to any of these causes giving his reasons.

16. He should keep all his original notes, even though he may make a fair copy of them afterwards, and should not lend them to anyone to read.

17. In all cases the examination of the body should be thorough, and the notes of the appearances discovered should be as minute as possible.

18. Full notes should also be made in cases of examination of wounded persons.

19. When summoned to give evidence in any case in which he has made a post mortem examination or examined a wounded person, the medical officer should bring with him to court the original notes made by him at the time of conducting such an examination.

20. The notes of the examination in all cases, or a fair copy of them in the handwriting of the medical officer, should be at once made in a book kept for the purpose, and should be signed by him.

APPENDIX VIII

RULES FOR GUIDANCE IN TRANSMITTING ARTICLES OF THE CHEMICAL EXAMINER TO GOVERNMENT

The question as to whether any, and, if so, what, articles should be sent for chemical analysis, and the transmission of such articles to the Chemical Examiner

will rest ordinarily with the medical officer (usually the Civil Surgeon), who should, however, attend to any requisition made by the magistrate or the police in this matter. Chief Court Circ., chapter II section xxxiv vol. II, 1894.

In cases where human subjects are not concerned, the police may send articles to, and correspond direct with, the Chemical Examiner.

All Magistrates are at liberty to forward any articles connected with any criminal case before them to the Chemical Examiner, but the desirability of their consulting the Civil Surgeon or other medical officer before doing so is obvious.

Everything upon which the Chemical Examiner's opinion is necessary should be forwarded to him with the least possible delay.

Whenever any article is sent to the Chemical Examiner whether by a Magistrate, Medical Officer or the police, it should be accompanied by a statement containing all possible information that may serve to guide the Chemical Examiner in his investigation.

In cases of poisoning where there has been a post mortem examination, and reference is made to the Chemical Examiner, a detailed account of the symptoms, post mortem appearances, and treatment (if any), and a summary of any evidence bearing on the mode of administration of the poison, and the interval at which the symptoms appeared after the supposed poisonous substance was taken, should be sent by the medical officer conducting the post mortem examination.

In all such cases the stomach should be tied at both

ends and removed from the body, so that its contents may be retained. After removal it should be opened, the contents received into a perfectly clean bottle, and the mucous surface of the stomach carefully examined, its appearance noted, and any suspicious particles found adherent thereto should be picked off with forceps and placed in a separate package for transmission.

A portion of the liver, not less than 16 ounces if possible should be sent in all cases of death from supposed metallic poisoning ; and in cases where it is suspected that dhatura or other vegetable poison has been the cause of death the contents of the small intestines should likewise be forwarded. Suspected food, drink and drugs, and any vomited matter, should also be forwarded.

All articles should be forwarded in separate bottles, the stomach in one, its contents in another, the liver in a third, dry particles in small phials ; and when any articles liable to decomposition are sent, they should always, whether the season be hot or cold, be immersed in methylated spirits of wine, which should be used in the proportion of one-third of the bulk of the article. The cork of each bottle should be tied down and sealed, and each bottle should be numbered. To ascertain that it has been securely closed, the bottle should be placed for some minutes with its mouth down.

The weight of each article sent, and where the portion of an organ is sent, the weight of the whole organ, as well as of the part sent, and, in the case of fluids, should be stated on a ticket attached to the bottle, and also in the letter of invoice.

The several bottles containing the articles sent should be enclosed in a tin or wooden box, which should be large enough to allow of a layer of raw cotton, at least three-fourths of an inch thick, being put between the bottles and the box ; the box should be securely fastened and covered with wax-cloth.

In cases where any of the contents of the bottles might prove offensive, the box must be of tin and Macdougall's powder or charcoal should be dusted between the box and wax-cloth.

All articles, on being put up by the forwarding officer and sealed and numbered by him should be packed in his presence and under his immediate supervision, and the package should then be sealed by him, in accordance with the usual rules of the post office as to parcels, in such a manner that it cannot be opened without destroying the seals. The seal used should be a private seal, and the same throughout.

In order to minimise the chances of parcels being lost in transit between the office of the Chemical Examiner and the railway station, all articles for medico-legal examination should be sent by post as far as the post office rules allow of this being done.

Conditions under which human viscera may be sent by post.

1. The suspected viscus or other material to be sent for examination shall be enclosed in a glass bottle or jar, fitted with a stopper or sound cork.

2. Great care shall be taken that the stopper or cork of the bottle fits tightly. The precaution is especially necessary when alcohol is used as a preservative ; in such cases a ring of bees' wax or candle-wax shall be placed round the lip of the bottle so as to cover the shoulder of the stopper. The stopper shall be carefully fastened down with bladder or leather and sealed.

3. The glass bottle or jar shall then be placed in a strong wooden or tin box, which shall be large enough to allow of a layer of raw cotton, at least three-fourths of an inch thick. being placed between the bottle or jar and the box.

4. The box itself shall be encased in cloth, which shall be securely closed and sealed. The seals shall be at intervals not exceeding three inches along each seam. All the seals shall be of the same kind of wax and shall bear distinct impressions of the same device. The device shall not be that of a current coin or merely a series of straight, curved or crossed lines.

Forwarding officers will be held personally responsible that these instructions are carefully followed. The parcel should invariably be sent to the post office by the forwarding officer and not by a subordinate. A declaration of contents to the postal department is unnecessary, and should not be made.

In all cases of transmission of articles to the Chemical Examiner, whether by a Magistrate, Medical Officer or the Police, a letter of invoice, giving a full description of the articles sent, should be despatched by post, together with the statement or post mortem report. A duplicate of the invoice should also be placed between the wax-cloth and the box to accompany the package. Both copies of the invoice should be stamped with an impression of the seal already referred to.

The Chemical Examiner should be requested to return, if possible, any article sent to him for examination which is likely to be required at the trial.

If sufficient information has not been supplied to the Chemical Examiner to enable him to certify to the presence or absence of any poison about which judicial questions may arise he may, before completing his examination, apply to the transmitting officer for any further information bearing on the case that might guide him in his search, and such officer must, after such inquiry as may be necessary, furnish the information called for without delay.

In inquiries or trials, where reference has been made to the Chemical Examiner, it will be the duty of the magistrate to examine the official who despatched the articles for analysis with regard to the identity of the invoice and seal, and thereby establish the identity of the subjects reported on with those sent for analysis, and prove that the Chemical Examiner's report refers to the subject connected with the case under inquiry. If the decision of the case turns on the results of the chemical

examination, a copy of the judgment, and of the evidence regarding symptoms and post mortem appearances will be supplied to the Chemical Examiner ; such copies being made at the expense of Government as a special charge.

In all cases of homicide, where the body is found, the identity of the body with the person said to be deceased must be fully established before the magistrate trying or inquiring into the case. In such cases, where there has been a post mortem examination, evidence must be recorded by the magistrate to prove the custody of the body of the deceased after death, and its delivery for the purpose of post mortem examination to the medical officer.

In all cases in which articles are brought up in evidence, the custody of such articles throughout the various stages of the inquiry must be clearly traced and established. Evidence must be recorded on this point, and the evidence should never leave it doubtful as to what person or persons have had charge of the articles at any stage of the proceedings. All such articles must be distinctly marked, and any reference to them in the record must be so clear as to leave no room for doubt as to the special article referred to.

Magistrates are warned that the evidence of non-professional witnesses on the subject of blood and of human hairs must be accepted with the utmost caution, and that, where the case rests materially on the proof of such matters, the evidence of a professional witness must be taken, and reference made, if necessary, to the Chemical Examiner.

APPENDIX IX

A LIST OF COMMON POISONS AND THEIR AUDITORS

In cases of poisoning when the substance has been taken by way of the mouth, the stomach must be emptied before proceeding to administer the antidote. This can be done by means of :—

(a) **Emetics** :

Large draughts of lukewarm water ; mustard-water, a tea-spoonful of powdered mustard to the tumblerful of water ; alum-water. a dessert-spoonful of powdered alum to the tumblerful of water ; sulphate of zinc, 10 to 30 grains ; powdered ipecac 10 grains, or :—

(b) **The stomach-pump.**

Where the stomach-pump cannot be promptly obtained, a rubber tube may be used for the purpose of washing out the stomach.

The only exceptions to the above rule are : first, when a considerable period of time—several hours—has elapsed after the ingestion of a small amount of highly poisonous substance ; and, second, when highly corrosive substances have been taken which are likely to have partially dissolved the wall of the stomach.

ACIDS

Poisons	Antidotes
	Alkalies
Acids	Bicarbonate of soda or potash
Sulphuric	Magnesia ; chalk or whiting.
Hydrochloric Nitric Phosphoric	Plaster from the wall ; soap followed by copious draughts of tepid water ; milk ; eggs : olive or almond oil.
Oxalic Tartaric Acetic	Chalk or whiting, or plaster from the wall, with water.
Hydrocyanic (Cyanide of Potassium)	Alternate hot aud cold effusion artificial respiration ; ammonia ; atropine hypodermically.
Carbolic	Saccharated lime ; Epsom's salts : stimulants ; white of egg, milk wheat flour.

ALKALIES

Caustic Potash Caustic Soda Caustic Lime	Vinegar, or other dilute acids. Lime juice. Milk.
Caustic Ammonia Carbonate of Soda. Carbonate of Potash	Castor, linseed, almond, or other oil, freely.

MINERAL POISONS

Antimony	If vomitting absent, wash out stomach with water. Follow with astringent infusions, as of galls, oak bark, strong tea, or tannic or gallic acid. Follow this by white of egg.

Arsenic	Liq Ferri perchlor (strong) 3 ozs. poured into a pint measure, which is filled up with water; 1 oz. of Calcined Magnesia is then mixed with another pint of water; both solutions are then thoroughly shaken together, and a dose of one tablespoonful given every 5 or 10 minutes.
	In absence of above, magnesia, or fats or oils, as sweet oil, ghi, butter, milk, should be freely given.
Iodine	Starch, wheat flour or arrowroot well boiled with water, very freely. Afterwards vinegar and water,
Copper Corrosive Sublimate Lead Metallic Salts	White of egg, freely, then wash out stomach and follow by demulcents, poultices to epigastrium, and opium by suppository, or morphine hypodermically.
Phosphorus (Rat paste)	Sulphate of copper; magnesia; copious draughts of water and mucilaginous drinks; oil of turpentine (old); animal charcoal. **Avoid oils and fats.**

ALKALOIDS ETC.

Aconite	Alcohol; ammonia; artificial heat; digitalis; atropine.
Alcohol	Coffee, cold affusion to the head; artificial heat to head and feet; strychnine hypodermically.
Atropine Belladonna Hyoscyamus	Coffee and stimulants; hypodermic injections of caffeine; artificial respiration.

Calabar Bean	Stimulants; atropine artificial respiration.
Cannabis Indica	Strychnine hypodermically.
Chloral	External warmth; strong, hot coffee per rectum; strychnine hypodermically every 15 or 20 minutes. Keep patient roused.
Colchicum	Tannic or gallic acid stimulants; opium.
Conium	Tannic acid; stimulants; coffee.
Croton oil	Demulcents; stimulants opium.
Digitalis	Strong tea; tannin; stimulants; aconite; absolute quiet.
Ergot	Stimulants.
Gelsemium	Atropine; stimulants; artificial respiration.
Lobelia	Tannin; stimulants; strychnine hypodermically.
Morphine, Opium	Keep patient aroused and moving; solution permanganate of potash; cold affusion; alcohol; atropine hypodermically; blood-letting; general faradisation; artificial respiration.
Mushroom	Atropine hypodermically; castor oil; stimulants.
Quinine	Tannic or gallic acid; strong tea or coffee; alcohol; ammonia, artificial respiration.
Pilocarpine	Atropine.
Stramonium	Same as for atropine.
Strychnine, Nux Vomica	Chloroform; tannin; bromide of potassium; chloral.

Tobacco	Tannin ; diffusible stimulants ; strychnine.

ÆRIAL POISONS

Anæsthetics	Artificial respiration; inversion of the body ; flagellation ; general faradisation.
Vapour of Chlorine Bromine Iodine	Steam inhalations.
Coal gas Charcoal fumes Carbonic acid gas Choke damp Marsh gas Fire damp	Artificial respiration ; alternate warm and cold douches ; frictions ; sinapisms ; venesection ; inhalations of oxygen.
Carbon monoxide	Fresh air ; artificial respiration ; transfusion.

APPENDIX X

INDIAN POISONS ACT XII OF 1919.

Whereas it is expedient to consolidate and amend the law regulating the importation, possession and sale of poisons throughout British India ; it is hereby enacted as follows :—

SHORT TITLE AND EXTENT.

1. (1) This Act may be called the Poisons Act, 1919.

(2) It extends to the whole of British India, including British Baluchistan and the Sonthal Parganas.

POWER OF THE LOCAL GOVERNMENT TO REGULATE POSSESSION FOR SALE AND SALE OF ANY POISON.

2. (1) Subject to the control of the Governor-General in Council, the Local Government may by rule regulate within the whole or any part of the territories under its administration the possession for sale and the sale, whether wholesale or retail, of any specified poison.

(2) In particular, and without prejudice to the generality of the foregoing power, such rules may provide for—

(a) the grant of licenses to possess any specified poison for sale, wholesale or retail, and the fixing of the fee (if any) to be charged for such licenses;

(b) the classes of persons to whom alone such licenses may be granted;

(c) the classes of persons to whom alone, any such poison may be sold;

(d) the maximum quantity of any such poison which may be sold to any one poison;

(e) the maintenance by vendors of any such poison, of registers of sales, the particulars to be entered in such registers, and the inspection of the same;

(f) the safe custody of such poisons and the labelling of the vessels, packages or coverings in which any such poison is sold or possessed for sale; and

(g) the inspection and examination of any such poison when possessed for sale by any such vendor,

POWER TO PROHIBIT IMPORTATION INTO BRITISH INDIA OF ANY POISON EXCEPT UNDER LICENSE.

3. The Governor-General in Council may, by notification in the Gazette of India, prohibit, except under and in accordance with the conditions of a license, the importation into British India of any specified poison, and may by rule regulate the grant of licenses.

POWER TO REGULATE POSSESSION OF ANY POISON IN CERTAIN AREAS.

4. (1) The Local Government with the previous sanction of the Governor-General in Council may by rule regulate the possession of any specified poison in any local area in which the use of such poison for the purpose of committing murder or mischief by poisoning cattle appears to it to be of such frequent occurrence as to render restrictions on the possession thereof desirable.

(2) In making any rule under sub-section (1), the Local Government may direct that any breach thereof shall be punishable with imprisonment for a term which may extend to one year, or with fine which may extend to one thousand rupees, or with both, together with confiscation of the poison in respect of which the breach has been committed, and of the

vessels, packages or coverings in which the same is found.

PRESUMPTION AS TO SPECIFIED POISONS.

5. Any substance specified as a poison in a rule made or notification issued under this Act shall be deemed to be a poison for the purposes of this Act.

PENALTY FOR UNLAWFUL IMPORTATION, ETC.

6. (1) Whoever—

(a) commits a breach of any rule made under section 2, or

(b) imports into British India without a license any poison the importation of which is for the time being restricted under section 3, or

(c) breaks any condition of a license for the importation of any poison granted to him under section 3.

shall be punishable,—

(1) on a first conviction, with imprisonment for a term which may extend to three months, or with fine which may extend to five hundred rupees, or with both, and

(ii) on a second or subsequent conviction, with imprisonment for a term which may extend to six months, or with fine which may extend to one thousand rupees, or with both.

(2) Any poison in respect of which an offence has been committed under this section, together

with the vessels, packages or coverings in which the same is found, shall be liable to confiscation.

POWER TO ISSUE SEARCH-WARRANTS.

7. (1) The District Magistrate, the Sub-divisional Magistrate and, in a Presidency town, the Commissioner of Police, may issue a warrant for the search of any place in which he has reason to believe or to suspect that any poison is possessed or sold in contravention of this Act or any rule thereunder, or that any poison liable to confiscation under this Act is kept or concealed.

(2) The person to whom the warrant is directed may enter and search the place in accordance therewith, and the provisions of the Code of Criminal Procedure, 1898, relating to search warrants shall, as far as may be, deemed to apply to the execution of the warrant.

RULES

8. (1) In addition to any other power to make rules hereinbefore conferred, the Governor-General in Council, or, subject to the control of the Governor-General in Council, the Local Government, may make rules generally to carry out the purposes and objects of this Act.

(2) Every power to make rules conferred by this Act shall be subject to the condition of the rules being made under previous publication.

(3) All rules made by the Governor-General in Council or by the Local Government under

this Act shall be published in the Gazette of India or the local official Gazette, as the case may be, and on such publication shall have effect as if enacted in this Act.

SAVINGS

9. (1) Nothing in this Act or in any license granted or rule made thereunder shall extend to, or interfere with, anything done in good faith in the exercise of his profession as such by a medical or veterinary practitioner.

(2) Notwithstanding anything hereinbefore contained, the Local Government may in its discretion by general or special order declare that all or any of the provisions of this Act shall be deemed not to apply to any article or class of articles of commerce specified in such order, or to any poison or class of poisons used for any purpose so specified.

(3) The authority on which any power to make rules under this Act is conferred may, by general or special order, either wholly or partially—

(a) exempt from the operation of any such rules or

(b) exclude from the scope of the exemption provided by sub-section (1).

any person or class of persons either generally or in respect of any poisons specified in the order.

REPEAL OF ACT 1 OF 1904

10. The Poisons Act, 1904, is hereby repealed.

APPENDIX XI

TABULAR STATEMENT OF OFFENCES UNDER THE INDIAN PENAL CODE

Offences affecting the Human body

Sec.	Offence	Arrest with or without warrant	Warrant or summons	Bailable or not	Compoundable	By what Court triable
302	Murder	without	warrant	no	no	Sessions
303	Murder by person under sentence of transportation for life	do.	do.	no	no	do.
304	Culpable homicide not amounting to murder	do.	do.	no	no	do.
304A	Causing death by rash or negligent act	do.	do.	yes	no	do. Magistrate 1st Class
305	Abetment of suicide committed by child, or insane etc.	without	warrant	no	no	Sessions
306	Abetting the commission of suicide	do.	do.	no	no	do.

307	Attempt to murder	do.	do.	no	no	Sessions
308	Attempt to commit culpable homicide	do.	do.	yes	no	do.
309	Attempt to commit suicide	do.	do.	yes	no	Magistrate 1st or 2nd Class
312	Causing miscarriage	with w.	do.	yes	no	Sessions
313	Causing miscarriage without women's consent	do.	do.	no	no	do.
314	Death caused by act done with intent to cause miscarriage	do.	do.	no	no	do.
315	Act done to prevent child being born alive etc.	do.	do.	no	no	Sessions
316	Causing death of quick unborn child by act amounting to culpable homicide	do.	do	no	no	do.
317	Exposure of child under 12 years of age by parent etc.	without	do.	yes	no	do.
318	Concealment of birth by secret disposal of dead body	do.	do.	yes	no	do. Magistrate 1st or 2nd Class

Sec.	Offence	Arrest with or without warrant	Warrant or summons	Bailable or not	Compound-able	By what Court triable
323	Voluntarily causing hurt	with w.	summons	yes	yes	Any Magistrate
324	Voluntarily causing hurt by dangerous weapons or means	without	do.	yes	yes per. of Court	Sessions, Magistrate 1st or 2nd Class
325	Voluntarily causing grievous hurt	do.	do.	yes	yes per. of Court	Sessions, Magistrate 1st or 2nd Class
326	Voluntarily causing grievous hurt by dangerous weapons or means	do.	do.	no	no	do.
327	Voluntarily causing hurt to extort property etc.	do.	warrant	no	no	Sessions
328	Administering stupefying drug with intent to cause hurt etc.	do.	do.	no	no	do.
329	Voluntarily causing grievous hurt to extort property etc.	do.	do.	no	no	do.

330	Voluntarily causing hurt to extort confession or information etc.	do.	do.	yes	no	do.
331	Voluntarily causing grievous hurt to extort confession or information etc.	do.	do.	no	no	do.
332	Voluntarily causing hurt to deter public servant from his duty.	do.	do.	yes	no	do. Magistrate 1st or 2nd Class
333	Voluntarily causing grievous hurt to deter public servant from duty.	do.	do.	no	no	Sessions
334	Voluntarily causing hurt on grave and sudden provocation etc.	with w.	summons	yes	yes	Any Magistrate
335	Causing grievous hurt on grave and sudden provocation etc.	without	do.	yes	yes per. of Court	Sessions, Magistrate 1st or 2nd Class
336	Doing an act which endangers human life etc.	do.	do.	yes	no	Any Magistrate
337	Causing hurt by an act which endangers human life etc.	do.	do.	yes	yes per. of Court	Magistrate 1st or 2nd Class

Sec.	Offence	Arrest with or without warrant	Warrant or summons	Bailable or not	Compoundable	By what Court triable
338	Causing grievous hurt by an act which endangers human life.	without	summons	yes	do.	Sessions
352	Assault or use of criminal force etc.	with w.	do.	yes	yes	Any Magistrate
353	Assault or use of criminal force to deter a public servant etc.	without	warrant	yes	no	Magistrate 1st or 2nd Class
354	Assault or use of criminal force to a woman etc.	do.	do.	yes	no	do.
355	Assault or criminal force with intent to dishonour a person etc.	with w.	summons	yes	yes	do.
356	Assault or criminal force in attempt to commit theft etc.	without	warrant	no	no	Any Magistrate
357	Assault or use of criminal force in attempt wrongfully to confine	do.	do.	yes	no	do.

358	Assault or use of criminal force on grave and sudden provocation	with w.	summons	yes	yes	do.
363	Kidnapping	without	warrant	no	no	Sessions, Magistrate 1st Class
364	Kidnapping or abducting in order to murder.	do.	do.	no	no	Sessions
365	Kidnapping or abducting with intent secretly etc.	do.	do.	no	no	do. Magistrate 1st Class
366	Kidnapping or abducting a woman to compel her marriage etc.	do.	do.	no	no	Sessions
367	Kidnapping or abducting in order to subject a person to grievous hurt etc.	without	warrant	no	no	Sessions
368	Concealing or keeping in confinement a kidnapped person	do.	do.	no	uo	do.
369	Kidnapping or abducting a child etc.	do.	do.	no	no	do. Magistrate 1st Class
370	Buying or disposing of any person or a slave	with w.	do.	yes	no	Sessions

Sec.	Offence	Arrest with or without warrant	Warrant or summons	Bailable or not	Compoundable	By what Court triable
371	Habitual dealing in slaves	without	warrant	no	no	Sessions
372	Selling or letting to hire a minor for purposes of prostitution, etc.	do.	do.	no	no	do. Magistrate 1st Class
373	Buying or obtaining possession of a minor etc.	do.	do.	no	no	do.
374	Unlawful compulsory labour	do.	do.	yes	yes	Any Magistrate
376	Rape—					
	If the sexual intercourse was by a man with his own wife	with w.	summons	yes	no	Sessions
	In any other case	without	warrant	no	ne	do.
377	Unnatural offence	do.	do.	no	no	Sessions Magistrate 1st Class

APPENDIX XII

Value of blood-stained nail parings as evidence.

The evidence of the Chemical Examiner, Colonel D. R. Thomas, I. M. S., before the Lahore High Court, on this point, which is very instructive, is quoted below in full :

Q. (By Court.) In this case a question arises as regards the value of nail parings, and we would like your opinion on the facts. 18 days after the murder the nails of five persons were pared. They were examined by your office nine days after they were pared, that is 27 days in all after the murder. The five men concerned were Sikhs who might normally be expected to wash their hands at least three times a day, and the approver, whose nails were also pared and examined by your office, had a bath in the sacred tank at Amritsar the day after the murder. We would like to know, first of all, whether in your opinion, under these circumstances, if these nails had been stained by the blood of the murdered man, would your office and that of the Imperial Serologist be able after 27 days to detect human blood on them ?

A. Most unlikely.

Q. (By Court.) Generally what is your opinion on the value of nail parings and blood stains found on the nails from the medico-legal stand-point ?

A. Absolutely no medico-legal value whatsoever.

Q. (By Court). Will you please explain that ?

A. In cutting nail parings there is a great possibility of drawing blood whether the paring is performed by a sharp instrument or a blunt instrument. Secondly, if you draw blood that blood will contaminate the instrument

which is used and therefore you will convey the blood from one finger nail to another. Thirdly, it is very important that the knife or razor or scissors which are used should be absolutely clear and free from blood. Fourthly, human nails are used for scratching purposes, and therefore if you scratch a pimple you will naturally draw blood and this will remain on the nail. I am absolutely certain that there is no medico-legal value attached to blood found under or on the nail parings.

Q. (By Court.) The nail itself is living tissue and has therefore blood in it ?

A. Yes, at the point or end of the nail it is dead tissue but the border line between the living tissue and the dead tissue is very indefinite and therefore in cutting the dead tissue it is possible to cut the living tissue. There is also living skin under the nail which may, especially in the case of a villager who does not tend his nails, extend to the end or point of the nail and therefore in cutting a nail you may cut the skin as well and it will bleed.

Q. (By Court) Therefore it appears to follow that if any of us here had our nails pared to-day, there is a grave possibility that they would be stained with human blood.

A. That is quite correct, and that of course applies to any human being. It will apply more strongly to persons who do not look after their nails.

Q. (By Court). Therefore if a person innocent of murder had his nails pared, the nail parings might show human blood normally.

A. Quite so, there is absolutely no medico-legal value whatsoever.

Q. (By Court). Then the evidence which is frequently produced in the Courts of this Province of bloodstains on nail paring is of no value ?

A. That is true.

On this evidence Young, C.J., observed "From Colonel Thomas's evidence it is clear beyond any possibility of

doubt that the evidence of bloodstained nails is not only of no value but may be extremely dangerous to innocent persons. It has frequently been given in the past as evidence corroborating an approver or as circumstantial evidence connecting an accused person with homicide. It may have led to the miscarriage of justice."

Ujagar Singh v. Emp., A. I. R. 1930 Lah. 149 (151).

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