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SOCIAL SERVICE IN INDIA

AN INTRODUCTION TO SOME SOCIAL AND ECONOMIC PROBLEMS OF THE INDIAN PEOPLE

Written by six Contributors

EDITED BY
SIR EDWARD BLUNT
KCIE, OBE, ICS (RETD)



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PREFACE

In 1936, a committee was appointed under the chairmanship of Sir Atul C Chatterjee, G C I E , K C S I , to enquire into the system of probation for the I C S This committee recommended, *inter alia*, that in the curriculum for probationers there should be included a series of lectures on Indian social welfare, attendance at which should be compulsory, though the subject was not to be included in the final examination They drew up a syllabus of the matters to be covered by these lectures, the number of which they suggested should be about ten

This recommendation was in due course accepted, and in 1937 another committee was appointed under my own chairmanship to consider the best method of giving effect to it This committee came to two conclusions Firstly, the draft syllabus drawn up by the Chatterjee Committee was incomplete, and must be expanded Secondly, in view of the size of India, its huge population, the diversity of conditions existing in different parts of it, and the number and variety of the matters which came under the term " Indian social welfare ", it was impossible in so few lectures to present more than the barest outlines of the subject They accordingly made the following recommendations Firstly, the syllabus should be enlarged and rearranged in twelve sections Secondly, a text-book should be prepared in twelve chapters, corresponding to these twelve sections, each of which chapters should be written by a person having special knowledge of its subject-matter Thirdly, a lecturer should deliver a series of twelve lectures, each based on one of the chapters, and so fill in the written outlines with details drawn from his own experience The probationer would be expected to read the appropriate chapter before attending the lecture

These recommendations were accepted, and the text-book was written in time for the lectures to be commenced after the New Year (1938) For various reasons, however, it was

decided not to print it till the first series of lectures had been delivered, and it was supplied to the probationers of 1937–8 in typescript Meantime, it had been suggested by some who had read it that it was likely to prove of interest to a wider public than the fifty or sixty young men who join the Indian Civil Service every year and when the time came for printing, it was decided that whilst it should continue to serve its original purpose of a text-book, it should also be published for general sale, and should be revised and expanded to make it suitable for such publication The result is the present book

During the last eighty years, many changes have been taking place in India, and with the passage of time have acquired ever-increasing momentum Firstly, since the rule of law and order began, the population has grown rapidly , and in recent years, as a result of the success which the public health departments have achieved in the prevention of epidemic disease, the rate of growth has accelerated so greatly, that in many parts of India the pressure of population on the soil has already become intolerable Secondly, though the general standard of living may have risen during the same period, yet it is still positively low, and unless the growth of population can be checked, is likely to become lower Thirdly, the mentality of the individual has altered, and with it his outlook on life As a result, partly of the spread of education, partly of the multiplication of contacts with western civilization, partly of political changes, the educated Indian has been moving—first slowly, then more swiftly—to a realization of his individual place in the body politic and of his capacity both for understanding and managing his own affairs Neither the peasant nor the industrial worker is, as of old, pathetically content with his lot they have long since discovered that they lack many things which they want they have discovered that in modern conditions there are means of getting what they want, and they are now determined to employ them If there are some amenities, especially in the sphere of public health, to which they are still indifferent, it is merely because they have never yet become aware of them , but their sons, who are better educated than they, will certainly demand them Finally, both the classes and the masses in different degrees are now resentful of the restrictions imposed on individual freedom of action by ancient social customs and religious superstitions " Great events are rapidly taking shape on the subcontinent of India " , and it is well that such members of

the British reading public as feel any interest in that country should be made aware of the course of those events That is one object of this book

At the present time, processes of uplift—both rural and urban, both economic and social—are being carried out in all provinces, which are engaging the attention both of official and non-official agencies Amongst official agencies, the most important are the technical departments—agriculture, irrigation, public health, industries, labour, co-operation—for these are directly concerned with public welfare, each after its kind But the District Officer has also important work to do His primary duty has always been to advance the welfare of the people under his charge, and it is so still, but in modern conditions the discharge of it has become more difficult and more complicated Though he is no specialist himself, yet he must have some knowledge of the work of all specialist departments for he serves as liaison officer between them, he interprets their advice to the people and the people's wishes to them He must be well-acquainted with the broad principles of social economy and with the accepted methods of solving the problems of social welfare Accordingly, the young civilian, who will be called on to assist his District Officer, who will himself in due time become a District Officer, must receive instruction in this as in other branches of his duties, and it is clearly better that he should study the principles and processes of social and economic improvement in England, where the principles are well known and the processes well-organized, than in India, where theory is still new and practice is still inadequate and dispersed The second object of this book, therefore, is to provide the I C S probationer with the instruction which he requires

It is necessary to make plain the limitations of this book It does not attempt to supply a cut-and-dried solution for every problem of Indian social welfare. It does not attempt to suggest a remedy for every evil and every disability from which the Indian people suffers If that had been the scope of the book, then every chapter must have been expanded to a volume, or in the alternative, a volume must have been written for every province It purports merely, in wide terms, (i) to describe conditions as they are, (ii) to explain how those conditions came about, (iii) to record what steps have so far been taken both by the State and by private

agency to improve those conditions, (iv) to suggest the main lines along which further improvements should move In short, it attempts to provide both those who are interested in the problems of Indian social welfare and those whose duty it will be to attempt their solution, with information that will enable them to understand those problems

India and Burma have now been separated, and this book is not concerned with the latter, which will have a book of her own But separate statistics are not yet available, and it has not always been possible to subdivide them This is why so many figures quoted in the text are described as "including" or "excluding" Burma

There are certain persons to whom I have to offer warm thanks

Mr G H G Anderson, D S O, M C, of the India Office, whose help, always readily given, and whose enthusiasm, always infectious, have greatly lightened my task

Mr M Griffiths, of the Indian States Railway Bureau, Mr A H Joyce, O B E, of the India Office, and Sir David Meek, C I E, O B E, Trade Commissioner, who lent and helped me to select the photographs from which the illustrations are reproduced

Miss M L Ratcliffe, of the India Office, who from start to finish has helped me with the preparation of this book Unwearying, accurate, methodical, and above all, interested in her work, suggest themselves to me as suitable adjectives

H M Stationery Office, who by their advice and assistance have reduced to a minimum the technical difficulties involved in producing a book of this kind, with its maps, diagrams, and illustrations

Finally, the contributors themselves, who have always been both patient and obliging in responding to my editorial importunities

The Introduction which follows was written for the original text-book, and is addressed to the probationers It is reproduced here, partly because it deals with the subject of this book from another point of view, but chiefly because—whoever else may read the book—the probationers must

E A H BLUNT,

1 *October*, 1938 EDITOR

INTRODUCTION *

The chief characteristics of India are its vastness and its variety The area † of India and Burma taken together is larger by 40,000 square miles than that of Europe, excluding Russia The area of India by itself is larger by 75,000 square miles than the estimated area of China proper ‡ Its greatest length, from Cape Comorin to the Karakoram mountains in the north of Kashmir, is about 1,900 miles, or much the same distance as from London to Constantinople , its greatest breadth, from the Baluchistan border to that of Assam, is rather more than its greatest length An express train takes rather more than 4½ days to travel from Madras to Peshawar Again, India stretches over 29 parallels of latitude, from 8° North to 37° North Follow these lines across a map, and you will see that the southern line passes through Abyssinia, Nigeria, Venezuela, and North Borneo The northern line passes through or near Smyrna, Athens, Sicily, Cadiz, Virginia, California, and Japan Madras is in much the same latitude as Gambia and the Barbados , Calcutta, as Havana and Canton , Lucknow, as the Canaries and Miami , Lahore, as Madeira, Charleston, and Nankin

And India's variety is the corollary of its vastness In its huge expanses are included sandy deserts and thick forests and fertile soils , the southern tableland and the wide plains of northern India , the world's highest mountains, and low-lying flats on the sea-coast that are covered by every tide

* As written for the original text-book see Preface, *ad finem*

† The exact areas are as follows —

British India proper	862,679 square miles
Indian States	712,508 square miles
Burma	233,492 square miles
Total	1,808,679 square miles

‡ China proper—i e excluding Manchuria, Mongolia, Chinese Turkistan, and Tibet The area of China is estimated at 1¼ million square miles (See *Census Report*, India, 1931, Vol I, Part II, pp 4 and 5)

There are varieties of climate to correspond with these physical features the eternal snow of the Himalayas and the rainless sands of Sind, the temperate regions of Kashmir * and the "perpetual hot-house of Malabar" the dry heat of the northern plains and the damp heat of the deltas and coast-lines, an annual rainfall † varying round an average normal of 45 inches from a minimum normal of under 3 inches in upper Sind to a maximum normal of 426 inches in the Assam hills There are countless varieties of crops, of fruits, of timbers, of minerals In fact, India should be reckoned not as a country, but as a continent

"The Indian Empire," says Professor Rapson, "is the abode of a vast collection of peoples, who differ from one another in physical characteristics, in language, in culture, more widely than the peoples of Europe" ‡ The vastness and the variety of the population of India are as great as the vastness and the variety of the country itself The inhabitants of India and Burma combined number rather more than one-fifth, the inhabitants of India by itself number rather more than one-seventh, of the population of the world § According to ethnographers and historians, this population is composed of numerous racial elements Some of them, such as the Kolarian and pre-Dravidian, go back to neolithic times, some are pre-historic, such as the Aryans, and that race which has left the remains of a high civilization in the Indus valley, whilst others are historical invaders, from Alexander's Macedonians in 326 B C to Babar's Moguls in A D 1526

According to linguistic experts, the inhabitants of India speak between them twelve principal languages and 220 dialects belonging to four of the great families of human speech, namely the Austric, the Tibeto-Chinese, the Dravidian, and the

* Kipling somewhere says that Kashmir is the only part of India that Europeans could colonize

† The highest rainfall that has fallen in one year was 905 inches in 1861 at Cherrapunji Falls of 15 inches in 24 hours are comparatively frequent, and falls exceeding 25 inches have occasionally occurred

‡ *Cambridge History of India*, Vol I, p 37

§ The exact populations are —

British India proper	256,859,787
Burma	14,667,146
States	81,310,845
Total	352,837,778

(*Census Report*, India, 1931, Vol I, Part II, p 3)

Indo-European, whilst Arabic and Persian of the Semitic family, which were introduced by Muslims in historical times, have greatly modified some of the Indian vernaculars Again, there are in India seven principal religions Hinduism, Islam, Buddhism, Jainism, Sikhism, Christianity, and Mazdaism, the religion of the Parsees The peoples of India also observe many different customs and belong to different stages of civilization—from primitive tribes, who are at home in trees and whose weapons of attack are bows and arrows, to progressive and highly educated politicians, who are at home in council chambers and whose weapons of attack are speeches and questions And finally, Hindu society is subdivided into over 2,000 castes, varying in social rank from the Brahman, who is reckoned as little lower than the gods, to the Pariah, who is reckoned as little higher than the animals India, in short, is a museum of race, language, and religion, which cannot be matched anywhere else in the world

Since India presents so great a diversity of physical, economic, and sociological features, is it possible to discuss Indian social welfare as if India was not manifold but one? Social welfare is at best a relative term Its content will differ with the nature of the society and of its environment, but whereas in most countries there will generally be only one society and one environment, in India there are many of both In other words, is it possible to generalize satisfactorily about 353 millions of people, especially when they are broken up into many heterogeneous units?

One answer to that question is that since such generalization is carried out daily at Simla, not without success, there is no reason why it should be unsuccessful in this text-book But it cannot be more than generalization A discussion such as is attempted here can only deal with broad statements, basic principles, and major variations Any attempt at detailed description would either be so vague as to be useless, or so full of exceptions that the rule to which they belong would itself be obscured The book, in fact, must be regarded as merely a skeleton account of Indian social conditions The intention is to follow up a study of the book by a course of lectures based upon it, in which the student will be shown how to apply the principles to concrete cases, and be given further information to explain the variations, especially those between province and province Further, since practice is better than precept, he will be told how the principles have

actually been applied by those who have themselves been in the position which he will one day occupy In other words, the lecturer's chief duty will be to clothe the skeleton of the book in the flesh and blood of experience

But when the student, having completed his course of instruction in England, has to apply his knowledge in India, he will discover fresh exceptions to the rules which he has learnt, and fresh varieties of social environment, he will also discover that the examples which he has been given are only of value as guides if all the circumstances which surround them are the same He must then use his own judgment, and make his decisions for himself in the light of the more general knowledge that he has acquired from instruction But that, to the civilian, is nothing either strange or new, for throughout his service he will constantly have to take his own decisions, together with the responsibilities which attach to them Meantime, the most that can be done for him in England is, firstly, to give him, as it were, a map of the main roads in the domain of Indian social welfare, leaving him to discover the side-roads and by-paths for himself, and secondly, to interest him in that domain as a whole, in the hope that he will be thus induced to explore it more fully

Some of the readers of this book will themselves be Indians They may be inclined to ask "What is there likely to be in this book that I do not already know?" Each will no doubt know much of the conditions of his own province, but the probationer is sent, perhaps more often than not, to another province than his own, and India, as this introduction has sought to prove, is so vast and so various that an officer from Madras, if posted to the Punjab or the United Provinces, is no more likely to be acquainted with its social conditions than an Italian or a Spaniard is likely to be acquainted with the social conditions of Norway or Iceland Further, their knowledge even of the conditions of their own province is not likely to be either complete or systematic, and this book may serve to fill up the blanks in their knowledge and to arrange it for them according to a definite scheme

E A H BLUNT,
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31 *December*, 1937.

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CHAPTER I

By SIR EDWARD BLUNT

The Environment and Distribution of the Indian People

General Conditions

1 Of all the conditions that make up the environment of Indian society the most important is India herself Her geological characteristics account for the nature of her soils and the distribution of her mineral wealth Her meteorology and her physiography taken together are responsible for the diversity of her climates, the variety of her vegetable products, and for her water-supply These, again, govern the density, the occupations, and the economic habits of her people Accordingly, some description of India from these various aspects is a necessary prelude to considering the economic condition of the Indian people

Geology of India

2 *The strata*—India has not always been an Asiatic country Once upon a time—as geologists reckon time—the plains of northern India were covered by a great central sea, stretching from Europe to Burma (both inclusive), to which the name " Tethys " has been given, and of which the Mediterranean is a miserable and degraded relic At this time, which fell in the mesozoic period, the Himalayas were not yet in existence The rest of India then formed part of an Indo-African continent, and was already immeasurably old It goes back to an age called " archaean, long anterior to the age called palaeozoic—an age of which, in the absence of all fossils, life cannot be predicated, which in the geological time-scale cannot be far removed from the Bible's " in the beginning " Archaean remnants still remain in the crystalline rocks—gneiss and granite—which are exposed over much of the surface of the Peninsula Elsewhere, this crystalline

bedrock has been overlaid—long after the archaean, but still before the palaeozoic era—by immense sedimentary rocks such as the shales, limestones, and sandstones of the Vindhyas.

3 The next chapter of geological history of which I need take account relates to the mesozoic system, called Gondwana, which consists of subaerial and fresh-water deposits. The rocks are mostly shales and sandstones ; but the Gondwana system is remarkable chiefly because its fossils afford proof of the Indo-African continent already mentioned, and because it contains all the coal-beds in India

4 Towards the end of the mesozoic period there occurred a series of volcanic cataclysms which entirely altered the topography of this part of the world and reshaped it as we know it now The old Indo-African continent was broken up, and large tracts of it disappeared below the sea All that remained of it was the present Peninsula, the surface of which was covered by great flows of lava, making the chief part of the geological formation known as the " Deccan trap " This lava, over some 200,000 square miles, concealed all older rocks, filled up all existing river-valleys, and levelled out the countryside, though subsequent denudation and weathering have cut up the lava into terraces and those flat-topped hills and isolated ridges which are characteristic of the Central India and Deccan plateaux About the same time similar volcanic activity brought Baluchistan into existence , and somewhat later, in the meiocene period, there began, possibly as the result of some upheaval to the northwards, the folding movement by which the Himalayas, " rolling out as a mighty rock-wave towards the south, rose as the greatest mountain chain in the world " , and in doing so drove back the central sea, which was replaced by the Indo-Gangetic plain These changes were completed in the pleiocene period, and so northern India is immeasurably younger than southern India Even so, northern India is from ten to fifteen million years old

5 Since then there have been further geological changes in India There has been volcanic action both on the Iranian plateau and in the Malay archipelago There has been ever-increasing deposit of alluvium by the great rivers in the northern plain and elsewhere There have been changes due to desiccation, of which the Rajputana desert is one result And there have been many earthquakes—five in the last forty

years * But on the whole the geological history of India since the pleiocene era seems to have been relatively uneventful

6 *The soils* —The geological structure of India is relatively simple, for many of the strata found in other countries are either absent or weakly represented Accordingly, the Royal Commission on Agriculture recognized only four varieties of soil, which correspond to the principal geological formations † The appearance of uniformity which results from this classification is deceptive Within each class there are many qualitative variations, due sometimes to differences in the depth of the soil or in its chemical composition, sometimes to differences in the nature of the subsoil It is impossible to deal with all these variations, and only some of the more important will be mentioned

7 —(1) *The alluvial soils* of India date back to the meiocene era, when northern India first emerged from under the central sea They occupy the whole of the great northern plain, except the Sind-Rajputana desert and the hill tracts of Assam There are also alluvial strips of varying width along the coastlines and the courses of the great peninsular rivers There are two main classes of alluvium the old, which is found wherever the process of land formation has almost or entirely ceased , and the new, which is found wherever inundation is still taking place and silt is still accumulating The soils of the northern plains, except in the beds and deltas of the rivers, are almost entirely old alluvium The thickness of it has never been ascertained, but such borings as have been made show that it exceeds 1,600 feet The colour varies from fawn or khaki to brown according to its consistency, which varies from sand through loam to the stiffest clay The subsoil is generally disposed in well-marked layers, amongst which there are sometimes found beds of nodular limestone (*kankar*) ‡ In stiff clay the drainage is often impeded, and salts of soda or magnesium accumulate, which appear on the surface as an efflorescence, and render the soil completely sterile § But when the drainage is good, the rainfall moderate and well distributed, and the facilities for irrigation are

* The earthquakes were those of Assam (1897), Kangra (1904), Dharmsala (1917), Bihar (1934), and Quetta (1935)

† *Report*, pp 70–4.

‡ Much used as metal for roads , it cannot, however, stand up to motor traffic

§ Such soil is called *usar*, *reh*, or *kallar*

adequate, this old alluvium by reason of its depth is naturally fertile and capable of growing a large variety of crops The new alluvium naturally possesses the characteristics of the soils found in the basin of the river which deposited it, but its consistency is always that of heavy rich loam, capable of producing excellent crops under irrigation, or along the river banks, even without it

8—(2) There are two types of *black-cotton soil (regur)*, of different geological origin The first is derived from the Deccan trap formations, and covers most of the Bombay presidency, Berar, the western tracts of the Central Provinces, and Hyderabad The second is found in five districts of Madras (Bellary, Kurnool, Cuddapah, Tinnevelly, and Coimbatore), and is derived by weathering from ferruginous gneisses and other similar rocks * The Deccan soils vary greatly in their nature and their fertility On the hillsides and uplands they are thin and sandy or gravelly, requiring a well-distributed rainfall to make them productive In the broken country between the hills and the plains the soils are deeper and darker, and are constantly being improved by deposits washed down from higher levels Lower still, in the valleys and plains, is found the best black-cotton soil, varying in depth according to the position The Madras soils never attain so great a depth, and in their subsoils there are usually *kankar* beds which overlie the rock stratum Nor do they form continuous tracts, like the Deccan soils, but are distributed in large and well-defined patches over the country The two types of soil, however, have many agricultural characteristics in common They are tenacious of moisture and sticky when wet, for which reason they do not respond to irrigation, but when they are not too deep, the drainage is good, for the subsoil is shaly When damp, *regur* contracts, and many cracks are formed, which are sometimes several feet deep

9—(3) *The red soils* are derived from the crystalline rocks of the archaean system These cover the whole of the Peninsula, except the black-cotton tracts just mentioned † Many

* It was formerly regarded as alluvial in origin Cf *Imperial Gazetteer*, Vol III, p 10, with the Agriculture Commission's *Report*, pp 71, 72

† The red soils area includes most of Madras, Mysore, south-eastern Bombay, the eastern parts of Hyderabad and Central Provinces, Orissa, Chota Nagpur, neighbouring districts in Bihar and Bengal, and some parts of Central India and of Rajputana They are also found in the Assam hills

of these rocks are highly ferruginous, which quality produces the deep red or brown colour of the soils derived from them These soils differ in consistency, depth, and fertility no less than the black-cotton soils, and in much the same manner On the highest levels they are often gravelly and light coloured, on the lowest levels they are fertile loams or clays of a deep red, and at intermediate levels they are of intermediate character Where these soils are sufficiently deep they repay irrigation

10—(4) *Laterite* * is a rock peculiar to India and a few other countries † which have a warm climate and heavy rainfall It is a porous, clayey, ferruginous rock which is found as a mantle or cap on the summit of the hills and plateaux of Central India, and has been recognized as a formation due to the weathering of the rocks below it, which are usually basalts or gneisses Like other soils derived from rocks, the lateritic soils are thin and gravelly at high levels, and at lower levels are heavy loams, capable of retaining moisture and sufficiently fertile Their peculiarity is an almost complete lack of lime and magnesium, which gives them an acid reaction They are found in patches in the east of the Central Provinces, Chota Nagpur, and the adjoining districts of Bihar and Bengal to the north, whilst the thick ferruginous clays of the Nilgiris and other mountain districts in Madras, Bengal, and Assam are also usually classed as lateritic

11 Some authorities distinguish a fifth class of soils to which may be given the name Bundelkhandi, as they are peculiar to that tract, together with certain parts of Central India and east Rajputana These are of different origins There is a thin red soil derived from the weathering of the archaean crystalline rocks that lie a few inches below the surface There are several kinds of black soil which appear to be water-borne from the hills of Central India *mar*, which is dark and friable, *kabar*, which is less dark, but much stiffer than *mar*, *rakar*, which is found on slopes and has much the same consistency (and fertility) as gravel, and *parwa*, which is a light, yellowish loam They have attributes similar to those of red and black soils respectively, though *parwa*, like the Gangetic loams, is responsive to irrigation

* See *Encyclopaedia Britannica*, *s v*, *Imperial Gazetteer*, Vol I, p 101, Agriculture Commission's *Report*, pp 73, 74

† East Indies, Malaya, Northern Australia, equatorial Africa, South America, and Cuba see *Encyclopaedia Britannica*, *s v*

12 The older Indian soils are all similar in their chemical composition In all of them there is a deficiency of nitrogen, phosphoric acid, and organic matter, and a sufficiency of potash and lime Laterite, however, is deficient in all these elements except organic matter, of which there is generally sufficient

Physiography of India

13 It is often said that India, being isolated from the rest of Asia by almost impassable mountains to the north and by the sea to the west and east, has a geographical unity such as no other country possesses That may be true, but it is a unity made up of diversities, the unity not of a country but of a continent And in no respect does India display greater diversity than in her physical features To describe them it will be necessary to subdivide India into her three component physical parts—the Highlands, the Plain, and the Peninsula

14—(1) *The Highlands* *—Beyond the western and northern land frontiers of India there lie two huge plateaux, the Iranian † and the Tibetan In the place where three empires ‡ used to meet, these plateaux come together the Hindu Kush range of the western system is linked on to the Karakoram range, which runs eastwards under the name of Kuen-Lun, to form the northern boundary of the Tibetan plateau The Indian Highlands lie along the edges of these two plateaux , whilst in the corner formed by the Hindu Kush and the Karakoram is the state of Kashmir

15 The northern half of the western Highlands consists of bare and treeless hill ranges, intersected by the valleys § of rivers that fall into the Indus and sometimes broaden out into plains Further south, the tract includes a part of the

* This tract includes the following political divisions (1) *British territory*—provinces of Baluchistan,, North-Western Frontier, districts of Kangra (Punjab), Darjiling and Jalpaiguri (Bengal), and the Kumaun districts (United Provinces) (2) *States territory*—States and tribal areas belonging to the Baluchistan and North-West Frontier States agencies , Simla Hill States and Tehri-Garhwal, belonging to the Punjab States agency , and Kashmir

† This stretches as far west as the valleys of the Euphrates and Tigris

‡ Russia, China, and India

§ The chief are the Khyber, Kurram, Tochi, and Gomal These are also passes

Iranian plateau , it is an area of rugged mountains diversified by stretches of desert, stretches of plain, and level river valleys In all parts of this tract the valleys and plains are usually fertile and well cultivated

16 Kashmir * has been described as " a house with many storeys " From a fringe of level lowland along the Punjab frontier the country rises, as it were, in terraces Each terrace is drained by a great river—the Chenab, the Jhelum, and the Indus Away in the north-west lies Gilgit, under the shadow of the border mountains , in the far north-east lies a huge tableland at an elevation of 17,000 feet, which is dotted with salt lakes The famous valley, where tourists and officers on leave congregate, is that of the Jhelum on the second " storey "

17 The Himalayas † begin in a bend of the Indus near Gilgit, and after traversing 20° of longitude end in a bend of the Brahmaputra near Sadiya in Assam They lie within the Indian border only as far as the western frontier of Nepal , thereafter, except for a small corner in the extreme north of Bengal, they pass through the independent states of Nepal and Bhutan There are three zones a watershed on the Indo-Tibetan border , a central range with many high peaks ‡ and covered with perennial snow , and the outer Himalayas, which are spurs diverging to the south-east or south-west from the central range They cease so abruptly to the south that their general elevation a few miles from the plains is 8,000 to 9,000 feet The outer slopes are covered with luxuriant vegetation , further to the north there are magnificent forests Further north still there is a line of perpetual snow at 15,000 to 16,000 feet, though in winter snow falls as low as 5,000 feet Along the foothills to the west there is a series of fertile upland valleys, called *duns*,§ flanked to the south by

* The cis-Indus district of Hazara (North-west Frontier Province) is, physically, part of Kashmir

† (1) *British territory*—Kangra district (Punjab), Kumaun districts (United Provinces), Darjiling and Jalpaiguri districts (Bengal) (2) *States territory*—North Kashmir, Simla hill States , Tehri-Garhwal , Sikkim

‡ Some of these are Nanga Parbat in Kashmir, Nanda Devi, Trisul, and Nanda Kot in the United Provinces, and Dongkya in Sikkim, all of them between 23,000 and 26,500 feet The highest peaks, namely Mt Everest, Kinchinjunga, and Devalagiri, lie in Nepal

§ The most famous of these is Dehra Dun, a district of the United Provinces

a range of hills called Siwaliks which merges in the Himalayas near Naini Tal in the United Provinces Further east the submontane tracts * are notoriously unhealthy

18 —(2) *The Plain* †—The plain stretches from the western Highlands to the Burmese border, and from the Himalayas to the Peninsula It falls into five sections

19 —(*a*) On the Arabian Sea there is a coastal tract, consisting of Cutch, which is more an island than a peninsula, Kathiawar, which is more a peninsula than an island, and Gujarat on the mainland Cutch and Kathiawar form a medley of hill ranges, isolated peaks, deep river-beds, and fertile valleys Gujarat is a small stretch of alluvial country with a very rich soil Features of this tract are the great and little Ranns of Cutch and the Rann of Cambay, which, though marked on the map as sea, are at some times of the year merely saline swamps

20 —(*b*) Beyond this coastal tract lies the " north-western dry area," ‡ bordered by the Indus, the great Rann, and the Aravalli hills to the east A great part of it consists of the Thar, or Indian desert, which is composed of long straight sandhills, running on parallel lines and covered with scrub or coarse grass There is little cultivation, except in a narrow tract between the Aravallis and the Luni river Outside the desert, there is a stretch of rich alluvial soil in the delta or along the banks of the Indus The rest of this area used to be barren upland, but it is now well-watered by some of the Punjab canals, has been colonized and cultivated, and belongs rather to the Indo-Gangetic plain than the dry area § The Sukkur Barrage and the Sutlej Valley Canal are expected to reclaim a large part of the waste that still remains, in Sind and the Bikaner State respectively

* Called Tarai and Bhabar in the United Provinces and Duars in Bengal and Assam

† (1) *British territory*—Gujarat (Bombay) , Sind, the Punjab, the United Provinces (excluding Bundelkhand and Kumaun), Bihar, Bengal, and Assam (2) *States territory*—Jodhpur, Jaisalmer, Bikaner (Rajputana), Cooch Bihar and Tripura (Bengal), and Manipur (Assam), and the Gujarat, Punjab, and Western India States agencies

‡ (1) *British territory*—Sind, Punjab (eight western districts) (2) *States territory*—Jaisalmer, Jodhpur, Bikaner, Bahawalpur

§ Lyallpur district, for instance, which had a density of 15 persons per square mile in 1891, has now a density of 357

21 —(*c*) The Indo-Gangetic plain,* named from its two principal rivers, is in many respects the most important part of India It contains its most ancient cities, its oldest centres of civilization, and its holiest places A vast alluvial plain embracing the greater part of four provinces, lying entirely within the influence of the monsoon, it is in a year favourable to agriculture one of the most fertile tracts in the world

22 (*d*) The delta called Gangetic is in fact the combined delta of three rivers—the Ganges, the Brahmaputra, and the Meghna—and covers some 50,000 square miles It is a flat stretch of rice-fields, cut up by streams and streamlets which struggle slowly to the sea Ultimately cultivation is replaced by dense forests on swampy islands this tract, known as the Sundarbans, is from 60 to 80 miles broad, and stretches over 170 miles along the coast of the Bay of Bengal

23 (*e*) Assam consists of a famous valley and four groups of hills, called Naga, Garo, Khasi, and Jaintia from the tribes which inhabit them , they are outliers of the Upper Burma system The valley, that of the Brahmaputra, is narrow, but exceedingly fertile, whilst terraces on the hillsides are mainly devoted to the growing of tea In the far north are large areas of reed jungle, inhabited chiefly by wild animals such as the bison, the buffalo, and the tiger

24 (3) *The Peninsula* †—This old India displays a bewildering diversity of physical features that almost defies description In shape it resembles an irregular triangle, of which the apex is at Cape Comorin, the sides are the two sea-coasts, and the base is formed by the Aravalli range and the edge of the Indo-Gangetic plain It can be subdivided into a huge tableland and a fringe of low-lying coastlands The tableland forms an inner triangle within the main outer triangle of the Peninsula it has the same base, but its sides are formed

* (1) *British territory*—Punjab (except eight western and hill districts), United Provinces (except Bundelkhand and Kumaun), Bihar (except Chota Nagpur), Bengal (except Ganges Delta) (2) *States territory*—Cooch Bihar, Tripura, Rampur, Benares, Punjab States agency (except Bahawalpur and hill States)

† (1) *British territory*—the Central Provinces , the province of Orissa , the presidencies of Madras and Bombay (excluding Gujarat) , the Bundelkhand districts in the United Provinces, and the Chota Nagpur districts in Bihar (2) *States territory*—Hyderabad, Mysore, and Gwalior , the Madras, Deccan, and Eastern State agencies , and those States of the Rajputana agency which lie south and east of the Aravallis

by two ranges which run roughly parallel to the coastlines, and meet in an apex in the Nilgiri mountains These ranges are known respectively as the Western and Eastern Ghats. The Western Ghats form a stretch of almost unbroken scarp facing the sea , the Eastern Ghats are both less high and less continuous, and occasionally fling out a spur seawards to form a headland This tableland, however, has few of a table's attributes Its altitude varies from 1,500 to 2,500 feet It is crossed by numerous hill ranges, which vary from low stony ridges to such important systems as the Vindhyas and Satpuras. It is intersected by numerous large streams running through well-cultivated valleys Amongst its hill ranges are large stretches of fertile plain, which are often dotted with isolated peaks, some conical, some flat-topped, some mere heaped-up masses of boulders Elsewhere there are dense forests, inhabited by primitive tribes who depend chiefly on forest products and hunting for their livelihood In fact, just as the landscape of northen India is a marvel of sameness, so the landscape of southern India is a marvel of variety

25 The coastlands * vary from the narrowest of strips, under the Western Ghats, to stretches of country 150 miles broad The western coastline is generally fertile riceland with many palm trees, broadening out into cultivated plains in South Kanara, Malabar, and Travancore On the eastern coast, from Orissa southwards, the nature of the country is always the same Along the seashore there is a narrow belt of sand , beyond the sand there is a rich and well-irrigated area of rice and palms , beyond the palms there is the background of the Eastern Ghats. Further south the scene is one of treeless plains, with an occasional cultivated valley and palm groves along the coast, but the general appearance is one of " dry, red desolation "

Meteorology of India

26. (1) *The monsoons* —" The primary fact in the meteorology of India is the alternation of seasons, known as the south-west and north-east monsoons " The south-west monsoon is a continuation of the south-east trade wind, and consequently a wind of oceanic origin, which is highly charged

* (1) *British territory*—Orissa , Madras (excluding Deccan districts) , Bombay coastal districts from Thana to North Kanara (2) *States territory* —Eastern States agency , Travancore, Pudukkottai

with humidity The north-east monsoon is a dry wind of continental origin The south-west monsoon is advancing from June to September and in retreat from October to December ; the north-east monsoon is in operation from the middle of December to the end of May The two between them are responsible not only for India's climatic conditions but also for the most important part of her water-supply

27 The south-west monsoon on approaching India divides into two currents, of which one moves up the Bay of Bengal and the other up the Arabian Sea About one-third of the Bay current enters Burma , the rest makes its way northwards over eastern Bengal and Assam, crossing the coastline between Puri and Chittagong Its course is blocked by the Assam hills and the Himalayas , it then bends westwards, moving right along the Indo-Gangetic plain till it meets the north-western hills Throughout its track it deposits rain, heavily on and near the hills, more lightly over the plains Meantime, the Arabian Sea current is directed against the western coastline Where it meets the Western Ghats it is forced to ascend, and then crosses the Deccan eastwards till it joins the Bay current It gives very heavy rain to the Western Ghats and the coastline below them, but having thus deposited the greater part of its vapour, has relatively little rain to give to the Deccan Further north, the current crosses the coasts of Cutch, Kathiawar, and Sind, passes over the Rajputana desert, and then goes north and north-east, being deflected from upper Sind by the earth's rotation, till it meets the Bay current over the eastern Punjab It gives good rain to the coastlands, to the eastern Punjab, to Rajputana east of the Aravallis, and to the western Himalayas, but none to the Indian desert

28 The full strength of the monsoon lasts for about three months, but rain does not fall continuously throughout this period. In time the air is drained of its vapour, and a " break in the rains " takes place But in due course the monsoon winds over the Arabian Sea and the Bay again advance landwards along their original tracks and give a second burst of rain, which in due course is followed by a second break From the agriculturist's point of view this alternation of burst and break is an important feature of the monsoon Incessant rain would cause the growing crops to rot, and a break gives the sun a chance of ripening them Too long a break, no

doubt, would bring disaster, but so would too long a spell of continuous rain In fact, moderation and punctuality are the chief qualities of the favourable monsoon If the commencement of the rains come late or their end comes early, if the fall is either less or more than is required, then in the tract affected the crops will suffer some measure of damage

29 There are parts of India where the monsoon is usually satisfactory—the coastline, Assam, Bengal, Bihar, the Punjab, and Gujarat In the central parts of India, however, the rainfall is apt to fail and agriculture is accordingly precarious—the United Provinces, Rajputana, Central India, and the Deccan This is borne out by history From 1770 to 1919 there have been seventeen famines Of these, Bengal, Bihar, Orissa, and Gujarat were each affected by only one The Punjab has suffered thrice But of the precarious tracts, the United Provinces have suffered eleven times and the Deccan, Rajputana, and Central India twelve times each

30 From the third week in September the two monsoon currents are in gradual retreat from northern India, each returning along the line of its original advance , by the end of October they have passed out of India altogether

31 The north-east monsoon * blows from the middle of January to the end of May , it is a land wind which gets hotter and drier as the spring advances, and at no time carries any moisture Such rains as occur in this period are mainly due to one of two causes Firstly, there are the cyclonic storms which occur from time to time in the Arabian Sea and the Bay of Bengal The cyclones in the Arabian Sea have little effect on the rainfall, except along the coast, for from the latitude of Bombay they curve westwards towards Arabia The Bay cyclones follow a similar direction, and so reach the eastern seaboard, travel inland, and give considerable amounts of rain These cyclones usually precede the advance of the south-west monsoon in May and early June † or follow its retreat in October The October cyclones give valuable rain, in November and early December, to the Coromandel

* It is sometimes said that the north-east monsoon is really the south-west monsoon in retreat

† The rainfall which precedes the monsoon rainfall proper is called the *chhoti barsat* (small rainfall), to distinguish it from the monsoon rainfall proper, which is called *bari barsat* (great rainfall).

districts and to the southern tracts of Madras, Hyderabad, and Bombay

32 The second cause of the cold weather rains are certain shallow storms * which form over Persia and travel thence into northern India They are, as a rule, heavy only in the Punjab plains, the submontane tracts in that province, and the United Provinces, and to a lesser degree in northern Bihar , but at this time even insignificant amounts are of great agricultural importance But the most important precipitation during this period is the heavy fall of snow in the western Himalayas and the higher mountains on the north-west border , for this snow, melting in April and May, feeds the rivers of northern India, so that they never fail entirely even in years of drought

33 (2) *The temperatures* —It is unnecessary to mention the causes which govern the seasonal and diurnal variations of temperature in India, for they are the same as in other countries in the same latitude , but these variations are affected by certain of India's physical features

(1) The Himalayas and the mountains in the north-west act as a barrier to keep out the air movements that occur in the lower atmosphere behind them, but not those that occur in the higher The higher air movements, which have passed over snows precipitated on these mountains, cause considerable falls of temperature in northern India

(2) India is open to breezes from the sea over and along the coastline which, being cooler than land breezes, lower the temperature wherever they penetrate

34 These facts have important effects on the variations of temperature in different parts of India, both seasonal and diurnal

(1) Though northern and north-western India lie in a temperate zone and the southern districts of Madras lie in a tropical zone, yet temperatures in the former tract during the hot months are markedly higher than they are in the latter For instance, the average mean temperatures of Jacobabad and Lahore at this time are about 95° and 90° respectively , those of Trichinopoly and Madras are about 89° and 88°

* They are often called Christmas rains, because they ought to, but often do not come at that time

(ii) The range between extremes of temperature in any year is far greater in northern and north-western India than in southern Madras In Jacobabad and Peshawar, for instance, the range is about 40°, and in Lahore about 38° , in Madras and Trichinopoly it is about 13°, and in Trivandrum about 5° In other words, though southern Madras is never as hot as north-western India in the summer, it does not enjoy the same cold weather

(iii) The range between extremes of temperature in the same day is much less on the coasts than in the interior, and also much less in the wet than in the dry season It is at its least everywhere in the rains and at its greatest on a cold weather day in northern India In December or January a man may go comfortably in shirt-sleeves at midday, but will require a heavy overcoat or a fire by which to sit after sundown

35 (3) *The climates*—The Hindustani word for climate is *abhowa* Literally, this means water and air, and when an Indian uses it he is thinking of drinking water, to the purity of which he rightly attaches much importance For our purposes, however, we may translate it by humidity and temperature, which are the two chief ingredients in the composition of a climate Enough has been said of the causes which produce these ingredients individually, but we have still to consider them in combination

36 In the United Provinces the climatic seasons are as follows

March to June	dry heat
July to October	damp heat
November to February	dry cold

In the first period the heat increases till it reaches its peak a few days before the rains break Throughout, a strong west wind, called the *loo*, is blowing from sunrise to sunset, and sometimes goes on blowing far into the night In due course the wind will change to the east, which is a sign that the monsoon is approaching When the rains have broken the temperature will drop by several degrees, but will rise again during a break. In October the monsoon passes away and the temperature begins to drop permanently Then comes the dry cold of the winter months, which is sometimes varied, after rain, by a cold and damp mist, sometimes by a spell of frost, which does great damage to the crops. But generally it is as pleasant a climate as there is anywhere in the world

37. As the climate of the United Provinces is, so is that of the rest of the Indo-Gangetic plain and of the Peninsular tableland There may be variations from place to place in the range of temperatures or the length of the various seasons, but, *mutatis mutandis*, the description of the climate of the United Provinces will also serve for the other tracts It is only in the high hills or in those parts of the country which are either permanently under the influence of the sea winds or else never come under that influence, that there are any marked climatic differences In the Himalayas, Kashmir, and the north-western hills the climate is cool in summer and during the rains, very cold in winter, and dry or damp according to the rainfall In Sind and the Rajputana desert there is little or no rain and the climate is always dry , the summer heat is prolonged, but there is also some cold weather Assam and the coastlands of Madras and Bombay are always damp, in degrees that vary from season to season and from place to place But whilst Assam is always cool, the coastlands are always warm

38 (4) *Water-supply* *—The chief source of India's water-supply is the rainfall But partly because of the heat of the climate, partly because of the vagaries of the monsoon, the rainfall is never sufficient by itself to satisfy the needs of agriculture In most parts of India it is always necessary, in all parts it is sometimes necessary, to supplement it by artificial irrigation from other sources The Indian peasant himself neglects no such source , he takes his water wherever he finds it—whether it be from a stream, or a swamp, or a well, or from the borrow-pit on the roadside It is enough, however, to consider the three most important sources of supply, namely, wells, storage works, and canals

39 (*a*) *Well irrigation* —Conditions for well irrigation are best in the northern plains, where the supply of subsoil water is everywhere large and in some parts, such as the western districts of the United Provinces, apparently inexhaustible Accordingly the Punjab and the United Provinces between them account for over 75 per cent of the total area irrigated from wells There is also well irrigation in Bombay, Madras, and southern Bihar and for garden crops

* For further information regarding the water supply, see Chapter V, paras 40 *et seq*

all over the country Wells are almost all open and of two kinds the temporary (*kachcha*) well, which is merely a hole in the ground, and costs a few rupees, and the permanent (*pakka*) well, which is lined with masonry and costs from 100 to 1,000 rupees or over, according to the depth and size of the well, the cost of the lining, and the nature of the subsoil Water is usually raised by bullock-power, but sometimes, if the lift is not too great, by man-power * The peasant has his own primitive lifting appliances, the most common, involving bullock-power, is as follows A large leather bucket, holding from 25 to 40 gallons, is fixed to one end of a rope, which passes over a pulley at the well mouth, the other end is attached to the yoke of a pair of bullocks. By walking down a ramp of a length equal to the depth of the well, the bullocks raise the bucket, and by walking up the ramp lower it once more All these primitive methods have in different degrees the same defects—they are all laborious, they are all slow, and relatively to the results achieved they are all expensive Tube wells driven by oil engines have been constructed in some provinces, but they are never likely to supplant open wells and bullock-power, for both their capital and their running costs put them beyond the reach of all but wealthy landlords † In the western districts of the United Provinces, where Government can obtain cheap power from its own hydro-electric system,‡ it has solved the problem by building tube wells on a large scale § at its own expense and selling their water to cultivators at rates which compare favourably with the rates for canal water But unfortunately cheap electricity is not to be found everywhere in India

40 (*b*) *Storage works*—Storage works may, for convenience, be divided into two classes, which we may call the reservoir and the tank The typical reservoir is a lake formed by the construction of a dam across the bed of a river or across the mouth of some other catchment area, the waters of which it impounds and contains The typical tank is an excavation in the ground, partly surrounded by an embank-

* Man-power is never used for a lift of over 15 feet

† Government is willing to make loans to assist in building such wells, but few cultivators can afford to borrow the amount required

‡ See para 48 below and Chapter V, para 42

§ There will be 1,490 of these scattered over seven districts by the end of 1938–39, together with some 300 more, which belong to private owners—mostly landlords

ment, which receives the overflow of the rainfall * The reservoir is most commonly built to contain the flood waters of rivers the flow of which is not perennial but intermittent Such a river is in flood during the rains, when irrigation is seldom needed, but when irrigation *is* needed in the cold weather, waters run low Thus the reservoir stores up the surplus of the wet season for use in the dry Most of these reservoirs are intimately connected with canal systems But there are also independent reservoirs, such as that called Periyar in Madras, which impounds by means of a dam the waters of a river which would otherwise have flowed into the Arabian Sea, and diverts them, by a tunnel bored through a watershed, to the other side of the Peninsula Large reservoirs of this kind are not numerous, for they are very expensive to build

41 From time immemorial tanks have been an important feature of Indian irrigation Most of the smaller village tanks were no doubt constructed by the villagers who occupied the lands which the tanks protected, the larger tanks, capable of serving several villages, were generally built either by rulers or pious donors Some of these old tanks are still in use—as, for instance, two tanks in the Chingleput district of Madras, which are more than 1,100 years old † But such large tanks are relatively few, and as a source of irrigation the smaller village tanks, though rarely commanding more than twenty or thirty acres each, are far more important than the larger There are no tanks in Assam, Sind, and the Punjab, relatively few in Bengal, Bihar, and Bombay, and relatively many in the Central Provinces and the United Provinces But they are both most numerous and most important in Madras, where the area which they irrigate is about three and a half million acres. Some 30,000 of these Madras tanks are under the control of Government Elsewhere they are generally the property of private owners

42 (*e*) *Canals*—Canals may be divided into two classes, perennial and inundation A perennial canal is one which has an assured supply of water all the year round, for which purpose a weir is constructed across the bed of the river to

* "Tank" in this sense is an Anglo-Indian term The derivation is uncertain It possibly comes from the Portuguese *tanque*, which is related to the French *étang* and the Latin *stagnum*

† See R K Mukerjee's *Local Government in Ancient India*, p 147

hold up its water supplies and divert as much of them as may be needed into the canal Inundation canals are channels taking off from the banks of a river at a level above the low-water level of the stream When the river is in flood the water flows into these channels, and is thus distributed to the tracts to be irrigated , and it continues to flow until the river has fallen below the level of the channels Such canals are not as satisfactory as perennial canals, since they last for only five months instead of a whole year The most important inundations canals * are connected with the Indus and its tributaries, though many of them have now been replaced by perennial canals

43 Perennial canals can be most conveniently described in three groups—(1) canals of the Indus basin , (2) canals of the Ganges basin , and (3) the Peninsular canals

44 (1) *Canals of the Indus basin* —The Indus rises near Mt Kailas, at the back of the Himalayas It flows north-west till it reaches Gilgit, and then turns southwards, to fall into the Arabian Sea The five rivers in its basin, which give their name to the Punjab, are the Jhelum, the Ravi, the Chenab, the Beas, and the Sutlej , of these the first two fall into the Chenab, the Chenab and the Beas fall into the Sutlej, and the Sutlej, which also rises near Mt Kailas, falls into the Indus near Mithankot Of these five rivers, four supply two canals each The upper and lower Bari Doab canals take out from the Ravi , the Sirhind and the Sutlej Valley canals take out from the Sutlej , whilst the Jhelum and Chenab each feed two canals known as Upper and Lower These systems between them, together with such inundation canals as remain, cover the greatest part of the Punjab The Punjab canals have turned sandy wastes into fertile fields and have entirely changed the face of the country "God has said, from water all things were made" that is undoubtedly true of the Punjab On the Indus itself the only great work is the Sukkur Barrage, which has been built across the Indus between Sukkur and Rohri, with canals that take out from the Barrage on both sides of the river This system has replaced inundations canals over most of Sind, and will also give water to three and a half million acres that are at present unirrigated

45 (2) *Canals in the Ganges basin* —The Ganges rises from an ice-cave in the State of Tehri-Garhwal It enters the plains

* Many of these Indus canals date back to Mogul times

at Hardwar and flows south-east through three provinces till it reaches the Bay of Bengal It has many tributaries both in the north and south, of which I need mention only those which are connected with canals There is first the Jumna, which also rises in Tehri-Garhwal, and flows on a course roughly parallel to that of the Ganges till the two meet at Allahabad Another important Himalayan tributary of the Ganges is the Gogra, which rises in Tibet, with its affluent the Sarda From the south the Jumna receives the Betwa and the Ken, whilst the Ganges receives the Son and Ghaggar

46 The Jumna feeds three systems, known as the Western * and Eastern Jumna canals, and the Agra canal These irrigate between them the eastern districts of the Punjab and the western districts of the United Provinces The Ganges itself feeds two canals which are called Upper and Lower Ganges respectively, and water the whole of the *doab* † from Saharanpur to beyond Cawnpore The sixth large system, known as the Sarda canal, was opened in 1930 and irrigates most of Oudh Of the smaller systems the most important are those of the Betwa, Ken, Ghaggar, and Son These rivers all rise in the plateaux of the Peninsula, and since they receive no snow-water, they degenerate into mere rivulets in the dry season Accordingly, all of them have been provided with storage reservoirs The Betwa and the Ken canals give water to Bundelkhand, the Ghaggar canal to Mirzapur, whilst the western and eastern Son canals irrigate the Bihar districts of Shahabad, Gaya, and Patna

47 (3) *Peninsular canals* —The Peninsular canals are of a different kind, being connected with the deltas of five great rivers—the Cauvery, the Penner, the Kistna, the Godavari, and the Mahanadi It will suffice to describe one of these—namely, the Cauvery system, which is the oldest, and served as a model for the Kistna and Godavari systems The Cauvery rises in the Western Ghats It traverses Mysore, enters Madras at the falls of Sivasamudram, and reaches the Bay of Bengal near Negapatam Near Trichinopoly the Cauvery breaks into two channels round the island of Seringam About the

* Many of the channels in the Western Jumna system are very old, they were first made by Firoz Shah Tughlaq in 1351 and repaired by the Emperor Akbar in 1568

† A tract between *du ab* (two waters)—in this case between the Ganges and Jumna

eleventh century a Chola king constructed a huge dam below the island to keep the two branches separate This is known as the Grand Anicut (dam), and serves as the basis for the present Cauvery canal system Between 1836 and 1848 British engineers built further dams to regulate the flow of the water in the three main branches of the river These main branches break up into innumerable channels, which serve the purpose of canal distributaries The flow is regulated by sluice gates and regulators built near the head of the more considerable of these streams Thus this system consists of a network of natural canals linked to a series of artificial dams The systems of the Godavari, the Kistna, and the Penner closely resemble the Cauvery system, and need not be described The Mahanadi system also has its dam, but the canals are artificial, whilst the dam is not only an irrigation work, but also serves to protect the delta from flooding There are small canals in the Central Provinces connected with the Wainganga, the Tandula, and the upper reaches of the Mahanadi, and in Bombay connected with the Nira, Mutha, and the Godavari in its upper reaches , but they irrigate only restricted areas

48 The water-supply is also important as providing a valuable source of power The first introduction of hydro-electricity into India took place in 1903, when the falls of the river Cauvery were harnessed to generate power for the Kolar goldfields and also for the city of Bangalore Between 1910 and 1919 three hydro-electric schemes were carried out to supply power to Bombay city and its neighbourhood , to which a fourth scheme, now in process of development, will be added All these schemes depend on the heavy monsoon rainfall of the Western Ghats, which is stored in reservoirs in the foothills and carried thence by pipes to the power-houses These Bombay schemes are controlled by different supply companies, for all of which Messrs Tata and Sons, Ltd , are managing agents * In Kashmir there is yet another hydro-electric system dependent on the river Jhelum which serves the towns of Baramulla and Srinagar The Punjab has also its scheme, which depends on the river Uhl, a tributary of the Beas , the head works are in the Mandi State, and power is supplied to forty-seven towns from Delhi in the south to Sialkot in the north In the United Provinces there is yet another scheme dependent on certain falls of the Ganges

* This is the same Tata family referred to in para 56 below

canal, which serves eighty-eight towns in the ten western districts Other hydro-electric schemes have been projected or partly constructed in Mysore, Madras, and Hyderabad * All these schemes supply power both for domestic and industrial purposes, whilst in the Punjab and the United Provinces they are giving assistance to agriculture in various ways †

Products of India

49 (1) *Animals*—The livestock of India consists of horses (most of which are ponies), camels, mules, donkeys, sheep, goats, oxen, and buffaloes , but I need deal only with the last four ‡

50 There are nearly as many sheep in Madras as in the rest of India put together, but they are of an inferior kind their fleeces are hair rather than wool, and they rarely give more than two pounds of it annually The best sheep are found in north-western India and Rajputana, and are of many kinds, of which two are especially esteemed—the *dumba* or fat-tailed sheep, which has long, coarse wool and makes good mutton, and the Bikaner sheep, which produces the best wool in India Outside Madras sheep are numerous in the Punjab, Rajputana, the United Provinces, Bombay, and Bihar § The Indian goats are more widely distributed than the Indian sheep, being found chiefly in Madras, the United Provinces, the Punjab, Bengal, and Bihar, which account between them for over 80 per cent of the total There are a variety of breeds Some are valued for their milk, for the goat is the poor man's cow, whilst all are valued for their meat and their skins Both sheep and goats bring in a considerable income to their owners by folding

51 The oxen and buffaloes form one of India's most important agricultural assets The males of both species are draught animals without them neither ploughing nor watering would be possible and no produce could be carried to market Of the females, the she-buffalo is kept for her milk, the cow is kept chiefly to reproduce her kind Oxen and buffaloes are

* The possibility of other hydro-electric projects is being considered both in the United Provinces and elsewhere

† See para 40 and Chapter V, para 42, where the connection of the U P hydro-electric system with agriculture is fully explained

‡ For a full description of these animals, see Chapter V, paras 21 *et seq*

§ Sheep are often used as beasts of burden in the Himalayas

found all over India, though their distribution, relative to the need for them, is uneven Their numbers are large in the United Provinces, Bengal, Bihar, and Madras, which provinces between them account for nearly 70 per cent of the total Everywhere there are more bullocks than cows, and more she-buffaloes than he-buffaloes Though cattle are one of the cultivator's most important assets, they are also one of his most pressing problems, which will be discussed elsewhere *

52 (2) *Forest products*—The forests cover about 12 per cent of the total area of British India, and are found in every province the largest tracts are in Assam, the Central Provinces, and Madras They contain many valuable timbers,† and a great variety of gums, resins, dyes, drugs, and tanning materials,‡ which are both used in Indian manufactures and exported But the forests have an indirect as well as a direct utility They conserve the rainfall, holding it up from immediate dispersal along the drainage lines, ensuring its absorption in the subsoil, and so assisting to maintain the water level To the peasant who lives in their vicinity, they provide grazing-grounds and fodder for his cattle, bamboos and timber and thatching material for his house, fuel for his fire, and leaf mould for his fields Forestry, in a word, is the handmaid of agriculture, and in that capacity is of even greater importance than as a provider of raw materials for commerce

53 (3) *The crops*—Before describing the crops of India, it is necessary to explain that in northern India, the Central Provinces, and the greater part of Bombay there are two distinct harvests—the *kharif* and the *rabi* The *kharif* crops are sown in June and July, when the rains break, and are reaped from October to December The *rabi* crops are sown in October and November and reaped from February to May In southern Madras, where the rainfall by reason of the north-east monsoon lasts till December and the climate is continuously warm, the distinction of crops and seasons tends to

* See Chapter IV, para 25 and Chapter V, paras 26 *et seq*

† Teak, deodar, *sal*, ironwood, ebony, rosewood, *shisham*, the *sundari* tree of the Sundarbans, are some of the most valuable There are also such trees as birch, spruce, fir, cedar, oak, cyprus, yew, box, walnut, and pine in the hillside forests of the Himalayas and Assam, and a variety of fruit-trees everywhere

‡ Lac, cutch or catechu, gambier, myrobalans, resin, and turpentine are some of them For forest products generally, see *Imperial Gazetteer*, Vol III, Chapter II, and Smythies' *India's Forest Wealth*

disappear, and there are only early and late sowings of the same crops As a result of the two crop-seasons, there is in all provinces a certain area that bears two crops in the same year * This double-cropped (*dofasli*) area varies greatly in different provinces in Bombay, for instance, it is negligible, whilst in Bihar and the United Provinces it amounts to about 25 per cent of the net cropped area ' The principal *kharif* crops are rice, *juar*, *bajra*, sesamum, cotton, jute, groundnut, and *ragi* At the *rabi*, rice, *juar*, and sesamum are grown a second time in southern India, together with gram, in northern India the chief *rabi* crops are gram, wheat, barley, maize, linseed, rape, and mustard Sugar-cane is in the ground for about ten months About 38 per cent of the total area of British India is sown with crops, whilst another 7 per cent. is current fallow

54 The agricultural products of India † consist of cereals, pulses, oilseeds, fibres, drugs and narcotics, fodder crops, garden crops, fruit and sugar-cane, which is a tropical perennial grass ‡ The cereals are rice, wheat, barley, oats, maize, and various kinds of millet, notably *juar*, *bajra*, and *ragi* Amongst the pulses the chief are gram (*chana*), pigeon-pea (*arhar*), and green pea (*matar*) The principal oilseeds are linseed, sesamum, groundnut, rape, and castor The chief fibres are cotton, jute, and hemp (*san*) The chief drugs and narcotics are tobacco, pepper, betel, cardamom, tea, coffee,§ and cinchona Of these, tea, coffee, and cinchona, together with rubber, are plantation crops Tea is grown in Assam, Bengal, and Madras, coffee in Mysore and Coorg; rubber in southern India, and cinchona both in southern India and northern Bengal At one time poppy was also important, but its cultivation has decreased greatly since the export of opium to China has come to an end The chief fodder crops are lucerne and guinea grass, but the area is small except in Bombay and the Punjab Garden crops include both indigenous and imported vegetables, which vary from

* A field usually lies fallow in one season out of four Thus double-cropped land usually produces three crops in two years, or (if sugar-cane be in the rotation), four crops in three years

† For the regional distribution of these products, see Chapter IV, paras 4 *et seq*

‡ For a full list of crops, see *Imperial Gazetteer*, Vol III, pp 98, 99

§ The devotees of Indian coffee affirm that it is the best coffee in the world

ginger, turmeric, and chillies to potatoes, cabbages, and cauliflowers Many fruits * are grown in India, both indigenous and exotic, and belonging both to the temperate and tropical zones Of indigenous varieties the chief are the mango, the jack-fruit, various kinds of citrus, such as lemons, limes, and oranges, guavas, cape-gooseberries, quinces, cocoanuts, and grapes Of imported fruits, there are the lichi and loquat from China , a kind of melon called *kharbuza*, imported from Central Asia by the Emperor Babar , and a variety of fruits from the West Indies and Central and South America, notably the pineapple, the papaya, various kinds of custard-apple, the cashew-nut, the pommelo, and, most recent of all, the grapefruit Of temperate types of fruit there are the apple, pear, peach, apricot, almond, strawberry, loganberry, and the yellow raspberry Walnuts and other kinds of nut also grow in the hills

55 (3) *Mineral products*—India has always been rich in mineral products, and from time to time in the past has made profitable use of them Her gold and her diamonds used to be famous , as late as the end of the eighteenth century her iron and steel, her copper and brass products gave her " a prominent position in the ancient metallurgical world " , whilst her nitre was one of the principal exports of the old East India Company Then came the industrial revival in England India was flooded with cheap European manufactures, and her own production of metals and metal wares either ceased or was greatly reduced, and it was not till the beginning of the present century that it once again began to increase †

56 Though the list of minerals that are known to exist in India is long,‡ there are but few of them that are actually produced, and it is only with these that I shall deal They are coal, iron, manganese, gold, mica, petroleum, salt, nitre, and a variety of building stones and materials § As might be expected, the greatest part of the mineral wealth of India is to be found in the Peninsula Coal is found chiefly

* For a list of fruits, see *Imperial Gazetteer*, Vol III, pp 75, 76 The question of fruit-growing is further discussed in Chapter V, paras 51 *et seq*

† For a full account of Indian industries, see Chapter IX

‡ For a full list, see *Imperial Gazetteer*, Vol III, pp 130, 131

§ Burma also produces lead, silver, copper, zinc, wolfram, rubies, and especially petroleum

in the Gondwana geological system,* which stretches across south-western Bengal, eastern Bihar and Orissa, Central India, and the Central Provinces † The most important coalfields are in the east of this tract, at Raniganj, Jharia, Bokaro, and Giridih The chief iron-mines and the chief iron-works are in Orissa and south-eastern Bihar, near the coalfields, with their headquarters at Jamshedpur and Tatanagar ‡ There are also manganese mines in the same tract, but it is more widely distributed than other metals, and there are other deposits in Vizagapatam and Bellary (Madras), Chhindwara, Balaghat, and Bhandara (Central Provinces), Dharwar and Gujarat (Bombay) Gold is extracted from a rich reef in the Kolar goldfields in Mysore and from a mine at Hutti in Hyderabad Mica is found in southern Bihar and Nellore (Madras) Petroleum exists both in Baluchistan and north-eastern Assam, but is only extracted in the latter Rock salt is obtained from the Khewra mines in the Salt Range of the Punjab, or from quarries in Kohat and near Kalabagh on the Indus , brine salt comes from Kharagodha on the Rann of Cutch, from various sea-salt factories on the coast, and from the great Sambhar Lake in Rajputana The chief source of nitre is still Bihar, as it was in the days of Warren Hastings There is a large variety of building stones—the granites of North Arcot (Madras) and Mysore, the limestones and sandstones of Shahabad (Bihar), Jubbulpore and Bilaspur (Central Provinces), and Attock and Rawalpindi (Punjab) , the Porbandar stone of Kathiawar , whilst slate is quarried in the districts of Gurgaon and Kangra (Punjab) and of Monghyr (Bihar), and lime and cement are obtained wherever there are convenient deposits of limestone, notably at Satna (Rewah State) and Katni (Central Provinces), both near the Vindhyas But a very large part of India's mineral wealth still awaits exploitation §

Transport and Communications

57 Till the middle of the nineteenth century communications in India were always bad and means of transport were

* See para 3

† Coal is also found in Assam, Baluchistan, and the Punjab, but there is little exploitation

‡ Called after Jamshedji Tata, founder of the Tata Iron and Steel Company, the biggest concern of the kind in India

§ For a description of minerals from the industrial point of view, see Chapter IX

primitive There was no natural highway from north to south, for the forests and mountains which separate the northern plain from the Peninsula formed an almost impregnable barrier In northern India itself there have always been ancient trade routes, for the most part running east and west, but they were mere tracks, not roads in the modern sense, and though they were easily traversed in the dry season, they were impassable in the rains Throughout this period, moreover, travel was dangerous Each route had its recognized perils—drought, famine, wild beasts, robbers, even ghosts and demons Accordingly, travellers usually moved in well-guarded caravans The Mogul emperors did much to improve communications, demarcating the regular caravan routes by milestones (*kos minars*),* pillars, and avenues of trees, and establishing police-posts (*chaukis*) at convenient intervals to guard them, in return for which services they charged certain transit dues (*rahdari*) But their system, though efficient enough so long as the government was powerful, broke down when the empire began to decay Throughout this period the means of transport were sometimes carts drawn by teams of oxen, but more generally pack animals Individual travellers usually rode on horses, camels, or elephants, or were carried in palanquins and bullock carts The inland trade in grain was carried out by the *banjaras*,† who were professional carriers possessed of substantial capital and large numbers of pack-oxen

58 For many years the Company kept open the old Mogul routes, most of which radiated from Delhi or Agra and ran generally east and west There was one that ran roughly north to south, from Mirzapur (United Provinces) to Jubbulpore (Central Provinces), and doubtless there were others in the south itself

59 The Company also supplemented its road communications by a free use of waterways, water-borne traffic

* The *kos*, like most other Indian weights and measures, varies from place to place In Mysore it is about four miles, in northern India a *kos* is equal to 5,000 *gaz* The distance between the *kos minars* still standing is two miles four furlongs 158 yards, which makes the *gaz* approximately thirty-three inches

† Generally called *brinjarees* in old books In the eighteenth century they became the camp followers and sutlers of troops on the march The Banjara still survives as a caste, and to a certain extent is still engaged in the carrying trade

has always been considerable till the railways came into existence, being carried first in country boats and subsequently in steamers The principal waterways in northern India were the Indus, Ganges, and Brahmaputra , whilst there were also some navigable canals connected with the Godavari, Kistna, and other rivers of southern India Even yet there are steamers running on the Brahmaputra and the lower reaches of the Ganges, which carry both passengers and goods

60 It was not till after 1833 that any systematic attempt was made to improve the roads The Grand Trunk road, running from Calcutta to Delhi, was then built in sections Subsequently Lord Dalhousie took the matter of communications in hand, and not only improved and extended the roads, but reorganized the postal system, introduced the telegraph, established the public works department, and made a beginning with railway construction By 1859 eight railway companies had been formed, most of which still survive, for the construction of some 5,000 miles of line Since then railway building has progressed rapidly By 1905 the total length of line was 28,000 miles , by March 1936 it had become 43,000 miles, of which 38,000 miles are under State control Of the remaining 5,000 miles, about 3,000 are railways owned or financed by Indian States and the rest belong to private companies

61 The construction of railways has had a considerable influence on road development Firstly, the main railway lines naturally ran parallel to the main roads, so that there was competition between them It now became necessary to build new roads in a direction which would enable them to feed, rather than compete with, the railways Secondly, the old roads had generally been left unbridged , for since their main object was to carry agricultural produce to market and since the harvest season coincided with the drying up of the rivers, no more was required than ferries and floating bridges, except in the case of the larger rivers Roads were now required that would give access to the railways at all times of the year, and which must therefore be both bridged and metalled The length of bridged and metalled roads in India is now 59,000 miles

62 Over large areas of Northern India stone is not procurable and road metal is for the most part nodular limestone (*kankar*) But *kankar* is relatively soft, and being bound

with nothing better than water, was apt to cut up into ruts even when the wheeled traffic which it carried was drawn only by horses or bullocks But when motor traffic came into use (and the use of it has increased very rapidly since 1914), the *kankar* roads quickly deteriorated, and in recent years there has been an increased demand for stone roads bound with bitumen, and large sums have been spent on building them Accordingly, the Government of India in 1929 built up a central road fund from the proceeds of an additional tax on petrol, from which fund it made allotments to the provinces for their road-building, but the road fund has not gone very far, and many provinces have been compelled to spend large sums of capital in addition A further difficulty has now arisen, namely that through motor traffic, instead of feeding, is beginning once again to compete with the railways, to the detriment of central revenues

63 There is also a very large mileage of unmetalled roads The most important of these are provided with bridges or ferries and are drained throughout, but many are nothing more than accommodation roads or village lanes, differing from each other only in the degree of their badness and usually impassable in the rains Accordingly, though Indian communications have greatly improved, there is still much to be done before they can be regarded as satisfactory, especially in respect of unmetalled roads, which serve as links between the interior of the rural tracts and the metalled roads

64 Other forms of communication that deserve mention are the postal, telegraph, and telephone services, and broadcasting Of the first two no more need be said than that they are both highly efficient, whilst the former is also cheap The telephone service is now to be found in most important towns, trunk lines are being rapidly extended, whilst telephonic communication has also been established with foreign countries There remains broadcasting This began in 1926 with an agreement between the Government of India and a private company, which was to operate two stations at Bombay and Calcutta The company, however, went into liquidation, and in 1930 Government took over the services with a new organization named "All-India Radio" At first there were two 1 5-kw stations at Bombay and Calcutta, and a 0 25-kw at Peshawar, but in 1935 a new 20-kw transmitting station was erected at Delhi, and in 1936 a large programme of

development was sanctioned which provided for short-wave 5 and 10-kw stations at Delhi, short-wave 10 kw stations at Bombay, Calcutta, and Madras, medium-wave 5 kw stations at Lahore, Lucknow, Trichinopoly, and Dacca, and a 0 25-kw medium-wave station at Madras Of these, the Delhi and Bombay short-wave stations and the Lahore medium-wave stations have already started regular transmissions Rural broadcasting for village audiences by means of communal receivers was first introduced in Peshawar, and was followed in 1935 by a similar experiment in the Punjab , but neither of these experiments was successful because of lack of staff and funds, and rural broadcasting has now been taken over by All-India Radio Village receivers have been provided by the Governments of Bombay and Bengal, and there are now 100 sets working in India These sets are given free, and no charges are made for their use, whilst the batteries are also recharged without cost The sets are provided with a time switch, which turns on the set at the appointed time and keeps it running for an hour In the programme no item lasts for more than five minutes, and music is alternated with talks, dialogues, and dramas, introducing where possible some idea relating to health, education, or agriculture It is proposed to undertake an intensive scheme of rural broadcasting in Delhi province, which will probably begin next winter * The intention is to test the value of rural broadcasting as leading to improvements in the villager's condition of life

Occupational Distribution of the People

65 At the census of 1921 † the occupational distribution of the Indian people was briefly as follows

Pasture and agriculture	72 4 per cent
Industry	10 5 ,,
Trade and transport	7 1 ,,
Public administration and liberal arts	3 1 ,,
Other	6 9 ,,

The figures establish the predominance of agriculture over all other occupations As we shall presently see, agriculture

* 1938–9 —Cf Chapter XII, para 37, for rural broadcasting in the hydro-electric area of the United Provinces

† I use the figures of 1921 instead of those of 1931 because certain changes were made in the classification at the latter census which would require somewhat lengthy explanation There has, in fact, been little real change between the figures of 1921 and 1931

has attracted many deserters from the traditional function of the caste * The increase of 1 per cent amongst agriculturists since 1911 represents about three million persons. No other change in that decade was of importance, so far as the main heads are concerned, but there have been some interesting changes within them "Organized" industries, for instance, have certainly gained from "unorganized" as the "organized" industry is one which employs not less than ten hands, this is an increase in large-scale, as opposed to small-scale, industries † Again, there is an increase under "professions" in the fourth of the main heads, which is clearly due to the gradual spread of literacy

66 Of women, only about one-third are "employed," as against two-thirds of the men But many women have probably been returned as "unemployed" who are engaged in domestic duties, such as cooking, grinding grain, drawing water, and looking after their children There is no doubt that they would regard themselves as "employed," even if the enumerating male did not ‡

67 The subsidiary occupation is a matter of great economic importance, for it often makes, especially amongst agriculturists, all the difference between poverty and comparative ease Unfortunately, the census returns shed little light on the matter the subsidiary occupation most commonly returned is itself agriculture, for there are many in all classes, from village artisans to wealthy business men, who lease or own land and derive an income from it as well as from their principal occupations There are, in fact, many peasants who have some other source of income, dairy work, selling grass or fuel, basket weaving, the making of rope, *gur* (coarse sugar), and tobacco, the ginning, spinning, and weaving of cotton, are some of them There are also a variety of cottage industries in many places, which in the United Provinces vary from carpet weaving and the manufacture of scents to the rearing of poultry and turkeys It is also important to remember that the economic unit amongst Hindus is not the individual but the joint family,§ and that one or more of its

* See Chapter II, para 39

† For information regarding industries, see Chapter IX

‡ Such women in 1931 were returned as workers under the head "domestic service"

§ See Chapter II, para 8

members are often in separate employment and earning an income of their own, of which they usually remit a part to the common pool of the family income

68 At the present time there can be no denying the fact that India is making inadequate use of her resources—even of her soil There is not, perhaps, much room for expansion of cultivation, for most of the land that is still culturable but uncultivated could only be brought under the plough at prohibitive expense But there is no doubt that the soil which is already cultivated could by improved methods of agriculture be made to give a greater yield * In other directions, India has by no means finished with the exploitation of her forests and has barely made a beginning of the exploitation of her minerals. And she has many ancient handicrafts, none of them as prosperous as they used to be, but still capable of adding materially to the sum total of her wealth † During the last few years, indeed, there has been a considerable measure of industrial expansion "Under the combined stimulus of protective duties and a high general tariff which is having a protective effect that was never intended", the output of industries already in existence, notably textiles and iron and steel, has greatly increased, and many new industries have come into existence But much remains to be done before India takes her proper place amongst the industrial nations

Vital Statistics ‡

69 Vital statistics in India are notoriously defective In urban areas they are maintained by the municipal authority, which is often uninterested, in rural areas they depend on reports made by village headmen or watchmen, who are illiterate as well as uninterested, and having as a rule to travel considerable distances to make their reports, are apt to neglect a troublesome duty The error varies greatly in 1931 the difference between the population calculated on the vital statistics and that recorded at the census was only $\frac{1}{2}$ per cent. in Madras, whilst in Assam it was over 60 per cent But the error occurs both in the record of births and that of deaths, and the statistics are reliable enough to show the general trend of the rates

* For these matters, see Chapter V

† For Indian industries generally, see Chapter IX.

‡ See also Chapter VI, paras. 14–6

70 (1) *The birth-rate*—The Indian birth-rate is high In 1935 it was 34 9 per thousand of population, as against 33 7 in 1934 and 35 5 in 1933 In the decade 1923–32 it averaged 34 5, with a minimum of 33 6 in 1925 and a maximum of 36 8 in 1928 It is apt to vary with general prosperity thus, in the United Provinces after the famine of 1907–08 and the malaria epidemic of the latter year, it fell from an average rate of over 40 in the previous six years to 37 5 in 1908 and 33 3 in 1909 Again, in the disturbed and gloomy period 1919 to 1922 * the all-India rate fell to an average of 31 8 The provincial average rates for the three decades between 1901 and 1930 are given in an appendix In Bombay and Madras the rate has risen during this period, whilst in the Punjab it has remained almost stationary But in the other six provinces there have been considerable decreases, which vary from 4 8 per cent in Bihar and Orissa to 9 1 per cent in Bengal In view of the general inaccuracy of the record of births it is unwise to attach too much importance to the figures themselves, but there is no reason to suppose that the number of unrecorded births is larger now than it was thirty years ago, and the downward trend of the birth-rate during this period can be accepted as fact The cause is obscure The factors which bring about the high birth-rate are social—the universality of marriage, early cohabitation, and that powerful desire for male offspring which leads to a complete absence of prudential restraint, † and in spite of the efforts of reformers, these factors, at all events amongst the masses, have so far lost little of their influence It is true that at the end of this period the general standard of comfort was probably higher than it was at the beginning, and that a rise in the standard of comfort is usually associated with a decline in the birth-rate, but one cannot help doubting whether the rise was sufficient to produce the decline But at all events, the result is satisfactory, whatever the cause may be—as far as it goes

71 The Indian birth-rate is far higher than the birth-rate of England and Wales or indeed than that of any country of western Europe The English rate has been dropping

* Disturbances on the frontier, the Moplah rebellion, trade depression, high prices, embarrassed finances, the non-cooperation movement, the bad monsoon of 1920, and the after-effects of the influenza epidemic of 1918

† For these factors, see Chapter II, paras. 48 *et seq*



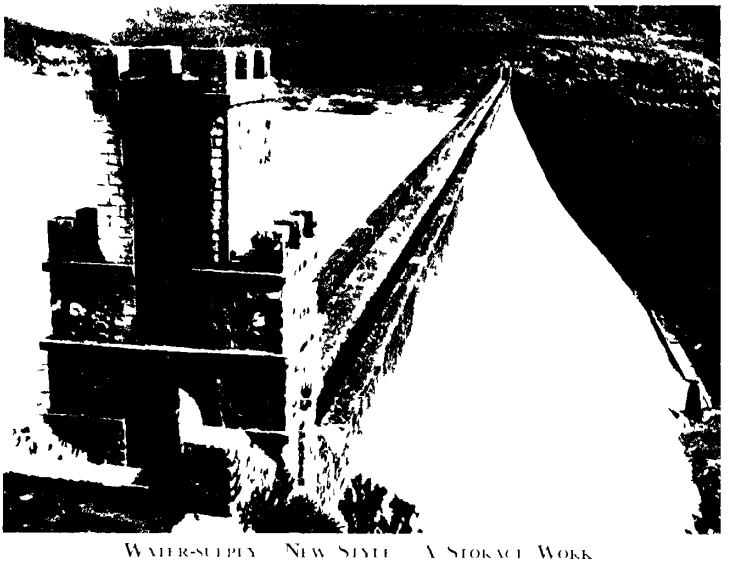
WATER-SUPPLY—OLD STYLE—BULLOCK-POWER

(An open well with two ramps and two pairs of bullocks. See Chapter I, part 39.)

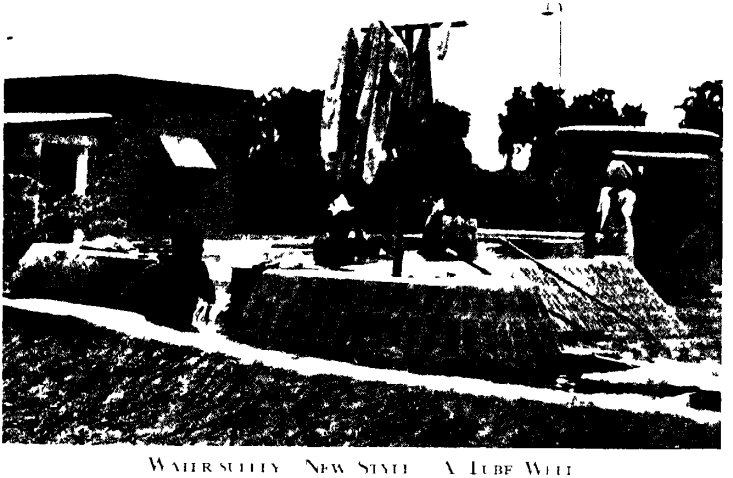


WATER-SUPPLY—OLD STYLE—MAN-POWER

The far end of the pole is weighted with a mass of dried mud sufficiently heavy to exceed the weight of the near side of the pole plus the bucket full of water. For use the bucket the woman has merely to let go of the rope. The method is known as *dhunkli* in northern India and *pivotah* in southern India.)



WATER-SUPPLY—NEW STYLE—A STORAGE WORK
(Headworks of the Periyar Dam and Lake—See Chapter I, para. 40)



WATER SUPPLY—NEW STYLE—A TUBE WELL
(In Meerut district, United Provinces—This is a State well driven by electricity. The well is in the cylindrical building to the right—In the foreground is a bathing pool—The building to the left is the operator's house—See Chapter I, para. 39.)

steadily from 35 in 1871 to 14 in 1933, since when it has risen slightly to 15 in 1935, and the present India rate is the same as the English rate of sixty-seven years ago Of the provincial average rates of 1921–30, two are well over 40, four are close to 35, Assam (whose vital statistics are specially inaccurate), has a figure of 30, whilst Bengal and the North-West Frontier Province, with figures of 28 5 and 28 respectively, compare with the English rate of 28 in 1901

72 (2) *Infant and maternal mortality* —The birth-rate, however, is to a large extent neutralized by the heavy mortality both of infants and of mothers in child-birth The proportion of infant deaths to a thousand live births was 164 in 1935, as against the English figure of 57, but high as that figure is, it is lower than earlier figures Between 1921–30, for instance, the average rate was 180, and in the previous decade it was 211 It is always higher in cities than in rural areas, in 1932 the figures of Calcutta, Bombay, and Madras were 246, 218, and 239 respectively, as against the London figure of 80 in 1921 There are no statistics of maternal mortality, but indirect evidence is available in the fact that (1) the female death-rate is much higher during the age-period 15 to 30 than it is during the preceding ten years, and (2) the female death-rate exceeds the male death rate *only* during the age-period 15 to 40

73 (3) *The death-rate* —The general death-rate at its lowest is about double the English rate, which in 1935 was 12 per thousand The Indian rate in 1935 was 23 6, in 1934 was 24 9, in 1933 was 22 9, and in 1931 was 21 6, but this is apparently the lowest on record since 1900, and the average rate of the decade 1923–32 was 25 5 There are violent fluctuations in the figures, chiefly as a result of epidemics for instance, the influenza epidemic of 1918 raised the all-India rate to 62 5 Again, during the period 1901 to 1910, when plague was raging, the average rate was well over 30 in all provinces except three, whilst in the relatively healthy decade 1921 to 1930 all provincial rates were well under 30, except two The figures are given in an appendix

74 (4) *Expectation of life* —The statistics relating to " expectation of life " at different ages are of peculiar interest, and I have reproduced the Indian figures of 1931 and the English figures of 1921 in an appendix One would naturally suppose that the expectation of life would grow less at each successive age, and in the English tables the figures do follow

that course, except that the male expectation at 20 years is slightly longer than it is at 10 years, presumably because the male in childhood is always more delicate than the female and at the lower age has not entirely outgrown his original delicacy But in the Indian tables the expectation, both of males and females, is markedly less at birth (or age 0) than it is at 10 years , and since the less the expectation of life at a particular age, the greater the mortality at that age, this fact is obviously referable to the high Indian rate of infant mortality Again, whereas the female's expectation in the English tables exceeds that of the male at all ages, in the Indian tables it is the less of the two till the fortieth year, and only begins to exceed the male's figure from the fiftieth year , which points to an excess of female over male mortality during the reproductive period And finally the English figures, for both sexes and at all ages, are far higher than the Indian figures

Growth and Density of Population *

75 The increase in the population of India (excluding Burma) between 1921 and 1931 was 32 millions, a figure comparable with the total population of either France, Italy, or Spain During the half century from 1881 to 1931 the increase has been 35 1 per cent , from 250 millions to 338 millions The rate of growth over this period is to some extent exaggerated, for at every census the returns themselves have become increasingly accurate At all censuses, also, fresh areas have come under enumeration , but with the exclusion of Burma, the consequent additions to the population are relatively unimportant , and for my present purpose the uncorrected figures will suffice The percentages of growth at successive enumerations have been 11 7 (1891), 1 5 (1901), 6 7 (1911), 0 9 (1921), and 10 6 (1931) Of the five decades, the first and last were normally healthy and prosperous, but the other three were all marked by calamities more or less severe Between 1891 and 1901 there was a widespread and prolonged famine, together with the earlier outbreaks of plague, which began in 1894 Between 1901 and 1911 there were recurring plague epidemics, a famine, and an epidemic of malaria in 1908 Between 1911 and 1921 there was the Great War and a visitation of influenza in 1918 which claimed more

*A further discussion will be found in Chapter VI, paras 11–3 and 36–41

victims in a few months than plague had claimed during the preceding twenty-four years

76 The figures suggest that after making allowance for extraneous causes of increase (namely additional areas and more accurate enumeration), the rate of growth in a normal decade, such as 1881–1891 or 1921–1931, has been about 10 per cent On the basis of 10 per cent, the population in 1931 would have been 403 millions instead of 338 had the whole half-century been normal Thus the loss of population due, directly or indirectly, to the epidemics and other calamities of the period 1891 to 1921 is no less than 65 millions, or 42 5 per cent of the normal growth of 153 millions—a sufficiently striking proof of the efficacy of the "positive checks" of Malthus But certain diseases, notably cholera, plague, and *kala azar,* have now been brought under control, and from 1931 to 1935, the average annual rate of growth, as calculated from the vital statistics, has been 1 2 per cent, a figure which suggests that the increase of population at next census will be not less than 12 per cent, and by reason of the defects of the statistics probably more In that case, unless some Malthusian check again comes into operation, the population of India in 1941 is likely to exceed 400 millions if Burma is included and to approach 380 millions if it is excluded

77 At the census of 1931 the density of the population in India proper, exclusive of Burma, was 214 persons per square mile The figure is comparable with the density of Europe (127), of the United States of America (41), or of China (estimated at 80) But figures of density relating to areas as large as these are of little value, for they are made up of a wide range of figures relating to smaller areas Thus in 1921 the density of England and Wales was 649,* but that of France was 184 and that of Spain was 107 Similarly, the Indian figure is made up of the density of British India, which is 297, and the density of the States, which is 114 The density of British India is made up of many densities, varying from 9 in Baluchistan to 646 in Bengal, that of the States is made up of densities ranging from 5, again in Baluchistan, to 814 in Cochin The presence of a city will affect the figures, for instance, the figure for Delhi province is 1,110, but this is made up of an urban figure of 6,835, and a rural figure of 372 It is useless, therefore, to discuss the all-India

* In 1931 the figure was 685

figures, and it is impossible to deal with the figures for lesser areas in detail * I can only put forward certain general considerations

78 There is no doubt that in India the density of population, both in the large cities and in extensive rural areas, is greater than in most parts of the world Urban densities are often artificially reduced by the existence of parks and other open spaces, and these are particularly numerous in India Nevertheless, out of thirty-five cities the densities of which are given in the census report of 1931,† only eight have figures below 10,000, and they run up to 48,000 in the case of Bombay and Jaipur and even to 58,000 in the case of Old Delhi, as separate from New Delhi The urban problem is relatively simple it is one of overcrowding, bad housing, and lack of sanitation, and can be solved—though at a price—by expansion and town-planning But the rural problem is both more important—since no less than 89 per cent of the population lives in rural areas—and more difficult, since it is one of pressure on the soil Moreover, there are only 2,575 towns in India and Burma, whilst there are about 700,000 villages

79 The growth of population must be considered from three aspects, namely its effect on the standard of comfort, its effect on the food supply, and its effect on agricultural employment Far too large a proportion of the rural population are already living at far too low a standard of comfort "Though they can by unremitting toil make ends meet in a good year, they can put by no reserves against a bad year, and when such a year occurs can only tide it over by borrowing" No argument is required to show that an increase in the rural population will necessarily lead to a fall in the standard of comfort And the ordinary Indian peasant has little chance of increasing his income, for he has not the capital to finance either an extension of cultivation or a subsidiary occupation , his only hope is to secure a better yield from his land by improving his methods of cultivation, and that, without assistance from Government, is beyond both his means and his skill It is not surprising that since he cannot increase his income, he is sometimes tempted to reduce his

* In *Census Report*, India, 1931, facing p 4, will be found an excellent map showing distribution of density

† *Op cit*, p 50 The list includes 39 cities, but two of them are in Burma and the density of two others of them is not given

expenditure by such a dangerous expedient as refusal to pay his rent, or canal dues, or interest Moreover, even when increased prosperity has come the way of the Indian peasant (as has happened in the canal colonies of the Punjab), he is apt by overfilling his family quiver to bring about a fall in his own standard of comfort—a proof of which is afforded by the district of Lyallpur, where the density has risen from 15 per square mile in 1891 to 357 in 1931

80 There are some economists who hold that since the population is already living on the verge of scarcity, any material increase of it must inevitably lead to a general shortage of food supplies * But these economists forget that about one-fifth of the total cultivated area, some 45 million acres, are under money crops , that if foodstuffs ran short, their prices would soar , and that the cultivator would not lose, but probably gain, by substituting food crops for money crops The danger is there, but it is still distant the ability of India to feed her people is not yet in doubt

81 But if we may assume that for yet a while there will be food enough to fill every mouth that God may send, can we also assume that there will be work enough to employ the two hands which God sends with every mouth ? It is generally held that agriculture in Europe cannot support, to every square mile, a larger population than 250 But the question whether a particular density constitutes over-population or not depends not only on the number of persons but on the nature of the square mile , and it may freely be admitted that in such tracts as the Indo-Gangetic plain and the coastlands a square mile is capable of supporting more than 250 persons, both because of its greater fertility and because in a less rigorous climate than that of Europe, the necessities of life are less Nevertheless, even if the figure were raised to 500, nearly half of the tracts mentioned would be carrying a heavier human burden than they can bear, whilst there are smaller tracts where the density runs into four figures † And it is possible that in less fertile tracts the densities, though lower, are still too high It seems probable that even now India in some of her rural tracts is over-populated, and there can be no doubt that if population continues to grow at its present rate she very soon will be For the number of persons who can

* See *Census Report*, India, 1931, pp 30–1

† For instances, see *Census Report*, India, 1931, p 4

work, profitably and economically, on a given area is limited. Any increase above that number must lead either to unprofitable and uneconomical cultivation, which will further lower the standard of comfort, or to some measure of agricultural unemployment And what the latter means can be seen from certain events which took place in the United Provinces during the years 1907–08 The rains came late and ceased early The result was that the *kharif* harvest failed , and since the ground remained hot and dry and hard, only a short area was sown at the succeeding *rabi* The measure of the loss on the two crops together was 52 per cent of the normal yield of food grains and 62½ per cent of the normal yield of money crops Since the *rabi* area was short, smaller cultivators (who form the great majority) were able to do their field work with such assistance as their own families could give them, and had no need to employ agricultural labourers, who from the end of December 1907 till the rains of 1908 began remained out of work Government met the situation by " declaring famine," which made it possible to provide work for the able-bodied and gratuitous relief for those who could not work The number of persons thus assisted from public funds rose to a maximum of over 1,400,000 about the middle of March—or nearly 5 per cent of the population of the stricken area , and the cost of their relief amounted to £1,431,000 (apart from remissions of land revenue) Such was the cost of relief during an epidemic of agricultural unemployment which lasted eight months and covered some 66,000 square miles Were a condition of chronic agricultural unemployment to occur, such as would result from over-population, the number of unemployed would not be so great as it was in the famine of 1907–08, because not the whole but only the surplus population of agricultural labourers would be affected But to counterbalance this there would be unemployment over much larger areas, whilst the cost would be recurring The effect on provincial finances, and consequently on the budgets of all departments dealing with social services, would be nothing less than disastrous

82 There are four possible ways of reducing the pressure on the soil One is to increase the productivity of the soil itself, either extensively by increasing the area or intensively by improving the cultivation The second is to reduce the burden on the soil by transferring a part of it to some other occupation The third is to persuade a part of the population

to leave the soil and go elsewhere The fourth is to retard the growth of the population All of these are discussed elsewhere,* and I need only offer a few remarks regarding the last two—namely emigration and birth-control

83 Nowhere in the world is the population so immobile as it is in India At every census some 90 per cent of the people are enumerated in the district in which they were born, and of the rest, some 7 per cent were born in neighbouring districts Their love of home is intelligible emigration involves severance from family and brotherhood, and may also involve a life amongst strangers who speak a different language, eat different foods, and observe different customs It is true that a certain number do emigrate from the more congested areas—some to other parts of India, some overseas It is also true that with greatly improved communications, emigration within India should have lost a part of its terrors, for the return home, to which every emigrant looks forward, will be less difficult But as yet there is little sign that the villager is willing to leave his home and his fields, except under severe economic pressure The new industries which are springing up will probably draw off a part of the surplus rural population, but, so far, neither an industrial revolution nor a widespread exodus from country to town is in sight As for overseas emigration, that is scarcely to be expected until the colonies and dominions of the British Empire extend a warmer welcome to Indian immigrants than they do at present

84 The only practical method of reducing the rate of growth of the population is the introduction of birth-control, which is strongly advocated by many economists Undoubtedly the neo-Malthusian check is preferable to the Malthusian check to which the population has so often been subjected But it will be no easy task to persuade a society which regards the begetting of sons as a religious duty to adopt neo-Malthusian practices—whether in the form of celibacy, delayed marriage, or contraception † They may appeal to the better educated classes, but scarcely to the masses, from which the "devastating torrent of babies" proceeds There is something in the suggestion that baby weeks should be replaced or accompanied by birth-control weeks

* (1) Chapters IV and V, (2) Chapter I, para 67, and Chapter IX, (3) Chapter IX, (4) Chapter VI, paras 36 *et seq*

† Cf Chapter II, para 50, for this belief

85. There are some economists who hold that India is not over-populated, because she has not fully exploited her resources nor adopted the best means of production and distribution, and if she did these things could support an even larger population That may be true, but to those who have to deal with her present troubles it is of small consolation There is no doubt that in her present economic condition her population is in many places larger than her soil can carry, and that the standard of comfort of that population, which is already low, is likely to become lower That is the situation with which Government and its officers for many years to come will have to deal as a part of their daily routine They cannot afford to wait for large measures of industrialization which may relieve existing difficulties They have to deal with the evil of the day, which is undoubtedly more than sufficient unto the day

PROVINCIAL VITAL STATISTICS FROM 1901 TO 1930

Province	Birth-rate per thousand			Death-rate per thousand		
	1901–10	1911–20	1921–30	1901–10	1911–20	1921–30
Assam	35 7	32 3	30 3	29 6	31 3	23 8
Bengal	37 6	32 8	28 5	32 7	31 1	25 3
Bihar and Orissa	41 1	38 8	36 3	35 3	35 2	26 7
Bombay	33 4	34 2	35 9	34 6	36 9	26 8
Central Provinces	49 6	45 5	43 7	35 9	44 2	33 5
Madras	30 8	30 7	34 6	23 2	25 6	23 9
N W Frontier Province	34 6	32 8	28 0	28 5	30 3	23 7
Punjab	41 2	43 8	42 2	44 0	36 6	30 4
United Provinces	41 4	42 2	35 1	39 3	40 2	26 4

EXPECTATION OF LIFE AT AGES 0 TO 70, IN YEARS

Ages	Indian Males 1931	English Males 1921	Indian Females 1931	English Females 1921
0	26 9	55 6	26 6	59 6
10	36 4	44 6	33 6	57 5
20	29 6	45 8	27 1	48 7
30	23 6	37 4	22 3	40 3
40	18 6	29 2	18 2	31 9
50	14 3	21 4	14 6	23 7
60	10 2	14 4	10 8	16 2
70	6 3	8 7	6 7	9 9

CHAPTER II

By SIR EDWARD BLUNT

The Structure of the Indian People

Caste and Religion

1 In all societies there always have been, and are still, grades and classes, the number and complexity of which increase as civilization progresses Let me take as an example England and the English-speaking peoples There are, firstly, the classes which are based on birth—the nobility, gentry, commonalty, with, in former times, a class of serfs There are, or were, other distinctions based on race *—Roman and Briton and Romo-Briton at one time, Norman and Saxon and Anglo-French at another , whilst even to-day the fervid Celt despises the Sassenach, and alien elements in the population are classed as undesirable Where, as in the United States of America and South Africa, there are differences of colour, racial distinctions, even if intermarriage has occurred, tend to become irreconcilable Finally, there are social gradations that are based on occupation The nobility are divided into lords spiritual and lords temporal , the gentry are divided into " services " and " professions " , the commonalty into farmers, tradesmen, clerks, mechanics, and labourers—not to mention the unemployed and the unemployable Between these social classes there are no hard-and-fast boundaries fixed one merges into the next, whilst a man by his individual efforts may raise or lower himself from one class to another, or even by different titles belong to two grades at the same time Thus the peer's son may earn his living by selling motor-cars, the office-boy may attain to the peerage, a priest may be " honourable " as well as " reverend " Secondly, though a man's social intercourse

* The Jew has been reponsible for many of these racial distinctions, from the ancient Jew *versus* Samaritan to the modern Aryan *versus* Jew

will generally be confined to persons of the same or similar social standing, yet a royal prince may dine with a trade guild or a noble lord with his tenant-farmers, and neither he nor anybody else will think shame Thirdly, though a man will generally seek his wife in his own rank of life, yet no woman in the world is prohibited to him, except some twenty-nine kinds of relative , * and if a lord should marry a housemaid or a lady her chauffeur, nothing more untoward will happen than the disapprobation of their relations and friends and an illustrated paragraph in the columns of the sensational press † On the other hand, no man will generally marry a wife till he is in a position to support her comfortably, nor may he marry more wives than one without running the risk of finding himself in the dock Finally, the " spirit of exclusiveness has no external sanction " Each individual is free to choose his associates, his profession, and his wife without interference from others , and if in making his choice he should defy convention, there is no authority that can inflict any penalty on him

2 All the grades and classes that are found in any modern European society are also found (with others) in Indian (or, more correctly, Hindu) society under the name of castes, a term used to translate the vernacular *zat* (*jat*, *jati*), which means breed But that is an end of the resemblance between the caste system and other social systems The spirit of exclusiveness manifested in caste is infinitely stronger, the restrictions imposed by caste on the individual are infinitely more severe

3 There are two main varieties of caste, tribal and functional ‡ The original tribe is an aggregation of persons who are, or believe themselves to be, united by blood, by common political interests, and by the need for mutual defence There are often subsidiary bonds of union—common deities,

* There are thirty relatives in the table of prohibited kin at the end of the Prayer Book, but marriage with the deceased wife's sister is now legal Of the thirty, sixteen presuppose a former marriage

† It is worth noting that the disapprobation will be much greater and the paragraph much more illustrated in the second of the two cases mentioned That is due to the force of the hypergamous custom even in modern European society For hypergamy, see para 7

‡ There are other minor varieties, which need not be mentioned See Risley's *People of India*, 1915, pp 75–95, and Blunt's *Caste System of Northern India*, pp 2, 3

common worship, common taboos and totems Tribal castes are sprung from those tribes which, both in pre-historic and historic times, have come in close contact with Hinduism, have gradually accepted its social ordinances, and have, finally, been merged in the Hindu social system *

4 The functional caste is an aggregation of tribes or pre-existing castes which have been drawn together by the bond of a common occupation In other words, people who followed the same occupation were impelled to unite for the purpose of defending their common interests and of regulating their common affairs, in spite of their difference in blood † Constant intercourse in business matters drew these divergent elements together and also separated them from the communities to which they originally belonged, till at last they merged into a regular caste The common occupation is traditional In theory the member of a functional caste must follow the traditional occupation of that caste, and is liable to be brought to book by his caste should he abandon it for another occupation It should be added that at the present day it is possible to assign to most tribal castes an occupation with which it is, or till recent times has been, intimately associated, which association is often so ancient as to be practically traditional ‡

5 The basic principles of caste are endogamy and heredity A man must marry a woman of the same caste as himself, their son is born of the same caste as his parents, and all his life must remain a member of it Every caste, moreover, lays down from what castes a man may select companions to share his meal, a cook to prepare his food, and an *abdar* (butler) to bring him water Very often a caste is composed of subcastes which are themselves endogamous, in which case what has been said of the caste applies to the smaller section These subcastes are rare in tribal castes, but very common in functional castes, where they correspond to the tribal or other elements of which the caste was composed Thus Hindu society is subdivided into a very large number

* For examples, see Risley, *op cit*, pp 75, 76

† Functional groups in other countries are the *collegia opificum* of the Romans and the merchant and trade guilds of mediaeval Europe

‡ An instance is that of the Ahirs, who are cattle-owners and are undoubtedly descended from a pastoral tribe called Abhiras, which was established in the Punjab at least as early as the first century A D

of mutually exclusive groups the number of castes alone exceeds 2,000

6 The segmentation of caste does not end with the endogamous subcastes Each endogamous group (caste or subcaste, as the case may be), is subdivided into exogamous groups, the members of which are, or believe themselves to be, so closely related by blood that they may not intermarry * Such groups are of agnates only , they do not prevent a man from marrying very close relatives on the maternal side , and the exogamous ban is accordingly reinforced by various rules of prohibited kin, of which the most widely spread is the *sapinda* rule of Hindu law This prevents the union of any two persons who have a common ancestor not more than six generations removed through the father or four generations through the mother †

7 The custom of hypergamy introduces a further complication Where it prevails, (and there is at all events a tendency to observe it in all Hindu castes), the exogamous groups are classified according to their social standing, and whilst a higher group will take brides from, it will not give brides to, a lower group It is obvious that in the groups of highest standing it is difficult for brides to find husbands and in the groups of lowest standing it is equally difficult for husbands to find brides

8 Finally, the exogamous group is made up of a number of "joint families" The typical joint family consists of a father, his sons and grandsons, together with the corresponding womenfolk—mother, daughters-in-law, and daughters and grand-daughters until they are married, when they enter into other joint families This agnatic family is the historical unit of Hindu society,‡ and the whole of Hindu law is directed to upholding its permanence Jointness is the normal condition, but partition can always be demanded, and in times of prosperity has always been frequent So long as the family remains undivided it is regarded as joint in food, worship,

* Instances of such groups are the *gotras* of the higher castes , the Rajput clans , totem groups or village groups amongst the lower castes

† It debars a man from marrying 2,121 kinds of relative, but many of the ascendants would not be available for matrimony It is excess of caution to forbid a man to marry his great-great-grand-aunt

‡ Apart from certain matrilineal castes in Malabar, and from recent legislation

and estate, however scattered its members may be All the men, when at home, live together in a common house, share meals cooked on a common hearth,* and carry out together the family rites , whilst the income of the ancestral property † and generally though not invariably the earnings of individual members are placed in a common fund, out of which the expenses of all members are paid The control of family affairs is in the hands of the father or some other senior relative, though in matters of importance all adult members are usually consulted There are three forms of joint family the Mitakshara, in which the son acquires a right in the ancestral property at birth and can demand partition at any time , the Dayabhaga, in which the son only acquires that right at the death of his father , and the Malabar, which differs from the Mitakshara only in that partition cannot take place without the consent of all the co-sharers ‡ The Dayabhaga form is peculiar to Bengal, the Mitakshara form is prevalent in other parts of India except Malabar In practice, joint families of all forms are administered in the same way, are animated by the same spirit, and display no material difference until a partition occurs

9 Caste imposes certain restrictions on commensal intercourse and the use of food and drink, of which an account is necessary, since disregard of them is a potent cause of offence These restrictions are all connected with a primitive idea of taboo This idea depends on the conception that in every individual person there is inherent a power, or potentiality, for evil which is to be dreaded and avoided This potentiality is especially active at certain crises of life , for instance, the mother and her child in child-birth, the bride and bridegroom at marriage, the dying man, the corpse, are all dangerous to others, whilst others are dangerous to them This idea of taboo is, in fact, one of the principal causes of the strength of the caste system, for since every stranger is a possible enemy, a man must be careful to know who are his friends, and therefore must restrict intercourse to persons whose interests are undoubtedly identical with his

* *Ek chulhe ka pakka khate hain*—" they eat food cooked on one cooking-place " this is the chief criterion of a joint family

† Ancestral property, in this sense, would include a family business or a *jajmani* (for which last, see Appendix I to this Chapter)

‡ The result is that many joint families in Malabar remain undivided for centuries

10 There are in all seven of these taboos *

(1) The commensal taboo, which lays down the persons in whose company a man may eat food

(2) The cooking taboo, which lays down the persons who may cook the food that a man eats

(3) The eating taboo, which lays down the proper ritual at meals

(4) The drinking taboo, which lays down the persons from whom a man may take water

(5) The food taboo, which lays down what kinds of food a man may eat

(6) The smoking taboo, which lays down the persons whose pipe a man may smoke and in whose company he may smoke

(7) The vessels taboo, which lays down the nature of the vessels which a man may use for eating, drinking, and cooking

These taboos vary from caste to caste and from place to place, and I will only explain the first four,† as they are found in northern India

11 (1) The working of the commensal taboo is simple Members of the same exogamous group can eat together, since they are blood relations, whilst members of different exogamous groups can eat together if their groups can intermarry In other words, the commensal and connubial restrictions are co-terminous It follows that if two exogamous groups cease to intermarry and become endogamous in respect of each other, then they may no longer eat together

12 (2) There are endless variations in the cooking taboo, but in all castes an important distinction is made between *kachcha* food, which is cooked with water, and *pakka* food, which is cooked with milk, *ghi*,‡ or butter The distinction is based on the fact that these substances, being products of the sacred cow, serve to purify the food that is cooked with them Accordingly, the restrictions in respect of *kachcha* food are much more severe than in the case of *pakka* food They

* For a full description, see Blunt, *op cit*, Chapter V

† Some of the restrictions on the types of food that may be eaten are incidentally mentioned in para 41, below

‡ *Ghi* is clarified butter

vary in different castes, but generally a Hindu can only eat *kachcha* food if it has been prepared either by a member of his own endogamous subcaste or by a Brahman, whilst he may eat *pakka* food if it has been cooked either by a member of the same caste, or by a Brahman, or by a Halwai confectioner, or by a Kahar domestic servant On the other hand, there is nothing to prevent any Hindu, however high, from accepting uncooked food from a member of any other caste, however low, this explains how men of low castes are able to feed Brahmans either at their domestic ceremonies or as a penalty imposed by caste authority for some offence The recipients accept the food, cook it themselves, and eat it at or near the house of the donor

13 (3) The eating taboos are so numerous that the cynic is apt to wonder that any Hindu ever thinks it worth while to eat at all So long as the meal or a part of it consists of *kachcha* food (as it invariably does, since the *chupatti* * appears at all meals), the Hindu must dine with all the precautions of a magic ceremony He and his fellow diners (if any) must sit within a square marked off on the ground (*chauka*), inside of which is the *chulha*, or cooking place Should a stranger's shadow fall upon this square, all cooked food within it is polluted and must be thrown away In camp Hindu servants may be seen, each well apart from the rest, each within his own *chauka*, cooking his food upon his own mud oven and eating alone, only the lowest castes would ever venture to neglect this troublesome custom † Wives do not, as a rule, eat with their husbands, but wait till they have finished There are also many other restrictions, the following are those observed by the Nagar Brahman in Gujarat Before eating he must bathe and put on clean garments, if these are of cotton they too must first be washed Many accidents may occur to render him impure and compel him to desist from his meal He must not touch an earthern vessel which has contained water He must not touch a piece of cotton cloth which has been touched by a person who is not himself ceremonially pure, or else has not been dipped in oil or *ghi* He must not touch leather or bone or paper unless, in the last

* A *chupatti* is a griddle cake made of flour and water, which takes the place of bread

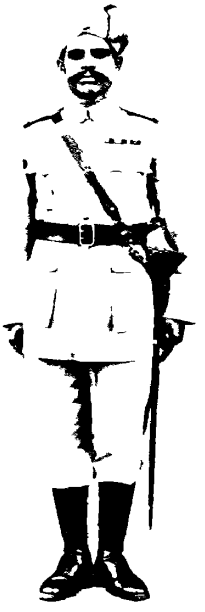
† One caste, the name of which I will not mention, is regarded as degraded because its members eat *kachcha* food in the fields instead of the decent privacy of their own *chaukas*



INDIAN TYPES
A Rajput warrior from Udaipur



INDIAN TYPES
A Sikh reading the *Granth* the Sikh's holy book



INDIAN TYPES
A Musalman Indian officer



INDIAN TYPES
A lady of high degree Punjab

case, there is Hindi writing on it He must not touch or allow himself to be touched by a donkey, pig, dog, or child old enough to eat solid food He may not read a printed book at his meal, because printing ink is impure He may not read a manuscript book unless it is bound with silk and the binder has used a special paste of pounded tamarind seed. If he does any of these things, he is at once defiled, and must either go hungry, or have a fresh meal prepared for him, and purify himself before he eats it

14 (4) The drinking taboo is much the same as the taboo in respect of *pakka* food, but in this case the vessel in which the water is contained affects the question For instance, a high-caste man may allow a low-caste man to fill his own drinking vessel for him, but will not drink from a vessel belonging to that low-caste man , or a high-caste man will give a low-caste man a drink, but only by pouring water from his own drinking vessel into that of the drinker It is in this method that the Brahman water-carriers at railway stations supply water to travellers

15 Thus in social matters the individual Hindu does not enjoy the advantages which the individual European enjoys Though he may be successful in life and earn the esteem of his fellow-men, yet during his life he cannot rise in the social scale for under the law of *karma* * he must wait for social promotion till he has been born a second time What with endogamous, exogamous, and hypergamous restrictions, his choice of a wife is limited—in the largest castes to a few thousands, and in smaller castes to a few hundreds or even tens , whilst if he belongs to a respectable caste he is debarred from marrying a widow Nevertheless he must marry, for marriage is a duty which he owes to himself and his ancestors—for as the lawgiver Baudhayana says, " by begetting a virtuous son a man saves himself from hell as well as the seven preceding and seven following generations ", and marriage is a necessary preliminary to the possession of virtuous sons His choice is also fettered in respect of his table companions, his servants, and his occupations He can possess neither property nor income of his own If he dare to offend against custom in any of these matters, then his caste will bring him to book , for in every caste there is some authority with

* The law of automatic retribution, according to which a man's status and condition in one life depends on his conduct in the former life

power to compel obedience to customary laws—a matter to which I shall return

16 By putting together the various attributes that are common to all castes, we can now frame a working definition of caste, as follows A caste is an endogamous group, or collection of endogamous groups, bearing a common name, membership of which is hereditary , imposing on its members certain restrictions in the matter of social intercourse , either following a common traditional occupation or claiming a common origin , and generally regarded as forming a single homogeneous community *

17 It is popularly but erroneously supposed that caste is immutable On the contrary, caste is and always has been peculiarly liable to change, which change (since the whole population is already subdivided into castes), always takes the form of further segmentation Occasionally an exogamous group, which by lapse of time had become inconveniently large, has been broken up into smaller groups , † but this process is far less common than the formation of new endogamous groups, which may be castes or subcastes In the past a common cause of fission was migration to a new settlement, when distance would prevent the emigrants from obtaining wives in their former home and drive them into endogamy , but with the improved communications of modern times, that cause no longer operates, and fission is now generally the result either of some change of occupation, of the adoption or abandonment of some social or religious custom, or of increased prosperity A change of occupation explains the formation, in quite recent times, of four new castes, the Kayastha-Mochi, Kayastha-Darzi, Kayastha-Bharbhunja, and Kayastha-Senduria, all groups that seceded from the clerical caste of Kayasthas and took respectively to harness-making, tailoring, grain-parching, and the trade in red lead The abandonment of the practice of widow-marriage accounts for the presence, in several castes, of a subcaste called Byahut ; ‡ the Basor,

* See Blunt, *op cit*, p 5 This definition is merely an expansion of Sir Edward Gait's in Hastings' *Encyclopaedia of Religion and Ethics, s v* Caste

† For instance, the exogamous groups (*gotras*) of the Dhusar-Bhargava and the Bhatiya, both castes of good status, have been subdivided respectively into *kuls* and *nukhs*

‡ Byahut is derived from *byah*, the form of marriage suitable to a virgin bride

Bansphor, Domar, and Dharkar are all branches of the great Dom tribe, which have given up a vagrant for a settled life, whilst the Kayastha-Darzi and the Kayastha-Sendurıa give as a reason for their separation not the change in occupation but the more creditable fact that they have become total abstainers Again, in the Teli caste of oil-pressers there are two endogamous subcastes called Mahabiria and Pachpiria, the origin of which is due to their worshipping different gods * Finally, when a group has become prosperous it will cut itself adrift from the caste to which it belongs and even abandon the use of the caste name Thus, the Sainthwar subcaste of Kurmis, because its leading family has risen to a position of some eminence,† has become a separate caste, and well-to-do Chamars call themselves Jaiswars or Kurils or Jadavs Such changes, moreover, are often accompanied by claims to Brahmanical or Kshattriya descent Thus Ahirs assert that they are Yadavas, of the Lunar race of Kshattriyas, Kayasthas in 1911, (for claims of this kind are usually advanced at the census), called themselves Chitraguptabansi‡ Rajputs, alleging that they were descended from the "civil service" of Aryan kingdoms, various artisan castes—carpenters, goldsmiths, blacksmiths—claimed to be Brahmans, of the lineage of Vishvakarma §

18 Thus the caste system constantly grows more complex From the individual's point of view, however, its working is sufficiently simple, for the caste as it is, and as it has been described, differs greatly from the caste as he knows it The word "caste" is used to translate two vernacular terms—*zat*, which means breed, and *biradari* or *bhaiband*, both of which mean brotherhood The *zat* is the caste as a whole, the *biradari* is the small group of caste-brethren who live in a particular neighbourhood and act together for caste purposes. Quantitatively considered, the *biradari* is a mere fraction of the *zat;* qualitatively considered, it is the *zat* in action. The

* Mahabir (great hero) is another name of the god more usually called Hanuman The Panchpir (five saints) are a quintette of Muslim worthies, who vary in different castes the chief of them, however, is always Ghazi Miyan, a title of Sayyid Salar Masaud, nephew of Sultan Mahmud of Ghazni, who was killed in battle near Bahraich (United Provinces) in A D. 1034

† The head of this family is now a Raja

‡ Chitragupta, in Hindu mythology, corresponds to the Recording Angel, and is an official of the court of Yama, god of death

§ Vishvakarma, in Hindu mythology, is the architect of the universe

customs which the individual must observe are those of his *zat*, the authority which enforces his observance of them is that of his *biradari* A *biradari* is always a small body it may include persons belonging to two or more exogamous groups, but would never include persons belonging to two endogamous subcastes Again, a *biradari's* jurisdiction,* the limits of which are always clearly demarcated, is never extensive, sometimes it covers part of a village or town, sometimes a whole village or town, occasionally a group of villages Thus the individual, however large his caste may be or however complicated its segmentation, need never look, in any caste matter, beyond his own little brotherhood and its little jurisdiction

19 Castes can be arranged in groups or classes according to a scale of social precedence The basis of this classification consists of the four *varnas*,† or colour-groups, of the old Aryan society, of which three—the Brahman priesthood, the Kshattriya nobility, and the Vaisya commonalty—were already in existence when the Aryas invaded India about 1500 B C , whilst the fourth consisted of those Dasyus (as they called the original inhabitants),‡ whom they enslaved and introduced into the Aryan body politic under the name of Sudra Thus, at the top of this social scale there is the Brahman caste, the largest and most widespread in India Next come the Rajput clans, whom popular opinion regards as successors in interest of the Kshattriyas In the third place are a number of mercantile and trading castes, which claim descent from the Vaisya *varna* § These three groups are called "twice-born," for they alone may undergo the *upanayana*, or initiation rite, constituting the "second birth," at which the initiate is invested with the sacred thread (*janeo*) which is his badge of rank After these three groups should come the Sudra castes, but the word has fallen into disfavour and it is now used only as a legal term for all Hindus who are not

* The jurisdiction is called by various names *ilaqa* or *juwar* (estate), *ghol* (company), *tat* or *chatai* (mat—from the piece of matting on which the *biradari* is seated at its meetings)

† The word is significant, for the Aryas were fair-skinned and the Dasyus dark-skinned

‡ Old theories of caste origin have usually identified the Dasyus with the Dravidians, but as a result of recent ethnological researches, this identification must be abandoned For that reason I use the term *Dasyu*, which merely means foeman, and implies no ethnological theory of origin

§ At the census of 1931 there were approximately fifteen million Brahmans, ten million Rajputs, and five million Vaisyas

twice-born Below the twice-born line there is no definite classification the status of a caste will be decided on a consideration of the nature and extent of the social intercourse in respect of food and drink that a higher caste can have with it The highest status is that of a caste from which a Brahman will accept water and *pakka* food Next will come a caste from which others of the twice-born will accept water and *pakka* food, but not the Brahman , and so on At the bottom of the scale come the castes usually called " depressed," contact with whom causes pollution Thus the scale of social precedence, though sufficiently precise at both ends, is vague in the middle , for obviously, every man who is considering the rank of one of these middle castes must decide each case on its merits as it arises

20 The nature of the caste authority, which has power to compel obedience to customary laws, varies in different castes Amongst the higher twice-born groups it is, as a rule, nothing more concrete than public opinion, though it is none the less effective because it is indeterminate , but in most castes the ruling body is the assembly (*panchayat*) of the *biradari* In a few of the better castes this *panchayat* is impermanent, meeting only when summoned, either by the complainant who wishes a case investigated or by an offender who has been informally outcasted by public opinion, and wishes either to establish his innocence or to obtain a mitigation of sentence But in a great majority of castes the *panchayat* is a standing body ruled by a permanent committee, which usually consists of five members under the leadership of a hereditary headman (*sarpanch*) * The procedure of a meeting of the *panchayat* resembles that of a court of law, with the committee as a bench of judges and the brethren present as a jury The most common punishments are fines , feasts to the brotherhood or to Brahmans , pilgrimages , various forms of degradation, such as a course of begging , and outcasting, either temporary or permanent

21 By collating a mass of evidence that was collected at the census of 1911,† it is possible to state certain types of offence of which most, if not all, caste *panchayats* would take cognizance A list of them is given in Appendix II, and shows

* There is also a committee in an impermanent *panchayat*, but it is appointed *ad hoc* for the duration of the particular session

† See provincial census reports, chapters on " Caste, Tribe, and Race "

clearly that the caste does not confine its attention to breaches of its own customary laws It encroaches on the spheres of religion,* of law,† and even of superstition ‡ it is not only *censor morum*,§ but *arbiter elegantiarum* || Indeed, when it is remembered that this list must be regarded as illustrative rather than exhaustive, it is no exaggeration to say that a caste regards it as its duty to enforce observance of all principles of right conduct, as laid down by custom

22 From the cradle to the grave the life of a Hindu, both in its daily routine and in its major crises, is governed by custom and surrounded by ritual There are firstly, all the commensal rules, already described There are the customary rites of religion—for instance, the annual *sraddha* ceremony, when offerings are made to the ancestors ; and the sixteen *sanskaras*,¶ which are domestic rites connected with the principal events in a man's life—notably, his birth, marriage, and death, and for the twice-born, also the *upanayana*, already mentioned Lastly, there is the Hindu's personal law The basis of it is custom, for as the great law-giver Manu has said, " immemorial custom is transcendent law " ** The written law consists of pre-existing usages, crystallized and codified by Brahmanical interpreters , whilst any usage, even it be contrary to the written law, will override it if there is sufficient proof of its observance

23 Many have held that caste and religion are inseparably connected , that caste was the artificial product of the Brahman priesthood, designed to preserve both purity of descent and purity of the old Vedic beliefs and ritual These views have now been generally discarded It is true, as Sir William Hunter put it, " that Hinduism is both a social organization and a religious confederacy " It is true that every man who counts himself a Hindu by religion must belong to a Hindu caste But there is only one connecting link between caste and religion—namely, the Brahman, who is supreme in both

* Appendix II, items 5 and 6

† Appendix II, items 1 (*a*) and 11 (Adultery is a criminal offence in the Indian Penal Code)

‡ Appendix II, item 8 (These taboos are not peculiar to Hinduism or even to India, but are found in many parts of the world)

§ Appendix II, items 1 (*a*), 2, 9

|| Appendix II, item 7

¶ For a full list of these, see Blunt, *op cit* , p 310

** *Institutes*, I 108

24 Hinduism as a religion is a complex congeries of creeds and doctrines It gives shelter to monotheists, polytheists, and pantheists, to worshippers of great gods, of inferior deities, of ancestors, of heroes, of ghosts, of animals, and even of natural objects These deities can be divided into two main classes The first is relatively small, including only the great Hindu gods in their various aspects and under their various names, of whom the chief are Siva, Vishnu, and their consorts, the second class includes all other deities Deities of the first class are always, deities of the second class are seldom if ever, recognized by the Brahman priesthood In practice the majority of all Hindus restrict their worship to one or more of the great gods, and may therefore be called orthodox, but a considerable proportion of the orthodox also worship deities of the second class, whilst the unorthodox minority worship only such deities The unorthodox consist almost entirely of relatively low castes, many of which have each its own little pantheon, selected out of the huge pantheon of Hinduism, which according to popular reckoning contains 330 million deities It must be made clear, however, that out of all these, the individual may worship one, or few, or many, as he pleases—or even none

25 Thus Hinduism, as a religious term, is of wide application It covers not a single doctrine, but all the different doctrines held by different groups or sects of Hindus Amongst orthodox doctrines alone, we find, for instance, three as important as the Saiva, the Vaishnava, and the Sakta These many doctrines vary greatly At one end are the animistic beliefs of primitive tribes and depressed castes; at the other end is that lofty Vaishnava creed, of which the principal tenets are faith in, and personal devotion to, a supreme God It is not strange, therefore, that there are but four practices or beliefs that are common to all, or nearly all Hindus Firstly, almost every Hindu carries out some form of ancestor-worship * Secondly, every Hindu has some idea of a supreme personal God, whom he calls Parameshwar † Thirdly, with the exception of a few low castes on the fringe of society, every Hindu pays a certain reverence to the cow, and lastly, with similar

* Orthodox castes worship their ancestors in the *sraddha* already mentioned, unorthodox castes worship their ancestors with propitiatory sacrifices See Blunt, *op cit*, p 288

† Parameshwar is regarded as exalted above all other deities, and therefore is less accessible than they

exceptions, every Hindu accepts such ministrations from the Brahman priests as they are willing to give him, and admits their spiritual supremacy

26 The Hindu is intensely religious he has a clear conception of his duty to God, and regularly offers up his prayers for divine help and guidance He has also a clear conception of his duty to man his ethical code is as high as that of any other civilized people, and he observes it with no less fidelity It is less clear, however, what connexion he believes to exist between these two duties whether, that is, he regards his religion as having an ethical content, or his ethical code as dependent on a religious sanction As we have seen, there are many doctrines , and it seems probable that the answer of a Hindu who was asked *why* he pursued virtue and avoided evil doing, would vary according to his eschatological ideas Two extreme examples will suffice One might reply in philosophical terms, by reference to the allied doctrines of automatic retribution (*karma*) and transmigration (*sansara*), according to which a man's thoughts and actions in one life determine his condition in the next , which reply would have no religious significance, since *karma* is regarded as lying outside the sphere of divine influence The Vishnu-worshipper mentioned above, however, would reply that the best means of showing devotion to God is to serve one's fellow-man, thus giving to his religion a high ethical value But whatever the connexion between the two duties may be, the two conceptions of them are there, strongly held and fully operative As for the caste-*panchayat*, it concerns itself solely with man's duty to his neighbour, and its sanction is social

27 It has already been said that the one real link between Hindu society and Hindu religion is the Brahman himself, who is supreme in both His religious supremacy he owes to his monopoly of theological thought and ceremonial usage in a society which is both intensely religious and intensely ritualistic His social supremacy he owes to other causes— his ancient lineage, his mastery of all branches of learning, his temporal power as the King's minister Most of all, perhaps, he owes it to his achievements as a legislator for to a people who held that custom was law, he declared that law was custom A proof of the respect in which he is universally held is the pathetic eagerness of low castes to receive his ministrations

28 According to the Muhammadan religion, all free Muslims are equal A Muslim may marry any woman outside the prohibited degrees (which are much the same as in the English law), provided that she belongs to a scriptural (*kitabi*) or revealed religion * , and though some kinds of food are forbidden, notably pork, there are no commensal restrictions Accordingly, the Hindu caste system is incompatible with the tenets of Islam Amongst those Muslims of foreign descent, whose ancestors brought Islam into India, practice corresponds with theory The four main Muslim divisions—Saiyid, Shaikh, Pathan, and Mughal—are not castes, though they are often described as such They are not even tribes They are merely names given to groups of tribes that are, or are supposed to be, of similar blood All these observe the doctrines of Islam in the fullest particularity, as also do those Muhammadan Rajputs whose conversion took place in relatively ancient times The position, however, is different in respect of other converts from Hinduism, who form a large majority of all Muslims in India Many of these when changing their faith did not change or only partially changed their social customs, and Islam has been compelled to accept the situation Some of them are divided into endogamous sections Many have their *panchayats* like Hindu castes, which exercise much the same powers Some, again, prohibit the remarriage of widows , some refuse to eat beef , some worship Hindu deities as well as Allah or bathe in the Ganges at important festivals In short, though caste is contrary to the Muhammadan religion, yet it does exist in a modified form amongst all the converts in the lower strata of the community

29 The bonds of union between man and man are community of descent and community of material interests , the former brings men together in tribes or social classes, the latter in occupational groups, such as merchant guilds or trade unions or masonic lodges Then, if there are also other bonds of union, such as community of language, of government, of political institutions, and of historical traditions, and if the original groups are not too dissimilar in point of race and culture, they will merge in the greater group of the nation In India, on the other hand, the original groups have maintained their separate existence, have multiplied, and have

* A scriptural religion is one which possesses a divine revelation contained in a book expressly recognized in the Koran, such as Jewish and Christian, but not Hindu, Parsee, or Buddhist

hardened into closely compacted entities Why has social evolution in India followed a course so different from that which it has followed in other countries? To answer this question fully, it would be necessary to dig deep into the origins of caste, and this is not the place for ethnological speculations I can do no more here than suggest a few relevant considerations

30 As has already been said, India is not a country but a continent Her enormous area, with its great diversity of physical features, naturally falls into separate tracts, and in the past her hill-ranges, her forests, and her great distances effectively prevented any social intercourse (or intermarriage) between the inhabitants of those separate tracts Her population, too, was continental in size and composition, even as early as 3000 B C it included many racial elements, from primitive tribes in a neolithic stage of culture to that highly civilized people that lived in Mohenjo-Daro and Harappa and elsewhere in the Indus valley Possibly at that time, but certainly some 1500 years later, the colour-bar came into operation, the most powerful of all bars to the fusion of races for the Arya "was a white man, and proud of it," and the Dasyu was "born of a black womb" and "noseless" as well * There have always been many languages in India; till recently there have always been many governments and many political institutions, there has never been further community of historical traditions than would arise from alliances of independent rulers against a common enemy In short, because India is a continent and not a country, there has never been a chance, till recent times, that her people would develop into a nation But at almost any time up to two centuries ago her people might easily have developed into several nations This has not happened Hindu society, though rent into thousands of sections, has preserved its external unity, and the bond which keeps it together is the Brahman's hegemony, which has endured, whatever else may have changed

Caste in Modern Conditions

31 In modern conditions are there any forces working to the disintegration of caste, and especially to the relaxation

* These are Vedic epithets Our knowledge of the Dasyu, unfortunately, is chiefly epithetical

of the many restrictions which it imposes on the individual's freedom of thought and action? Education is spreading, the improvement of communications has brought men—and castes—nearer together, large-scale commerce and manufacture have come to stay; politics, formerly the concern of the few, are now becoming the concern of the many, a national spirit is not merely awake, but active In a world of railways and motor-buses, of factories and machinery, of electorates and legislative assemblies and political parties—what is happening to caste?

32. For the last half century there has been manifest among the better educated classes, especially those who have received a part of their education outside India, a certain feeling of resentment against the trammels of the caste system That feeling has grown stronger with the progress of education, and there are now many well-educated Hindus who frankly condemn caste as antiquated and wholly unfit to survive in modern conditions They scoff at the restrictions on commensality, which they regard as ridiculous The number of those who will dine in company not only with other Hindus but also with Muhammadans and Europeans is constantly increasing And of those who are willing thus to "interdine," * many are also willing to ignore other taboos They will eat, for instance, any kind of food (except beef and pork), no matter who has prepared it, and in eating they will observe not their own mealtime etiquette but that of their hosts † Many Hindus, again, have realized the evil effects of the *purdah* system, and have not only permitted their womenfolk to emerge from their former seclusion, but to go freely into society and even to take an active part in public affairs Every educated Hindu will desert the traditional function of his caste if he can put his acquirements to better account in some other trade or profession As regards the marriage restrictions, few, if any, educated Hindus at the present day would defend such practices as infant marriage, the prohibition of the remarriage of widows, or extravagant expenditure at weddings, whilst some have been bold enough to lay unorthodox hands on endo-

* "Interdining" has become almost a technical term for meals at which members of two or more communities are present

† Others, however, are more particular when "interdining" Some must be provided with a wholly vegetarian meal, some must be provided with lawful food, usually sweetmeats and fruit, that has been prepared by a Brahman

gamy itself So far, however, reformers who have attacked the marriage customs have usually been defeated by the orthodox majority The Hindu Widow Marriage Act was passed as far back as 1856 to legalize the remarriage of Hindu widows, the Child Marriage Restraint Act,* to penalize infant marriages, came into force in April 1930, and of these the former has proved entirely and the latter wellnigh ineffective A number of bills have also been put forward from time to time to legalize marriages between members of different castes, of which the last was Sir H S Gour's Special Marriage (Amendment) Bill in 1931, but they have all been rejected and, so far as the law is concerned, the principle of endogamy is still secure Occasionally an inter-caste marriage or the remarriage of a widow is announced in the press, and the number of such is increasing, but they are still rare enough to be greeted with a paean of triumph when they occur

33 Of all reforming bodies that have attacked the caste system in recent years, the most vigorous is the Arya Samaj, which was founded by Dayanand Saraswati,† who began to preach in 1863 On the religious side it is a simple straightforward monotheism founded on the Vedas, on the social side, it acknowledges no castes save the old *varnas*, and holds that membership of these is based not on birth but on personal qualifications This is not only the negation of the caste system, it can scarcely be called a social classification at all The Samaj naturally approves of inter-caste marriages, it is strongly opposed to infant marriage and ceremonial extravagance, it encourages the remarriage of widows, and it has cut down the commensal and food restrictions to a minimum Its social propaganda has had much success The membership of the Samaj is constantly growing, it appeals especially to Hindus of the better class who have enlightened and progressive views

34 At the census of 1931 there was agitation against taking a record of caste on the ground that " the mere act of labelling persons as belonging to a caste tends to perpetuate the system " I need not discuss the validity of such an argument or the possibility that the agitation was prompted to

* Better known as the Sarda Act, from its sponsor, Diwan Bahadur Harbilas Sarda

† Born either 1824 or 1827, died 1883 *Samaj* means assembly or congregation

some extent by political motives So much is clear, that though the agitators may not have wished to kill caste, they disapproved of any officious (or official) attempt to keep it alive It is striking that any Hindu should hold that opinion , it is even more striking that nearly two million Hindus should agree with it so far as to state that they had no caste at all *

35 The attitude of the masses towards caste is also beginning to change It is often alleged that the conditions of railway travel have weakened both the stringency of the food taboos and the idea of untouchability, and there is some justification for the assertion For instance, no orthodox Hindu can eat *kachcha* food during a railway journey, for such food must both be prepared and consumed with certain precautions that cannot possibly be observed in a railway compartment or on a station platform Accordingly, he must content himself with *pakka* food purchased from some platform food-vendor and water obtained from the official water-carrier , but if he does, he must take it for granted that they are of unimpeachable caste, since he will have no time to cross-examine them on the point † There is, indeed, no evidence to show that laxity in respect of the food taboos when on a journey has led to similar laxity elsewhere Nevertheless, here is a nail in the coffin of caste waiting to be driven home

36. In the matter of untouchability, the railway and the newer motor-bus have already produced some effect Says the moneylender in *Kim* " There is not one rule of right living which these *te-rains* do not cause us to break We sit, for example, side by side with all castes and peoples " A high-caste man may be well aware that his neighbour in a crowded railway carriage is an untouchable , but he is also aware that if he gives the situation away by asking inconvenient questions, he will have to pay the difference in fare and change to a higher compartment Accordingly, he consoles himself with the reflection that " where there is no eye, there is no caste ", and says nothing Discovering that his silence has no untoward results, he begins to wonder whether he could not ignore untouchability altogether At the present day in the United Provinces few of the twice-born trouble about the matter, except Brahmans, and even they are relatively lax

* *Census Report*, India, 1931, p 430

† The railway authorities reduce the traveller's difficulty by licensing as food-vendors and water-carriers only persons of suitable caste

For instance, a Brahman will feel no dismay should he come in contact with some untouchable labourer in the fields, for the bath that he will take in any case when he goes home will remove the pollution. It is also said that in Madras, though the idea of untouchability, or pollution by contact, still prevails, the idea of unapproachability, or pollution by proximity, is fast disappearing "The train began the breakdown of this preposterous system; the bus may complete it"

37 During the last twenty years there has been a marked and progressive decline in the authority of the caste *panchayat* This is due to a variety of causes, of which the most important are the spread of education, the political changes of recent years, and the improvement in means of transport The spread of education has widened the mental horizon of the lower classes, both in the towns and in the rural areas, and they are now taking an interest in many matters to which they were formerly indifferent. Again, the small man, townsman or peasant, has become an elector, and as such has been wooed for his vote by rival candidates, generally of much higher caste than himself Thus he has acquired a new sense of his individual importance, a new consciousness of his legal rights, and a new readiness to assert them He has accordingly lost his old respect for the *panchayat*, composed as it is of individuals whom he regards as in no way his superiors. Having an inborn love of litigation, he is now taking to the regular courts (which have been brought closer to him by the motor-bus), cases that he would formerly have taken to the *panchayat*, including even offences against marriage custom. If he wishes to avoid the *panchayat*'s interference or to escape its punishment, he can now, with improved methods of transport at his disposal, transfer his residence to some place beyond the reach of the *panchayat* and there affiliate himself to the local brotherhood, which knows nothing of his past *

38 It is in respect of all matters related to the traditional function that the authority of caste *panchayats* have been most seriously diminished Fifty years ago † they were accustomed to fix the wages of labour, the hours of work, and the prices and output of commodities They regulated trade-processes,

* There are other causes that have contributed to the decline of the *panchayat's* authority See *Census Report*, United Provinces, 1931, pp 554–6, for a full account

† Hopkins, *India Old and New*, pp 193 *et seq*

they tried breaches of the occupational customs of the caste, they arbitrated in disputes between their members, they organized strikes and boycotts when their members were oppressed. If any member dared to abandon the traditional function for another, they doomed him to permanent ostracism, and were thus responsible for the formation of many new castes But as civilization progresses, the needs of the community become more numerous and more complex Primitive occupations die out and fresh occupations appear to supply fresh needs, and functional castes must adapt themselves to the new conditions Functional apostacy has now become so common that the old methods of dealing with it have become ineffective, for no *panchayat* can afford to outcaste the faithless many for the sake of the faithful few It has now become useless for *panchayats* to insist on rigid adherence to the traditional function or on rigid maintenance of the traditional methods So for the last twenty years or so, *panchayats* have rarely exercised their power, except in three cases—firstly, to engineer resistance to oppression, secondly, to regulate the custom of *jajmani* (a somewhat technical matter, which is explained in an appendix), and thirdly, to prevent the adoption of an occupation involving social degradation, and even in respect of these three cases the *panchayats* are far less active than they used to be *

39 Abandonment of the traditional function has occurred in all non-agricultural castes, but the extent and nature of it vary greatly Some castes have been forced to it by causes outside their control The Kayastha professional scribe, for instance, has been driven to other pursuits by the spread of education, for there is no longer the same need for his services Other occupations have become less profitable the Teli oil-presser has lost by the increasing vogue of kerosene and the Momin weaver by the competition of the mills In other castes, where the proportion of those who follow the traditional function is still relatively high, that function is generally one that is necessary at any stage of civilization—the tailor, the goldsmith, the shoemaker, the barber, the potter, or else it is one not likely to attract competition, such as scavenging and washing clothes The one occupation that has not been deserted by its followers, which has indeed gained considerably from other occupations, is agriculture

* Blunt, *op cit*, pp 243–5, *Census Report*, United Provinces, 1931, pp. 544–6.

40 Though in recent years the authority of the caste over its members has declined, yet it still keeps a jealous eye on its own prestige In every caste there are certain things that " are not done " , and if they *are* done, the offender will be left in no doubt of the caste's indignation This jealousy shows itself most strongly in respect of changes of occupation The caste will not condemn, it will even approve of, such a change, if the traditional function is replaced by one that is equally or more respectable , but it will certainly resent a change in the other direction Thus the highest castes, Brahmans and Rajputs, disdain any occupation that involves manual or mechanical labour , like mid-Victorian Englishmen, they confine themselves to such learned professions as medicine, law, or education, or to government service in any branch, military or civil Their social position, moreover, makes it impossible for them to handle a plough , their agricultural activities are confined to watching their labourers at work, with the result that their cultivation is always inferior to that of lower castes Where the Jat or the Kurmi grows first-rate wheat, the Brahman or Rajput grows second-rate barley As regards the lowest castes, it is sometimes asserted that they are not allowed to adopt more remunerative occupations * The statement is certainly incorrect many members, even of untouchable castes, have actually taken to other pursuits So much, however, is true, that many such castes do cling to their proper occupations, partly because they are essential to civilization, partly because they are of a kind not likely to attract competition It is also perhaps true that when a member of such a caste does adopt some other trade, it will usually be one related to his traditional occupation , the Chamar tanner, for instance, will become a shoemaker, or a saddler, or a taxidermist † The castes of middle rank, Vaisyas and the better type of Sudras, are more fortunately placed than either their superiors or their inferiors The traditional function of the Vaisya is trade or commerce, and accordingly he has at his command a large selection of callings without departing from tradition The rest are almost entirely agriculturists, and in India agriculture is the most respectable of all occupations No caste, however high, can

* Anstey, *Economic Development of India*, p 53

† In Bijnor (United Provinces), there are families of Chamars who are extremely skilful in setting up heads and curing skins

lose dignity by adopting it, indeed, a large majority of those who have deserted their traditional functions have taken to it Thus the individual's choice of a livelihood, though freer than of old, is still limited by social considerations There is dignity only in some kinds of labour, whether initiative and enterprise are regarded as commendable depends on their direction Lastly, agriculture, the most important of all occupations, is overcrowded and can no longer support its followers

41 The commensal and food taboos lead to economic wastefulness It is not possible, for instance, to have common tables in a college or common messes in a regiment, and even in the houses of the legislatures there must be separate refreshment rooms for Hindus and Muhammadans A common kitchen is possible nowhere except in the house of a joint family Persons of different castes, though living in the same house, must have their separate kitchens There are, moreover, certain kinds of food that cannot be used No Hindu caste will eat beef, many will not eat fish, fowls, or pork * The only kinds of meat which Hindus of good caste will eat are mutton, goat's flesh, venison, and game birds, but in practice few Hindus ever eat meat at all—most of them because they cannot afford it, many because they pride themselves on ceremonial purity.† Amongst Muhammadans the only meat food tabooed is pork ‡ The cow is also responsible for much economic waste, for since her life is sacred, inferior or diseased animals are allowed to survive, which eat up the fodder supply and beget inferior young.

42 Again, amongst orthodox Hindus and Jains there are religious objections to the taking of animal life, and so such pests as the monkey and the rat are allowed to survive, and do great damage to orchards and garden crops When a Hindu community is troubled by a plague of monkeys, it causes them to be caught alive, charters a special train, and sets them

* *I e* the flesh of the domestic pig Wild boar's flesh is often eaten

† The eating of meat is to some extent governed by religious considerations Vaishnava sects will never eat it, Saiva and Sakta sects will eat it even in the highest castes

‡ Both the domestic and wild pig Moslems also object to such foods as liver, kidneys, tripe—the inner parts of any animal, nor will they eat the flesh of any animal unless its throat has been cut whilst alive (*halal*)

free in some distant forest * Lower castes, however, do not hesitate to destroy animals of this kind Some will also eat them †

43 Religion is also responsible for certain economic disadvantages The Hindu, laying stress on things of the spirit, is willing to support a large number of mendicants, similar to the begging friars of mediaeval Europe, some of whom may be truly religious, though many are frauds Again, sanitation is often ignored, though ceremonial purification is strictly observed A pious Hindu will often live in the same room as a cow, yet refuse to take water from a man, however personally clean, if he happens to be of a low caste It is doubtless true that many primitive religions, regarding cleanliness as (literally) next to godliness, have insisted on ceremonial purifications for purely hygienic reasons , but at the present day, in India as elsewhere, such lustrations are seldom more than symbolical

44 Other caste customs also have economic importance Much money, for instance, is spent on the marriage ceremony , for the parties must live up to their social position Again, since the bride by reason of the custom of hypergamy is always of a rank inferior to that of the bridegroom, the bride's father, at whose house the ceremony is held, usually spends more than he can afford in an attempt to live up to the bridegroom's superior status He must provide his daughter with her dowry, trousseau, jewellery, and household utensils He must entertain the bridegroom's party for several days He must feast the assembly of caste-fellows and Brahmans He must fee the officiating priest There are also other ceremonies—at birth and death, with the *sraddha* and the *upanayana* —all of which involve heavy expenditure which cannot be avoided Large sums of money are also frequently spent on pilgrimages (*tirath*) or sacred recitations (*katha*) Offenders against caste custom are often heavily fined, or ordered to give a feast either to a specified number of Brahmans, or to the brotherhood, or to both Lastly, a Hindu is compelled both by law and by religion to pay the debts of his ancestors The legal obligation is due to the nature of the joint family , the

* Incredible though it may sound, this is a fact I have myself known of two or three such cases

† In the United Provinces there are four castes which regard field rats as a delicacy

ancestor, in contracting the debt, has acted as the agent of the heir, and the heir is consequently liable The religious obligation arises from the fact that failure to repay debt is a sin, and it is the heir's duty to deliver his ancestor from the consequences of that sin The consequences are sufficiently heavy , for, according to one of the Hindu lawgivers, he who does not repay a debt " will be born hereafter in his creditor's house a slave, a servant, a woman, or a quadruped " * All these customs undoubtedly lead to debt Certainly not less than one-third, and amongst the highest castes, where such debt is particularly heavy, possibly as much as one-half, is due to unproductive expenditure of this kind

45 Lastly, we have to consider the position of women Of the effect of marriage customs on their expectation of life I say more presently Both amongst Hindus of the better class and amongst the great majority of Muhammadans it is the custom to keep the women in seclusion , and though, as we have seen, many women of the better classes are now being allowed to emerge from the *purdah*, the great majority must still live behind it " *Purdah* is the hallmark of the lady "— who, accordingly, can do nothing out of doors and very little indoors She cannot, for instance, draw water from the well or take her husband's food to him in the fields, and must employ a servant for both purposes And yet these points are of minor consideration Such Indian women as have emerged from their former seclusion have not only shown that they have the qualities necessary to make useful citizens, but both in society, in the local bodies, and in the legislatures, have already rendered valuable services to their country Thus India has much to gain from abolishing the *purdah* system As for women in the lower castes, these are not kept in seclusion, but their daily tasks, such as the grinding of flour, the fetching of water, and the carrying of heavy loads, involve heavy labour The deplorable effects and the economic disadvantages of such conditions need no further description

46 Of all the problems that engage the attention of the social reformer, none is more important than that of the depressed castes Their origin is not in doubt In the population of the ancient Indian state there was always a non-Aryan element drawn from the primitive tribes that lived

* Vrihaspati *apud* Jagannatha's *Digest*, Vol I, p 334

within its borders On these *hina-jatyo* (low tribes) and *hina-sippa* (low trades), as they were called in Buddhist times, there always rested a social stigma due to their race, which was intensified when they followed degrading occupations, such as those of the hunter, fowler, scavenger, potter, tanner, night-watchman, and executioner They were segregated in villages of their own , they must beat two pieces of wood together to give warning of their approach, for their touch was pollution It was from such as these—Nishadas, Chandalas, and Pukkusas—that the depressed classes are descended * The cause of their degradation is uncleanness, whether caused by their occupation or by the eating of unclean food such as beef or pork , and their untouchability is the result of this uncleanness In Madras there are some castes which are not only untouchable but unapproachable, having a range of pollution which varies from twenty-four to sixty-four feet

47 The nature of the disabilities from which these depressed classes suffer is well known They are compelled to live in isolated hamlets or in separate quarters of a town They may not enter Hindu temples , they may not use wells that higher castes use, or attend schools that higher castes attend They have now been given,† under the name of scheduled castes, certain political advantages which may enable them to secure an improvement in their lot In some provinces their representatives have even been appointed ministers It is worth remembering that, as more than one of their leaders has made plain, they do not wish to be raised by others, but to raise themselves, and that all they want from the orthodox is that they should be given a chance to do it

Marriage Customs and the Sex-ratio

48 At all censuses there has been an excess of males over females in the population of India. The sex-ratio has varied with the circumstances of the preceding decade , the average proportion of females to males from 1881 to 1931 was 952 per mille, with a maximum of 963 in 1901 and a minimum of 940 in 1931 ‡ There are great variations from

* See R K Mukerjee's *Local Government in Ancient India*, pp 65 *et seq* , and Blunt, *op cit* , p 15

† By the Government of India Act, 1935

‡ Or 941 after Burma is excluded

place to place the number of women is relatively least in north-western India, and relatively highest in the Peninsula, exclusive of Bombay There are also variations in different strata of society, it is generally true that the lower the social status, the greater the proportion of women Amongst Hindus, the ratio of females to 1,000 males is 953, amongst Muhammadans it is 903'*

49 The Indian sex ratio differs entirely from the sex-ratios of western Europe, where there is always an excess of females over males Thus in 1911,† when the proportion in India was 954 per mille, it was calculated that the average proportion in western Europe was 1,038 It was also calculated that in India the number of female births was 937 to 1,000 male births, whilst in western Europe the figure was 948 But an excess of eleven male births per mille will not go far to explain a deficiency of 84 living females per mille The difference in the two sex-ratios does not depend on the difference in the two birth-ratios, its explanation is to be sought in the conditions *after* birth, and of their effect on the relative mortality of the two sexes Let me first state those conditions as they are in Europe In Europe children of both sexes receive the same care and attention from their parents, but boys are constitutionally more delicate than girls, and the number of male deaths in childhood exceeds the number of female deaths Accordingly, when adolescence is reached, the excess of male births has been obliterated and there is numerical equality between the sexes, or even a small excess of females In later life, also, the mortality of males exceeds that of females, for men in their daily avocations are exposed to risks—hard work, exposure, accidents—from which women are preserved by reason of the nature of their occupations It is true that they are exposed to a risk entirely their own, namely the risk of child-birth, but in modern conditions the danger which this involves is far less than it used to be. Thus the proportion of females steadily rises In India, however,

* Excluding Burma But the latter figure is misleading About 66 per cent of Muhammadans live either in the north-west, where the proportion of females is lowest in all communities, or in Bengal and Assam, where it is below the all-India average, and in both these tracts the Muhammadan ratio exceeds the Hindu

† I have chosen 1911 partly because the required figures are available, chiefly because the Great War had not yet occurred to disturb the sex-ratios of Europe

the conditions after birth are entirely different Girls have the same natural advantage over boys, but this is neutralized by the treatment to which they are subjected after birth , and amongst Hindus this difference in treatment is the result of certain marriage customs

50 In all patriarchal societies at all ages of history the birth of a son has always been preferred to the birth of a daughter But amongst Hindus the feeling goes far beyond preference The birth of a son is ardently desired, because he is necessary for the performance of the *sraddha* ceremony,* whereby his father's salvation is secured , and it is this " superlative anxiety for male children " which is chiefly responsible for the universality of marriage amongst Hindus On the other hand, the birth of a daughter is a matter of positive regret, for sooner or later she must be married and, as has already been explained, it is on the bride's father that will fall the heavy wedding expenditure

51. In the past certain castes, with the object of avoiding the difficulties caused by a daughter's birth, took to the practice of female infanticide † Legislation was passed to stop it, and though there is evidence to suggest that here and there it still survives,‡ yet it is now too rare to affect the sex-ratio But, as has been pointed out in successive census reports, though infanticide has now disappeared, yet the original preference for the son over the daughter, which caused infanticide, still survives The brother, in such respect as food and clothing, fares on the whole better than the sister, and as the proverb puts it, " the parents look after the son, and God looks after the daughter " This preference tends to rob the girl during her childhood of the greater vitality with which nature has endowed her , and though it does not affect the sex-ratio to the same extent as infanticide, it certainly affects it in the same way

52 According to the Hindu law-books a girl must be married before she reaches puberty ; if she is not, then she will bring disgrace on her family in this world and damnation on her parents in the next It is true that in most parts of the country and amongst the great majority of Hindus infant

* Cf para 18, *note*

† For full account, see *Census Report*, India, 1911, pp 215–217.

‡ *Census Report*, India, 1931, pp 195, 196

marriage * does not lead to infant cohabitation, the bride does not go to her husband's house till she is past puberty † Nevertheless, cohabitation generally begins far too early, and causes many premature deaths in child-birth of adolescent girls Even if the girl wife survives, she is exhausted by the strain of bearing children too early and too often, and at the age of thirty—should she succeed in reaching it—she will be an old woman Infant marriage, therefore, is another cause of the general shortage of women It may be noted that there is no similar restriction on the man, though he is, in fact, often married undesirably young, there is no reason why he should not marry at any age

53 It is also laid down in the law-books that no woman may marry more than once, for marriage is a sacrament and the effects of it, in the case of a woman, are indelible—though a man may marry as often as he pleases There are a certain number of relatively low castes which ignore this prohibition on the remarriage of widows, but it is observed by all twice-born castes, by the Byahut subcastes of certain other castes, and also by all castes that aspire to rise in the social scale—roughly, by not less than one-third of the Hindu population and possibly by more Thus Hindu society, though it does not possess enough women to supply its men with the wives they universally desire, yet deliberately deprives itself of a large number of potential brides

54 This custom does not increase female mortality, and so does not affect the general sex-ratio, but it does affect the ratio between potential brides and potential bridegrooms, especially when taken in conjunction with infant marriage According to the strict letter of the law, the only marriageable women are unmarried girls aged fifteen or less, whilst potential bridegrooms include all unmarried and widowed males whatsoever, and the proportion between them, on the census figures of 1931, is 560 to 1,000 In practice, the situation would not be so unfavourable as this We must

* For the origin of infant marriage, see *Census Report*, India, 1911, pp 263–4, 267–71, *Census Report*, India, 1931, pp 226–27, Blunt, *op cit*, pp 75–80, where the marriage ages for a number of castes are given

† When the wife goes to her husband's house for the first time there is often a separate ceremony called *gauna* (*deductio in domum*) There is also a domestic rite (*sanskara*) called *garbhadan*, the object of which is to invoke a blessing on the consummation Both are nowadays often omitted

increase the number of women to allow. (1) for those unfortunate girls who have reached their adolescence unmarried, but will certainly be married if a chance occurs, (2) for adolescent girls in castes which practise adult marriage; and (3) for widows in those castes which permit their remarriage We can also safely assume (1) that very young bachelors—let us say, those aged three or less—will find their wives amongst girls still unborn, (2) that old bachelors and widowers over fifty will not be likely to change their condition, and we can reduce the number of males accordingly I calculate that on this basis the proportion of potential brides to potential bridegrooms would be about 800 per mille On that reckoning, one potential bridegroom in every five must remain unwed, being unwed, must remain sonless, and being sonless, must go to hell * An unmarried or widowed Hindu, accordingly, must perforce take any bride that he can find, whatever his and her ages may be young men of twenty or twenty-five, elderly men of forty or fifty, must be content with wives of two or three Naturally, many of these baby brides survive their husbands Thus the shortage of marriageable women tends to keep infant marriage alive—in spite of the reformers Infant marriage tends to produce disparity between the ages of husband and wife That disparity tends to increase widowhood Widowhood increases the shortage of marriageable women Thus the vicious wheel has come full circle These facts are beyond dispute They are discussed, with the figures, in one census report after another All over India, educated Indians abhor these customs, all over India there are associations and individuals working to reform them They have had considerable success already, but, as the agitation connected with the Sadr Act has shown, much still remains to be done

55 There are other customs which increase female mortality and affect the sex-ratio The mother in childbed is attended, at all events in the villages,† by a midwife of some untouchable caste (which in northern India is usually the Chamar caste of tanners), whose methods are both primitive and unscientific Widows, again, become family drudges and must content themselves with one meal of coarse food a day; those of them who are married as babies and widowed in child-

* This is a reference to Baudhayana's dictum quoted in para 15

† But also see Chapter VI, para 35

hood are treated worse than their elders, for it is held that to suffer so dire a fate as infant widowhood, they must have committed some dire offence in a former life. Ladies of the better classes, living behind the *purdah*, suffer from tuberculosis and other ailments from which their poorer sisters are free, whilst those poorer sisters are worked as hard as their own cattle Conditions of this kind do not conduce to longevity

56 Amongst Muhammadans, the position of women is better than amongst Hindus Daughters are not neglected Infant marriage, though permissible, is uncommon *, and a girl, if married without her consent during her minority, can annul the marriage on coming of age † There is no prohibition on the marriage of widows The ills from which Muhammadan women chiefly suffer are the *purdah* system and unskilful midwifery But it is to be remembered that the great majority of Muhammadans are converted Hindus, who whilst changing their religion have preserved their social customs, and are as liable as Hindus to suffer from their results

57 If there is to be any improvement in the welfare of Indian society, the first thing needful is to raise its standard of comfort This is not, as some seem to think, a purely economic process, consisting in the increase of material wealth Comfort has other ingredients than wealth, namely health and happiness, and even in respect of wealth, it is not the amount of it that affects a man's comfort, but the manner in which he spends it In the family of a peasant or labourer, the person responsible for the expenditure of its wealth is not the husband but the wife He may produce the wealth in the shape of grain or money and bring it home, but it is she who turns the grain into food, and decides how much of the money must be spent on clothes, kerosene-oil, salt, and other necessaries It is also she who is responsible for the health and happiness of her family, by nursing them when sick, by keeping the house swept and clean, by scouring pots and pans that are used in cooking and eating In short, such comfort as there is

* Muhammadans objected greatly to the Child Marriage Restraint Act of 1929 on the ground that (*a*) it was contrary to Muhammadan law, which permitted infant marriage, (*b*) it was unnecessary, because they did not practise it See *Census Report*, India, 1931, pp 229 *et seq*

† Strictly according to the law, she can only annul such a marriage if it was arranged by some other guardian than her father, but if her father should arrange it, then the guardian ranking after him is entitled to object

in her home is entirely due to her But how much greater would that comfort be if she were sufficiently educated to keep the household accounts, if she had been taught to look after and bring up her children, if she had been trained in what our grandparents called housekeeping and we call domestic science *

58 The conclusion is plain Government officers and departments, politicians and reformers by their various activities can secure for the people additional wealth, better health, and greater happiness, in short, they can increase the raw material of which comfort is made But the only agency which can manufacture additional comfort out of that additional raw material—in other words, the only agency which can raise the existing standard of comfort—is Indian womanhood, and if Indian women are to make the best and the most of their increased opportunities, then, firstly, their natural aptitude for carrying out the duties of a housewife must be increased by education and training, and secondly, those marriage customs must be abandoned which reduce their usefulness by undermining their health and threatening their lives Of all the many changes likely to improve the welfare of Indian society, none is more important than these two—female education and marriage reform

Conclusion

59 The situation may now be summarized In the past the outlook on life of the individual Hindu has never been wider than that of his caste But in modern conditions education has enlarged his outlook, which according to his circumstances may extend beyond his village to the factories of the neighbouring town, or beyond his province to the tea-gardens of Assam or the coal-mines of Bihar, or beyond India to the civilizations of the West, whilst the cinema, which has already arrived in Indian villages, and broadcasting, which is on the point of arrival, will enlarge his outlook still further Again, education, working together with political progress, has taught him that though he may have been born the slave of custom, a mere head to be counted amongst the other heads of his caste, yet he is also a free and independent citizen, with

* In this paragraph I am indebted to Mr Brayne's book, *Better Villages*

rights, privileges, and duties of his own and a definite value in the body politic He has discovered, in short, that the lot to which he was born is not the only lot that is open to him, and he has acquired a measure of that discontent which is "the first step in the progress of a man or a nation"

60 It would be a mistake, however, to conclude that the efforts of reformers and the disintegrating force of modern ideas have so far seriously impaired the vitality of caste Most of the customs principally attacked are caste customs, as it were, by accident In the case of infant marriage and the prohibition against widow marriage the sanction is religious Commensal and food restrictions depend on primitive taboos, reinforced by the Brahmanical doctrine of ceremonial purity Even heredity of function is a commercial rather than a social principle They are all customs which caste chooses to enforce, but they could all disappear without affecting the essential principle of caste, which is endogamy And that, as we have seen, is still relatively secure The most important change that has yet occurred is the decline of the caste *panchayat*'s authority for there is small use in making laws if there is nobody with power to enforce observance of them Meantime, the reformers are still few, the orthodox are still many, the mass of the people show no desire to relax their marriage rules, and it will be a long time yet before the caste-system can be flung on the dust heap of worn-out superstitions

61 Many of the difficulties that impeded the development of an Indian nation have now disappeared There is a common government, there are common political institutions and interests, amongst the educated, there is even a common language, namely English The old racial differences have long since been forgotten, though they have been replaced by communal differences Improved communications have reduced the distances and the size of India to manageable dimensions An Indian nation is now in process of formation The birth of a nation will not necessarily involve the death of caste A nation can as well be composed of endogamous groups as of groups of any other kind But a nation without caste is undoubtedly better and stronger than one which suffers from all those restrictions, especially the marriage restrictions, which caste involves. As for the ultimate decease of caste, the causes most likely to produce it are old age and internal decay, and they are already at work

Appendix I —Jajmani

Every village artisan or servant has a fixed circle of clients, which is called *jajmani* Literally, the word *jajman* means the giver of the sacrifice, but it is now extended to mean a client of any kind The *jajmans* of the Brahman family priest are his parishioners, whose domestic rites it is his duty to superintend Similarly tanners, barbers, carpenters, and blacksmiths all have their *jajmanis*, or circles of clients, from whom they receive fixed dues in return for regular services Sometimes the women have *jajmanis* of their own For instance, in the United Provinces, the wife of the tanner (Chamar) is the village midwife and the wife of the barber (Nai) is the village monthly nurse The dues consist of a certain quantity of grain at each harvest, but there are also fees which are paid for special duties A *jajmani* is a valuable source of income, both hereditable and transferable It is often given, for instance, as a dowry or mortgaged to raise a loan They are accordingly strictly demarcated, and to poach on them is an action bitterly resented

Appendix II —A List of Offences triable by a Caste Panchayat

(1) Breaches of the marriage law
  (*a*) Adultery
  (*b*) Refusal to carry out a marriage after agreement (breach of promise of marriage)
  (*c*) Refusal to send a wife to her husband at the proper age (*gauna* ceremony)
  (*d*) Refusal to maintain a wife (restitution of conjugal rights)
  (*e*) Marrying a widow when that is not permissible
(2) Immorality and concubinage (especially with a woman of another caste)
(3) Breaches of the commensal law and of restrictions on eating, drinking, and smoking
(4) Breaches of caste custom in respect of occupation and trade processes
(5) Killing a sacred animal, notably the cow also the squirrel or monkey, sometimes the dog or cat
(6) Insulting or otherwise causing offence to a Brahman.

(7) Breaches of caste etiquette, *e g* leaving a dinner party before others have finished, or omitting to invite persons who have a right to expect invitation
(8) Breaches of certain taboos, *e g* mention by a wife of her husband's name or intercourse between an elder brother and his younger brother's wife (These relations may not even speak to each other or be in the same room together)
(9) Abusing or beating parents or other senior relatives
(10) Conduct derogatory to the dignity of the caste, such as begging or being assaulted by an " untouchable "
(11) Assault or debt

Some castes also try afresh offenders who have been convicted by a court on release from gaol—though sometimes the *panchayat* is not concerned with the original offence, but only with the subsidiary offence of having been found out

CHAPTER III

By C G CHENEVIX-TRENCH

The Rural Community

The Villager and the Village

1. According to the latest census report, in British India proper, that is, exclusive of Burma and the Indian States, there are close on half a million villages and the rural population was returned at over 228 million souls, or 89 per cent of the total inhabitants Thus, in respect of numbers, the relative importance of the urban and rural elements, which in England and Wales is roughly as four-fifths to one-fifth respectively, is in India almost reversed The Indian Civil Service recruit will soon realize that the great majority of those who attend the courts of his district headquarters are villagers, earth-coloured, vociferous rustics not in the least overawed by the majesty of his own or any other tribunal Later he will discover that essentially an Indian village, or *mauza*,* corresponds very closely with an English parish. Both are administrative units and each consists of a collection of houses, compact or scattered, set in an area the boundaries of which normally remain unchanged from century to century The total acreage of a *mauza* may run into five figures, but in old, long-settled tracts, such as the eastern districts of the United Provinces, the average area may be as low as 100 to 150 acres, as against 1,000 to 2,000 acres in the Central Provinces, where the influx of Hindu immigrants from the Gangetic plains has been comparatively recent Pressure on the land frequently

* A dictionary definition of *mauza* is "a parcel or parcels of land having a separate name in the revenue records and of known limits" It is not, therefore, necessary that a *mauza* should contain an inhabited site, and though it almost invariably does, *mauzas* are occasionally found without one, and are known as *wiran* (uninhabited or deserted) The name for the inhabited site as opposed to the *mauza* is *gam, ganw, deh, abadi*

compels the *ryots*,* or cultivators, to rent holdings outside their village, and this is especially the case where villages run small Elsewhere most of them depend for their living on the fields within its limits They, with the artisans and menials who serve their needs, a priest, the village accountant, a money-lender, a schoolmaster, and perhaps even a petty shopkeeper or two, form a self-contained aggregate, deeply conscious of its corporate unity and resentful, at heart, of interference from outside

2 To the traveller by train from Bombay to Calcutta the general appearance of the villages seen from his carriage window is distressingly uniform Each is a huddle of mean houses, tiled or thatched, built of mud or dry stone, and containing only one or two rooms, with a yard at the back for storage of grass and fuel Glazing and chimneys are unknown and a straight line or right angle in any roof or wall is rarely to be found In the hilly tracts, however, notably among the Satpura, Vindhya, and Aravalli ranges, the broken nature of the ground forbids the massing of many dwellings on one site Tiny settlements or single homesteads dominate the lower hilltops and a village of Bhils may be scattered among thirty or forty *pals*, or hamlets Houses of this type are often roomy, well-ventilated, and conspicuous for neatness, symmetry, and even ornament Bamboo enters largely into their construction

3 Inside the house of an average cultivator there are tall clay receptacles for storing grain, perhaps a chest or two, but no tables or chairs The floor and walls are decently smoothed with cow-dung, a clean and sanitary distemper the use of which is not unknown in villages of the west of England. Scoured brass utensils gleam in a corner , in another is a heap of unattractive bedding Rough bedsteads, mere frames connected with a network of home-made string, stand in the verandah, at one end of which, probably, is the family cooking-hearth On cold winter evenings the cultivators of the village sit over communal fireplaces maintained at some central point out of doors, as a rule under the great tree where the elders meet to gossip on a platform built around its roots But the shepherd whose duty it is to provide the fuel for these fires from the droppings of his flock keeps warm by packing an armful of kids under his cloak and brooding over them like a sitting hen

* The Urdu word *raiyyat* means a subject, but in official parlance a *ryot* denotes a cultivating tenant

4 The villager is, by necessity, a vegetarian, growing what he eats, with the exception of salt and a few spices * His diet is monotonous in the extreme , but in normal times he certainly fares better than the English peasant in the " hungry forties " or his opposite number in Ireland at a much later date Bread of wheat, barley, maize, or millet, according to the tract, or rice in the latitudes where that crop is the chief staple, is his mainstay, varied with four or five sorts of pulses and a very few coarse vegetables and fruits During seven months out of the twelve his milk costs him nothing Raw cane-sugar,† cheap and often home-produced, is his only sweet, except on feast-days But though his material outlook is limited his moral and spiritual levels are high, and it would be the greatest mistake to regard him as a yokel or a boor

5 As the physical structure of an organism is built up of single cells, so in the Indian body politic the villages may be said to form the cellular tissue A breakdown of that tissue, that is, its dissolution into what biologists call an " undifferentiated mush," might lead to embarrassing consequences on a large scale It is, therefore, worth while to outline the leading features of the village community in an Indian State, where it has remained comparatively untouched by modern social and political changes, and to compare them with those prevailing in British India, where disintegrating tendencies have been longer at work

6 The exemplar State shall be in Rajputana, the village one of respectable Hindu cultivators, Jats predominating. They are a republic in miniature, with a decided oligarchic tinge The State treats them with respect Written orders from the Raj, departmental notices and the like to be promulgated in the village, are punctiliously addressed to " The *Patels*, *Panches*, *Patwari* and cultivators, one and all, of *Gam* (village) so-and-so " The *patels*, who vary in number, are the hereditary headmen , the *panches*, in theory the Big Five, but generally more or less than five, are their council, to which, on special occasions, an elastic body of *bhanjgars* (reputable men) are added By *patwari* is meant the village accountant, in Rajputana almost always a Vaisya (*bania*), while in the United and Central Provinces the profession is practically

* For the question of eating meat, see Chapter II, para 41 and notes Vegetarianism in most cases is *only* a matter of necessity

† *Gur*

monopolized by the caste of Kayasthas The word "cultivator" employed in the Raj's order would exclude the low castes The executive arm of the *patels* and *panches* is the *gam-balahi*, who, though invariably an untouchable, wields great power and influence His special duty is to muster his fellow-untouchables and arrange for their performance of the many compulsory public duties, paid and unpaid, which by custom fall to their lot Prominent among these (misnamed) "outcastes" * are the barber, washerman, drum-beater, wheelwright, and blacksmith who render communal service and are remunerated in grain twice a year from the threshing-floors But the majority will be field-labourers, probably aboriginals, to whom no work, however unpleasant, is unlawful They are the dispossessed, yet by no means weaponless against oppression If, for example, a Jat's cow dies in its owner's sitting-room or verandah, only an untouchable can remove the corpse The urgency of this operation, especially when the thermometer stands at 118° F in the shade, encourages the cultivators to remain on friendly terms with their social inferiors

7 Strikes, nevertheless, are frequent and rarely unsuccessful A trifling quarrel between the barbers and drum-beaters of a village on the Gwalior border has been known to lead to the boycott, by both parties, of the entire body of *ryots*, including a hundred houses of Brahmans By these tactics each party hoped to compel the cultivators to intervene in its favour The result was complete social paralysis over a period of months, as without the services of drum-beaters and barbers respectively no marriages or funerals could be celebrated A chronic dispute, also, smoulders over the housing of the low-caste families The Jats insist on their living on the village-site, within easy call whenever need for their services may arise The untouchables, for obvious reasons, are incessantly petitioning the State for leave to establish a hamlet of their own at a distance † In justice to the *panches* it should be remembered that their inveterate

* These are all low or depressed classes In some parts of India "outcaste" is used as a synonym for "depressed," but the term, used in this way, is misleading "Outcaste" should refer to an individual only, not to a whole caste

† Hamlets inhabited by untouchables are common in many parts of British India The Chamar hamlet is generally known as Chamrautia or Chamrola

prejudice in favour of the whole community being housed within a ring-fence is not all due to selfish motives Its roots lie deep in the stormy past, when every village was exposed to the menace of marauding bands Deserted houses, moreover, harbour thieves

8 In all probability there will be found in this village several houses of Gadris, or shepherds Between them, also, and the Jats there is no love lost, for sheep and goats nibble and browse the common grazing grounds to the quick By way of compensation, the valuable manure of these small cattle is claimed by the Jats, who opine that, as cultivators, they alone are " the people " The Gadri counters by pressing his ancient right to the top and lop of all acacia trees on the boundaries of the Jats' fields Incidentally, the State law, in deference to public sentiment, forbids under heavy penalties the export of manure, even as little as a basketful, from one village to another

9 Strenuous efforts are made by the *patels* and *panches* to settle all such quarrels within the village without recourse to the courts of law, and in this they have the support of the State Though they exercise no authorized civil or criminal powers, the peace and good order of the countryside lies, to a large extent, in their hands In times of agrarian unrest they are the recognized spokesmen of their community, which at a word from the *panches*, as is well known to the Ruler, will resist to the utmost any real or imagined infringement of their customary rights Thus, a new impost may be combated by a refusal to move a plough in a hundred or more villages for one, two, or even three successive years When things come to this pass, the State gives way Police arrangements in the villages are, perhaps, sketchy The *panches*, accordingly, see to it that any malefactor caught red-handed receives such summary chastisement as renders the result of his subsequent trial in court a matter of comparative indifference to him This is one reason why the incidence of serious crime is often lower in State territory than across the border in British India Again, a large village may have in it half a score of temples and religious foundations The *panches* are responsible for the collection and allocation of their revenues, the regular performance of the services, and the entertainment of peripatetic holy men and indigent wanderers For these purposes and for the upkeep of rights-of-way and boundary marks, they levy a cess

(*malwa*) within the village, and also contribute a fixed annual sum to the "established church" (*devasthan*) of the State, precisely as a parochial church council in England pays its annual quota to the diocesan fund of the see No one dreams of auditing the *panches*' accounts, yet complaints of inefficiency or speculation are practically unknown

10 The *patwari*, *ex officio*, has little concern with party politics, but twice a year, when the annual instalments of land-revenue fall due, he is the most important functionary in the community This is one of those villages where the land tax is annually assessed in a lump sum on the *gam* (village) as a whole Since the figures of the past fifty or sixty years are on record and the character of recent seasons, at least, is within the memory of both officials and village elders, agreement is reached without much difficulty Once fixed, the distribution of the amount among the *ryots* is the business of the *patwari*, who, it should be noted, draws no salary or allowance from the State He and the *panches* carry out this exceedingly intricate and invidious operation without the aid of any field map, to the general public satisfaction Then the *kharda*, or rent-roll, showing how much is due from each *ryot*, is punctually presented at the local revenue office and collection is the duty of the Raj officials

> "The Raj is the lord of the *bhog* (revenue),
> We are the lords of the *bhom* (land)"

In this couplet, which they are never weary of quoting, the stubborn conservatism of the cultivators is aptly summarized So far do they carry their independence as occasionally to make revenue-free assignments of land to priests and village menials, arguing that provided the total demand on the village is not thereby reduced, the Raj has no right to interfere Well might the Collector of a British district raise hands of horror at such sacrilege!

11 The typical village in that officer's jurisdiction is comparatively anaemic and amorphous The headmen (*lambardars, patels, or muqaddams*) and the village watchman (*chaukidar*) are virtually government officials, and in their appointment, dismissal, and remuneration the public has very little say. Their authority may be greater, yet their prestige is less than that enjoyed by their countertypes in a State The British Indian *patwari*, in particular, may have half a dozen

villages in his charge, but so far from being the ally and colleague of the *ryots*, he is always their master and often an extortionate petty despot And the law imposes such a load of unpopular duties on the *muqaddam* that it is sometimes difficult to find volunteers for the office

12 On the credit side of the account is the transformation wrought by the improvement of road and rail communications, and, in recent years, by the advent of motor transport The raging popularity of the passenger *lari* * (motor-bus) which travels where a bullock-cart can go and at ten times the speed, has quickened the *tempo* of a process which is making labour infinitely more mobile and adventurous No longer is the *ryot* content to remain idle during the slack months of the year or in times of " famine " (the word is now almost obsolete), to sit and starve in his village till relief is brought to his door He takes his cart and bullocks to the nearest town or city and earns by haulage enough to keep his family and pay his rent. As for the casual labourers, owing to improved economic conditions they are often better off than the rank and file of cultivators Emancipation is in the air Eight lives were recently lost in a riot caused by certain presumptuous untouchables who dared to wear coats with collars, to build a second storey to their houses, and to make sweetmeats in iron instead of earthen pans In fifty years this will be a scarcely credible legend

13. But the upheaval of social strata hitherto submerged has gone far to break up the original organic unity of the village, in which function was largely determined by caste. Its tendency is to eliminate all leadership but that of the salaried official Experience has shown that in times of scarcity or agrarian unrest the co-operation of the natural leaders of the people is of the greatest value to the Government, and it would be unfortunate if ever the State should seek such assistance in vain " It was more especially in times of scarcity that the relaxation or total interruption of the ties of patronage and dependence, which formerly connected the great rural proprietors and the peasantry, was manifest At such critical times the central government, alarmed by its own isolation and weakness, sought to revive for the nonce the personal influences or the political associations which the government itself had destroyed , they were summoned to its aid, but they

* This is merely " lorry " mispronounced

were summoned in vain, and the State was astonished to find that those persons were defunct whom it had itself deprived of life " * Between conditions ruling in France in the eighteenth century and in present-day India the differences are doubtless wide, but the quotation is not wholly inapposite

14 The danger has long been realized Over a century ago Sir John Malcolm urged that in Central India civil and criminal cases of minor importance might with benefit be entrusted to village *panchayats*, as was the practice, he had observed, in the Rajput and Maratha States, nor was he the first to make this recommendation But the subject was not pursued in earnest until, following the report of the Decentralization Commission (1909) and a Government of India resolution on local self-government (1918), in and shortly after the year 1920 various Acts, aimed at the reconstitution of village *panchayats*, were passed in nearly every province of India An interesting survey of this legislation will be found in a lecture recently delivered by Sir Selwyn Fremantle before the Royal Society of Arts † Eight major provinces are covered by the review, viz Bombay, Madras, the United Provinces, Punjab, Bengal, Bihar, the Central Provinces, and Orissa From the lecture and the discussion that ensued the conclusion may be drawn that the number of genuine village *panchayats* (exclusive of villages grouped into union boards) ‡ is now between 10,000 and 12,000, which, in the lump of half a million *mauzas*, is a leaven of only 2 per cent , that the powers vested in them vary from province to province ; that though their judicial work is generally good, especially in the United Provinces and Bengal, on the administrative side they show regettable weakness , and that without increased official supervision, to which the greatest obstacle is financial stringency, improvement must be slow The point was emphasized that these new *panchayats* are not a restoration of the old, for the latter are, inevitably, beyond resuscitation Their importance lies in the prospect of devolving upon them, in increasing measure, many of the functions exercised by larger bodies and so of recreating the village as an element of local self-government, as was the effect, in England, of the Parish Councils Act of 1895. The possible ultimate

* Alexis de Tocqueville, *State of Society in France before the Revolution of* 1789, translated by Henry Reeve, p 114

† Society's *Journal*, March 12th, 1937

‡ See Chapter XI, para 37

incorporation of *panchayats* as representative units in the constitution of India was also foreshadowed *

Land Tenure and Land Revenue

15 To generalize on any subject connected with India is notoriously imprudent, but there is no exception to the rule that from time immemorial the Government, whether indigenous or foreign, has been the sole owner, as ownership is understood in England, of the Indian soil, and that freehold tenure is unknown † The right of the Ruler to levy a tax on every rood of land in every village is unchallenged He may, as a favour, remit the tax, wholly or in part, permanently or for a term of years, but the remission is always conditional, and breach of the conditions on the part of the grantee may involve, and often has involved, forfeiture of the privilege

16 In the form in which it reaches the treasury, the tax is known as "land revenue" There are tracts and whole provinces, conspicuously Madras and Bombay, where the State collects it direct from the *ryot* who happens to be the registered occupier of the land The unit of assessment is there the *ryot*'s holding or survey-number This system is called *ryotwari*, and where it prevails the terms "rent" and "land revenue" are synonymous In other tracts and provinces the tax is levied not on the *ryot* but on a class of landlord intermediaries called *zamindars*, *malguzars*, *taluqdars*—to quote three out of their many designations For the sake of brevity they will hereafter in this chapter be referred to as *zamindars* At varying periods of history, for various reasons, the ancestors of these were either granted proprietary right or (as the revenue authorities of the age imagined), continued in such right, with power to collect rents from their tenants, on condition that they paid into the treasury a land revenue equivalent to a fixed fraction of their combined assets The assets were their rental collections, the rental value of their home-farms, and their income, if any, from forest and waste The standard fraction has been gradually lowered, under persistent pressure from the powerful landlord community, who in this way recoup themselves for the progressive limitation, by statute, of their power over their *ryots* In the United Provinces it may now exceed 40 per cent only to avoid a

* See Chapter XI, paras 37 *et seq*

† W H Moreland, *Agrarian System of Moslem India*, p 63

reduction, in settlement, of the existing demand The modern settlement figure in those provinces centres around 35 per cent In the *zamindari* system, the unit of assessment is not the holding but the *mauza*, or village, and the rent is emphatically not the same as the land revenue, for the rent is paid by the *ryots* to the *zamindar*, and the land revenue by the *zamindar* to the Government Confusion on this point has led to the publication of such ridiculous mis-statements as that " the Indian Government exacts from the cultivator one half of the gross produce of his land "

17 It may well be asked why in Bengal, the United and Central Provinces the Government should ever have created by a stroke of the pen a landlord class where nothing of the kind had previously existed In effect, the grant of proprietary right to persons who, at the time, were no more than farmers of revenue or village headmen, amounted to the gratuitous sacrifice of at least half the government demand Before many years had elapsed, the cash value of the surrendered right ran into millions sterling The reasons which appealed to the authorities of the day seem, at this distance in time, curiously unconvincing, and the mistake, aggravated by a declaration that the ten-year settlement of 1786 in Bengal and Bihar was to be permanent, must rank as one of the most expensive blunders in Indian fiscal history

18 Before proceeding to describe how the land revenue is assessed and collected, a brief mention of the differing rights in which tenancy land is held will not be out of place In *ryotwari* villages the position is simple The tenure of the *ryot* is heritable (provided the government rent (revenue) is duly paid) , and, as a rule, he may sell or otherwise alienate his tenancy, *i e* his cultivating right, to members of his own caste or tribe, though his powers of partition are restricted Thus, Government tenants are in a strong position and generally enjoy more peace of mind than their fellows in *zamindari* areas Rents are collected by the village headman, who retains as commission only a small percentage of his takings, depositing the balance in the nearest treasury The rights of the *zamindari* tenant, however, have been the subject of a prolonged legislative struggle, in which the tenant is winning all along the line As in Ireland * in the nineteenth century and as in

* From which country the term " three F's " originally came, with Gladstone's legislation of 1881

many Indian States to-day, the tenant is fighting for three objectives, a fair rent, fixity of tenure, and freedom to transfer his tenancy right Nothing short of these "three F's" will content him The *zamindar* is also human, and the village of his dreams is one in which he can enhance his *ryots'* rents at will, evict any tenant with whom he is dissatisfied, and exact a heavy "fine" on every transfer His forefathers enjoyed these privileges and he is a conservative man Not only from province to province but even within the unit of the village the battle-front, in course of time, has bulged into salients which bite deep into the *zamindars'* defences It is impossible within the limits of this chapter to summarize the tenancy legislation of British India, but a fair idea of the *zamindari ryot's* position may be gained by a review of it in two major provinces

19 In the Central Provinces three classes of tenants are recognized by law They are, in descending order of right

(1) absolute-occupancy tenants ,
(2) occupancy tenants ,
(3) subtenants

20 The third category may be dismissed in a few words A subtenant is a tenant of another tenant, yet so tender is the law to cultivating possession continued over a long term of years that even a subtenant can win occupancy right, *i e* immunity from ejectment against both his lessor and the proprietor (*zamindar*) of the village, if "habitual subletting" on the part of the tenant-in-chief can be proved. Otherwise, he has no statutory rights If he falls out with the lessor, he must seek his remedy in a civil court Tenants of a proprietor's home-farm * differ from genuine subtenants in that no lapse of time can improve their position The two higher classes now enjoy the advantage of a fair rent periodically fixed by Government, at intervals usually varying from twenty to thirty years Rent-fixation is part of the operation known as settlement, of which more anon It would, however, be disastrous if, after the Government had fixed a fair rent, the landlord were empowered to raise it arbitrarily on a tenant during the term of a settlement This is a point in respect of which the absolute-occupancy right is superior to the occupancy In no circumstances can an absolute-occupancy rent be enhanced between settlements, unless the landlord has improved the

* *Sir* see para 31, below

holding An occupancy rent, on the other hand, can be raised during the currency of a settlement, though not at shorter intervals than ten years, on several grounds Chief among these are an improvement made by the landlord and a general rise in produce prices since the rent was last fixed Enhancement procedure, however, is so hedged about by legal formalities that landlords in the Central Provinces comparatively seldom embark upon it

21 As for fixity of tenure, the right of both classes is heritable and tenants of the first class cannot be turned out of their holdings by their landlord as such—for example, for arrears of rent. An occupancy tenant may be ejected for this reason, but the civil court's decree must be transferred for execution to a revenue court, which is invested with powers directed at postponement and, if possible, ultimate avoidance of the threatened ejection Both classes are entitled to improve their holdings, and receive compensation therefor if they are evicted

22 In the matter of freedom of transfer, an absolute-occupancy tenant may, without his landlord's permission, sublet his holding for a maximum term of ten years, or sell or mortgage it to a partner or possible heir For other transfers he must give notice to his landlord, who may exercise his right of pre-emption within a month If the latter fails to pre-empt, the transfer goes forward, in which event the proprietor is entitled to receive from the outgoing tenant a fine bearing a prescribed proportion to the rent of the holding An occupancy tenant may sublet for one year only, and sell his right only to a co-tenant or possible heir But, to balance these minor disabilities, his holding is exempt from court sale or foreclosure , in short, provided he pays his rent punctually, he has nothing to fear

23 In the United Provinces of Agra and Oudh the tenancy system is far more complicated than it is in the Central Provinces Not only do the tenures of Agra differ from those of Oudh, but it is usual to reckon in all five principal classes of cultivating right, namely those of the *sir*-holder, the inferior proprietor, the superior tenant, the ordinary tenant, and the subtenant Of these, the first two may be ignored at present, since they are proprietary rather than tenant rights

24 *Superior tenants* · (*a*) *Agra*—In Agra there are four kinds of superior tenant, namely the permanent-tenure holder,

the fixed-rate tenant, the occupancy tenant, and the expro-prietary tenant The first two of these are found only in the permanently settled districts Both are persons who have held their land at the same rate of rent since the permanent settle-ment in 1795 , and they now possess a heritable and transfer-able title They cannot be ejected for arrears of rent, whilst the rent itself cannot be enhanced unless their holding has been increased by alluvion or encroachment Their security, therefore, is in every way complete They hold, however, only a very small area, amounting to about 2½ per cent of the total holdings area The occupancy right is heritable, but not transferable An occupancy tenant is protected from enhance-ment of rent except at settlement and in the " roster year," * which can only occur at intervals of twenty years He is also protected from ejectment, except in execution of a decree for arrears of rent and in certain other special circumstances † which are rarely likely to occur His security, therefore, is very much the same as that of his opposite number in the Central Provinces The exproprietary tenure is an occupancy tenure of a particular kind When a proprietor has transferred his land otherwise than by gift or exchange, he acquires a right of occupancy in his *sir* land ‡ at a favoured rate of rent, and is then known as an exproprietary tenant This tenure also carries the same privileges as the occupancy tenure

25 Before 1926 a tenant could acquire a right of occupancy by twelve years' continuous cultivation This method of accrual, however, was abolished by the Tenancy Act of that year, and the only occupancy tenants now in existence are those who had already acquired the right by continuous cultivation or those who have obtained it from the landlord either by gift or purchase since the commencement of the Act From the point of view of the tenant this change can only be regarded as retrograde § Nevertheless, the area held in occupancy is still no less than 49 per cent of the total holdings-area, whilst the exproprietary holdings amount to a further 2½ per cent

* See Agra Tenancy Act, clauses 55, 56 There are also limitations of enhancement, see clauses 57–59

† These are illegal transfer of his holding , actions detrimental to the land in his holding , and breaches of any condition of his tenure Agra Tenancy Act, clauses 82–84

‡ See para 31

§ Up to the end of 1934–35 landlords have conferred a right of occupancy in a total area of only 61,000 acres

26 (*b*) *Oudh*—In Oudh there are also exproprietary and occupancy tenants The exproprietary right is, in all respects, similar to that in Agra The Oudh occupancy right is heritable but not transferable, and carries a favoured rent The measure of protection from enhancement, however, varies , in some cases enhancement is possible every five years, in others it is possible only at settlement Incidentally, the occupancy tenure in Oudh is not a right acquired by continuous cultivation, but a privilege conferred in various ways on persons who had in the past possessed claims superior to those of ordinary tenants In Oudh, as in Agra, a landlord may confer a right of occupancy on a tenant The total occupancy and exproprietary area in Oudh is less than 2 per cent of the holdings-area

27 *Ordinary tenants*—The Oudh Rent Act of 1886 created a class of statutory tenants who were entitled to retain their holding for seven years without disturbance or enhancement of rent By the Oudh Rent (Amendment) Act of 1921 all statutory tenants were given the right to retain their holdings for life, and the heir of such a tenant was given the right to remain in possession of the holding for five years after his predecessor's death Enhancement is possible only at settlement and in the "roster years," which can only occur at intervals of ten years after settlement , whilst the enhancement is limited by rates specially fixed under the law In Agra the Tenancy Act of 1926 replaced the former class of non-occupancy tenants by a new class of statutory tenant in all ways similar to that in Oudh, except that enhancement can only take place at intervals of twenty years instead of ten In Oudh statutory tenants and their heirs hold no less than 70 per cent of the total holdings-area, and in Agra nearly 24 per cent

28 *Subtenants*—In both provinces subtenants enjoy no rights except that they are allowed to hold their land for one complete agricultural year The periods for which various classes of tenant can sublet their holdings are limited by law, and illegal subleases may involve ejectment

29 It is clear from this statement that the position of the tenant in the United Provinces is much less favourable than it is in the Central Provinces Statutory tenants are undoubtedly better off than the non-occupancy tenants whom they replaced, but they are still far removed from complete security It is no

doubt true that, as the Persian couplet runs, " to the inhabitants of the pit, purgatory is paradise " Nevertheless, nobody will remain even in purgatory if he sees a chance of rising higher, and at the present day statutory tenants all over the United Provinces are insistently demanding universal conferment of the occupancy right, free of cost, either by a stroke of the legislative pen or by the old method of continuous cultivation for a term of years The latter method is more consonant with indigenous sentiment and tradition, and is recognized as just in many Indian States *

30 Turning, now, to the landlord or *zamindar* class, we shall find them existing in almost bewildering variety At one end of the scale are the huge, compact *zamindari* estates along the eastern border of the Central Provinces, some of which contain over a thousand villages apiece The owners of these are comparable with the great *taluqdars* of Oudh Their position in law differs little, if at all, from that of ordinary *zamindars*, except in matters of family law and inheritance, and none of them is exempt from settlement and payment of land revenue under some name or other At the other end are the little " plot-proprietors " sometimes found within a *mauza*, like miniature cakes imbedded in the substance of a larger cake They are not tenants, for they may have tenants of their own, in all three rights, and they pay land revenue to the Government They have more than one name, that current in the Central Provinces is *malik maqbuzas* † A *zamindar*, we have seen, may own any number of villages He may also have only a minute fraction of one, for there is no limit to the partition or transfer of proprietary right Both in the United Provinces and the Central Provinces he has the right to accumulate a home-farm, but in the Central Provinces any tendency to *latifundia* is checked by a proviso limiting the area which he may sublet or cultivate to a specified proportion of the total occupied area of his village He may, indeed, bring more than this area under his own ploughs, but if he leases out any of the excess land, the lessee at once acquires tenancy right

* A new tenancy bill recently introduced into the United Provinces Legislature confers the occupancy right on all tenants who do not at present possess it, under the name " hereditary right "

† *Malik maqbuza* means " held by an owner," and is, strictly speaking, an adjectival term, with " land " understood, in common parlance and also in the law, however, it is transferred to the owner of the land

31 The position in the United Provinces is more favourable to the landlord *Sir* is the name given to "land recognized by village custom as the special holding of a co-sharer," * and is to be distinguished from *khudkasht*, which is any other land that a proprietor happens to be cultivating at any particular time The *sir*-right is entirely personal If the land passes by inheritance or gift, the *sir*-right will pass with it, or two co-sharers can exchange their *sir* But if the ownership is transferred in any other way, the *sir*-right is extinguished, being replaced by an exproprietary right, as explained above Thus the *sir*-right is extremely valuable, and though far more land is recognized by village custom as *sir* than is actually cultivated by proprietors, there has always been a tendency to facilitate its increase For instance, in the Agra Tenancy Act of 1926 the term was extended to include not only all land already recorded as *sir*, but also all *khudkasht* of not less than twelve years' standing at the beginning of 1902, and all land that was actually *khudkasht* in 1925, whilst it was laid down that all land cultivated continuously as *khudkasht* for ten years after the commencement of the Act was also to become *sir* The provisions of the Oudh Rent (Amendment) Act of 1921 have a similar effect, though they are worded in a somewhat different way Both Acts, indeed, place restrictions on the total area that may be held as *sir* Nevertheless, the fact remains that in Agra no less than 20 per cent of the total holdings-area and in Oudh no less than 11 per cent is *sir*, or *khudkasht* that may be classed as *sir* under the provisions of the two Acts

32 Finally, there exists in the Central Provinces, as it were parasitically on the *zamindars*, a host of "inferior proprietors," lessees and sublessees of proprietary interests They pay an agreed sum to the landlord or sub-landlord next above them, and make what they can out of the village In certain tracts, where their tenure is of long standing, they may claim statutory protection against ejectment There are villages in Bengal where lease of owners' rights has been carried to such an extent that the *mauza* is like a Chinese toy of hollow ivory spheres, one within the other, in the words of the Report of the Indian Statutory Commission, 1930,† "as many as fifty or more intermediate interests having

* See Agra Tenancy Act, 1926, clause 4 (*c*).

† Vol I, para 381

been created between the *zamindar* at the top and the actual cultivator at the bottom " There are inferior proprietors of a different kind in Oudh, who are called underproprietors They are the descendants of communities or individuals who once possessed heritable and transferable rights in their villages or their holdings, and managed to retain them when the villages or holdings were merged in the estate of some *taluqdar* They are described in the Oudh Rent Act as " possessing a heritable and transferable right of property in land, for which they are liable to pay rent " * These underproprietors cannot be ejected for failure to pay rent, nor can their rents be varied during the currency of a settlement They, together with the permanent-tenure holders that are found in Agra, are entitled to acquire *sir* The area held by underproprietors in Oudh is about 5 per cent of the total holdings-area

33 The foregoing remarks may be summarized as follows

(*a*) All villages are either *ryotwari* or *zamindari*

(*b*) In *ryotwari* villages the Government is the landlord The land revenue (rent) is collected by the village headman direct from each *ryot* and deposited in the treasury, *minus* a small commission for collection

(*c*) In *ryotwari* villages all the Government tenants have virtually the same statutory right, and enjoy a fair rent fixed by Government, full security of tenure, and nearly complete freedom to transfer their holdings

(*d*) In *zamindari* villages the *zamindar*, alias *taluqdar*, alias *malguzar*, etc , is a proprietor-middleman either created or recognized by Government He collects the rents from the cultivators They are his tenants, not the Government's, and if their rents fall into arrears the loss falls on him and does not affect the Government demand The assessed rents, *plus* the rental valuation of his home-farm, *plus* his income, if any, from forest and waste,† constitute the " assets " of his village Of these assets a fraction, which is very rarely over 50 per cent , is taken from him as land revenue

(*e*) Tenants in *zamindari* villages enjoy varying degrees of statutory protection against arbitrary eviction and enhance-

* See Oudh Rent Act, 1886, clause 3 (8)

† Usually known as *sayar* literally, remainder

ment of rent, and have wide, but not complete, liberty of transfer *

(*f*) The government may remit the land revenue of plots or whole villages, for a term or in perpetuity, but such remission is always conditional on the behaviour of the grantee, and can be revoked for breach of the conditions † Such land is commonly known as *muafi* or *jagir*, and its holders are *muafidars* or *jagirdars*

Assessment of the Land Revenue

34 The importance of the land revenue in Indian finance is indicated by the proportion it bears to the total revenues of the provinces ‡ In six major provinces taken as a whole it amounts to 35 per cent , in the United Provinces it exceeds one half , in Bengal, on the other hand, owing to the permanent settlement, it is only 27 per cent of the total Since the Indian Government is, with the exception of Soviet Russia, the largest landowner on this planet, it is necessary to devote a considerable part of this chapter to a brief description of how the land revenue is assessed

35 Assessment is the main object of the operation called "settlement" The estate-books of account are the annual land record, which may justly be classed among the wonders of the modern world Settlement and, in lesser degree, the land record based on it are of vital concern to the agricultural community, that is, to nearly 230 million souls History relates that in the early decades of last century one bad settlement brought a whole district of a certain province to temporary ruin According to official reports of the time, the major part of the population disappeared and land entirely lost its value A village surrendered by its overtaxed proprietor was put up for sale for five rupees at the district court, but found no purchaser willing to assume responsibility for the revenue.

* Full powers of transfer are against the interests of the *ryot* himself, for his credit is thereby increased, which tempts him to run into further debt It is well known, for instance, that the fixed-rate tenants of the United Provinces (see para 23), who have a transferable right, are relatively much more heavily indebted than tenants who have only a heritable right

† Good service in the Great War, for example, was freely rewarded, in the old traditional manner, by revenue-free grants of land for one or more lives

‡ Statutory Commission's *Report*, 1930, Vol I, para 416

Within the official lifetime of the writer, the same village changed hands for 25,000 rupees Conversely, under a good settlement agriculture and trade flourish, at the next succeeding revision of the revenue the annual cash rent-roll of the estate is found to be greatly enhanced, and of this increase Government, as owner of the estate, will take its due share

36 As already mentioned, re-assessment of the land revenue is generally undertaken at intervals of from twenty to forty years In the United Provinces, the Bundelkhand division excepted, forty years is now the statutory term No settlement, as has long since been realized, can be final Large areas formerly landlocked are successively opened out by new roads and railways, new centres of trade spring up, and the value of agricultural produce rises until it falls into line with world prices Again, much waste land is brought under cultivation and new leases of such land reveal a sharp upward move in rental values Obviously, it is only fair that the State should enjoy some share of these enhanced values created by its own enterprise

37 But there is another possible side to the picture Permanent flooding, erosion, sand-drift, incursion of the dreaded *kans* weed,* sinkage of the subsoil water, or some other kind of natural calamity may have so reduced the outturn of the land that a reduction of rents and revenue may be imperative The same necessity followed on the phenomenal slump in produce prices from which the world is now emerging. All India over, the current settlements crashed Wholesale interim remissions of rents and revenue were granted and revisions of time-expired settlements postponed Such untoward happenings, however, are usually dealt with by more summary remedial action than a full-dress settlement †

38 A settlement ‡ generally embraces a district, and the districts of a province are taken up for re-settlement on a roster, as each falls due for revision Let it be assumed that the province is one of *zamindari* villages and, as is normally the case, that revision has been ordered with a view to the enhancement of the land revenue demand. By what per-

* See para 50

† For the unfortunate consequences of a permanent settlement, see Indian Statutory Commission's *Report*, 1930, Vol I, para 382

‡ This account of settlement is based on the practice of the Central Provinces



VILLAGE SCENES

An Indian village in northern India. (The string frameworks both to left and right of the picture are beds.) (See Chapter III, part 3)

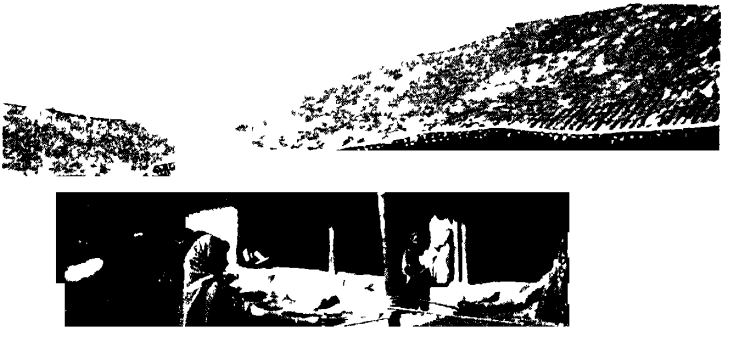


VILLAGE SCENES

An Indian village in southern India near Cape Comorin. (This village is much better kept than the northern village above.)



WOMEN WORKING AT HOME
Reeling cotton yarn



WOMEN WORKING AT HOME
Churning butter

centage should payments be increased ? This pivotal question forms the subject of a " Forecast report " on which Government, in due time, issues an appropriate order

39 There are several guides to a just decision in the matter. The simplest and most obvious is a spontaneous increase in the area occupied for cultivation, resulting in a corresponding automatic increase in the *zamindars'* rent-rolls Instead of absorbing from 30 to 50 per cent , the settled revenue may now be less than one-quarter of the present village assets * Next, the prices of agricultural produce ruling at the last revision, say, twenty-five years ago, are compared with those now prevailing If the prices of the chief staples show a rise of 100 per cent (which is not unusual), then after making every allowance for increased costs of cultivation, a substantial rental and revenue enhancement would commend itself as possible A third indication is provided by the recorded figures of sub-rents paid by agreement in recent years These may amount to a staggering multiple of the settled rents A fourth indication comes from the premia which *zamindars* can obtain by agreement on release of surrendered holdings If the incoming tenants are found willing, as a rule, to pay as premium a sum equal to twenty or thirty times the settlement rental of their new holdings, as is by no means infrequent, then that rental is obviously too low

40 Extreme caution, nevertheless, is necessary in drawing inferences from unclarified statistics There are, for example, certain tracts highly favoured by retired servants, shop-keepers, soldiers, and other pensioned servants of the State These gentlemen-farmers habitually pay sub-rents and premia quite uneconomic and sometimes even fantastic, to acquire land with which to amuse themselves in their declining years On the evidence of such transactions, to impose an all-round enhancement in rents would be disastrous to the main body of genuine cultivators

41 From a study of all available data, it may be found that though a 50 per cent enhancement is justified on the figures, such a heavy *per saltum* increase is out of the question A fair practicable figure is 25 per cent Armed with instructions to this effect, the Settlement Officer embarks on his four to five years' task He is already possessed of an accurate,

* For " assets," see para 32 (*d*) above

up-to-date, large-scale map of every village, showing all field boundaries This preliminary survey has occupied the time of a large party * for the preceding three or four years, and may cover two or three thousand villages Traces of these maps in hand, expert members of his staff enter in a register the serial number each field bears on the map and its class of soil—light, heavy, dry, irrigated, and so forth—, by its local name In his field-to-field progress the classifier is attended by the cultivators, whose opinion receives the fullest consideration The Settlement Officer and his assistants check this work most thoroughly †

42 The next step is to prepare the village field-book, or *khasra* ‡ In the *khasra*, also, the fields are entered in their serial order, but with a plethora of detail, including the area of each, the crop or crops found in it, and the name and other particulars of the occupier, whether landlord or tenant The most important and contested column of the *khasra* is that in which the right of the man in possession is recorded On this entry most of the appeals against the record hinge

43 Now, a single tenant's land generally consists of many fields scattered over the whole village area and often distributed among several rights The liability to pay rent being personal, it is necessary to compile, by extraction from the *khasra*, a second register called the *jamabandi* § In this are entered under the name of each holder his fields grouped according to the right or rights pertaining to them Thus Ram Bakhsh, absolute-occupancy tenant, who also has holdings in occupancy and *malik maqbuza* right, may monopolize several continuous pages of the *jamabandi* So will the

* In the United Provinces, the officer of this party is usually known as Record Officer, and in this preliminary survey is usually the District Officer He has one or more assistants who are usually members of the Provincial Civil Service, and are known as Assistant Record Officers When the Settlement Officer is appointed, he takes over the post of Record Officer

† In the United Provinces the soil classifiers (*chaktarashes*), do not compile a register They divide up the village into soil tracts on the map, the classification of each field after it has been checked by the Settlement Officer is put in the *khasra*

‡ The names of the records and registers here used are those in use in any part of India north of the Kistna

§ In the United Provinces this register is known as the *khataun-jamabandi* The two were formerly separate records, the *jamabandi* was the register of payments of rents The two have now been combined in one See Glossary

home-farm of the proprietors. The register, in effect, is a list of holdings

44 Thirdly, the settlement officer draws up a highly important document known as the *wajib-ul-arz* or *dastur-deh*, i e the statement of village customs This, amid a mass of other interesting information, contains a record of the custom of user over the village forest and waste It is often a remarkably close echo of an old English manor-roll What kind of trees may the *ryots* cut for their ploughs ? Where pasture their cattle, sheep, and goats ? What mango or tamarind groves are open to the public and what share of forest produce, such as honey, myrabolans, and wild fruits may the landlords exact from the gatherers ? Is grazing on stubbles free ? If so, up to what date ? How are the village servants paid ? On these and other kindred subjects local custom varies from village to village It is to be noted that no law is created or established by any entry in this paper, which is written throughout in the indicative mood It is a statement of fact, but in a civil court it is taken as presumptive evidence of the facts recorded, until and unless the contrary is proved *

45 The map, the *khasra*, the *jamabandi*, and the *wajib-ul-'arz*, together with the *khewat*, or list of proprietors, which may contain only one name, but often records as many as fifty, constitute in combination what is known as the village record of rights Their compilation in the field is called the "attestation" of a village. Every stage in this process is checked on the spot by the Settlement Officer,† who is lucky if he finishes his annual programme of inspection before the end of April On his return to headquarters every year he elaborates his proposals for the fixation of the new rents in the villages last attested This is by far the most important and difficult part of the settlement

46 It must be remembered that he has to propose a *fair* rent for every separate field, and a single field may contain many kinds of soil, good and bad, in varying areas ‡ To work by rule of thumb and enhance all rents alike would be

* In the United Provinces the *wajib-ul-arz* is not now prepared at every settlement, but the existing document is brought up to date

† In the United Provinces the check is made by the Assistant Record Officers, and the Settlement Officer merely hears objections to their decisions

‡ This is uncommon in the alluvial fields of northern India, as a rule, each field only contains one type of soil

absurd, for some payments, for various reasons, must be reduced It may be that owing to desertion and subsequent reoccupation of a village, not a single settlement rent survives and the new rents may be either far stiffer or far more lenient than the old Clearly, the Settlement Officer must have some device for gauging the pitch, i e the *pressure* of the rent on the land in every holding, village, and group of villages—that is, whether it is light, severe, or normal—before he can begin to meddle with payments He is not bound to observe the forecasted district enhancement of 25 per cent in every group or village, much less in every holding, but he must keep it in sight, for it has been fixed after mature deliberation by men who know their business, and his final results will be expected at least to approximate to his seniors' estimate

47 The methods employed by Settlement Officers to gauge the pressure of existing rents and subsequently to work up to the forecasted enhancement vary from province to province They are highly technical processes and no attempt will be made here to explain the mysteries of the "soil-unit" or the *annawari* systems, which are two out of many The simple application of cash acre-rates, in tracts of diverse kinds of soils, many of them often found in a single field, is generally impossible The problem has been, on the whole, adequately solved , unfortunately, as will appear later, the workings of its solution are generally unintelligible to the *ryot* *

48 Following, then, one or another of the sanctioned methods of (*a*) gauging the pitch of existing rents, (*b*) raising the sum total of those rents to the forecasted figure, the Settlement Officer submits his reports, group by group, on the revised rental valuation of tenancy land and the home-farm, along with his estimate of the income derived by the proprietors from forest and waste The total of these three items will be the assets of the group under report On receipt of orders, he goes on to propose a suitable land revenue for each *mauza*, based on the fraction of assets fixed by statute for the province.

49 The period from May to November in every year of his settlement duty will be occupied in this heavy task In the succeeding cold-weather months he must move out to

* In some districts the difficulty of the process described is increased by the fact that the rents are not shown for every field individually, but only for every holding, and must then be broken up into individual field rents

announce the sanctioned rents and revenues to the assembled *ryots* and *zamindars* "Announcement" is usually a trying ordeal for the Settlement Officer No one likes to have his taxation increased and all objections must be heard and disposed of on the spot, in camp Comparatively few cultivators allow the occasion to pass without entering a vigorous protest For weeks on end the camp is a pandemonium, but given patience and good humour on the announcing officer's part, the turmoil, in time, subsides Their new rental certificates tucked into their waistcloths, the *ryots* of the last village to be dealt with depart under the stars to their homes The settlement, but for the tedious process of "winding up," is over

50 Not all settlements are of the full-dress type above outlined In Bundelkhand, for instance, the peculiar habits of the *kans* weed (*Saccharum spontaneum*) necessitate a revision of the demand every five years This vegetable menace deserves more than a passing reference It flourishes most in tracts of black-cotton soil * and appears in the rainy season as a grass five or six feet high with a handsome, silvery head. Its roots, often as thick as a man's finger and penetrating, it is alleged, to a depth of forty feet, form a tough network against which the plough struggles in vain Only by incessant cultivation can clean land be kept clear of *kans*, but fields which have lain fallow for a year or which have been sown with some broadcasted rains-crop are immediately invaded by the weed Fortunately, after running a course of from twelve to sixteen years, it perishes For that period the affected land is rendered useless, and the dense cover harbours pig and antelope and other destroyers of crops Heavy tractors have been employed against *kans* with partial success, and when young it can be killed by drowning, provided it is completely submerged Bundelkhand is not the only area infested The traveller by rail through the north of the Central Provinces cannot but notice the innumerable *bandhans*, or curving embankments, some of them twelve feet high and over a mile long, which seam the treeless prairies watered by the Betwa, Ken, Sunar, and Nerbudda rivers They have been built at great expense to hold up the monsoon rainfall in *kans*-ridden land, and for four months of the year they turn the areas flooded by them into shallow lakes But where embankment is not feasible, whole villages drop out of cultivation and come

* See Chapter I, para 8

under the plough again with disconcerting rapidity, as the tide of *kans* flows and ebbs For such areas short-term settlements are most suitable

51 In really backward tracts, where rents may be found to be based on the plough, the axe, or even the hearth, cut-and-dried methods may have to be jettisoned The official code and regulations were of little avail in the case of some twenty Bhil villages, the settlement of which fell to the lot of the writer early in the present decade The hitch lay in the objection of the excitable aboriginals to the mapping of their lands Some hundreds of them, each man with his bow in one hand and the regulation five loose arrows in the other, assembled, and the following dialogue took place between them and the writer

Aboriginal—" We are tired of paying sixteen rupees per hearth to our Thakur * Some of us have only one field, some have many Assess us according to our wealth or poverty ! "

Settlement Officer—" Very well First, we must measure your fields The surveyor will arrive next week "

Aboriginal—" Quite impossible ! If any surveyor dares to set foot on our land our women will raise the *kilki* (war-cry) and then we shall be obliged to fill him full of arrows "

Settlement Officer—" Then what do you suggest ? "

Aboriginal—" It is your business to make suggestions We are ignorant men "

In the end, with the help of the *gametis* (headmen) a method of rental valuation based on the *biyai* (seed-capacity) of each plot was worked out to the general satisfaction As there were fifteen different kinds of seed-grain to be considered, varying in size from mustard to maize, the complications may be imagined, but for six years that curious settlement held good, at the end of which period the villagers, comforted by reassuring propaganda, consented to a survey

52 During the currency of a settlement the State will in no circumstances enhance the revenue On the other hand, crop-failures or a catastrophic fall in prices may compel it to remit a substantial part of the demand , in fact, not a year passes without the necessity of such action arising Thus, in the United Provinces ever since 1931 the annual remission

* A title meaning " lord," used of Rajputs

of revenue due to the slump in agricultural prices has been Rs 112 lakhs (£840,000), over 16 per cent of the demand * In 1936 the Madras Government, which has 26 16 million cultivated acres of *ryotwari* area in its charge, wiped off nearly 55½ lakhs (£416,750) The magnitude of these sums emphasizes the shortcomings of a revenue system which debars the State from recouping in good years, at least partially, the enormous losses it incurs in bad At rock-bottom the land-tax is a share in the annual produce of the land Manifestly, for a country like India, where the insecurity of the harvests is extreme, the ideal land-tax would fluctuate with the conditions, in particular the crop-outturn and price-level, of each year As matters are, there are frequent fluctuations in favour of the landlord, but none in favour of the State

53 In many of the Indian States it does so fluctuate, as was the prevailing custom for crops coming to the threshing-floor in and prior to the days of the Moguls † The Ruler takes a fixed share of the produce, commutes it into cash at market rates, and collects the revenue in rupees from the *ryots* Nothing, in theory, could be fairer , indeed, in small, well managed estates where the village community flourishes in full vigour it often works admirably But owing to abuses which seem inseparable from the system, it is almost universally unpopular The State *ryot* clamours for a fixed rental on British India lines, and beyond a doubt the *lata-kunta* system, as it is called, is doomed In at least one province a sliding scale of land revenue, based on produce-prices, has been introduced, but there are disturbing factors other than prices Fame if not fortune awaits the deviser of a system simple and inexpensive, (it takes years to recoup the cost of a full-dress settlement), which will bring prompt relief to the rural rent and revenue-payer in bad seasons, while ensuring to the Government a just share in the profits of a bonanza harvest coinciding with a good market The automatic adjustment of rent (as distinct from revenue) to meet major fluctuations in prices is much to be desired, but has not yet been achieved.

54 The land record is simply the settlement map, *khasra*, *jamabandi*, and *khewat* of each village, annually brought up to date by an immense staff of *patwaris*, inspectors (*kanungos*),

* During this period there were also many other remissions due to crop-failure

† See Moreland, *op cit*, *passim*

and superintendents The United Provinces alone employ over 25,000 *patwaris* From one point of view the above-named four papers and their derivative abstracts are the books of account on which the land revenue is twice a year calculated and collected Their accuracy at any given moment is of supreme importance For instance, failure to bring on the books all transfers of tenancy or proprietary right by surrender, inheritance, or otherwise, would throw the whole machinery of collection into confusion From another standpoint, the Government as overlord must be kept informed of any shrinkage or expansion in its landed estate The occupied area is constantly lapsing into waste, waste is constantly coming under the plough * It is the *patwari*'s business to record all such changes in the village map, *khasra*, and *jamabandi* When it is considered that a single rice village may consist of 15,000 separately mapped and numbered plots, the magnitude of the land records staff is no longer matter of surprise The check of their work in the field is carried out incessantly by every touring revenue officer, from the latest-joined Assistant to the Commissioner of a division Again, on the annual statements of crop-areas, compiled from the *khasra*, the commercial world depends for information regarding the great staples, cotton, wheat, rice, oilseeds, and the like Preliminary and final quantitative forecasts of crop-outturns, also, must be punctually submitted to facilitate forward transactions In some seasons wheat is available for export , in others it must be imported The price of oilseeds in the Argentine is affected by the prospects of that crop in India, and *vice versa* The writer once found a group of traders in an obscure provincial town of the Nerbudda valley poring over their weekly cable announcing the rate of *Lamalta* linseed *Lamalta*, though they knew it not, was La Plata ! Finally, in addition to collecting and tabulating information of the kind described above, the land-records staff is at the disposal of every court and department of Government that seeks enlightenment or evidence on any subject affecting the rural community or any member of it, or desires to promulgate any order in half a million villages The accuracy of the returns submitted by the staff is probably unapproached in any other country in the world By comparison, the agricultural statistics periodically published in the United

* Such changes are rare in the well-established cultivation of northern India, but there are constant lapses into or from fallow, which have much the same effect

Kingdom would strike a competent *patwari*, who investigated the methods of their compilation, as a mass of assumed and unverifiable figures

Agrarian Discontent

55 In these days it is scarcely possible to open an Indian newspaper without coming on a reference to agrarian discontent in some part or other of the country The irritant cause is commonly an alleged failure on the part of the Government or the landlords to give suitable remissions in land revenue or rents after some disaster to the crops or a steep decline in prices Accusations of callousness and greed are flung wholesale, generally with little regard to the facts Or the countryside may be swept by one of those periodical fits of exasperation * at the high interest charged by rural moneylenders, to which the Indian peasant is peculiarly liable His impatience then occasionally finds relief in decapitating his creditor, as the latter lies asleep in his verandah, with a chopper In its more serious form the discontent may develop into a no-rent campaign or widespread repudiation of all private debt

56 Of a bad government it has been well said † that the most critical moment in its life is the moment in which it embarks on reform The remark applies with almost equal force to governments whose motives and performances alike are unimpeachable Now that the *ryot* has become an elector, agitation of the kind referred to is not likely to decrease , in fact, it is bound to become more vocal and intense As the rural community is the largest section of the Indian population and the land revenue the keystone of the country's finance, a few observations on agrarian unrest and the frame of mind in which to meet it may not be considered an impertinence The individual addressed is a junior civil servant, posted, let it be assumed, to his first district

57 (*a*) Do nothing, by injudicious word or deed, to weaken the "revenue-paying conscience" It is a tender growth and much disliked by a certain type of popularity-hunting politician Once impaired, it is difficult to restore The Jats of a certain group of *ryotwari* villages when offered

* E g the Deccan riots of 1874, which led to the passing of the Deccan Agriculturists Relief Act in 1879

† De Tocqueville, *op cit*, p 152

waste land free of rent for a term of years, replied to the writer, indignantly "Are we Brahman beggars, that we should feed free from the hand of the *Sarkar?* Assess us to a fair prairie rent until the land comes into full bearing order, and we will pay!" That is the spirit to encourage

(*b*) Be patient! Possibly the *ryot* has not had a square deal Let his spokesmen talk till they are tired, up to three in the morning, if necessary Give him what he calls *sunai*—a hearing—and the battle is half won If the villagers insist on your seeing the crops with your own eyes, consent with alacrity, and then proceed to show your good will by walking them off their legs Your trouble will be appreciated Sympathy and a sententious saying or two will carry you far "Death and the tax-collector, friend, are the only certainties in life" "I myself would rather break stones for a living than plough the ungrateful soil, but to every man his *karma* (destiny) and next year we may have good rains"

(*c*) A great defect in all settlement systems, in which the rural community is deeply interested, has been the mystery which surrounds them Every Indian can understand how customs-dues, octroi, and even income-tax are assessed, but in general the *annawari* and invariably the "soil-unit" method of rent-fixation (to cite two out of many) are entirely beyond the *ryot*'s comprehension It is certain that in future he will not submit to any land-tax enhancement the limits of which, for all he knows, depend on the arbitrary whim of a local officer There is trouble ahead in this quarter of the administrative compass The most successful civil officer will be he who grasps in all its implications the meaning of the magic word *samjhana* (to make to understand), and acts accordingly

(*d*) Mistrust the "dusty answer" of statistics unless you are satisfied how they have been compiled The compiling agency is often both stupid and venal Regrettable consequences on a large scale have before now followed neglect of this precaution

(*e*) Cultivate serenity, but avoid the excessive official optimism which makes the intelligent Indian taxpayer gnash his teeth "You officers on high salaries," a hard-driven *malguzar* was once heard to remark, "have a mania for calling other people prosperous"

58 The poverty of the great mass of cultivators stares the observer in the face How to relieve it is certainly the

most urgent problem of the day It is being attacked on many sides, among others, by the preaching of improved methods of agriculture, provision of more and better education, co-operative credit, temperance movements, and associations to check extravagant social expenditure One most promising line of approach is the action taken to consolidate scattered tenancy holdings, for it proceeds from the spontaneous desire of the cultivators themselves and has in it the germ of vitality Not much can be done to help the *ryot* whose area is too small to support him But there are millions whose holdings would be " economic " if only they were not fragmented—a matter which is described elsewhere * Action for the consolidation of holdings is now in force in more than one province, notably the Punjab and the Central Provinces, and the movement gathers momentum in every year that passes In the Punjab consolidation is carried out by means of co-operative societies, and their processes and achievements are related in a later chapter † In the Central Provinces consolidation is carried out under the Consolidation of Holdings Act of 1928 , and in the Chattisgarh division alone, up to 1937, over a million acres belonging to nearly 100,000 holders have been dealt with, at a cost of four annas ($4\frac{1}{2}d$) an acre, which is willingly paid by the *ryot* The procedure involved is real education in democracy, for if the majority in a village apply for consolidation, the good work is carried out regardless of the feelings of the dissenting few No better instance could be cited of the superiority of evolutionary over revolutionary methods of reform

Agricultural Indebtedness

59 The smallness of many holdings in India together with the fragmentation of most of them are two of the principal causes of agricultural indebtedness ‡ The total figure of agricultural debt is enormously high Maclagan in 1911 estimated the agricultural debt of India at 300 crores of rupees § Darling in 1922 put it at 600 crores || In 1930 the Central Banking Enquiry Committee, on the basis of provincial

* Chapter IV, paras 34–5

† Chapter X, para 35, with Appendix

‡ The farmer also suffers from many other disabilities which contribute to this condition See Chapter IV, paras 36–40

§ See *Note on Agricultural Indebtedness in India*, p 2

|| See *The Punjab Peasant in Prosperity and Debt*, p 18

investigations, raised the figure to 900 crores * Since then, as the result of the agricultural depression,† it has risen by a further amount which has been variously estimated at anything between 50 and 100 per cent It is unnecessary to examine the accuracy of these estimates in amounts so huge, a few crores more or less make no material difference

60 Neither in India nor in any other country can a farmer avoid incurring debt Agriculture is an industry, and like any other industrialist, the farmer must borrow to finance his operations He needs long-term loans to provide fixed capital for his permanent improvements , he needs short-term loans to provide working capital for his current expenses , and in a bad year he may have to borrow to pay his rent or (in India) his revenue If he is provident, as soon as he has reaped his harvest and sold his produce, he will pay his tradesmen's bills, meet his interest charges, and cover his overdraft and then all will be well with him For it is not borrowing that matters, but failure to repay , not the fact of incurring debt, but the condition of indebtedness—a condition that is apt to pass into insolvency if neglected And indebtedness, often amounting to insolvency, is the normal condition of a majority of Indian farmers

61 The difference between them and the farmers of other countries lies chiefly in this—that the latter seldom borrow except for productive purposes, whilst a considerable part of the borrowings of Indian farmers are for unproductive purposes Their short-term loans, indeed, are expended as a rule profitably, on such objects as the purchase of seed or cattle, the payment of wages, or the subsistence of themselves and their families But of their long-term loans only a small portion is devoted to such objects as the building of wells, the terracing of fields, the purchase of improved machinery, or of additional land By far the greater portion is spent on unproductive expenditure such as litigation, the repayment of ancestral debt, social and religious ceremonies, and generally on the maintenance of social prestige, which is a most important matter amongst the higher castes Such debt is not really agricultural debt at all it is merely non-agricultural debt

* £675,000,000 see *Report*, p 55 If Burma is excluded the figure of 900 crores would be reduced to 850 crores, or from £675 millions to £637½ millions

† It began in 1930

incurred by a person who is an aristocrat, but also happens to be an agriculturist

62 Indian farmers, apart from that small class which can be described as well-to-do,* possess few reserve resources Their payments of interest and their repayments of short-term loans must be met, with all their other charges, out of the proceeds derived from the sale of their crops In a good year, they can usually keep abreast of these payments, but if the crops fail or agricultural prices fall materially, then the debt charges remain unpaid, and the debt grows by accumulation of compounded interest and by the passing of short-term into long-term loans This part of the total debt, whatever the original purpose for which it is raised, also becomes unproductive

63 Of the total volume of debt, all that part which has been raised by tenants who have no transferable right in their land, and a certain part of that which has been raised by landlords and others who do possess such a right, is covered by no security The rest is secured by land-mortgages, and to a very small extent by mortgages of trees, houses, *jajmanis*,† or other property But unsecured debt is entirely dependent on the debtor's personal reputation, on the "triple chain" of caste, custom, and character, and on the attachment of the peasant to his land—in a word, on the debtor's "credit" in the literal sense In such circumstances, the moneylender must demand high rates of interest He renders important services to agriculture, but he charges a very high price for those services, whilst he is often guilty of usury and other serious malpractices Smaller cultivators become his bondsmen Most of the benefits derived from agriculture or irrigation accrue to him, not to them The peasant debtor must be content with making a poor livelihood, and allow profits to go to his creditor It is not strange that he has little incentive to experiment with improvements, or to work any harder than he does already

64 But if it be true, in the words of the proverb, that "the *bania* goes in like a needle and comes out like a sword," he is none the less an indispensable cog in the economic machine, and much of the abuse commonly levelled at him is unmerited It is his little capital (seldom more than 1,000

* Chapter IV, para 33
† See Chapter II, Appendix I

rupees), which, revolving in its own narrow little circle, brings crop after crop to the threshing-floor If the crops succeed, then he receives his interest at due date, and all is well with him as well as with his clients But if the crops fail, then both he and his clients must tighten their belts Meantime, his bad debts are colossal, and he protects himself in the only way open to him Government efforts to supplant him by co-operative credit societies and land-mortgage banks have not been conspicuously successful It is at least arguable that a more helpful and conciliatory policy towards the *bania*, who is a hard man to beat, might have reactions favourable to the *ryot* He might, for example, be given better legal facilities for prompt recovery of his fair dues For the *ryot*, when in a borrowing mood, can be "as unscrupulous as any member of the Smart Set,"—to quote from an official report not thirty years old. Of millions of his kind it is safe to assert that if all their debts were liquidated to-day, their credit would be pledged to saturation-point in a month or two The problem, at bottom, is largely one of psychology, and the key to its solution is better education and a realization of the folly of insane expenditure on social ceremonies The schools should teach that lifelong indebtedness is not the normal state of man, and is in fact discreditable Spasmodic pressure brought to bear on moneylenders at irregular intervals in "debt-conciliation proceedings," i e "voluntary" scaling-down of debts under the persuasion of an officer, is of doubtful efficacy Once the storm has blown over, the *bania* recoups his losses in cash and self-respect by doubling or trebling his normal rates of interest, and the last state of his clients may be worse than the first That, at all events, was the result of "conciliation" in a district known to the writer

65 Just as many tenancy and rent Acts have been passed to protect the tenant against his landlord, so, too, has there been much debt legislation to protect the cultivator against the moneylender Amongst earlier measures of the kind may be mentioned the Land Alienation Acts of the Punjab and Bundelkhand—which prevent the transfer of land by an agriculturist to anybody but another agriculturist, the Deccan Agriculturists Relief Act of 1879, and the Usurious Loans Act of 1918, with subsequent amendments, both of which have to a large degree failed in their purpose The Land Improvement Loans Act and the Agriculturists' Loans Act of 1883 and 1884 enable provincial Governments to make loans to culti-

vators, but are too hedged about with safeguards to be popular In the last few years, as the result chiefly of the agricultural depression which began in 1930, legislation intended both to reduce the burden of existing indebtedness and to retard its further growth has been passed in several provinces In the Central Provinces, conciliation boards have also been created for the adjustment of debt Finally, mention must be made of the Co-operative Credit Societies Act of 1904 and the Co-operative Societies Act of 1912, which have done much partly to relieve the burden of indebtedness, and partly to develop other aspects of social welfare The co-operative movement, however, is fully described in a later chapter, and no more need be said on this subject here

Future Developments

66 Formidable but inspiring is the task which confronts the Civil Service in the cities, towns, and villages of the new India That vast mass of humanity whose name heads this chapter will not be submissive and inert much longer New ideas and aspirations are blowing through and over it, the old bonds of custom are becoming weaker, the old unquestioning acceptance of whatever fate, personified by the civil officer, may send, is giving way The *ryot*'s leaders clamour in one breath for better economic conditions and lower taxation Schemes of social, educational, hygienic, moral, and aesthetic uplift struggle for existence against the numbing frost of financial stringency All these reforms are admirable and most of them long overdue, but where shall the money for them be found? The opium revenue, four million pounds sterling, has gone, a heavy sacrifice for a poor country like India Receipts from excise, which in provincial finance were once second only to the revenue from the land, are in the opinion of many doomed to virtual extinction Province after province declares its intention to enforce prohibition in the near future—exemption, be it noted, to be made "in favour of aboriginals and Europeans" The land revenue itself, as far as can be foreseen, offers little scope for expansion and its principles and administration are no longer immune from attack

67 The most obvious and possibly the only way out of the *impasse* is to increase the productive capacity of the 200 million cultivators, and raise their standard of living That is a long row to hoe First, in competing with the farmer of

the world's more temperate climes, the *ryot* is severely handicapped by sheer physical unhealthiness Malaria, hookworm, guinea-worm, cholera, and other bowel complaints slay and enfeeble him by the million, all of them ailments from which his rivals in Europe and the United States are exempt * Vigour and enterprise are not to be expected in a rural population every member of which, on the average, is sick for one month out of the twelve Secondly, the *ryot* works under the disadvantage of extreme insecurity of crop-outturn Thirdly, owing to imperfect elementary education, he falls an easy prey to every wind-bag agitator and every breath of false rumour A strong medical service, improved agricultural methods, and more education are his most urgent needs

68 Hope for the future lies in the contemplation of what has been achieved in the past The old, fanatic prejudice against vaccination, inoculation, and recourse to the in-patient wards of government hospitals has, within living memory, lessened to vanishing point Though crop-failures still occur over vast areas, the spread of irrigation is gradually limiting their range, and owing to increased mobility of labour and goods (notably foodstuffs), the sting of famine has been drawn Indeed, the Famine codes published in the early years of this century are mostly obsolete and lie undusted on the office shelves Drought-resisting, frost-resisting, blight-resisting varieties of many important staples have been evolved by the experts of the agricultural departments, who declare that further triumphs are to be expected Opinion in favour of compulsory primary education is hardening, the time approaches when resistance to it will be impossible Great events are rapidly taking shape on the sub-continent of India, and the young entry of civil officers in every service will be in at their birth Adventure is in the air The old administrative landmarks may have changed their shape and position or even disappeared, but who would not rather sail uncharted or partially charted seas than travel on a personally conducted tour ?

* See Chapter VII, *passim.*

PLATE 7



INDIAN AGRICULTURE

Ploughing in Sind with the indigenous plough (See Chapter IV, para 26)



INDIAN AGRICULTURE

Gathering rice plants from a seed-bed preparatory to transplanting



INDIAN AGRICULTURE

Harvesting sugar-cane near Agra in the United Provinces. (This is the old thin cane of northern India now for the most part replaced by Coimbatore canes.) (See Chapter V, part 12.)



RURAL PROPAGANDA

A Government servant expounding the mysteries of bee-keeping to villagers

CHAPTER IV

By R G ALLAN

Agriculture—Crops, Farmers, and Departments

Introductory

1 India has always been an agricultural country, and through all the ages of her history her agricultural products and processes have changed but little Many of the crops that are grown today have been grown from time immemorial ; and the system of farming as we now find it, though it may have been improved in details by man's ingenuity or modified to suit local conditions, yet in essentials has remained unchanged for hundreds of years Nor has the nature of the Indian cultivator changed Like his remote ancestors, he still grows those crops that are best suited to the position of his holding He still concentrates his time and his effort and the means at his disposal on his cultivation, for the maintenance of himself and his family And he still has to contend with many difficulties I propose in this and the next chapter to consider firstly, his crops, secondly, his difficulties, and thirdly, the steps taken during the last seventy-five years to assist him in the fulfilment of his object

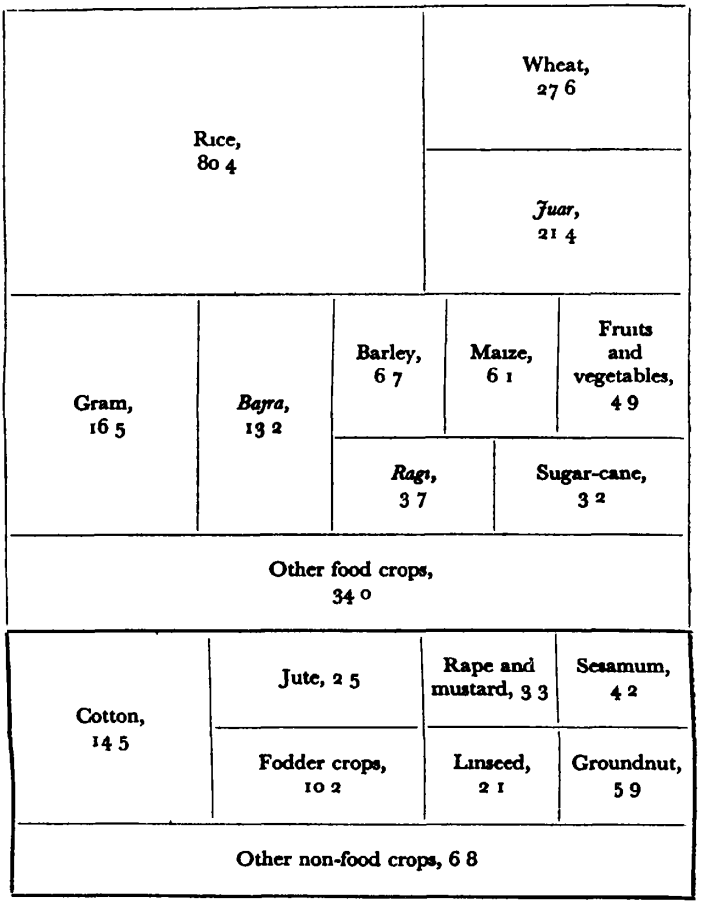
The Principal Crops and Their Distribution

2 The principal crops * in British India are shown in the diagram on p 114, which is taken from the *Agricultural Statistics of India* for 1933–34 The total area of India † is 1,162 million acres, of which 687 million form the area of British India. The area used for arable farming, as shown in the diagram, is 232 million acres, or 35 per cent of the whole ;

* A list of Indian crops with their botanical and vernacular names will be found in the *Imperial Gazetteer*, vol III, pp 98, 99

† Including Burma

Diagram, showing crop-areas in millions of acres



Other food crops are pulses other than gram, minor millets, condiments, spices

Other non-food crops are oilseeds and fibre crops other than those mentioned, drugs and narcotics, and miscellaneous inedible

Total cultivated area, British India . . 267 2 million acres.
Within thin line, area under food crops . 217 7 ,, ,
Within thick line, area under non-food crops 49 5 ,, ,,

but 35 million acres of this area is double-cropped,* thus raising the gross sown area to 267 million acres Of the rest of British India, 22 per cent is land totally unfit for cultivation, 13 per cent is covered by forests, 7 per cent is current fallow, and 23 per cent is cultivable but not yet cultivated In theory, this cultivable land represents the area of possible expansion, but in fact, a large part of it could only be brought under the plough at prohibitive expense Most of it is level, but much is either in need of drainage, or suffers from alkali,† or lacks water, or is malarious, or is too shallow to grow anything but the lesser millets Those tracts which lack water are the least unpromising; many thousands of acres which would have been in this class sixty years ago have now become fertile by the provision of irrigation facilities ‡ Of the total cultivated area, 80 per cent is sown with the food crops required to feed India's large population Little of this produce is exported Such export as exists is almost entirely confined to the non-food, or money, crops, the better types of rice, and, in recent years, a certain quantity of wheat.

3 The cropping of any individual village is governed by two groups of factors—the "regional" and the "local" Regional influences may be natural or artificial Of the former, the most important are variations of temperature, the amount and distribution of the annual rainfall, and the nature of the surface soils. Of the latter, the chief are facilities for irrigation to supplement the rainfall, the introduction of new crops or new types of an existing crop, and the development of industries These regional influences decide what crops it is possible to grow, and to a certain extent what crops it is profitable to grow. The selection of crops to suit different villages and different fields depends on local factors, of which the most important are (1) the prevalent system of farming; (2) the supply of subsoil water, (3) the position of the field on the local contour, a factor which affects the depth of soil, its ability to retain moisture, and its fertility, (4) the distance of the field from the village, (5) the character of local communications; (6) market facilities; and (7) to some extent, the castes of the villagers

* See Chapter I, para 53

† See Chapter I, para 7, for a description of *reh*

‡ A good instance is the Sukkur Barrage, which is expected to bring into cultivation some 3½ million acres in Sind that were formerly uncultivated. See Chapter I, para 20

4 The tabular statement at the end of this chapter, which shows the areas of the principal crops in British provinces and certain major States, will serve as a basis for discussion of the regional influences which govern crop distribution The statement is of a general nature, for many different varieties are included under each crop head

5 (*a*) *Annual temperature*—India falls into two regions. One is the northern or temperate region, which has a definite cold season, the other is the southern or tropical region, which has little or no cold season, except in tracts that lie inland and at a relatively high altitude * The dividing line between them runs from the west coast near Surat up the Tapti valley to Khandesh, and thence eastwards to Nagpur, whence it bears north-east to a point 100 to 150 miles north of Calcutta The two regions lie north and south of this line respectively The difference between the *kharif* and *rabi* † is strongly marked in the northern region

6 Certain crops, namely wheat, barley, gram, linseed, and rape are temperate or semi-temperate species, which are always sown at the beginning of the cold season and belong chiefly to the northern region, in the southern region they occur either not at all or in small amounts ‡ Wheat appears to be a partial exception, but where this is not due to elevation, it is explained by a difference in varieties in the south the wheat is macaroni wheat (*Triticum durum*), in the north it is bread wheat (*Triticum sativum*)

7 The other crop species are tropical, requiring both a high temperature and sufficient moisture Most, if not all, varieties of these crops can be sown at any time of year in the southern region, where it is always warm, provided that the water-supply is adequate the amount of water required increases progressively from north to south These tropical species, if given sufficient water, can also establish themselves in the northern region when the temperature rises with the movement of the sun over the equator, they can be sown as

* Cf Chapter I, para 38, relating to local variations of temperature

† See Chapter I, para 53

‡ In the Central Provinces and Bombay, which are crossed by the dividing line, these crops are found entirely north of it Their presence in Hyderabad is explained by the fact that there is here a cold season, due to the altitude

early as April or May, but as a rule the moisture required for their sowing does not come till the rains begin in June It is too late to sow them after July * It is to be noted, however, that the tropical varieties found in the northern region differ considerably from the southern varieties, especially in respect of the time they take to mature Thus cotton is found in appreciable amounts in all tracts except Bengal, Bihar, Orissa, and Assam , but the northern cotton, sown in June and July and watered only by the rainfall, is for the most part a short-staple type with a five months' growth, whilst such indigenous long-staple cottons as exist are to be found only south of the line † and have a longer period of growth Sugar-cane is essentially a tropical species, though its wide distribution does not suggest it But the cane in the south differs greatly from the cane that was till recently prevalent in the United Provinces , it has a longer growth, a heavier yield, a greater thickness, and a much higher sugar-content than any cane to be found, even today, in the northern region Of the oilseeds, groundnut till a relatively recent date was more or less restricted to the red soils ‡ of Madras and Hyderabad Its extension into such areas as Khandesh (Bombay) and the Central Provinces § as a rotational crop with cotton is new , but the type dominant in the red soils is a trailing plant with a bold seed, which takes a long time to mature, whilst the other type has small seeds, grows in bunches, and matures more quickly Castor, also essentially a crop for a warm climate, appears in any great quantity only in the south, where it is usually sown in separate fields, so that its area can be measured , but in many parts of the Gangetic valley, it is grown with other crops, and if the sum total of plants scattered in small numbers over hundreds of thousands of small holdings could be ascertained it would certainly be considerable Linseed on the whole requires a cooler climate, and is concentrated in the north of the Central Provinces, the Bundelkhand districts of the United Provinces, and Orissa, which abuts on them ; in these tracts it is grown in heavy soils which retain the monsoon moisture, and are usually devoted to unirrigated *rabi*

* A few varieties of sesamum can be sown, just north of the line, as late as September

† Also for about 100 miles in Gujarat, where by reason of the proximity of the sea the climate is semi-tropical

‡ See Chapter I, para 9

§ There is nothing to prevent its extension into areas, such as the United Provinces, where labour is plentiful and the rainfall is not excessive

crops, whilst it is also grown in the Gangetic alluvium of the submontane tracts of the United Provinces and Bihar.

8 (*b*) *Rainfall*—The suitability of particular crops to a particular tract depends on the amount of rain which it receives, and to some extent on the character of the early falls and on the dates when they begin * For instance, rice grown without irrigation requires not less than 50 in of rain Cotton, *juar*, and *bajra* do not thrive if the rainfall exceeds 40 in , and for many short-staple cottons 25 in would be enough, if well distributed Maize and jute germinate best in high temperatures and are intolerant of heavy rain in the early stages of their growth, though both of them, especially jute, can stand large amounts when once established Rice can be grown in peninsular India at any time of year if there is sufficient moisture , but it grows best in the Madras coastlands, where the irrigation dams in such deltas as those of the Godavari and Kistna make it possible not only to sow several times but to sow the later and better types of rice The Gangetic valley is also a tract suited to rice , the crop is at its best in Bengal,† with its tropical climate and heavy rainfall, but the earlier and coarser paddies are also found over considerable areas further to the north-west, where the warm period is shorter and the rainfall is lighter The rice tract of the Central Provinces abuts on Orissa, and though it does not get so heavy a rainfall as Bengal and Bihar, it gets enough for the early rices and too much for cotton, *juar*, and *bajra* Finally, in Bombay rice is almost entirely concentrated in the narrow coastlands between the Western Ghats and the sea, with a rainfall of 100 in to 200 in Once the Ghats are crossed, the rainfall drops sharply to 30 in or less, and one passes abruptly from a humid to a semi-arid climate, to a different soil, and to the region of cotton, *juar*, and *bajra*

9 Jute, again, is concentrated in Bengal, Assam, Bihar, and Orissa , and this concentration is partly due to the rainfall ‡ The tract usually receives substantial showers in April and May, which permits the crop to become well-established before the rains really break—an important advantage The

* For the monsoon and its characteristics, see Chapter I, para 26 *et sqq*

† The rice area along the east coast and the head of the Bay of Bengal is about 55 million acres

‡ Other causes for the concentration of jute in the north-east are (1) sufficiency of water for retting , (2) concentration of the industry in the same tract , (3) proximity to the market

crop could be, but is not, grown in Madras, the United Provinces, and even the Central Provinces; the reason is that the rainfall of April and May must there be replaced by artificial irrigation

10 The requirements of cotton, especially the predominant short-staple types, of the early varieties of groundnut, of *juar*, *bajra*, and of several of the *kharif* pulses are the exact opposite of those of rice They belong to semi-arid tracts where the rainfall is not persistent and the drainage is good They may be grown in the same provinces as rice, but seldom in the same districts The Central Provinces have substantial areas of both cotton and rice, but one dominates the west and the other the east In short, though it may be possible to grow in almost any part of India during the summer crops that are naturally at home in the south, yet in the absence of irrigation it is the nature of the monsoon which decides whether the crop shall be some variety of rice or else cotton, *juar*, or *bajra*, or even one of the lesser millets

11 (*c*) *Soils*—The soils of India can be simply classified in five main groups, in accordance with their origins * In all these groups but one, it is the position of a soil on the local contour, rather than the nature of the rock from which it was derived, which is of importance in deciding whether it is suited to particular crops, for it is on its position that depend its capacity for retaining moisture and its fertility In the alluvial group, where the soils owe their existence to river action in the shape of erosion or flood, they naturally vary according to the character of the rock or soil from which they are derived

12 (i) *The red soils*—The thin, reddish soils of the Mysore uplands and other similar tracts are usually fit only for the lesser millets, of which *ragi* is predominant, it is, indeed, confined almost entirely to southern India At lower elevations the red soils are deeper, darker, and more fertile, and grow such crops as cotton and groundnut (of the trailing variety), with rice in the well-watered tracts At the time when attempts were first made to improve the indigenous cottons, American varieties were tried everywhere, but it was only in these red soils that they established themselves

13 (ii) *The black soils*—The black soils are found in a country of low rainfall, but are extremely retentive of moisture

* See Chapter I, paras 7–12, for description of these soil-groups

As in the red soil group, position plays a prominent part in determining soil-values On the upper slopes the soil is thin and the commonest crop is the spiked millet (*bajra*) Lower down the slopes, the soil is 3 ft to 4 ft deep, containing a varying proportion of lime nodules and overlaying a stratum of decomposed trap this is the true black-cotton soil, which grows short-staple cotton and the great millet (*juar*) in enormous areas At the bottom of the slopes and in the river valleys, the depth increases to 10 ft to 20 ft , nodules are absent , and in spite of the low rainfall, the soil is unworkable during the monsoon and much too waterlogged for cotton or *juar* But though these soils lie in the tropical or southern region, yet because of their capacity for holding water and of the cold climate due to elevation, they can be sown in September and October with *rabi* crops of temperate or northern varieties, such as linseed, wheat, and gram, which grow without irrigation over considerable areas in the Central Provinces and Central India Except where black soil is of moderate depth and lies over a layer of shaly or decomposed trap, it does not respond to irrigation No soil plays a greater part in deciding the regional cropping than this

14 (iii) *The lateritic soils* —A large part of the rice area lies in the lateritic soils but whether this is due to the soil or the climatic conditions is uncertain The soil is undoubtedly suitable to rice, for it permits the circulation of water by drainage, and rice does not thrive in stagnant water Where lateritic soils are found in undulating country away from the coastal belt—as, for instance, in the Central Provinces—rice is grown in the lighter soil and *rabi* crops in the heavier soil of the hollows, where the drainage is less satisfactory

15 (iv) *The Bundelkhandi soils* —The Bundelkhandi soils are, on the whole, lighter than the red or black soils of southern India, which they resemble A great deal is poor country given over to grass The cropping is governed largely by the rainfall and the possibilities of irrigation *

16 (v) *The alluvial soils* —The alluvial tracts of India are by far the most extensive and agriculturally the most important They occupy the larger portion of Sind, Gujarat, and the four great northern provinces , they appear again in the extensive deltaic tracts of Madras , they are found in narrow

* See Chapter I, para 11 , and Chapter III, para 50

strips along the coastlines, and reappear along the courses of many of the great peninsular rivers With a spread so wide as this and with varied sources of formation, their qualities are far from uniform Taken as a whole, they are fertile, not too dense in consistency, naturally drained, and level, and accordingly they lend themselves to extensive irrigation schemes They are, in fact, excellent media for the growth of any crops that are suited to the climate and that require the assistance of irrigation

17 (*d*) *Artificial irrigation*—Of the various kinds of artificial irrigation, the canal systems,* in particular those of northern India, produce the most important regional effects The large increase in the wheat areas of the Punjab and Sind is due to their canals, for though the temperature is suitable, the rainfall outside the submontane tracts is entirely insufficient Again, though wheat can be grown in the United Provinces without irrigation, both the expansion of the area and the increase of the yield are due to the canals Cotton, too, would be entirely unknown in the Punjab and even in Sind in the absence of irrigation , its presence accounts not only for the extent of the cotton area, but for the early sowings of April and May, which make it possible to cultivate widely the long-staple American types Sugar-cane is at home in the submontane districts of the United Provinces, where water-lifts are short and the climate is relatively humid , but the wide expansion in the western districts of a crop which is at its best far further south must be attributed primarily to the cheap water obtainable from the Ganges canals And lastly, whilst the prominence of maize in Bihar and Orissa is due to the early rains which precede the monsoon, its appearance further to the north-west is chiefly due to the use of canal water in the latter part of the hot season In all, some 55 million acres are aided or protected by artificial irrigation throughout British India, or nearly a quarter of the total cultivated area The influence, therefore, of this method of improving on nature is considerable

18 (*e*) *Selection of new crops*—A crop may be of different species, each comprising different varieties, in each of which there are different types , each species, variety, and type has its own special attributes, which determine its suitability

* See Chapter I, paras 43–48

to particular conditions of soil and climate. The widespread cultivation of cotton, from Madras to the Punjab, is due to the multiplicity of its forms The discovery of a variety or type fitted for a particular tract will result in the appearance of a new crop in that tract or the extension of an old crop , a striking example of this is the introduction, in 1912–13, of a new type of groundnut, ripening quickly and easily harvested, into the black soils of Khandesh and the Central Provinces, which led to the expansion of a negligible area of about 2,000 acres, chiefly irrigated, to an area of over 600,000 acres, all unirrigated * Other examples are the wide expansion in southern India of Coimbatore cotton, an American type introduced by chance in 1905, and of other American cottons in the Punjab and Sind , and the replacement in northern India some fifteen years ago of the indigenous sugar-cane by the new types created at the sugar-cane breeding station at Coimbatore, with an increased yield of 50 per cent , which has led to an expansion of the cane area from less than 2 5 million acres to 4 millions, and to the establishment of a considerable sugar industry in the United Provinces and Bihar.

19 (*f*) *Industrial development* —The location of most large-scale Indian industries has been determined by proximity to transport facilities they are situated either at the ports or near railway junctions † In some cases, however, the deciding factor has been proximity to raw materials The manufacture of jute, for instance, was attracted to the neighbourhood of Calcutta because of the large area under jute in Bengal Sugar factories are most numerous in the United Provinces and Bihar because of the area under sugar-cane in those provinces Cotton mills are more widely dispersed, but they are always within reach of supplies of raw cotton But though the location of such an industry depends on the location of the crop which serves it, the development of the industry reacts on the scale of cultivation Thus the influence of the jute industry has led to the concentration of jute in Bengal , the influence of the cotton mills of Bombay and Ahmedabad has led to almost excessive cultivation of cotton in Gujarat ; and the rapid development of the sugar industry in the United Provinces and Bihar has led to great expansion of sugar-cane cultivation

* See para 7 above

† See Chapter IX, para 5

Local Conditions and the Selection of Crops

20 Whilst regional factors decide what crops can be grown, local factors decide which of the crops that can be grown will be cultivated in particular villages or fields Of these local factors the first is the system of farming Of these systems there are two—farming for the support of the family, or subsistence farming, and farming for market, or commercial farming The first seeks to supply as many as possible of the family's needs from the family's holding, which involves the cultivation of many crops in small quantities The second involves cultivation of one or two products for the market, and of subsidiary crops chiefly as leading to the improvement of the money crops or as reducing the cost of growing them , and implies dependence on the market for the provision of most home necessities Over the greater part of India, with its small holdings, conservative methods, and relatively poor communications, farming is still of the subsistence type The farmer will grow some money crop to provide his rent, but his chief concern is the food supply of his family and his live-stock, and he will grow a relatively high proportion of the food grains which will thrive,—even at times cultivating crops which are less profitable than others merely because they are required for household needs The general effect of such cultivation over a village is that of a patchwork quilt , whilst in many fields the sowings are mixed, partly to secure the necessary variety, partly as a sort of insurance against losses due to unfavourable weather, partly as a method of providing the effects of crop rotation * Except in sugar-cane areas, most of the farming in the Gangetic alluvium and in south and Central India is of the subsistence kind At the other extreme is the type of farming found on the better soils of Gujarat and Berar, where the farmer's sole consideration is his cotton crop, or in some places his tobacco Here every acre carries the money crop which can be made to grow it, up to some two-thirds of the holding , and the village area looks like a single field of cotton, cut by occasional lines of some other crop, usually a pulse, and broken here and there by scattered fields of *bajra* or *juar* Other local factors which affect the selection of crops are the subsoil water-supply, the position of the field on the contour, and its proximity to the village In the alluvial tracts, outside

* Some common mixtures of crops are wheat and barley (*gojai*) ; barley with peas or gram (*bejhar*) , or some of the minor pulses, oilseeds, and millets with the more important millets, such as *juar* or *bajra*

the areas watered from canals or tanks, irrigation is from wells Where these are numerous the more valuable crops predominate—vegetables, spices, sugar-cane, wheat, or cotton, according to circumstances—and the other staples are relegated to fields outside the reach of the wells In the black and lateritic soils and to a less extent in the red soils contour position is the all-important factor A village with a large proportion of deep, heavy black soil will perforce be down in linseed, wheat, and gram At the other extreme of the contour, the cultivation will be of *bajra*, *urd*,* and a little poor cotton In intermediate positions it will consist almost entirely of cotton interspersed with *juar* In the lateritic soils the influence of position is fully apparent thin grass at the top passes to some minor millet, then to successive zones of early and late rice respectively, and lastly in the hollows to a mixture of *rabi* crops, with wheat and gram predominating In the red soils the effect of position is modified by the effect of irrigation As regards proximity of a field to the village, the nearest fields (so long as they have no defects) are usually sown with the best crops that conditions permit, for they receive such natural manure as is available and, incidentally, a greater share of the owner's attention

21 Transport and marketing facilities also have their effect on cropping Market-gardening, for instance, is specially prominent round the larger towns or in places conveniently situated to the railways When haulage exceeds 40 miles, cotton cultivation declines and land which would be under cotton if nearer the market is sown with *juar* or *bajra* Finally, caste has its part in the cropping scheme Kachhis and other related castes, for instance, specialize in market-gardening, and a village in which there are many Kachhis will be largely given over to a miscellaneous collection of vegetables of all kinds Apart from such specialists, however, some castes are very much better farmers than others , and in villages where they predominate there will be a larger proportion of those crops which call for greater attention and skill and fetch the higher prices

The Indian Farmer

22 Cultivation throughout India is essentially peasant farming in small holdings There are many landed magnates in certain parts of the country, notably the *taluqdars* of Oudh.

* Black gram

the large landowners in the canal colonies of the Punjab, and the *malguzars* of the Central Provinces, but far too few of these have any direct or personal interest in the management even of their own home-farms, still less in the cultivation of the villages which they own, whilst far too many are absentee landlords, content with the collection of their rents, especially those that belong to the Vaisya or other non-agricultural castes, who, in the absence of a Land Alienation Act,* have purchased their land But when, as occasionally happens, a landlord *does* reside on his estate or when he *is* interested in farming, he can and does do a great deal to raise the general standard of cultivation in his neighbourhood

23 Again, in some villages there are to be found a certain number of substantial farmers †—we may call them yeoman farmers—who hold thirty acres or more by some special right to the land they farm, they are most common, perhaps, in parts of the Punjab, in the United Provinces, and in the *ryotwari* tracts of Bombay, Berar, and Madras These are essentially farmers by profession and caste, and also village leaders who, if they can be convinced of the desirability of some change of seed or practice, can do much to assist in the introduction of the change But these between them farm but a small portion of the total cultivated area The rest, by far the greatest part, is held by an enormous host of petty farmers Many have an occupancy or other superior right to their land, others are tenants with inferior rights, or subtenants, holding from landlord, yeoman farmer, or even from a superior tenant Their ability, skill, effort, and productive value vary enormously Certain castes are outstandingly good farmers, hard working and able to extract with the slender resources at their disposal the utmost out of their lands Among these may be mentioned the Jat Sikhs and other Jat communities of the Punjab and the western districts of the United Provinces, the Patidars of Gujarat; and the Kurmi cultivators of the Central Provinces, Bombay, and elsewhere Other castes, on the other hand, are indolent or do not possess the natural faculty for making plants grow. There is always a great difference between the appearance and output of land worked by one of the castes whose traditional function is farming and the land of those who farm because they must live or because they have no alternative occupation

* See Chapter III, para 65

† For the various tenant rights, see Chapter III, paras. 19 *et seq.*

24 Yet again, the standard of farming is governed by the strength of the incentive Where the monsoon is uncertain the level of farming is low , where the monsoon is assured and even more, where the land is protected by irrigation, especially from wells, the level is high Where the incidence of debt is not too great and the land is not mortgaged, the standard is better than when the whole produce, except so much as is required for food,,passes to the moneylender or to the mortgagee Again, given the same climatic and soil conditions, the farming standard of a tenant with superior rights is usually better than that of one with inferior rights Where the holdings are relatively large and not unduly fragmented —as, for example, in the canal colonies of the Punjab—the nature of the farming points clearly to a higher level of well-being. Finally, climate has an important effect on the health and vitality of the farmer and on his energy and the manner in which he uses his assets These considerations have their influence all over the country, explaining the different standards found in different tracts and sometimes within a single village, even if it be inhabited by men of the same caste.

The Farmer's Working Outfit

25. (1) *Livestock* —For the farming of a holding, whether big or small, certain assets are required, both live and dead The Indian farmer's power is provided by one or more pairs of bullocks, according to the size of his farm , the number varies according to the soil, the cropping, and the presence or absence of a well. In black-cotton soils and in the cultivation of *kharif* crops a good pair will command thirty or forty acres In Kathiawar farms of 300 acres are effectively managed with five good pairs In the alluvial soils, where cane and wheat figure in the rotation, not more than eight to twelve acres can be effectively tilled by a single pair , and as a great majority of tenants have much less land than this, one pair, even at times a hired pair, is generally all that is required * In addition to his bullocks, the farmer in the Gangetic valley and the Punjab generally possesses a cow and in western India a she-buffalo As a rule, the animal is kept to supply the farmer's household with dairy produce, but in some tracts, such as

* Sometimes a small man owns a single bullock, and borrows a second from a friend, to whom in turn he lends his own When he " hires " a pair, the payment often takes the form of one or more days' service as ploughman.

Gujarat, the buffalo plays an important part in farming economy. Every Patidar has at least two The farmer's cropping depends to some extent on the needs of his buffaloes, and the daily expenditure of the family is met from the sale of their products Unless one has lived in rural India it is difficult to realize how much the tenant is dependent on his cattle Without these, as Darling expresses it,* " his fields remain unploughed, his store and bin stand empty, and food and drink lose their savour." The occasional loss of livestock from famine or epidemic is one of the primary causes of chronic indebtedness †

26 (2) *Dead stock*—The indigenous instruments of tillage are simple and primitive , but though, as will be seen later, they can be improved, yet in conditions where labour-saving devices are of little value and man has ample time to till his small holding, they are, for the most part, sufficiently effective, and produce in due course such tilth as his crop requires. The Indian farmer for the most part is a small man and his farm is more often than not very fragmented ‡ The class of instruments which he needs and has invented, must in consequence be " general utility " tools If a man farms a large area, he can afford to own a series of specialized implements, as each individual implement will, in a year, do enough work to pay its way But though such an implement may do its work more effectively and more cheaply than any indigenous implement, it is a useless extravagance on a farm of four or five acres, especially if the acres are divided up into many small plots. These indigenous implements in all parts of the country are made to much the same pattern, though there are minor variations to suit local requirements, in support of which the farmer can always provide convincing arguments The farmer's stock of implements also varies, being greatest in Gujarat and smallest in the Gangetic alluvial soils. The plough (*hal*) is the principal implement It consists everywhere of three main parts, namely a wedge-shaped block of wood which is fitted with an iron share, a draught-pole which connects this wedge to the neck-yoke of the bullocks, and a single short stilt which serves as a guiding handle The whole plough may be described as a single-tined grubber.

* In his book *The Punjab Peasant in Prosperity and Debt*

† A pair of bullocks may cost anything from 80 to 300 rupees, or £6 to £22 10*s*

‡ See below, para 34.

Its only important variation is in respect of weight, at one end of the scale there is the very light plough employed by the Bengali farmer and his microscopic bullocks to scratch 2 in to 3 in deep, and at the other end is the plough, weighing 100 lb or more and drawn by four to six pairs of bullocks, which is used by the farmer of the Deccan to give a periodic ploughing in the hot season to depths of 10 in to 12 in * As a rule, however, the Indian plough, though its weight varies with the capacity of the bullocks, is a one-pair implement

27 Outside the black-cotton soils, the only other implements that the cultivator ever uses, except under the influence of demonstration by the department of agriculture, are a rectangular beam † or log to crush clods and sometimes a wooden harrow like a rake In the alluvial soils of northern India it is with these that he prepares his seed-bed Sowing is usually broadcast, if it is in lines, the seed is deposited by hand in the furrows made by the plough When sowing is in dry, heavy soil, the seed must be deposited in the damp subsurface A bamboo tube fitted into a wooden bowl is then attached to the plough the seed is fed by hand into the bowl, and drops through the tube into the furrow just behind the plough's point, being covered by the soil moved in making the next furrow. Weeding in this tract is usually done by hand, though at times, to open the soil surface, the plough may again be passed through the crop

28 In the Peninsula in general and in the black-cotton soils of the Deccan and Gujarat in particular the standard of equipment is higher Here, the plough, for day-to-day work, is replaced by a wide-bladed harrow or scarifier (*bakhar*), consisting of a knife attached by two wooden or iron vertical tines, or stays, to a short block of wood, which is fitted with a wooden draught-pole by which it is attached to the yoke, and a driving stilt or handle These implements do not stir the soil, but pare the surface, working to a depth of 3 in to 4 in in soft soil They vary in weight and width of blade according as they are required for dry-season or moist-season work, and for field tillage or seed covering They cover the field rapidly and are sufficiently effective, for an annual ploughing for

* This last is a special implement required for special work, and has been, to some extent, replaced in this tract by inversion ploughs of the heavier type, which produce the same results at less than half the cost in bullocks and labour

† The driver often stands on this beam to increase its weight

kharif crops in black soils is neither necessary nor economical, whilst speed is essential These harrows not only loosen the soil, but break up the clods, which pass beneath the block of wood to which the blade is fitted In most of this tract the seed is drilled in regular lines with an implement consisting of a block of wood, which forms the body, and is fitted with pole, yoke, and guiding handle in the way already described In this block of wood are set two or more short-pointed coulters A tube is fitted into each coulter, which tubes radiate from a bowl into which the seed is fed by hand , and the coulters open the soil to receive the seed But these seed drills are not essential The small farmer for his drilling uses his *bakhar* by attaching the base of a hollow bamboo to each of the two tines, so that, whilst he stirs up the soil surface by driving his bullocks in straight lines backwards and forwards, his wife, holding the bamboo, drops in the seed line by line with a spacing equal to the distance between the vertical supports , and so the small man can both plough and sow with a single *bakhar* But, in general, holdings and fields are bigger in the Deccan and Gujarat than elsewhere, and this is probably one of the reasons that have led to the adoption of line-sowing as a regular practice Though some weeding is done by hand, most weeding and also the important process of making a loose mulch of earth to retain moisture after the rains cease are done by bullock-power In this tract, therefore, there are bullock hoes in the farm equipment, in addition to drills These are similar to but smaller than the *bakhar*, and fitted with smaller blades , they are commonly worked in pairs, two men to each pair Here, again, though the pattern and principle are always the same, there are variations in such details as the width of the blade, as required by the nature of the crop and the width of sowing

29 In addition to implements that involve the use of bullocks, the farmer has a few hand tools which vary a good deal in pattern Among the commonest are the *kodali* of northern India, called *mamuti* in southern India, which is used in somewhat similar fashion to a pickaxe, and consists of a steel blade 15 in to 18 in. long, with a 3-in cutting edge, fitted to a wooden handle , the *phaora*, which fulfils the purpose for which a spade is used in Europe, but is worked by the arms , * the *khurpa*, a weeding tool, best described as a chisel-shaped

* The blade and handle form an acute angle, with the blade pointing towards the workman

piece of iron fitted in a wooden handle, and the sickle (*hasya*), with which all crops are reaped These tools vary in size and shape from province to province Threshing is sometimes done by hand-beating or by rolling the crop under a stone roller, but usually the grain is trodden out under the feet of bullocks The subsequent separation of grain and chaff is done by letting the wind play on the mixture as it is dropped from a basket held aloft, and finished off by the use of the winnowing scoop (*sup*) Other tools that may be mentioned are the chopper (*garasi*), axe (*kulhari*), and leather water-bucket (*pur*) The expenditure on dead stock is small, on a one-pair farm in the Gangetic plain it would be covered by an investment of 10 to 15 rupees * In the black soils a full equipment per pair would cost 20 to 25 rupees The cost of upkeep is relatively high,† but a good deal of it is performed by the village carpenter and smith, who are paid in kind With this very simple outfit and a good deal of manual effort the many million acres of India's land are tilled and her many million tons of produce are harvested

The Farmer's Disabilities

30 About 1926 a special inquiry was made in some 2,400 Punjab villages to collect data regarding the size of holdings for the information of the Commission on Agriculture ‡ The resulting figures showed that of the total number of cultivators, 22 5 per cent cultivated 1 acre or less, 33 3 per cent cultivated between 1 and 5 acres, 20 5 per cent cultivated between 5 and 10 acres, and 23 7 per cent cultivated 10 acres or more Similar statistics were not prepared for other provinces § but as the average holding in every province except Bombay

* In northern India a plough (complete) costs about Rs 3½ Other implements mentioned cost about Rs 10½ The rest of the equipment required at the well-mouth costs about Rs 9, but most of it would be the common property of several cultivators For a complete list of tools and implements, see *Fields and Farmers in Oudh* (edited by R K Mukerjee), pp 46–8 A rupee is equivalent to 1*s* 6*d*

† In northern India certain parts of a plough require annual replacement, at a cost of half a rupee, other wooden parts must be replaced every three or four years at a cost of Rs 2 The share must be renewed every eight years The life of other implements is from two to five years See *Fields and Farmers in Oudh*, *loc cit*

‡ See Agriculture Commission, *Report*, pp 132–3

§ Similar figures are to be found in such books as V G Ranade's *Social and Economic Survey of a Konkan Village* or Dr Mann's *Land and Labour in a Deccan Village*, but they relate only to small areas, as their names imply

is smaller than the average holding in the Punjab,* there can be no doubt that Bombay would show results very similar to those of the Punjab, and that other provinces would show larger proportions of the smaller cultivators It is unnecessary here to go deeper into the figures Enough has been said to show that the great majority of Indian cultivators are petty farmers with small holdings, and that many of them are merely allotment-holders

31 The prevalence of the small holding is due to a variety of causes Amongst Hindus it is due primarily to the increasing frequency of joint-family partitions, which entail the subdivision of the family property amongst the co-sharers † Amongst Muslims it is due to the law of inheritance, which entails the subdivision of immovable property in fixed shares amongst all heirs But there are also other causes which accentuate the evil As the Commission on Agriculture has pointed out,‡ the acquisition of land by moneylenders and other similar transferees results in the creation of a number of petty holdings and in the reduction of the area left to be divided amongst the heirs , whilst the growth of population increases the number of co-sharers or heirs, so that each of them receives a smaller holding

32 The question then arises how many of these small holdings are large enough to support the cultivator and his family at the standard of comfort to which he is accustomed , or, in other words, how many of them are " economic holdings " That is not a question which can be answered according to any general principle or definite formula , it is always a question of fact the answer to which must vary according to the circumstances of each case It will vary, firstly, according to the productivity of the soil a holding which is economic in rich irrigated loam will be entirely uneconomic in unirrigated sand It will vary, secondly, according to the skill and industry of the cultivator a Brah-

* This assertion is based on figures given in the Census Report for India of 1921, quoted in the Agriculture Commission's *Report, loc cit* The Commission doubt their accuracy—and rightly for instance, the average holding in the United Provinces is put at 2½ acres, whilst figures of average holdings in United Provinces districts (which are given in Vol XIV of the Agriculture Commission's *Report*, p 396), vary from 3 4 acres in Azamgarh to 12 4 in Jalaun But they are accurate enough to indicate the extent to which the small holding prevails in the different provinces

† See Chapter II, para 8, regarding the joint family

‡ *Report*, p 131

man or Rajput would starve on a holding sufficient for a Kurmi or a Jat, a Kurmi or Jat, who grow staple crops, would require a larger area than a Kachhi or Murao, who grow vegetables in two or three acres intensively cultivated It will vary, thirdly, according to the standard of comfort to which the cultivator is accustomed three acres may be ample for the depressed classes and 30 acres not enough for the twice-born There are also other circumstances which would affect the answer It is scarcely an exaggeration that there are as many "economic holdings" as there are cultivators—or, at least, as there are classes of cultivators *

33 Nevertheless, during the last fifteen or twenty years, many inquiries, both special and general, both official and non-official, have been made into such matters as family budgets, expenses of cultivation, yield of crops, average holdings, and standards of comfort and by collating these it is possible to arrive at certain broad conclusions All over India only a relatively small minority of cultivators have holdings large enough to enable them to set aside in good years reserves sufficient to carry them over bad years A larger, but still relatively small, proportion live at all times below the economic level, and even in the best years cannot make ends meet unless agriculture is supplemented by a subsidiary occupation † The majority are living at or just above the economic level, and though by incessant toil they can make ends meet in a good year, they too need a subsidiary occupation to enable them to do so in a bad year Poverty and wealth, moreover, are relative terms The well-to-do class just mentioned is well-to-do *only* by the prevailing standard of comfort, the poorest class is poor *even* by that standard, and compared with the standards of European nations, the Indian standard is miserably low ‡

* The "economic holding" can only be calculated on a basis of averages of various kinds—average distribution of soil, average cropping, average outturn, average prices, an average tenant, an average family, an average rent, and average expenditure But some of these averages involve impossibilities The "average cropping" of a district cannot be reproduced in a single holding An average family in the United Provinces is 4 8 persons And an average tenant has no more real existence than the economist's "economic man"

† For the subsidiary occupation, see Chapter I, para 67

‡ The Banking Enquiry Committee estimated that in the United Provinces the proportions of the three classes were 18, 30, and 52 per cent respectively See *Report*, United Provinces, pp 97–8

34 An even greater evil than the subdivision of holdings is their fragmentation * into small plots scattered discontinuously over the village area This process is chiefly due to the method in which the subdivision of property between co-sharers and heirs is customarily carried into effect Each heir receives not a part of the whole equivalent to his share, but a proportionate share of each item of the property † Thus if an estate of three fields is to be divided up between three co-sharers, they would take not one field each but one-third of each field each Fragmentation is furthered by irregular expansion of cultivation in the waste, by purchases and sales, by the division of the property of extinct families amongst distant relations, and by the eagerness of all cultivators to secure any additional land that they can, wherever it may be situated The result is that not only the holdings but also the fields run small, with results that are sometimes ludicrous In the Ratnagiri district (Bombay) there are fields as small as 30 square yards , ‡ in the Punjab there are fields over a mile long by a few yards wide , whilst " areas have been brought to notice where fragmentation has been carried so far as effectively to prevent all attempts at cultivation " §

35 This process of fragmentation ensures that every holder has his share of all qualities of soil, which in a system of subsistence farming is a matter of some importance, since it enables the cultivator to grow all the various crops which he requires for his own and his family's food, and also acts as an insurance against that total failure of crops which might occur if they were all grown in a compact area But it has many countervailing disadvantages A cultivator's holding is made up of isolated fields separated from each other by large blocks

* The *locus classicus* for subdivision and fragmentation is Chapter V of the report of the Commission on Agriculture

† " Everything is divided—shares, holdings, plots, tenants' houses, groves, ponds, and even trees " Clow, *Settlement Report of Basti* (United Provinces), 1914–1919, p 15

‡ To enable the reader to visualize an area of 30 square yards, it may be described as rather less than one-tenth of a tennis court (312 square yards) This is unusually small The average area of the fields in two northern tahsils of Basti district (United Provinces) is 7 *biswas*, or about 1,060 square yards (R K Mukerjee, *Rural Economy of India*, p 38) A *biswa* is one-twentieth of a *bigha*, which is five-eighths of an acre (3,025 square yards) Fields the size of a tennis court (or about 2 *biswas*) are not uncommon

§ See Agriculture Commission, *Report*, p 134

of cultivation through which access is difficult and often obstructed Much time is wasted in shifting ploughs, cattle, and manure from one field to another, as well as some money , much land is wasted in field boundaries that would otherwise be unnecessary , the problem of irrigation is often insoluble , whilst the farmstead is never on the farm The obvious remedy is consolidation of holdings, either by Government or by co-operative action—a matter described elsewhere * Another possible remedy which has been adopted in the United Provinces is consolidation of cropping , groups of cultivators owning contiguous plots grow by agreement the same crop This is especially common in the area commanded by the State tube wells,† where efforts have been made by the departments of agriculture and co-operative credit to organize consolidated cultivation, notably in respect of sugar-cane , and it is also practised by the better farming and better living societies organized in the eastern districts of the United Provinces

36 The smallness of the holding and its excessive fragmentation are the two principal disabilities from which the Indian farmer suffers , but there are many others Some of these have been, others will be, discussed elsewhere , but it will be convenient to give a list of them here These disabilities can be divided into three classes Some are due to his natural environment—the climatic and other external circumstances in which he cultivates Some are due to his social environment or his personal characteristics, and have been inherited from the past Others are the result of modern influences working on ancient conditions—of pouring new wine into old bottles

37 *Natural environment*—The farmer's disabilities that are due to his natural conditions are five in number

(1) The uncertainty of the harvest, due partly to the vagaries of the monsoon, which become all the more serious when artificial supplies of water are not available,‡ and partly to frequent attacks of insect pests and fungoid disease §

* Chapter III, para 58 , Chapter X, para 35, and Appendix

† See Chapter I, para 39, and Chap V, para 42

‡ See Chapter I, para 37

§ This is the business of the research experts see Chapter IV, para 52

(2) The cultivation of crops which are poor either in respect of their yield, their market value, or their susceptibility to disease *

(3) The lack of sufficient manure, resulting in low fertility †

(4) The use of dead stock (tools and implements) which, though adequate when each village was self-contained and each farm self-sufficient, are ineffective now that Indian farmers are growing crops which compete in the world's markets ‡

(5) The use of ineffective livestock, their low productive value, and the heavy losses of livestock due to epidemics §

38 Of these disabilities, the first, in so far as it is due to lack of water, is the special concern of the irrigation department ‖ The fifth is the special concern of the veterinary department The rest are the concern of the department of agriculture

39 *Social and personal disabilities*—Amongst the farmer's disabilities which are due to his social environment and personal characteristics are the following

(1) His attachment to his land, his home, and his family, which make him unwilling to leave them except under severe economic pressure—and even then only temporarily ¶

(2) The congestion of the rural population in closely packed and insanitary villages—originally due to the need for mutual protection and a common water-supply, and incurable except by extensive replacement, at a great cost, of old by model villages **

(3) The absence of alternative methods of earning a living and of subsidiary occupations ††

(4) A general tendency to improvidence, due partly to the difficulty of making profitable use of surplus stocks in the

* See Chapter V, paras 9 *et seq* , 46 *et seq*

† See Chapter V, paras 13 *et seq*

‡ See Chapter IV, paras 25 *et seq* , and Chapter V, paras 18 *et seq*

§ See Chapter V, paras 21 *et seq*

‖ Assisted, as regards wells, by the agricultural engineering section of the department of agriculture see Chapter V, para 41

¶ Cf Chapter I, para 83, and Chapter IX, paras 14–6.

** This remedy has been tried in the Punjab , but see Brayne, *Better Villages*, pp 220–1, and Chapter X, para 33

†† See Chapter I, para 67.

absence of adequate transport facilities, partly to the risk of possessing savings in the absence of any safe place in which to keep them These inconveniences of rural life in India, however, have been greatly reduced under British rule, which has greatly improved communications, has increased security, and introduced post-office savings banks But the peasant's safe is still generally a hole in the wall or floor of his house or in the corner of a field ; and there are still dacoits abroad to compel him to disclose it *

(5) The unproductive expenditure which is imposed on the peasant by caste custom in such matters as social and religious ceremonies, the repayment of ancestral debt, and the maintenance of his social prestige, † and also by his litigiousness

(6) The small value of his assets, which make it difficult for him to borrow money, even for productive purposes, at a reasonable rate of interest The tenant's assets consist of his crops, his cattle, his agricultural implements, his women's jewellery, his trees, and his *jajmani*,‡ if he has one , to which a landlord or other person with a transferable right in his holding can add his land But of these the first three make adequate security only for short-term loans, since he can spare neither his live nor his dead stock for any length of time The fourth he will keep intact till he is at his last financial gasp , extensive pawning of jewellery is a sure sign of great distress Trees and *jajmanis* make better securities for loans, but not all tenants have them There remains the land, a good security, but overloaded with debt

40 *Disabilities due to modern progress* —The establishment of British rule, whilst freeing the peasant of some difficulties, has helped to create others It has put an end to the internal disorders and extortionate revenue demands which once put the farmer's harvest in jeopardy It has made possible the disposal of surplus stocks and the cultivation of money crops The recognition of rights in land has converted it from a liability to an appreciating asset But other developments have reacted adversely on the rural population

(1) Internal security and the expansion of cultivation that followed it have led to an enormous increase in the population,

* On the question of transport, see Chapter I, paras 57 *et seq.*

† See Chapter II, para 44

‡ See Chapter II, Appendix I

a difference of nearly 100 millions between 1881 and 1931.* This has led to serious pressure of population on the soil † and to the overcrowding of agriculture as an occupation ‡

(2) By reason of increased facilities in the disposal of his produce and the increased value of land as security, the cultivator has become more prosperous, and being naturally improvident has been led both to spending and to borrowing more

(3) The establishment of civil courts has assisted the money-lender to tighten his hold on the peasantry, and has led to a great increase of litigation, frequently needless and always costly

(4) The moneylending and banking class has taken over the business of marketing the crops, to the cultivator's great disadvantage §

41 Agricultural indebtedness is a matter discussed elsewhere,‖ and all that need be said here is that it is the result of the farmer's disabilities just described In these disabilities the most important causes of debt are (1) the smallness and fragmentation of the holdings, (2) the loss of livestock from famine or epidemic, (3) the insecurity of the crops; and (4) social extravagance But all the other disabilities are contributory causes.

The Departments and Their Work

42 *Early history*—The first reference to the need for a department of agriculture in India appears in a recommendation of the Royal Commission appointed after the Bengal famine in 1866 The need was again stressed a few years later by Manchester cotton merchants, upset by the disturbance in their business which was caused by the American civil war. Certain trials of exotic cotton were made in Bombay and the Central Provinces, but the results were of little value The next indication of interest followed another famine—that of 1881 As a result of this, there came into being embryo

* Excluding Burma, the increase is about 90 millions

† Cf Chapter I, paras 78 *et seq*

‡ Cf Chapter I, para 81, and Chapter II, para 39

§ The new marketing officers should do a good deal to remedy this state of affairs see Chapter V, para 49.

‖ See Chapter III, paras 59 *et seq*

departments of agriculture, which were usually linked with land records, and experimental farms were established in all the major provinces, of which those in Bombay, the United Provinces, and the Central Provinces were the most successful

43 Between 1880 and 1905 there was further progress It was during this period (1889–91) that Dr Voelcker was sent from England to study the conditions of Indian agriculture (his book *The Improvement of Indian Agriculture*, though written forty years ago, is still of the utmost value to students), that the first research workers were appointed—Dr Leather as agricultural chemist and Dr Barber as economic botanist in Madras, and that the first beginnings of agricultural education took place, at Poona, Cawnpore, Nagpur, and elsewhere, from which the present agricultural colleges have developed It cannot be said that achievement was large, but attention was attracted to the need for applying scientific investigation to the problems of agricultural improvement, and a vast amount of data was collected that proved of value later

44 *Present department*—It required, however, another famine and another commission to bring about the creation by Lord Curzon of the department as it is to-day, but its scope has since been enlarged and research facilities have been increased At that time, it consisted of an Imperial research institute at Pusa, where the scientists of the Imperial agricultural department were centred, and of provincial services Each provincial service was under a Director (a member of the Indian Civil Service), who was assisted by a headquarters staff of experts, consisting of agricultural chemist, botanist, entomologist, and mycologist, who were engaged in agricultural education, and by other agricultural experts in the districts, who were engaged in field experiments and propaganda, thus linking up research with the village

45 These organizations had already made substantial progress when, with the outbreak of the Great War, many officers were permitted to join the army, leaving a skeleton force which, with the greatest difficulty, kept the departments running In 1920 the service was again restaffed, and since that date there has been steady expansion, which has varied with provincial resources and interest Under the Government of India Act of 1919 agriculture became a transferred subject, under a Minister responsible to the local legislative

council for funds At first there was an almost universal tendency to curtail departmental budgets, which all fell below the 1920–21 level Subsequently, however, the department's value was recognized in most provinces, and the funds provided rose steadily, till the general slump of 1930–32 called for retrenchment in all directions—a temporary condition of affairs which, with the rising value in agricultural produce and the greater interest in rural development at the present day, is rapidly being remedied

46 In 1924 overseas recruitment ceased, and thereafter the different provinces organized their Class I and Class II services In 1923 the Indian Central Cotton Committee, to be described later, came into being , and in 1930, on the recommendation of the Commission on Agriculture, the Government of India established the Imperial Council of Agricultural Research Both these bodies, the former in respect of cotton and the latter in respect of other crops and livestock, have done much to develop and finance research work, which was formerly under the control of provincial Directors of Agriculture It has thus been possible to increase staff and to undertake research to an extent which could not have been attempted by the provincial departments concerned from their own budgets , whilst any increases in those budgets could be devoted to the other important operations of extension and propaganda The departments of agriculture in the various provinces, exclusive of temporary officers engaged in handling special schemes, number at the present day 307 gazetted officers in the Class I and Class II provincial services, and 1,635 non-gazetted officers

47 At the present day the composition of the agricultural service is much the same as it was in 1905 The Imperial branch of it, which is controlled and financed by the Government of India, has its headquarters in Delhi, to which they were transferred after the Bihar earthquake in 1934 had destroyed Pusa It is chiefly engaged in research problems associated with crops and livestock. In addition to the laboratories and farms at Delhi, it controls the sugar-cane breeding station at Coimbatore , the institute of animal husbandry and dairying at Bangalore , a plant-breeding station and the cattle-breeding farm at Karnal These institutes are administered by the Director of the Imperial agricultural institute at Delhi

48 The provincial services are also similar to those of the past, but have certain additional expert branches, the size and nature of which vary from province to province The usual functions of the provincial service are research and education, agricultural extension, propaganda, livestock breeding, agricultural engineering, horticulture, and marketing The personnel consists of a Director , of the provincial gazetted staff of Class I and Class II officers , the upper subordinate staff, composed of graduates who hold posts either in the research laboratories or the college, or are in charge of farm and district activities , and a lower subordinate staff of non-graduates, who are chiefly employed in extension and propaganda work in the rural areas The Director, who in the larger provinces has an Assistant Director, is responsible for administration and for carrying out Government's policy. The research and educational staff would in the typical province consist of an agricultural chemist, two or more economic botanists, a plant pathologist, an entomologist, and an agricultural expert All these are Class I officers, who have in most cases Class II officers as their assistants They are stationed at the headquarters of agricultural activity, which are not necessarily the headquarters of the Director The staff engaged in propaganda and extension work consists of a varying number of Deputy Directors, according to the size of the province Each Deputy Director controls a circle, which is usually divided into two or three divisions under the charge of Class II officers called Assistant Deputy Directors or Divisional Superintendents These officers are responsible for examination of the results of research work in the field, the testing of agricultural implements at their experimental farms, the multiplication and distribution of seed, and for demonstration and extension work in general , and they control a large staff on their farms or in the districts, which is drawn from the upper and lower subordinate cadres In addition to these two main groups, most provinces have (1) a Deputy Director in charge of cattle-breeding farms and livestock improvement , (2) an Agricultural Engineer, and in some provinces also Assistant Agricultural Engineers, whose functions are the improvement of underground water-supplies and the introduction and charge of tractors and other agricultural implements and machinery , (3) a Horticulturist and his staff, engaged in fruit development—a comparatively recent addition , and (4) a Marketing Officer

49 The highest form of agricultural education is provided at the Imperial agricultural institute It consists of post-graduate courses of about two years' duration, either in agriculture or in one or other of the cognate sciences The standard for admission is the M Sc of an Indian university or a diploma in the first division of an agricultural college

50 There are five agricultural colleges, situated at Poona (Bombay), Coimbatore (Madras), Lyallpur (Punjab), Nagpur (Central Provinces), and Cawnpore (United Provinces) They were all originally controlled by the departments, but have now been affiliated to local universities and are under their control in respect of studies and examinations The courses are for three or four years, depending on the date at which admittance is possible In addition to these colleges, which give degrees equivalent to the B A or B Sc , there is a degree obtainable from Allahabad University in agriculture, the teaching for which is in part provided by the Naini institute, a missionary organization which has specialized in agriculture The selection of applicants for admission to most colleges depends, apart from educational qualifications, on possession of interest in land and on the opportunities which the candidates are likely to have in future of applying their knowledge in practice The courses aim at a general grounding in the theoretical and practical knowledge of agriculture and its cognate sciences , and their general standard, in respect both of the subject-matter and the instruction, compares favourably with that provided in other countries The standard of a pass degree in the third division is not high, but a student passing out in the first division or at the top of the second division has acquired a sound knowledge of scientific agriculture, and is likely to make a good agricultural officer, especially if he comes from an agricultural caste In the early days it was difficult to fill these colleges and the educational standard of recruits was low , but at the present day the standard has risen and applicants far exceed vacancies Though a certain number of students are engaged in farming, the majority, as is the case all over the world, take the course with the hope of securing employment, either in the department or elsewhere The upper subordinate service, whether employed in the research sections or in field service, is entirely recruited from this source

51 Three alternative types of vernacular education in agriculture * have found favour in different provinces These are (1) vocational training in agriculture and allied subjects for a course of one or two years at special schools, which is taken after the student has completed his vernacular or Anglo-vernacular education , (2) pre-vocational training, in which agriculture is taught in the middle or Anglo-vernacular courses in what are termed agricultural bias schools , and (3) short courses in special subjects, primarily of a practical character, conducted at government farms In schools of the first kind the son of a landowner or farmer can find an alternative to the ordinary high-school course and acquire the knowledge necessary for the running of his property At one time there were six such schools in Bombay , there are now two, and two more in the United Provinces Most of the young men thus trained return home to farm their own land, though they are also willing enough to take a post in the lower subordinate service, especially since the slump in agricultural prices Pre-vocational training is common in Bombay and the Punjab, and has been adopted in Bengal and the United Provinces. Sufficient hours are allotted in the time-table of a rural middle school for a theoretical and practical training in nature study and agriculture The school is provided with either a small farm or a garden plot, and a qualified teacher In an irrigated tract the school farm is about six acres in area, sufficient to permit the maintenance of a pair of bullocks, whilst a garden plot covers about an acre and any necessary work requiring bullocks is done by hired animals In dry tracts like the Central Provinces farms would be larger, and would not provide the same facilities for work that are available on irrigated areas , and garden plots are better than farms where water is limited Many of the school farms and plots established in irrigated tracts do well , they are at their best when the school is not entirely composed of day-boys Success depends on the interest of the headmaster and on the training of the teacher This class of school is intended to prevent education from divorcing the peasant boy from his natural surroundings The last type of training is a short practical course held at a government farm or even a college Classes are held in many subjects, such as the use of oil engines and tractors, dairy work, fruit-canning and bottling, and poultry-farming The course lasts from three to six weeks, and is

* Cf Chapter VIII, paras 47–9

open to anybody from the small farmer to the employee of a large landlord

Of these three types of agricultural education, the first and the third are controlled by the department of agriculture and the second by the educational department, though agricultural officers inspect and give guidance on the farm

Research

52 Since the department was created, much useful scientific investigation has been directed to acquiring a better understanding of the soil, to increasing the yield and improving the quality of various plants, and to the discovery of means of defence against insect pests and diseases, which take a heavy toll of the crops each year A great deal has been done to apply theory to practice The theoretical results are to be found in the publications of the Imperial department, and in many provincial bulletins, the practical results are to be found in the fields and on the threshing-floors

53 Government employs a large number of economic botanists and plant-breeders, and attention has been principally devoted to direct plant-improvement, whether by selection from existing forms or by hybridization This, indeed, is the easiest method of helping the cultivator, for a good seed from an improved strain—whether the improvement consists in higher yield, better quality, or greater resistance to this or that adverse factor—costs him little in cash and involves no troublesome change in his methods of cultivation Some of the most important of the improved seeds are the Pusa wheats, which cover large tracts of the Gangetic alluvium, the wheat evolved by the Punjab for their special needs, the Coimbatore sugar-canes of the present day, which occupy 75 per cent of the total area, many of the rices and some, at any rate, of the improved cottons to be found in common cultivation These and many other improved seeds, as well as a large part of recently acquired knowledge in other directions, must be credited to the permanent staff and the normal budget resources of the imperial and provincial departments of agriculture, and much of the recent progress made by both is due to the advice and financial assistance rendered to them by the two external agencies already mentioned, namely the Indian Central Cotton Committee and the Imperial Council of Agricultural Research

54. *The Indian Central Cotton Committee*—The Indian Cotton Committee of 1917–18 had already laid stress on the need for greater correlation of research work in this crop, and for more intensive efforts at its improvement, and as a result of its report the Indian Central Cotton Committee was constituted in 1921 and was given a definite legal status in 1923 by the Indian Cotton Cess Act of that year The Committee consists of representatives of the provincial departments and of cotton merchants, ginners, spinners, and growers Its income consists of the proceeds of a cess of two annas per bale levied on all baled cottons, whether used in India or exported The Committee has worked with marked success in many ways to improve the cotton industry, and most of its expenditure has been devoted to research work with the object of producing better types, investigating causes reacting against plant yield, and setting on foot extension schemes to put research into practice Its efforts are largely responsible for the five million acres which are under improved types of cotton to-day Its annual income is about eight and a half lakhs,* from which, together with reserves created in its earlier years, it maintains an excellent technological laboratory in Bombay for the use both of the trade and the research worker, meets a large share of the cost of the institute of plant industry at Indore, and finances a number of research and other schemes in different tracts by means of grants to provincial Governments

55 (2) *The Imperial Council of Agricultural Research*—The Royal Commission on Agriculture in 1926 drew attention to the lack of cohesion in the matter of research between the Imperial agricultural institute and the provincial centres, and as a remedy suggested the creation of an Imperial Council of Agricultural Research, the primary functions of which would be to promote, guide, and coordinate agricultural and veterinary research and to link this with similar work in other parts of the Empire The Government of India accepted the suggestion with certain modifications and in 1930, the Council, with an advisory board of technical experts, came into being Its funds consisted of a lump sum grant of 26 lakhs and a recurring provision of 7½ lakhs,† of which 5 lakhs is for the promotion of research The Council provides

* Equivalent to £63,750

† Equivalent to £195,000 and £56,250 respectively

funds for schemes relating to soils, crops, and livestock, which may be classed in the following groups

(1) All-India schemes which require a special, but not necessarily a permanent organization, e g sugar technology, locust research, agricultural marketing ; and statistics relating to field experiments and animal husbandry

(2) Schemes requiring temporary expansion of the central research institute, e g the establishment of sub-stations of that institute at Karnal for cane-breeding and plant botany.

(3) Coordinated schemes carried out in several provinces, e g the rice research schemes in Madras, Bengal, the United Provinces, the Central Provinces, and elsewhere , the sugar-cane testing stations , fruit research , and research into dry farming

(4) Schemes carried out in one province or State relating to problems of all-India importance, e g the Bombay fruit-storage scheme

(5) A variety of schemes that are being carried out at universities throughout India by means of funds provided by the Council

56 Sir John Russell, in his recent report on the work of the Council, described most of the schemes in progress as satisfactory and likely to provide useful results The organization thus created has done much to weave agricultural research workers into a closely associated and closely cooperating body, and to put the work on a much higher level

DISTRIBUTION OF PRINCIPAL CROPS IN BRITISH PROVINCES AND LARGER STATES (Figures in million acres)

Crop	Madras	Mysore and Hyderabad	Bombay and Bombay States	Central Provinces and Berar	Bengal	Assam	Bihar and Orissa	United Provinces	Sind	Punjab
Cereals—										
Rice	10 5	1 7	2 4	5 6	21 5	4 8	13 0	6 6	1 1	*
Wheat	*	1 2	2 1	3 7	0 15	*	1 2	7 7	1 0	9 2
Barley	*	*	*	*	0 09	*	1 3	4 0	*	0 7
Juar	4 8	9 3	10 0	4 3	*	*	0 07	2 4	0 04	0 8
Bajra	2 8	2 3	5 3	0 1	*	*	0 07	2 1	0 8	3 0
Maize	0 7	0 7	0 17	0 15	0 07	*	1 7	2 1	*	1 1
Pulses—										
Gram (Bengal)	0 07	2 0 (*a*)	0 7	1 2	0 2	*	1 5	5 5	0 3	4 7
Oilseeds—										
Groundnut	3 2	1 2	1 5	0 18	*	*	*	*	*	*
Sesamum	0 75	0 6	0 5	0 5	0 16	*	0 2	0 25	*	*
Castor	0 27	0 9	0 09	*	*	*	*	*	*	*
Linseed	*	0 3	0 12	1 1	0 12	*	0 6	0 8	*	*
Rape	*	*	*	0 06	0 71	0 34	0 6	2 6	0 1	1 1
Fibres—										
Cotton	2 1	1 8	5 8	4 2	0 05	*	*	0 7	0 8	2 5
Jute	*	*	*	*	2 1	0 15	0 24	*	*	*
Others—										
Sugar	0 12	0 1	0 1	*	0 3	*	0 45	2 1	*	0 47
Tobacco	0 26	0 1	1 6	*	0 3	*	1 4	0 08	*	0 08
Tea	0 07	*	*	*	0 2	0 43	*	*	*	*

Remarks —* Below 50,000 acres (*a*) Includes another species of pulse also called " gram "

CHAPTER V

By R G ALLAN

Agriculture—The Work and Achievements of the Department

Government Farms

1 The provincial Governments maintain a number of farms of their own In all provinces there are three types, namely the research farm, the experimental farm, and the seed and demonstration farm , in the United Provinces there is also a fourth type, the model farm Each kind of farm has its own special kind of functions, but in practice the functions of the different classes tend to overlap Research farms are controlled by specialist officers at headquarters and elsewhere, and are concerned with plant breeding and other similar matters Experimental farms are scattered over the provinces, being usually situated near the headquarters of the Deputy Directors who are in charge of them Their functions are threefold (*a*) the trial of crop varieties, the examination of the results of research under local conditions, and other field experiments , (*b*) the testing of new implements or machines , (*c*) the production of nuclei of improved seed in a condition of complete purity The name " seed and demonstration farm " is misleading, in that people expect it to afford a demonstration of how to run a farm at a profit The primary object of such farms, however, is the multiplication and occasionally the testing of seeds suited to a given tract and the provision of object lessons in the use of some implement or in some improved method of growing a crop Many farms of this kind do, in fact, cover their running expenses , but when it is realized that their buildings are costly and that they must grow the crops locally required, which are not necessarily the most paying crops, there is plainly little chance of their serving as examples of profitable farming This object is attained in the United Provinces by the model farms, which

are usually small farms with cheap buildings, and cultivated for profit in such a way as to illustrate the possibilities of modern conditions

Seed-Supply and Propaganda

2 The research and the experimental farms, as it were, provide the goods which are to fill the shop window propaganda and seed-supply serve to provide the dressing for it The chief functions of a Deputy Director outside his farms are to establish a supply of sound seed, to organize its distribution, and to persuade the villagers to adopt it These functions are extremely important, for without them research work is useless But they are not easy to carry out

3 Let us suppose that a number of types of a particular crop, received from the plant breeder at the research farm, have been tested at an experimental farm, of which two or three types have proved promising These will then be further tried out at various seed and demonstration farms in soils and climatic conditions that differ both from those of the experimental farm and from each other These trials make it possible to decide what particular types are suitable to particular localities Again, crop varieties are affected by the field conditions in which they are grown, thus a type of sugar-cane that does well if the standard of farming is high will do much less well if the standard is low To some extent this is tested by growing the same seed with and without manure, but the best information is obtained by growing it side by side with the local type on the farm of some responsible cultivator, or by financing private persons to run small experimental farms under departmental supervision These data enable an officer to state with certainty that a particular variety in particular conditions are better than other varieties already in cultivation Once he is assured of this, his next task is to arrange for the multiplication of the seed, for which purpose he sets apart a certain area of the government farm, on which the seed is grown and rogued of any impurities Thus a seed nucleus is created, but the amount of seed that can be grown even on a big farm (and many are quite small) is limited If only so much seed be issued to cultivators as can be grown on the farm, and it be left solely to natural spread, the best result that can be expected after two or three years is a mixed and degenerate crop posing as the original variety Accordingly, since holdings in India are chiefly

small, it is imperative, if there is always to be enough seed of the proper quality, to create an organization by which a steady flow of seed can be maintained, from its ultimate source in the government farm The methods of multiplication vary a good deal In the case of cotton, seed grown and ginned on the farm is placed next year with certain substantial growers of good repute, who are called "A-grade registered seed-growers" In due course the produce of this seed is again rogued by the departmental staff, and ginned at a public ginnery under supervision This new seed is then issued to groups or unions of growers, members of a co-operative sale society, its produce, after further roguing and supervised ginning, is used to provide the main stock of seed, which is sold to ordinary growers This process continues from year to year, and there is thus a steady flow along a regular channel, providing good quality and sufficient quantity for full sowing In the Central Provinces the spread of a good variety of wheat is secured by supplying responsible *malguzars* at regular intervals with pure seed from government farms, to be sown on their home farms, whilst their tenants sell their wheat, and obtain each year a fresh supply of seed from the *malguzars* on the *sawai* system * Thus before long the whole village will be sowing the same wheat, which will be approved wheat from the government farm In the Punjab there are big departmental seed farms, which build up a large nucleus by purchasing seed from large estates in the canal colonies, which themselves use government seed, and are thus able to supply seed of good quality in bulk The Punjab organization is thus largely a matter of finance and transport, the department buys up and transports these stocks and resells them in smaller amounts to peasant farmers, either direct or through co-operative societies In the United Provinces the position is more difficult, as the landlord does not, as in the Central Provinces, deal in seed, and there are few big growers who are able and willing to carry over seed from harvest to seed-time and to lend it on *sawai* to tenants In this province the multiplication of seed and its supply is secured by issue of government seed on *sawai* or for cash to registered seed-growers who own fairly large areas, by purchasing their stock, and storing it in government seed-depots, and by reissuing it the following season either to a ring of small growers or to individual farmers

* *Sawai* is repayment at harvest of the seed borrowed, plus an addition for interest of 25 per cent The transaction is in kind

for ordinary sowing Government in the United Provinces maintain about 200 seed depots, which handle between two to three hundred thousand *maunds* * of seed each year

4 Propaganda, or the art of bringing the results of research to the farm, may take several forms It may be an occasional visit of an inspecting officer of the department, who endeavours to persuade one or two of the bigger men to adopt this change or that, in the hope of rousing a spirit of emulation amongst their neighbours It may take the form of conducting a party of villagers to examine the work of a neighbouring government farm Again, annual fairs and exhibitions, to which the cultivators throng, offer opportunities to the department for displaying exhibits and demonstrating the use of implements , large crowds attend these fairs, and at times a new idea sticks or a new implement is adopted In an area where the department has been active, where a certain number of cultivators already grow improved crops or use improved ploughs, a local show, with prizes for the best samples of seed or for ploughing contests, will stir up local interest and bring forcibly to the notice of farmers what some of their neighbours are growing or using , but, on the whole, the value of demonstrations at these fairs is doubtful and their effects seldom lasting. The only effective way of getting villagers to take up some novelty is to demonstrate its value in the village and on the villager's land The ordinary cultivator does not easily believe that the results which he may see on a government farm can be reproduced on his own , nor is he often impressed by the mere fact that his landlord does this or that on his home-farm He is seldom influenced by the written word, since he cannot read, and he has little faith in what he is told unless the teller has already secured his confidence by showing him successful results His attitude is not unreasonable, for he is a small man, and small men cannot afford to experiment or speculate at their own expense He is more likely to take up an innovation which does not involve expenditure, even if it calls for extra effort On the other hand, if he is once convinced of the value of an innovation that costs money, he will as a rule quickly adopt it, provided he has the money or can borrow it

5 Demonstration work cannot be fruitful if it is only spasmodic Occasional visits of an agricultural officer to a

* A *maund* is 82 lb , there are nearly 27⅓ maunds to a ton

village seldom produce lasting results If an officer is to establish a new variety and, still more, a new practice, he must have the right personality and must be recognized by the leading agriculturists as a friend and not as a chance visitor And the chief difficulty in making propaganda effective is the need of establishing contact with a large number of farmers, none of whom are big men, and to maintain that contact

6 Propaganda may be either intensive or extensive If it is intensive, then no attempt will be made to cover a whole tract, attention will be centred on blocks of neighbouring villages A block may consist of eighteen to twenty-four villages, each divided into three groups of six to eight The block is in charge of a lower subordinate officer, assisted by three fieldmen, one to each group A better farming society, or farmers' club,* is established in each village amongst its leading cultivators, the task will be easier if there is already a co-operative credit society Anyone may be enrolled, provided he is regarded as a keen cultivator by the villagers and provided he is willing to conform to the very simple requirements of the society The goods for the shop window are then selected The Deputy Director chooses new types of seed or new methods which are reasonably certain to give good results The next step is to select at a meeting of the society three reliable farmers, who will undertake to set apart two small plots, each of a quarter of an acre or so, in one of which will (for example) be sown some new type of seed and in the other the ordinary village seed Three or more such demonstrations are arranged, each of which is allotted to three representatives Each demonstration is taken up as the time for it arrives The novelty—seed, implement, manure, or whatever it may be—is provided by the fieldman, who maintains regular touch, usually at weekly intervals, with the members of the club, and assists at any critical point The officer in charge of the circle takes every opportunity to arouse the interest of the members in the demonstrations, and so, too, do senior officers when visiting the circle At harvest the crops of these plots are cut and weighed, and the comparative merits of new and old are discussed at a club meeting The experiment involves no extra cost to the grower New seed is given to him in exchange for an equal quantity of the seed he would otherwise have sown If a new

* Cf Chapter X, para 36, and Chapter XII, paras 8, 11.

implement is on trial, it is lent to him If it be a new cake or a new fertilizer, it is supplied to him free Finally, to ensure his confidence, as confidence is everything, he is given a guarantee that if the yield from the new is not at least equal to that of the old, the difference will be made up to him When an experiment with a new variety of seed has succeeded, there is seldom any difficulty in getting a few farmers to exchange their own seed for an equal quantity of the new for use on their own holdings, and in due course to provide all the members with the new seed for future sowings The writer has come across several cases in which this concentrated type of propaganda has had striking success—in the shape of a wholesale acceptance of new strains of rice, sugar-cane, or wheat, of a standard manurial dressing, or of protective crop treatment ; of wholesale efforts to increase home supplies of manure , or of a wholesale demand for a new implement

7 Extensive propaganda usually takes the form of an itinerant cart, which brings improvements into the village, and proves to the cultivator that there is a department of agriculture whose object is to help him , for even to this day there are millions who do not even know of the department's existence, or, if they do, regard it as something outside their horizon These carts are of a special design , they are fitted with lantern and gramophone, charts, selected lectures, selected literature, suitable implements, and sample packets of seed of all kinds, including vegetables , of sulphate, ammonium sulphate, and similar articles—all of which are distributed free The outfit includes a pair of bullocks, a skilled ploughman, and the assistant in charge. These carts proceed on definite circuits, which are notified in advance with the help of the revenue authorities , they halt for a couple of days at key villages at intervals of eight to ten miles, during which time agricultural matters are discussed, the fields of farmers are visited, lantern and other short lectures and demonstrations of implements are given The visit of the cart will be followed up by another visit, either of the cart itself or of some officer, to see that any new implements that may have been ordered are being properly adjusted and that seed orders have been fulfilled Such carts are running for about seven to eight months in a year, and visit a dozen central villages or so per month They may not produce such striking results as concentrated propaganda in village blocks, but as a halt at one village generally attracts a respect-

able number of visitors from neighbouring villages, they have a sufficiently wide influence, and at any rate they have the great advantage of bringing the shop window and its goods to the door of the cultivator *

The Cultivator's Difficulties and the Department's Attempts to remedy them

8 In writing of a country with so great a variety of climates, soils, and agricultural conditions it is difficult to describe in a few pages the chief handicaps of the farmer and the steps taken to reduce them, the possible remedies and the obstacles which obstruct their application The farmer's needs are (1) better seed, (2) better manures, (3) better implements, (4) better methods of growing the crops, (5) better livestock, (6) a better water-supply, and (7) better market facilities

9 (1) *Better seed*—Improved crops are dependent on the introduction of strains which increase the yield, improve the quality, or resist a defect which affects the yield or quality of the local type In the early stages plant improvement was almost entirely confined to the introduction of exotics, notably cotton, sugar-cane, tobacco, and groundnut, and though most of these exotics were failures, traces of them still remain The Cambodia cotton and Dharwar American cottons are instances of widespread types of exotic origin, and also some types of sugar-cane and groundnut which are still in common cultivation The foreign kinds of tobacco that were first introduced into India were of little importance, but most of the present improvements in the cultivation of cigarette-leaf are associated with recently introduced exotics, such as "Adcock and Harrison special" †

* In the United Provinces there are also a number of propaganda motor-vans similarly equipped These also tour the country but keep only to the main roads, whilst the carts penetrate further into the interior where the vans cannot go Some of them have been presented to Government by public-spirited landlords They deal not only with agriculture but with public health matters too See Chapter XII, para 37

† Virginia tobacco is extensively grown in India, chiefly at Guntur in Madras There is now a very large export of unmanufactured cigarette-leaf from India, whilst the imports both of unmanufactured leaf and of manufactured cigarettes have fallen considerably, which indicates the growth of a large cigarette-making industry in India which uses Indian leaf

10 With the establishment of the present department, improvement took the form of the examination and selection first of indigenous varieties and then of such individual plants of the selected varieties as possessed their general characteristics in the highest degree The Pusa wheats, numbers 4 and 12, which to-day occupy large areas in the Gangetic valley, are the result of selections from mixed field-wheats , and many improved rices, cottons, linseeds, and grams have a similar origin This method entails the cultivation of hundreds of individual plants, often exhibiting only slight variations of the particular factors that are being sought, the examination of their progeny, and the fixation of those factors Such selection has limited results , the plant may give a higher yield, but a lower quality, or it may be particularly susceptible to some disease It may possess undesirable as well as desirable characteristics But by hybridization and subsequent selection of individual plants within the products of the cross, it is possible to evolve a plant possessing the good qualities of both parent plants , and though there is still some measure of straight selection, hybridization is predominant The modern Coimbatore canes are the most striking example of this process Hundreds of new types are created at Coimbatore, are tested there and at the sugar-cane farms throughout India, and pass out to provide new types suitable to new provinces, soils, and cultural conditions, which, especially in northern India, take the place of those old indigenous canes which have few good qualities except hardiness * Other examples of improved types now in use, which are the result of hybridization, are the later Pusa and Punjab wheats, certain rices in the United Provinces and elsewhere, groundnut in the Central Provinces and Madras, and cottons in Bombay and the Punjab

11 As a rule, a new type is better than the old type not universally but only in a limited zone The Pusa wheats, for instance, are better than the local wheats in the Gangetic alluvium, but not in the black-cotton soils , the new linseeds are improvements in the Central Provinces, but not in the submontane areas A cotton of outstanding merit in the Punjab is more often than not useless in Gujarat It is this which explains the need for numerous plant-breeding stations

* In sugar-cane reproduction is vegetative, i e by cuttings, and the lengthy process of fixation of character is not so essential as it is in seed-sown plants

and for trial in experimental farms, and even in village plots, before a new type is liberated.

12 One of the great difficulties in deciding which of different types should be introduced is the constant conflict between quantity and quality It is usually easier to introduce a type with a higher yield, for the cultivator can see the yield on the threshing-floor and measure it in so many additional *maunds* at the old price Thus Coimbatore canes are easily introduced because they are so obviously larger than the old indigenous forms In most cases improved yield pays the cultivator best—largely because in existing conditions of marketing he finds it difficult to secure the premium, or at least, the full premium, which is due to better quality It is easy, for instance, to popularize a cotton with much the same lint and staple as those of the old type, but with a higher ginning percentage , but it will not be so easy to introduce a cotton of lower ginning percentage, but with better lint or a longer staple The responsible officer may realize that with a declining market for short staple, the new type will prove more profitable in the long run But the cultivator lives for today and not for tomorrow, and is not likely to select the longer staple unless special marketing arrangements are also made

13 (2) *Better manures* —Almost all Indian soils are deficient in organic matter, whilst the lateritic and red soils are also deficient in phosphoric acid and the former frequently in lime India has been cropped for hundred of years with only a small direct return , and in many tracts yields are low because they depend solely on that minimum of plant food which the soil, left to its own devices, can annually provide After shortage of water, the chief cause which limits crop yield is shortage of manure The supply of cattle-dung manure should be ample, for the bovine population of the country is many times larger than it is in other countries That is not, however, the result, because (*a*) by far the larger proportion of solid manure is dried and used for domestic fuel , and (*b*) because the average farmer does not make as much manure as he could from other sources, nor, indeed, does he get full value out of such supply of livestock manure as remains after his fuel has been collected He relies on this residue, often carelessly gathered, to provide the annual needs of his fields, to which, in some tracts, he adds the manure obtained by folding sheep * As regards the first

* Cf Chapter III, para 8

of these causes, cattle dung is the only available fuel over large tracts of country, and research has shown that on the whole it is more economical to burn it, in spite of the consequent waste of valuable plant food, than to buy coal or charcoal Apart, therefore, from isolated areas in the neighbourhood of forests or collieries, the use of cattle dung as fuel is a necessary evil, for there is little point in increasing the supply of raw food by manuring if that supply cannot be cooked Village demonstration work has accordingly been directed to the second cause of shortage, and attempts have been made (1) to induce the cultivator to realize that dung is not the only manure, but that he can largely increase his supply by collecting waste vegetation, passing this under his bullocks, and then into correctly made pits—in other words, by "composting", (2) to make him realize that the urine of his livestock, if systematically conserved in loose dry earth, is equal to the value of the solid manure which he burns, and (3) where climatic and irrigation conditions permit, to encourage the growth of leguminous species as catchcrops for the purposes of inversion or green manuring

14 Modern composting,* as carried out systematically on government farms, is capable of at least trebling the heavy manure available It is, however, beyond the capacity of the small cultivator, and the most that can, as a rule, be done is to get him to make a suitable pit and to collect therein any weeds or vegetation that come to hand The second method of collecting manure involves nothing more than keeping the earth floor in the cattle stalls loose instead of hard and changing or adding to it periodically With a little persuasion at first, it has been possible to establish the practice in a number of the better farming societies already mentioned But in field demonstrations the method of improving fertility which is most commonly recommended, as being both cheap and easy, is green manuring It is now most common (*a*) in advance of sugar-cane in areas where the ground was formerly left an open fallow, (*b*) before wheat, in areas where irrigation is feasible, and (*c*) before rice, if either early showers (as in Bengal) or irrigation (as in the United Provinces and Madras)

* A composting pit is about 2½ feet deep It is never more than half filled, but water is added from time to time to quicken rotting and every fortnight or so the manure must be turned over It is ready for the field in about three months See Brayne, *Better Villages*, p 67

make it possible to establish a leguminous plant before the heavy rain sets in and transplanting begins *

15 It must not be supposed that Indian cultivators, at all events of the better kind, do not appreciate the value of manure, though they may not know how to increase their supplies, or of possible substitutes What they have they apply with care first to the irrigated land, then to the *kharif* crop, and lastly to some *rabi* crop *Rabi* crops that have been cultivated dry —for instance, wheat on the black soils—never see manure, and the maintenance of fertility is solely dependent on the leguminous crops which appear in the rotation

16 The profitable use of cakes and fertilizers is practically confined to irrigated crops of the more paying kind, such as sugar-cane, onions, chillies, or potatoes, as an addition to an earlier dressing of heavy manure On ordinary staple crops their use is always speculative, as their value is dependent on the nature of the monsoon The only exception is the use of bonemeal or other phosphatic manure on the red and lateritic soils In irrigated areas they would be used more extensively if agricultural loans (*taqavi*) † were more readily advanced for their purchase, or any other means of credit at reasonable rates were available which permitted payment after harvest Lack of ready money is the chief hindrance, even in areas where the water-supply is regular

17 Night-soil plays little part in the manurial scheme of the Indian peasant, chiefly because only very low castes will handle it Certain municipalities sell it in the shape of poudrette or night-soil composts, and in that form it is used by market-gardening castes or occasionally by some big farmer who employs labourers of the proper castes to handle it But most peasants will have nothing to do with it In this respect the Indian farmer differs from the Chinese or the Japanese, who, having much fewer livestock, use night-soil freely

18 (3) *Better implements*—As has been mentioned, on small holdings country implements do all that is required, and the use of a better implement, unless it can be secured on loan or hire, would seldom be economic But the larger and more

* Green manuring consists in sowing a suitable crop which is not cut, but ploughed into the soil There are various suitable crops, *sanai* is one of them

† Granted by Government under the Agriculturists Loans Act of 1884

consolidated the holding, the more desirable becomes the use of more efficient tools and the greater are the results to be expected from them The increased use of iron implements and simple machinery in the village depends partly on the amount of demonstration, partly on the efficiency and push of the demonstrator, and also on the maintenance of an adequate system of repair There is a world of difference between watching an inversion plough at work on a government farm and operating that plough oneself behind one's own bullocks, on one's own soil, and with a capable agent beside one to adjust it and to show how it should be handled Many more improved implements would be used if there was more village demonstration and better salesmanship But in view of the small size of even an economic holding and the cultivator's lack of mechanical sense, the implement must be cheap and must be simple, even if its simplicity should rob it of some of the extra advantages which a good European or American farmer would appreciate If by slight adjustment or attention it can be made to do several jobs, so much the better

19 Modern types of field and stockyard equipment are most commonly used in certain parts of the Deccan and in the canal colonies of the Punjab Thirty years ago there was scarcely an iron implement in use anywhere Today, on the black soils heavy inversion ploughs are freely used, which have replaced the old indigenous ploughs drawn by four or six pairs of bullocks for periodic deep-ploughing In these parts even small men can use such ploughs, because they are kept for hire by the *taluka* * agricultural societies The iron three-roller mill for crushing sugar-cane has now almost entirely replaced its wooden predecessor all over India, with great additional efficiency in extraction In the Punjab cheap fodder-cutters locally made are to be found in numbers in most canal colonies , the use of chaffing as increasing the value of fodder is better recognized here than in most places Winnowers are now common in the wheat tract of the Central Provinces ' In the easily worked soils of the alluvial areas light inversion ploughs, built on the English model, are steadily on the increase , there are tens of thousands of them in the United Provinces alone Such a plough and a light three-tined grubber, like the Baroda cultivator's hoe, are practically

* A subdivision of a district in Bombay and elsewhere , called *tahsil* in other provinces

all the modern equipment that five-acre farms require There has always been controversy regarding the economic value of the inversion as compared with the indigenous plough and of deep ploughing in the heavy black soils. Except for a periodical stirring of the soil and the removal of perennial weeds, deep ploughing in these soils as a regular practice is neither necessary nor economical, and in general the use of inversion ploughs should depend on the fertility of the soil, and the manner in which it is maintained Where soils are poor and there is little or no return either from manure or the presence of leguminous crops in the rotation, regular inversion ploughing, though it may stimulate the yield temporarily, will eventually do damage But in all other cases everything is in favour of the wider use of such ploughs

20 (4) *Better methods of growing crops* —Apart from better tillage and better manuring, demonstration has rarely been responsible for the introduction of agricultural improvements One instance is the gradual extension of line-sowing in *kharif* crops, accompanied by bullock-hoeing, from southern India to parts of northern India, in place of sowing broadcast or behind the plough Another instance in the case of sugar-cane is the adoption of ridge-and-furrow planting, and wider spacing between the lines, which is required by the larger modern canes Such innovations as these can only be effected by intensive work in the villages themselves

21 (5) *Better livestock*—(*a*) *bovine* —India has an enormous livestock population—bovine (oxen and buffaloes), ovine (sheep and goats), and other classes (horses, donkeys, and camels). According to the last cattle census the bovine population, including that of Indian States, is approximately 190 millions, the ovine population is about 90 millions, whilst horses, donkeys, and camels number about five millions India possesses between one-third and one-fourth of the total bovine population of the world, which is estimated at 690 millions , about three times that of the United States and of the Soviet Union , and thirty times that of the United Kingdom Though the value of the products of any individual animal may be low, the total value is very considerable , for instance, the annual milk products of the country are estimated at 300 crores of rupees * per annum, which is roughly equal to the value of the Indian rice crop and three or four times the value of Indian wheat , whilst hides

* £225,000,000

and skins are worth another 30 crores, which is more than the value of India's sugar-cane products Moreover, the whole of India's cultivation rests on the bovine population , bullock labour represents an expenditure of between 400 and 500 crores, whilst the estimated value of the fuel and manure which they provide amounts to another 270 crores At a rough estimate, the bovine population contributes about 1,000 crores of rupees, or 750 millions sterling, to the agricultural income of the country

22 The cattle are of two kinds, oxen and buffaloes As has been already explained,* the male is of special importance in the former class, as supplying the agricultural power of the country, though in certain breeds the female also has a value as a milch animal In the second class the female is of special importance, as providing milk, *ghi*, and other animal products, though the male is often used as a draught animal, especially in the rice tracts On an average, the she-buffalo gives rather more than twice the milk of a cow at each lactation Of the total number of cattle in British India, 21 per cent are to be found in the United Provinces, 16 per cent in Bengal, 50 per cent in Madras, and only 8 per cent in the Central Provinces and Bombay † The poorest and most degenerate stock are found in the areas round the head of the Bay of Bengal They appear to coincide with the lateritic soils and also with the areas of highest general rainfall, namely, the east of the Central Provinces, Bengal, Assam, Bihar, and Orissa The poor types of stock found in Bengal account for their large number , in the drier tracts of the Central Provinces, Bombay, and northern India there are better types both of cattle and buffaloes

23 Most provinces have one or more distinctive breeds, though the actual number of pure-bred cattle in the villages are relatively few, and become fewer the further the village is from the breeding centres There are two kinds of breed—those in which the males are of chief importance as draught animals and those in which the females are of chief importance as milch animals. Again, amongst the working breeds there are some which are valuable for heavy draught and others whose chief quality is rapidity of movement, being lighter in

* See Chapter I, para 49

† The ratio to a cultivated acre ranges from 105 per 100 acres in the United Provinces to 36 per 100 in Bombay

the body and longer in the leg In some of these breeds the cows, if carefully selected and properly fed, give considerable quantities of milk

24 The best known milking breeds are the Sindhi and Thar Parkar (Sind), the Sahiwal * (Punjab), the Gir (Kathiawar), and the Ongole (Madras), whilst the best working breeds are the Hariana † (Punjab), the Malvi (Central India), the Kankrej (Gujarat), the Gaolao (Central Provinces), the Kistna Valley (Bombay and Madras),‡ and the Amrit Mahal (Mysore) The Malvi is the typical heavy-weight plough bullock, at its best in preparing the black soils for *rabi*, whilst the Gaolao, Kankrej, and Amrit Mahal are fast-moving animals particularly suited to the shallow cultivation and hoeing requirements of cotton and to cart-work The popularity of one breed or another in any particular locality chiefly depends on the nature of the farm-work and especially the general depth of ploughing required, and is also influenced by the hardiness of the breed The Malvi, the Gaolao, and the Amrit Mahal are purely working breeds Amongst the Hariana and the Kankrej are to be found good milch cows, probably the Kankrej is the finest breed for general agricultural purposes in India

25 Most provinces have some breed of buffalo of their own The best known breeds are (1) the Murroh or Delhi buffalo from the Rohtak district, which is common in the Punjab, the west of the United Provinces, Rajputana, and North Sind, it is a heavy-built type, with a ram-like horn, capable of giving thirty to forty pounds of milk, (2) the Jafarabadi of Kathiawar, a badly shaped animal, but also capable of giving thirty to forty pounds, (3) the Surati or Charotar breed of Gujarat, a smaller buffalo, but the mainstay of the Gujarat milk industry, two or three of which are kept by every substantial cultivator, and (4) the Mehsana breed, which is probably a cross between the Delhi and the Surati, good milkers, and more economical to maintain, as being less heavy, than the Delhi type The animals in the big dairy stables of Bombay are mostly of the Mehsana and Delhi breeds § The Deccan and Central India breeds have a

* Also called Montgomery

† Also called Hansi

‡ Also called Nellore in Madras

§ The number of animals sent annually to the Bombay stables is put at an average of 14,000

long, pointed horn and, compared with the other breeds mentioned, give little milk Though buffaloes thrive well in districts of heavy rainfall, the best are found in districts of moderate to light rainfall

26 The total number of ordinary cattle varies, as has been noted, from province to province, though the ratio of bullocks to cows and other cattle is much the same everywhere, in spite of different conditions This indicates a similarity in the method of management , and as the number of cattle in a district is regulated by the need for bullocks, the worse are the conditions for rearing cattle, the larger is the number of cattle of all kinds that the cultivator must keep This is a situation which can only go from bad to worse, for the more cattle there are in a given tract the greater is the drain on the fodder supply, whether natural or cultivated In India it is generally true that the larger the amount of free grazing the more numerous are the animals and the worse is their general standard

27 The village bullock is obtained from two sources—the professional breeders and the cultivator's own cows The professional breeders inhabit the less populated and cultivated tracts, such as Central India, certain parts of the Punjab, Sind, Kathiawar, and northern Gujarat Cultivators' cows are found all over the country, but are relatively few where professional breeders are many Thus, in northern Gujarat it is rare to find a cultivator in possession of a cow In the Gangetic valley draught animals are partly home-bred, partly imported by dealers from the Punjab In the east of the Central Provinces they are for the most part home-bred In general, the home-bred bullock, the result of uncontrolled breeding by immature or degenerate sires, is a miserable animal, and also ill-fed, since it depends for its food either on an overcrowded common grazing area which produces little or nothing, or on what it can glean from the stubble of harvested fields The animal of the professional breeder is relatively well bred, from a selected sire , and as the young males are castrated and sold, no damage is done by immature mating, such as occurs in the mixed herd which wanders out from the village to the grazing grounds If the monsoon is favourable, there is probably sufficient grass , but unless there is some special stock of fodder or of cereal straw, or other reserve to tide over the lean season from March to July, the development of the stock will suffer It was probably much easier

to feed livestock in the semi-nomadic method of cattle-raising of the past than it is now There is no doubt that in some tracts the area of the common grass-lands is diminishing as cultivation expands and that what is left of them is not of the same quality as it once was And that is a serious matter, for most Indian bullocks get little but grass to eat from the day when they are weaned to the day when they are set to work

28 The various defects of Indian livestock just mentioned have been realized from the earliest days of the department of agriculture, to whom livestock improvement was entrusted in all provinces except the Punjab From 1906–1920 cattle-breeding was in the hands of the Deputy Directors, and in most provinces cattle-breeding farms were established, which dealt with the local breeds of importance, though often on too small a scale It was not till the service was re-established after the war that the necessity was realized of employing a full-time livestock officer, and of thus ensuring some semblance of a continuous policy in respect of breeding Such an officer was appointed in most of the major provinces , and at this time, or shortly afterwards, most departments materially increased their herds, and were able to provide bulls in increasing quantity There are now thirty-nine cattle-breeding farms in India In the Punjab, breeding at Hissar and elsewhere had the advantage of being controlled in the early stages by a veterinary officer with a knowledge of stock-breeding, and also of operating on a large scale The first real movement towards improving the village livestock took place in the Punjab Bulls from government farms were sent out to the district boards for village service, on condition that wherever such a bull was sent all scrub bulls should be castrated There is no doubt that this steady output of bulls caused steady improvement in a tract which has the advantage of including fodder crops to some extent in the crop rotation

29 The table on the next page shows the progress made in the annual issue of bulls from government breeding-farms The marked superiority of the service in the Punjab is obvious , but in the United Provinces progress has been better than the figures indicate The policy in this province is to reserve farm bulls for issue in certain reserved tracts where cattle-breeding is of importance, and to purchase animals from the Punjab to serve as sires for issue to the ordinary village herds The bulls in service at the present time are 200 in Assam, 487 in Bengal, 289 in Bombay, 137 in the Central Provinces, 181 in

Madras, 5,035 in the Punjab, and 3,448 in the United Provinces Both villages and individuals are more willing to take over and maintain a bull in the Punjab and the United Provinces than they are in the cotton tracts of the Central Provinces and Bombay In most provinces other than the Punjab and the United Provinces, a bull is issued on what is called the "premium system," whereby Government meets half the original cost and makes annual provision for three years towards its maintenance

Province	1925–26	1929–30	1934–35	1936–37
Assam	7	15	36	42
Bengal	5	13	30	33
Bombay	30	17	28	23
Central Provinces	52	41	62	36
Madras	20	74	69	103
Punjab	370	336	551	616
United Provinces	75	145	142	141

30 Little has yet been done to improve the grass-lands, apart from a certain amount of departmental research in Bombay and the Central Provintes and certain practical experiments carried out by the forest department in the United Provinces regarding the control of grazing on *usar* * and ravine lands, which have brought about an increase in the yield of hay Cultivators, however, are now beginning to realize the advantage of growing fodder crops on their farms , they have been stimulated partly by the need for greater supplies in the off-season, partly by their increasing interest in the dairy side of animal husbandry, and partly by demonstrations of silage as a means of carrying over *kharif* fodders and surplus monsoon grass into the hot season Many new fodders of considerable promise are in the experimental stage, whilst others are now well established, such as berseem in northern India and Napier grass, guinea grass, and lucerne in various irrigated tracts

31 The Indian cattle-breeder has for generations concentrated his attention on the working bullock and the female

* See Chapter I, para 7

has been regarded merely as the vehicle of reproduction, unless, indeed, she were a better milch animal than usual She has had less than her fair share of food , her progeny, especially her female progeny, have been deprived of much of her milk , in short, the cow, however sacred, has not had much of a chance In certain breeds matters have gone so far that the cow is now unlikely ever to give much milk Breeding for work and breeding for milk are ultimately antagonistic , muscle and milk do not go together And the department has so far followed the Indian cattle-breeder's example It has devoted itself to the improvement of the working breeds and done relatively little for the milking breeds

32 As the Indian cow was generally in low esteem as a milker, the first move towards improving the milk supplies was by mating with imported bulls—Ayrshire, Short-horn, and Holstein This certainly led to enormous increases in the yield of the cross-bred progeny and became recognized mating in the military dairy herds But it became clear at an early date that the progeny were peculiarly susceptible to the many epizootic diseases of India and that for the most part they deteriorated in the second generation , and this means of improving the Indian cow has proved a failure. More recently, however, attempts have been made to create pure-bred herds of good milking types at Pusa, Lyallpur, Firozpur, and elsewhere , there has been steady progress, and the milk yield of these herds, mostly Sindhi and Sahiwal, has year by year increased Thus, the Lyallpur herd advanced from an average of 5 6 lb per day in twenty-two years to 17 15 lb , and the Pusa herd in twenty years from 5 8 lb to 18 5 lb

33 There was at one time a tendency to create " dual purpose " breeds, with males capable of doing harder work and females capable of giving more milk , but though in the Kankrej, for instance, a higher milk yield can be secured without affecting the working ability of the male, in most breeds the increase in milk must generally be limited if working efficiency is to remain high Cattle-breeding policy, therefore, is likely to take the form of improving certain working breeds in the less populated tracts and certain milking breeds in tracts where the population is thicker, where urban markets are available, and where the cultivation of fodder crops is possible Less attention has been given to buffalo-breeding ; possibly

the original buffalo was an animal of higher standard than the original bullock

34 The estimated amount of milk that is produced per annum is 690 million *maunds* * Statistics, which are available only for certain areas, show that about 33 million cows are responsible for 240 million *maunds* and 14 million she-buffaloes for 220 million *maunds* The milk of the latter is considerably richer in butter fats, and is thus the chief source of *ghi* But the consumption of milk and its products is extremely low In European countries it averages 36 oz per head per day, in India it averages 7 oz, from a minimum of 3 2 in Bengal to 15 in northern India Of the total output of 690 million *maunds*, 215 millions are used as fluid milk, 364 as *ghi*, and the rest in other forms Both milk and *ghi*, particularly in urban areas, are adulterated—the former by free use of water, the latter by admixture with other vegetable fats India exports about 24,000 cwt of *ghi*, chiefly to Malaya, and imports about 8,000 cwt of butter (an import which has steadily risen from 1,000 cwt to the present figure in the last ten years), 10,000 cwt of cheese, and two million cwt of various forms of preserved milk, for the most part sweetened and condensed

35 (*b*) *Ovine*—The total population of sheep and goats is 90 million head, of which about one-third are found in Madras Apart from a certain number of experiments with merino rams, so as to improve the fleece of these sheep, very little attention was given to these animals till the Council of Agricultural Research began to allot funds in certain provinces for breeding work in both classes Little has so far been achieved, but the indications are that considerable improvements are possible The supply of goats' milk is capable of considerable increase, and as the upkeep of a goat is cheap, it will help to solve the problem of the village milk-supply

36 (*c*) *Poultry*—Poultry is another class of livestock which is gaining in importance The first active efforts to improve the indigenous poultry on any large scale were made in the United Provinces shortly after the end of the war Poultry improvement now figures in the programmes of many provinces and States, and has been in some cases stimulated by grants made by the Council of Agricultural Research The movement towards rural uplift which has been prominent in the past five years has also intensified interest in poultry-keeping

* A liquid *maund* is about 7½ gallons

as a subsidiary industry, at all events in villages where Muhammadans or low-caste Hindus predominate, for the better castes will have nothing to do with it * It is possible to effect considerable improvements in the laying capacity, the size of the egg, and the size of the bird, either by replacing the indigenous birds altogether or by mating them with cocks of overseas breeds The White Leghorn and the Rhode Island Red are most common, and both do well Poultry disease is the chief obstacle to expansion, but this will be dealt with at an institute of animal husbandry which is on the eve of establishment at Izatnagar near Bareilly in the United Provinces

37 *The Veterinary Service* —The need for a civil veterinary department was first suggested in 1868, but the service was not established till 1891 At the present day it consists of 109 gazetted officers of the Indian Veterinary Service and provincial services consisting of Veterinary Inspectors and Assistant Veterinary Surgeons to the number of 1650 The largest department is in the Punjab, with 36 of the first and 408 of the second class , but in this province cattle-breeding is one of its functions, whereas in most provinces the cattle-breeding staff is under the department of agriculture The Commission on Agriculture pointed out how inadequate was such a staff to deal with the injuries, sickness, and, above all, the devastating epizootic diseases to which the livestock of the country are subject, and insisted that the Indian service should be increased three times and the provincial services four times At present, there is one veterinary surgeon for approximately every 1;200,000 head of cattle and one hospital or dispensary assistant to every 100,000 All the major provinces employ a small staff of fully qualified veterinary surgeons, one of whom is the Director of Veterinary Services The arrangements for controlling and paying the subordinate service vary considerably

38 Veterinary research is chiefly carried out at the institute at Muktesar in the Kumaun hills, where much valuable work on animal disease has been done It provides the greater part of the serum required for preventive inoculation against rinderpest In recent years subsidiary research laboratories have been established in most provinces, and the Council of Agricultural Research has provided the pay of provincial Disease Investigating Officers, who are engaged

* Poultry are regarded as unclean by all but relatively low castes.

in the local study of the more important causes of illness They are additional to the regular staff

39 The principal duties of the service are the control and prevention of the major epidemic diseases, the castration of bulls, and the general treatment of ordinary ailments and injuries The most prevalent diseases are rinderpest, haemorrhagic septicaemia, and foot-and-mouth disease, though there are a number of others which occasionally cause heavy losses Control has improved enormously Thus vaccination with goat virus, at a very low cost, will prevent an attack of rinderpest for several years Haemorrhagic septicaemia, from which the buffalo chiefly suffers during a monsoon, can be prevented by inoculation before the epidemic season sets in Legislation to enforce the early report of diseases and the control of movements of livestock has also facilitated the handling of epidemics The number of castrations of undesirable males, especially in breeding areas, has doubled in the last eight years, and a much more general use is now made of the local dispensary if one is anywhere within range The Council of Agricultural Research, which includes a veterinary expert, has provided funds for the foundation of an institute of animal husbandry, which will be chiefly engaged in considering the problems of nutrition and disease , for the dairy research institute at Bangalore , and for schemes relating to the nutrition, diseases, and improvement of sheep, goats, and poultry

40 (6) *Better water-supply* —The principal features of the monsoon and the principal types of artificial irrigation have already been described * Here, it will suffice to recall certain salient points. Firstly, from October to June most of India gets little or no rain Secondly, the monsoon rainfall lasts from June to September , but the quantity of it varies greatly in different parts of India Thirdly, the *kharif* must be matured and the *rabi* must be sown on the water provided by the rainfall Fourthly, the rainfall is often short or ill-distributed and must then be supplemented by artificial supplies the value of which is inestimable in most parts of India The only tracts that can do without artificial irrigation are the western coastline the Gangetic delta, and the black-soil areas The principal types of artificial irrigation are canals, tanks, and wells, about which it is unnecessary to say more than has already been

* Chapter I, paras. 26-31

said * There are, however, other sources, notably streams † and swamps (*jhils*), which are freely used by cultivators whenever they are accessible The cultivator's method of raising water from these sources is peculiarly laborious Two ropes are attached to each side of a shallow basket (*dugla*), which is made of plaited strips of either bamboo or leather, the ropes are held by labourers, one to each pair, they dip the basket into the stream, and swing it up on to a higher level, at the same time tilting the water out of it. If necessary the process is repeated two or three times

41 The part irrigation plays in the rural economy of different places varies greatly, but it is of importance chiefly in Sind, the Punjab, the North-West Frontier Province, the United Provinces, Bihar, and Madras Of the 55 million acres which are protected by irrigation of some kind, over 45 million are in these tracts, or (including the double-cropped areas) 56 million The figures are shown in the table below.

Province	Areas in Thousands of Acres		Percentage of Cultivated Area that is Irrigated	Nature of Soil
	Cultivated	Irrigated		
Punjab . . .	27,400	15,008	54 7	Alluvial
Sind . . .	5,193	4,141	79 7	,,
North-West Frontier Province	2,120	1,010	47 6	,,
United Provinces	36,000	10,800	30 0	,,
Bihar .	19,360	4,460	23 0	,,
Madras . .	32,000	8,000	27 6	Alluvial and red soils
Bombay and Central Provinces	53,000	2,300	4 3	Chiefly black soils

* See Chapter I, paras 38 *et seq*

† The streams in question are usually such as are too small or flow at too low a level to be used for feeding canal-systems On two such streams in the United Provinces, namely the Ramganga and the Kali Nadi (Black River), both tributaries of the Ganges, electrically-driven pumping stations have been installed, and they have thus been brought into the general canal-system But even when cheap power is available, such pumping schemes seldom pay, and they are not likely to be used if any other method of irrigation is available.

The total irrigated areas in British India in 1934–5 were, in round figures, 25 million acres from canals (both government and private), 6 million acres from tanks, 12½ million acres from wells, with 5½ million acres from other sources—in all, 49 million acres

42 It has already been said that most departments of agriculture include an agricultural engineering section This section has a variety of functions—the designing of improved implements and the introduction and control of agricultural machinery, such as oil engines, pumping plants, and tractor ploughs, but its most important duty is the improvement and increase of subsoil water-supplies The amount of improvement that these engineering sections can achieve depends partly on their opportunities These are most numerous in Bihar, the east of the Punjab, and the United Provinces—in particular, the last Their work takes the form of tube-well construction and the improvement of open wells A development mentioned in an earlier chapter,* whereby the Government of the United Provinces has undertaken the building of electrically-driven tube wells in its western districts, is the outcome of earlier work of the same kind done by the Agricultural Engineers on behalf of large landowners At the present day this agency, either on behalf of the irrigation department, who are in charge of the State tube wells just mentioned, or for private owners, builds over 450 new tube wells per annum, whilst the Punjab and Bihar engineering sections provide some 250 wells between them The improvement of existing open wells is of little less importance In most of them the water level is relatively high But experience has shown that in the alluvial areas the outturn of such wells can be improved by about 1,500 gallons per hour by boring from 60 feet to 80 feet in the bottom of the existing well This type of improvement is commonest in the United Provinces, Madras, and Bihar The Agricultural Engineers of the United Provinces sink over 100,000 feet per annum in about 1,800 wells, and in about 75 per cent of them succeed in adding 1,500 gallons or more per hour to the old supply. Thus, in a period of five years they can add over ten million gallons per hour to the water-supply of a province—an addition which has no small effect on its safety and prosperity Similar results, though not so extensive, have been obtained in Madras

* See Chapter I, para 39

and Bihar But be it noted that whereas the discharge of an open well, even after it has been improved in the manner described, is not likely to exceed 2,500 to 3,000 gallons per hour, the average State tube well discharges 1½ cusecs—or 585 gallons *per minute* *

43 In addition to increasing the water-supply, much attention has been devoted to the better use of irrigation and the better conservation of the natural rainfall It is a well-known fact that the standard of farming is usually higher if irrigation is from a well than if it is from a canal This may, to some slight extent, be due to the nature of the water , but it is chiefly due to the fact that the farmer, having had to work himself to get his water, takes more trouble and is less wasteful in using it Well irrigation, measured in man and bullock-power, is infinitely more expensive even with the best type of lift than canal irrigation Canal rates in the Punjab are 12 rupees per acre for cane, 6¼ rupees for cotton, and 5 rupees for wheat per season In the United Provinces cane costs 10 rupees and wheat 5 rupees per acre, if irrigated from the canals , if it is irrigated from the State tube wells, where water is sold not by area but volumetrically, cane will cost possibly 15 rupees per acre per season , but if it be irrigated from even a shallow open well, the cost will probably be 25 rupees Differences of this kind make the cultivator more careful in the use of water If he is using canal water, he is also apt to over-irrigate when his turn comes , but continuous propaganda is having its effect, and on the older canals it is calculated that the same volume of water now supplies 30 per cent more land than it did forty years ago

44 Conservation of rainfall in the soil is most necessary in those tracts where rainfall is often short and irrigation is not available, such as the south of Bombay, Hyderabad, and parts of Madras Three schemes of dry farming † have been financed by the Council of Agricultural Research, which involve both increased water storage and selection of crop varieties which can mature with less irrigation In tracts like Kathiawar, with a rainfall of 15 to 20 inches, many of the principles of dry farming, viz deeper tillage and frequent hoeing, which facilitate the retention of moisture, have always been practised

* A cubic foot of water is 6¼ gallons

† " Dry farming " does not imply complete absence of water, but absence of any water except such as is provided by the rainfall

45 One of the farmer's greatest difficulties is a weak and irregular rainfall Not only does it decrease the food supplies, but it leads to those calamities which increase indebtedness. Further, a limited and seasonal rainfall in, for instance, the black-soil tracts means heavy work at one time and at another comparative idleness for months on end, so that many hours of the nation's time are wasted Irrigation of any kind, especially perennial irrigation, helps the farmer to avoid debt, above all, it enables him to keep himself busy on his land most of the year, and the extension of irrigation facilities both increases the people's prosperity and ensures the State's revenue.

46 (7) *Better marketing facilities*—Good communications and speedier means of transport are of great importance to the cultivator, for on these depend his opportunities of disposing favourably of his produce and, to some extent, the decision of what he can most profitably grow The gradual substitution of farming for market for the older farming for subsistence is undoubtedly due in the more fertile tracts to the improvements in transport, both by rail and road, which have taken place during the last three-quarters of a century * Moreover, such improvements enable produce to be moved quickly and cheaply to places where demand exists, thus tending to equalize the prices of particular products, especially those used in the country. The days have almost passed when after a bumper harvest the produce was sold locally for next to nothing and a short harvest made even necessities unobtainable Thanks to improved communications the cultivator is now no longer in the hands of the local dealer in the matter of price, the time spent and the strain on his bullocks in placing his produce on the market are reduced; and he can now often profitably cultivate market-garden crops or maintain dairy stock as a regular part of his farming operations But though progress has been considerable, much still remains to be done, as a comparison of figures relating to India and the United States of America will show Firstly, the density of population per square mile in British India † is 270, in the United States it is 41 In India the mileage of metalled roads to every 100 square miles is 5 4 and 22 to every 100,000 of population, whilst similar figures for roads of all kinds are 20 2 and 84.

* Cf Chapter I, paras 57 *et seq*

† Excluding Burma

In the United States the mileage of metalled roads to 100 square miles is 12 and to 100,000 of population is 383 , for all roads the figures are 80 and 2,550 The importance of further improvement is fully realized by Government, and in most provinces there are now communication boards With the rapid expansion of motor traffic, development and improvement of the main arterial and secondary roads is essential , but the development of the country roads is of even greater importance to the cultivator, since they are the connecting links between both the village and the metalled roads and between one village and another An improved main road is of little use to him if his access to it is hampered or impossible, as it often is in the heavier soils during the monsoon

47 The departments of agriculture have done much to improve the quality and to increase the quantity of the farmer's outturn, but it is only of recent years that anything has been done to enable him to get a better price for the better quality or the additional outturn To a certain extent an increased yield on his old price-basis has provided him with more to spend , but he does not always reap the benefit of increased value due to better quality, especially when a reduction in yield was necessary to secure it To some extent, especially in respect of cotton, this failure to get an adequate premium on quality has been met by propaganda, by the organization of special auction sales by the department, and by attempts at co-operative marketing The fact, however, remains that in general the Indian farmer markets his crop under great disadvantages , and till these can be removed, he will have difficulty in reaping the full benefit of better yield and still more of better quality He is, for the most part, a small farmer , except in certain areas he is still at heart a subsistence farmer , and he has only a small and intermittent supply of produce for sale His inherited experience centres in the work of his holding, and except in certain cotton-growing areas he knows little of commercial marketing He is seldom in a position to hold up his crop after the harvest, when prices rule lowest , and even if he can afford to hold it up, he has not sufficient storage for the purpose His standard of literacy is low He is frequently heavily indebted to the person through whom his produce will ultimately reach the market Communications are even yet poor, causing him not infrequently to dispose of his surplus to an itinerant buyer, who is probably working without competition and invariably has a better

knowledge than the farmer of the true value of the crop It is unlikely that he is in touch with a regulated market, as such are relatively few , and so if he does take his crop to a market, it will probably be one in which he will be the victim of dishonest practices, and in any case will be selling his produce with little knowledge of the rates ruling in the larger markets

48 Of his possible bargains, the worst is enforced sale to the village *bania*, part moneylender, part grain-dealer, who is his principal creditor , and until the removal of his indebtedness frees him from the *bania*'s clutches, he will be unable to take advantage of any marketing improvements that may be organized Sale to itinerant buyers is also unprofitable, though that system is dying out where communications have been improved Sale in some badly organized market is better than this, even though the scales are probably manipulated against him, though deductions for charitable and other objects are levied, though large samples are taken from him for which he is not paid, and though the broker through whom he sells favours the purchaser

49 The Commission on Agriculture emphasized strongly the need for regulated markets, working under strict rules to secure fair play , for standardized weights and measures, which still vary considerably from province to province and market to market , for better storage facilities , for detailed market surveys , and for the appointing to the provincial departments of marketing experts and other marketing officers The Central Banking Enquiry Committee also pointed out the need for some central agency to advise and assist in coordinating marketing activities, particularly in the case of agricultural produce intended for export , for there have often been adverse comments regarding exports—with the exception of oilseeds—on the score of adulteration, dirt, and inferior processing Accordingly, the Government of India in 1935 created a strong central marketing staff and gave financial assistance to the provincial Governments so that they might employ an adequate staff of marketing officers, both superior and subordinate Their work consists of investigation, development, and the provision of grade standards The investigation consists of a close survey throughout the country of the most important commodities, grouped in subdivisions of crops and livestock products Certain of these enquiries have now been completed and others are still in progress

The report on each commodity describes existing methods of marketing and trade, makes suggestions relative to such matters as grades, containers, packing, and tentative proposals regarding improvements in market organization Further development and provision of grade standards must naturally await the result of these surveys The staff concerned with this work consists at the centre of the Agricultural Marketing Adviser, six senior and twelve assistant Marketing Officers In addition there are forty-seven Marketing Officers in the provinces and thirty-six in the Indian States An organized attempt, in fact, is now being made to rectify present defects

50 To enable the cultivator to secure a full premium for an approved quality, the most effective method is to establish a co-operative society which will teach the cultivator how to prepare his produce, will collect sufficient produce at one centre to permit of grading, and bring the producer into direct touch with the ultimate consumer Little progress has so far been achieved in this class of work, except perhaps in connection with cotton Societies for the sale of cotton, gur, tobacco, mangoes, and rice, are found in Bombay, and the cotton societies have made good progress, their sales of improved varieties have steadily risen in value, till it is now worth over 50 lakhs The other societies, however, are not in so flourishing a state In the United Provinces there is a steady increase in co-operative sale of sugar-cane to the factories, and also of *ghi*

Horticulture *

51 Since the dietary of the Indian people is chiefly, and often exclusively, vegetarian, the cultivation of vegetables and fruit is a matter of considerable importance † The ordinary peasant, farming as he does for subsistence, usually provides his household requirements from his own holding All over the country, wherever the water-supply is sufficient, innumerable cultivators possess each his tiny kitchen-garden ‡ Many cultivators also possess an odd fruit tree or two, whilst others

* The following paragraphs are principally based on the Agricultural Commission's *Report*, Chap XVII, which deals with the subject at length

† The dietetic aspect of this matter is examined in Chapter VI, para 46 *et seq*, especially paras 55 and 58, where the relations between fruit and vegetables and the various vitamins is discussed

‡ *Cf* Chapter IV, para 21 It is also a common practice to grow cucumbers, marrows, and other members of the gourd family on the house-roof

gather the products of trees and bushes that grow wild in uncultivated areas I am not here concerned, however, with small-scale cultivation for domestic consumption, but with large-scale cultivation for market At present the area under fruit and vegetables is small in 1925–26, it amounted only to some 5 2 million acres out of a total cropped area of 257 million acres,* and in 1933–4 it had fallen to 4 9 million acres, though the total area had risen to 267 million † There is accordingly room for development, and there is also need for it, since the urban demand for fruit and vegetables has increased considerably in recent years The experience of other countries shows that the substitution of horticultural crops for some part of the existing field crops would materially advance the prosperity of the cultivator Nor is the change unprecedented, for it amounts to no more than the replacement of food crops by money crops It remains to consider the difficulties in the way of such a change, and the best means of minimizing or removing them

52 *Vegetables* —Many sorts of vegetables, both indigenous and exotic, are grown in India ‡ Commercial production is chiefly in the hands of certain castes which specialize in market-gardening § The holdings are small, seldom exceeding three acres, but under a system of highly intensive cultivation they yield several crops during the year The expenditure of these market-gardeners in seed, manure, and irrigation, is large, but so, too, are their profits They are not only industrious but enterprising and skilful, as is shown by their readiness to respond to the constantly growing demand for high-class European vegetables, and by the excellence of their produce There is, indeed, little that anybody can teach them about their special occupation But they are small farmers, and suffer from the same disabilities as other small farmers. They

* Agricultural Commission, *Report*, p 589

† See diagram in para 2 above To these figures, however, should be added the area under condiments and spices, which in 1925–26 amounted to 1 3 million acres

‡ Roots, such as the carrot, onion, turnip, radish, potato, and yam many kinds of peas, beans, and pulses (though these are usually reckoned as field-crops) the cabbage, cauliflower, and other species of the same family pumpkins, cucumbers, and other gourds condiments and spices, notably chillies, garlic, ginger, and turmeric miscellaneous vegetables, such as artichoke, brinjal, lettuce, spinach and tomato

§ Such are the Kachhi, Koiri, and Murao in northern India Tobacco is also one of their specialities *Cf* Chapter IV, para 21



CATTLE AT WORK
Threshing wheat near Kohat



CATTLE AT WORK

Crushing sugar-cane by bullock-power. (By the size of the cane it appears to be a superior quality, as also does the bullock. The machine is the old *kolhu* now generally replaced by iron three-roller mills.) (See Chapter V para 19.)

PLATE 10



GOATS RETURNING FROM PASTURE



SHEEP RETURNING FROM PASTURE

rarely command enough capital to extend their cultivation. They have only a limited supply of produce for sale Their ignorance of market conditions prevents them from securing adequate prices, and especially from reaping the full benefit of better quality * They have also an important difficulty of their own Since vegetables are perishable goods, large-scale market-gardening requires adequate transport facilities, and accordingly must be (and, in fact, is) located either close to the cities or towns where the products are sold or to the railways which serve them † Some of these difficulties can be reduced or removed by applying to market-gardening the principles of Co-operation both in respect of credit and of sale But in the present circumstances it is obvious that a change from the cultivation of field crops to market-gardening is beyond the power of most small farmers, since on the one hand they would be faced with the same financial and other difficulties as they are at present, whilst they would not possess either the special skill or the special knowledge of the market-gardening castes A man who held sufficient land in a suitable locality and was possessed both of sufficient capital and sufficient business capacity would be able to make large profits out of market-gardening, provided that he had first acquired the requisite knowledge or else employed servants that had it ‡ But such men are rare amongst Indian cultivators.

53 *Fruit*—The position in respect of fruit is far less satisfactory than in respect of vegetables Though, as has already been stated,§ many varieties of fruit are grown in India, yet it is only in certain restricted areas that fruit-growing is the principal means of livelihood of any considerable number of cultivators || But even in those tracts it is only in some orchards that cultivation is scientific, and marketing

* See para 47 above

† See Agricultural Commission, *Report*, p 595, and also Chapter IV, para. 21 The modern motor-bus has probably enlarged the areas within which commercial cultivation of vegetables is profitable

‡ See Agricultural Commission, *Report*, p 594, for instances

§ See Chapter I, para 54

|| Those areas are the neighbourhood of Peshawar and Quetta on the north-western frontier the Kangra Valley (Punjab), and the Kumaun districts (United Provinces), all in the Himalayas certain parts of the Central Provinces and Assam, where oranges and other citrus fruits are extensively cultivated and the mango-growing district of Konkan (Bombay).

is on business lines As a rule, both in those tracts and elsewhere, the growing and marketing of fruit is entirely unorganized There are many who have fruit to sell In many villages there are groves of mangoes or other fruit trees which belong to the proprietary body Well-to-do landlords have their orchards (*baghichas*) Residents in cities and towns have their gardens Government or district boards own the avenues of fruit trees which grow along the roadsides But the total amount of money and effort which is expended by such owners on fruit production is small, and all of them are content to dispose of the produce to contractors, who make their own arrangements for gathering and marketing it * Finally, there are many areas in India where fruit-growing for market would be profitable, but little or none is attempted

54 There are a variety of causes for this state of affairs

(1) The capital required to plant an orchard is considerable

(2) A certain time must always elapse before the trees begin to bear, during which time further expenditure must be incurred

(3) There is no "tradition of horticulture" amongst ordinary cultivators, who lack both the skill and the knowledge required in such matters as selecting varieties, planting, pruning, and spraying

(4) The prevalent fragmentation of holdings makes protection of the crop almost impracticable

(5) Fruit is specially liable to damage from such causes as frost, hail, and heavy rainfall

(6) Transport difficulties in the case of fruit are often more serious than in the case of vegetables, and not so easily overcome

55 Market-gardening can be located wherever transport facilities are available, but fruit can only be grown in suitable conditions of climate and soil Moreover, some of the best natural fruit-areas are situated in the Himalayas or the hills of Assam, where roads are either bad or do not exist at all, and the only means of transport are pack animals or

* In private gardens even the scaring of birds is usually left to the contractor, whilst allotments for arboriculture in the budgets are seldom large

porters Once railhead is reached these difficulties disappear ; but distances are often long, and in the absence of cold storage on the railways much fruit is damaged in transit, especially as packing is often unsatisfactory

56 Finally, marketing conditions leave much to be desired The purchaser, by dealing with the contractor, loses a part of the profit which he would make if he dealt direct with wholesale firms The contractor has also difficulties of his own He is dealing with perishable goods , cold-storage facilities in the markets are either limited or entirely absent , gluts are frequent, and prices are constantly chaotic Naturally he passes on his losses to the purchaser, whose profit is thereby still further reduced Considering all these difficulties, it is obvious that fruit-growing is even less suitable than market-gardening for a small cultivator It is not, however, beyond the capacity either of co-operative associations or well-to-do individuals, provided that they are guided by expert advice

57 Long before the present departments of agriculture came into existence, valuable work on the improvement of indigenous fruits, the acclimatization of exotic varieties, and the training of gardeners (*malis*), had been done by horticultural societies and the staff of Government gardens When horticulture came under the control of the departments they continued to work on the same lines, but this work remained unscientific until after the War, when special horticultural officers were appointed in some provinces Thereafter, largely as a result of the recommendations of the Commission on Agriculture,* interest in the cultivation of fruit was aroused and rapidly increased, whilst the Indian public is also being educated in the dietetic value of fruit Nurserymen and seedsmen have now made their appearance in India , the number of orchards run on business lines, which deal direct with wholesale firms, is increasing Strong fruit-growers' associations have been established in the United Provinces, Bombay, and the Punjab The Imperial Council of Agricultural Research has financed a number of investigations into the scientific cultivation of fruit, as well as into such subsidiary matters as cold storage, canning, and bottling The Marketing Officers are already engaged in examining marketing conditions

* See *Report*, pp 598–9

with a view to their improvement There is now a Horticultural Officer in most provinces * In short, fruit production can look forward to a profitable future, which directly or indirectly will be to the benefit of the rural population Nor will this benefit stop at production Expansion and improvement of horticulture will lead to the introduction of new industries, such as the preservation of fruit and vegetables, and the manufacture of jam, which will also add to the prosperity of agriculturists by providing them both with alternative occupations and with an outlet for their surplus produce

* *Cf* Chapter IV, para 48

CHAPTER VI

By SIR JOHN MEGAW

Medicine and Public Health

Medicine and Public Health in Ancient India

1 The Ayurvedic * system of medicine which is still widely practised among Hindus has its roots in the dim and distant past † A good deal of information with regard to this system can be obtained from the writings of Susruta and Charaka, who were famous practitioners about 1,800 years ago Susruta was a surgeon, and it is interesting to know that he emphasized the necessity for dissection of the human body both for theoretical and practical knowledge of surgery The bodies used for dissection were allowed to putrefy so as to facilitate the exposure of the internal organs by the use of brushes Surgical instruments of many kinds were in use and surgery was divided into two branches—general surgery and surgery of the head and neck There were six branches of medicine (1) general diseases , (2) demoniacal possessions , (3) infantile diseases , (4) poisoning , (5) the pharmacology of drugs for promoting health, beauty, and longevity , and (6) methods of restoring vigour to the generative organs

2 The Ayurvedic system is claimed to be of divine origin it appears to be purely indigenous and not to have been influenced by foreign systems of medicine Physicians were held in high repute, they were trained by recognized masters of the art, and were governed by very strict rules of conduct Their privileges were great , any one who refused their treatment was destined to go to hell, while those who accepted it were assured of admission to heaven even if they did not see the holy Ganges at the time of their death ‡ In early days

* *Ayurveda* means the Veda of life

† The medical system of the Arya invaders of India (*circa* 1500 B C) is to be found in the *Atharvaveda* The period when the Ayurvedic system was at its most flourishing was between 250 B C and 750 A D , roughly covering the Buddhist period

‡ In Hindu belief, to die within sight of the Ganges ensures admission to paradise

the Ayurvedic doctors were Brahmans or Vaidyas,* but gradually the medical profession fell into the hands of men of lower castes

3 The description of their methods of diagnosis and treatment make curious reading Signs and portents which had no apparent bearing on the disease entered largely into the diagnosis, prognosis, and treatment Even the personality and actions of the messenger who summoned the physician were regarded as of great importance, both in diagnosis and prognosis The causes of most diseases were regarded as being derangements of wind, bile, and phlegm, but demoniacal possessions, the anger of supernatural powers, and the sins of the parents were also important factors During the past five hundred years or so the Ayurvedic physicians and surgeons have fallen far from the high position which they once occupied in the social scheme, but there are still a few highly respected practitioners of the system, and probably more people in India are treated for medical diseases in accordance with Ayurvedic principles than by doctors of the modern school The Ayurvedic physicians are called *Vaids*, † they rarely practise surgery except of a very minor kind

4 Another indigenous system, of relatively recent introduction, is that called Unani This was introduced by the Muslim conquerors and was of Greco-Arabian origin, the word Unani being the Arabic form of Ionian ‡ Schools for teaching the Unani system are said to have existed in Delhi, Agra, and Hyderabad , but they had disappeared before the coming of the British and no records of them have been found The practitioners of the Unani system are called *hakims* §

5 Except for the religious observances which entered so largely into the lives of the people there is little evidence of organized public health activities in ancient times More than two thousand years ago the great Emperor Asoka ordered that

* Early Hindu doctors were probably Brahmans Subsequently, in their desire to preserve ceremonial purity, they seem to have abandoned medicine to the Vaidya caste which, according to Manu's genealogies, was descended from the union of a Brahman father and a Vaisya mother This caste also seems to have died out in time, though the name survives in *Vaid* (See para 3 below)

† Commonly *baids*

‡ The Sanskrit form is Yavana

§ Pronounced hukeem , to be distinguished from *hākim*, which means a magistrate or judge

wells should be dug and trees planted along the roads, and the tradition which was thus established seems to have persisted ever since, to the great benefit of the people of India Some existing Indian customs may have had their origin in a conscious or unconscious effort to promote public health The caste system is obviously a forerunner of eugenics and its rigorous application has given it a far greater influence than the science of eugenics can hope to achieve Child-marriage in early times may have been regarded as a means of ensuring the survival of the family at a period when famine, pestilence, and warfare were liable to wipe out a large percentage of the population * Again, the sanctity of the cow was probably of protective value in assuring the survival of some cattle during times of famine, when there would be a natural tendency to kill off all the livestock, with the result that cultivation would be greatly hindered when the drought came to an end † If there is any foundation for these speculations, they are examples of how customs which were helpful in certain conditions may outlive their usefulness and become positively harmful in the changed circumstances of modern life

6 There are no reliable estimates of the fluctuations of population in ancient times One writer suggests that in 1650 the population was 80 millions and a hundred years later 130 millions Sir Frederick Nicholson estimates that it was only 100 millions in 1800 These estimates are pure guesses ‡ We may reasonably surmise that before 1700 there were great fluctuations, between 40 millions and 100 millions After one or more failures of the monsoon, the people must have died in large numbers of starvation and disease , with the return of better times, the population would naturally increase rapidly until the numbers again pressed on the available food-supply, so that the next failure of the rains would find the people in a vulnerable condition It may be that famines with their heavy death-rolls may have been followed by periods of plenty deserving the name " golden age , " but these could not have

* For other possible explanations of the origin of child-marriage, see Chapter II, para 52, *note*, and references there given

† For other explanations of the sanctity of the cow, see Blunt, *Caste System of Northern India*, pp 295–6

‡ The first enumeration was made between 1867 and 1872 the population was then 206 millions The first synchronous census was in 1881

lasted long as a population living in peace and plenty could easily double itself every fifteen to twenty years, and therefore the pressure of population would soon bring the golden age to an end There is ample historical evidence of the terrible destruction of life which used to happen in times of famine * Even in recent years, despite the great effort made by Government to control famine, there have been great changes in the population of certain areas which are specially at the mercy of the monsoon These have been aptly described as " mighty swings of nature's pendulum " For example, in Rajputana during the successive decades since 1880 the following changes took place in the population · a rise by 20 6 per cent , a fall by 20 5 per cent , a rise by 6 9 per cent , a fall by 6 5 per cent and finally a rise by 14 2 per cent Such changes as these must be trifling compared with those which occurred in ancient times, when no organized efforts could be made to supply food for famine stricken areas Railways and irrigation have made it possible for Government to prevent any large-scale reduction of the population by starvation, whereas in the " good old days " nature was allowed to strike the balance between population and food-supply by her time-honoured methods of famine and pestilence, aided frequently by man's intervention in the form of warfare

Early Stages of Medical Relief and Public Health under British Rule

7 The coming of the British made little difference at first, for they had little to offer in the field of sanitation , but with the rapid advance of knowledge of the causation, prevention, and treatment of disease, the way was opened for medical relief and public health In the early days of the East India Company the British doctors confined their activities to the treatment of servants of the Company, for whom hospitals were opened as early as 1664 Towards the end of the 18th century a hospital was provided for Indians in Calcutta The records show that 115 in-patients and 101 out-patients were treated in 1794 and that the figures had risen to 218 and 4,443 by 1803 In Bombay and Madras, hospitals for Indians

* For famines, see Thompson and Garratt, *Rise and Fulfilment of British Rule in India*, pp 489–493 , Blunt, *The I C S*, pp 177–185 For the famine of 1630, the first of which there is contemporary record, see Sir W Foster, *English Factories, 1630–33*, p 122

were opened about the year 1800 The first *mofussil* * hospital was established at Dacca about the year 1804, and by 1840 there were about a dozen hospitals for Indians in various large towns besides the presidencies

8 At the beginning of the 19th century some instruction was given to Indian students in Ayurvedic and Unani medicine at the Sanskrit College at Benares and the Madrasa of Islamic studies at Calcutta respectively,† but the teaching was purely theoretical, no dissections or other practical work being carried out Between the years 1822 and 1827 medical schools on western lines were opened in Calcutta, Bombay, and Madras, but these were of a primitive kind, instruction was given in the local vernaculars, and no dissections of the human body were performed ‡ The objection to touching dead human bodies which had arisen since the time of Susruta must have been an important factor in the decline of indigenous medicine in India Very soon the students of the schools began to agitate for instruction in English, § and in response to their demands the Calcutta Medical College was founded in 1835 A historical event was the first dissection of the human body (in modern times) by a Hindu, Pandit Madhusudan Gupta, in January 1836 This incident aroused so much enthusiasm that a salute of guns was fired from Fort William in honour of the occasion Medical colleges were opened in Madras and Bombay within the next few years The original staffs of these colleges were small, in Calcutta, for instance, there were only two teachers, both of them surgeons of the East India Company who were not allowed to carry on private practice.

9 Vaccination was introduced early in the 19th century and gradually became popular, but apart from this it was not until the year 1880 that any organized effort was made to establish public health as an activity of Government, which prior to that time had apparently held the view that education and the provision of medical relief must first break down the opposition to public health measures by creating a feeling of confidence and good-will This delay in introducing

* *Mofussil* is a corruption of the Arabic *mufassal*—literally, separate It is used to express the rest of a province or district, as opposed to the *sadr* or headquarters town of that province or district Its most usual application, however, is to the country as distinct from the presidency towns in general, and Calcutta in particular

† See Chapter VIII, para 2

‡ We read that in Calcutta the bodies of sheep were used for dissection.

§ See Chapter VIII, para 3

organized sanitation had one unfortunate result, for the physicians and surgeons were already firmly entrenched and had little sympathy for the new-fangled idea of preventive medicine, they argued that there was no popular demand for it, whereas the people were flocking in their thousands to the hospitals The public health officers, therefore, were compelled to fight for the independence of their department, so that in some provinces there is still an undesirable tendency for public health and medical relief to work in watertight compartments Full cooperation between these two complementary branches of medicine is likely to be promoted by the recent formation of the central Public Health Board, to which reference will be made later in this chapter *

10 The first Sanitary Commissioners † were appointed in 1880 in the five chief provinces, Bengal, Madras, Bombay, the Punjab, and the North-West Provinces and Oudh ‡ In 1914 the Government of India formulated a sanitary policy which would have been greatly in advance of anything that had been attempted previously, but the Great War came before action could be taken

Some General Considerations on Public Health in India

11 Public health is usually regarded as being concerned almost exclusively with organized efforts made under the direction of medical experts for preventing disease and improving the health of the people This view of the subject is one-sided and positively dangerous The best medical experts in the world, even if they were given unlimited powers to carry on public health activities within the boundaries which are normally assigned to them, would fail miserably if other lines of improvement in the conditions of life were neglected Suppose for a moment that the public health services of India were to achieve complete success in stamping out malaria, cholera, small-pox, tuberculosis, and all the other great killing diseases of India, and suppose that nothing were done to increase the production of food or to restrict the growth of population, the inevitable result would be the replacement of the tragedy of death from disease by the greater tragedy of death from starvation

* See para 17 below

† Now called Directors of Public Health

‡ Now the United Provinces

12 Let me at once admit that some experts dissent from this view They hold that the increased mental and physical efficiency resulting from the control of disease would promptly raise the standards of life , they believe also that the natural fertility of the people declines automatically during prosperous times, so that there need be no fear of over-population Unfortunately the experience of other countries as well as of India lends little support to such a view In India, thanks to the partial success of public health efforts, the death-rate has been greatly reduced, the birth-rate has also declined, but to a much smaller extent, so that the population has been growing more and more rapidly Other things have, of course, been happening the production and distribution of foodstuffs have improved owing to the construction of irrigation works, railways, and roads, and new industries have sprung up which provide sustenance for large numbers of people Many authorities hold that the people as a whole are now better off than they were when the population was only half its present size, but we have no exact information to show whether or not this is true for India as a whole There are certainly some places in the Punjab * and elsewhere in which production has outstripped reproduction , in other words, the increase in the supply of food and other commodities has been greater than the increase in population This is a great achievement , but when we look at the state of nutrition of the people of India as a whole we find small reason for being content with existing economic standards of life In any case, it must be quite clear that the state of health of a community does not depend only on the control of preventable disease , it depends equally on its state of nutrition and general economic standards To be truly successful, a public health policy must be well-planned , it must be worked out in terms of agricultural and industrial production , it must look ahead and take into account the maintenance of a proper relation between the number of the people and the available supply of the necessities of life If the masses of India were subservient to the orders of a dictator, he would frame the necessary plan in the fields both of production and reproduction, and compel the people to carry it out , but in such matters pressure, let alone compulsion, is contrary to the established and generally accepted policy of the Indian Government, and accordingly the success of such a plan depends entirely on the willing

* Notably the canal colonies

cooperation of the whole community That can only be obtained by the spread of education The word education must not be taken as referring only, or even chiefly, to the customary subjects of instruction in schools and colleges it is used in the wider sense of teaching not only children but also adults how to make life worth living—how to decide what they want to get out of life, and how to make and carry out a plan of life by which they can achieve their desires It is, in short, an education of which the principal subject is "life-planning," which would use all effective forms of propaganda through the press, pamphlets, posters, lectures, the cinema, and wireless broadcasting * Russia, Italy, and Germany have demonstrated the astonishing influence of propaganda there is no reason why the diffusion of useful knowledge should not be equally effective in countries where freedom of speech exists But propaganda can never be successful in India unless it is administered as a sugar-coated pill, with a large amount of sugar and only a little pill Prosy talks about disease will never catch the attention of the people , music, witty dialogues, and stories must be used as ear-openers , then only will it be possible to "put over" a few scraps of useful knowledge Education in the schools would also be far more useful if it were presented in a more attractive form Joyless schools can only prepare the children for joyless and hopeless lives †

13 The real difficulty is to decide what should be taught by propaganda This is a matter which calls for careful consideration by educationalists, public health and agricultural experts, economists and industrialists The leaders of public opinion must be consulted, for the programme of instruction should steer clear of anything which would offend the religious beliefs of any section of the people The observance of this principle need not give rise to any great difficulty, for no objection is ever raised to instruction in improved methods of agriculture or of prevention of disease Such a problem as that of over-population would have to be handled with discretion, but there can be no objection to the treatment of the subject on strictly biological lines ‡ The advocacy of any special method of population-control is quite unnecessary , all that is needed is a presentation of the underlying principles When people

* For broadcasting, see Chapter I, para 64 , for propaganda generally see Chapter V, paras 6–7

† See Chapter VIII, para 36

‡ See Chapter I, para 84

have begun to realize the possibility of improving their lot in life by restricting the output of children, they will soon decide for themselves whether celibacy, delayed marriage, or other means are most acceptable to them Every progressive country has consciously or unconsciously adopted the policy of population-control religious and sentimental objections have never been able to offer effective resistance to the desire for an improvement in economic standards There are undoubtedly religious prejudices in India which give rise to difficulties when attempts are made to improve the conditions of life, for example, the objection to putting old and diseased cattle out of their misery, the insistence on child-marriage, and the *purdah* system * These ticklish questions can best be dealt with by Indians, who usually discuss them far more freely than is possible for Europeans, restrained as they are by the fear of giving offence Indians on the whole are far less addicted to false modesty in matters of sex than Europeans, they often feel surprise, perhaps even scorn, of the reticence which convention imposes on Europeans when certain subjects are raised My own experience has always been that educated Indians are more broad-minded than Europeans in their attitude towards questions which many British officials are afraid to discuss † One thing is certain—the problem of public health in India must be faced fairly and squarely If the subject is regarded in the proper light as one which is concerned with everything affecting the health of the community, it must be admitted to be the biggest and most important problem of India

14 The following facts and figures show clearly how deplorable is the existing state of affairs, and how urgent is the need for revolution ‡ The average expectation of life of the new-born infant in India is less than half as many years as

* See Chapter II, paras 41, 45 and 52

† The following may be quoted as an incident which has a bearing on this point More than fifty years ago a certain Governor when visiting a certain State was presented with an address in which he was asked " to use his great influence and transcendent abilities to restrain, in some measure at all events, the inordinate proclivity of the people to have excessively large families " The Governor was indignant, and replied that " he would do everything in his power for the increase, and nothing for the diminution, of Her Majesty's subjects " The people who presented the address were " much surprised that he should have taken exception to so reasonable a request "

‡ For a fuller discussion of the vital statistics, see Chapter I, paras 69 *et seq*

that of the English infant The birth-rate in British India and Burma in 1935 was 35 per mille against 15 in England The death-rate was 24 per mille against 12 in England The infant mortality rate, viz the death-rate among infants under one year of age, was 164 for every thousand live births against 57 in England The natural increase of the population was 11 per mille in India against 3 per mille in England The increase in population of all India and Burma between 1921 and 1931 was 34 millions (10 6 per cent), or nearly as much as the whole population of France If the present rate of increase continues the population will exceed 400 millions in 1941 The increase during the past fifty years represents an addition of about thirteen persons to every square mile The annual number of births in British India and Burma averaged 4½ millions between 1881 and 1890 , it was more than 9½ millions in 1935 These figures are very significant, and their implications deserve the most serious consideration The registration of births and deaths in India is admittedly imperfect even in areas where registration is compulsory, but as more births than deaths are left unrecorded the rate of increase of the population must be even greater than that shown by the annual returns , for example, in 1935, in certain rural areas of Madras 38,000 unrecorded births were detected and 11,700 deaths

15 The actual causes of death are fairly accurately recorded in the cases of plague, cholera, and small-pox, but these constitute only a small fraction of all the deaths For other diseases the figures are almost worthless, although the total death-rate gives a fairly true picture of what is happening The actual records for British India and Burma are in round figures as follows —

	1935	Average for 1926–35
Dysentery and diarrhoea	279,000	247,000
Cholera	217,000	220,000
Plague	32,000	71,000
Small-pox	91,000	84,000
Respiratory diseases	483,000	415,000
Fevers	3,755,000	3,669,000
All other causes	1,722,000	1,629,000
	6,579,000	6,335,000

16 It will be seen that the great majority of the deaths are classified under the three heads "fevers," "respiratory diseases," and "all other causes" It would really be less misleading to include all these three groups in the third of these categories, as it must be admitted that the reporting agents are quite unable to diagnose the diseases which they record under these heads In his report for 1935, the Public Health Commissioner calls attention to the urgent need for more accurate records, as the health officers are severely handicapped in their efforts to apply preventive methods because they do not know what diseases are responsible for the mortality which they are trying to control The figures for respiratory diseases are certainly far too low pneumonia and tuberculosis of the lung must account for many more than 483,000 deaths, and probably many of the deaths from these diseases are included under the heading "fevers" On the other hand the deaths from fevers are often supposed to be due chiefly to malaria, but it is unlikely that half of them are due to this disease Attempts have been made to find out the real causes of death in certain areas, one of these was by Sir Leonard Rogers more than thirty years ago, and he was able to satisfy himself that the official returns for the area were hopelessly wrong *

The Public Health Activities of the Government of India

17 *Administration*—By the Government of India Act of 1919 responsibility for medical relief and public health was transferred to the provincial Governments Only a few subjects were retained under the control of the Government of India, such as legislation with regard to infectious diseases, external public health relations, port quarantine, statistics, and the medical research department Under the present constitution, as laid down under the Government of India Act of 1935, the position remains much the same The Government of India has now taken an important step which will bring it again into touch with public health activities in the provinces and so rectify a serious defect in the constitutional position This step consists in the setting up in 1937 of a central Advisory Board of Health for the purpose of promoting coordination

* He found, for example, that a child who had been drowned was returned as having died of fever

of effort between the provinces and States This Board has no executive powers and therefore cannot encroach on the powers or responsibilities of the provincial Governments, but it is certain to have a great influence by providing for advice, consultation, and cooperation with regard to public health questions

18. The Government of India has a small medical and public health section which is under the Member in charge of the department of Education, Health and Lands The Director-General of the Indian Medical Service is the chief adviser to Government on all questions of a medical nature, while the Public Health Commissioner is his staff officer for public health In technical matters the Public Health Commissioner is in direct relation with the other departments of the Government of India and with the provincial Governments when they seek his advice He deals with vital statistics and produces an annual report, which is of great interest and importance , he represents the Government of India on international health bodies, supervises the health of the major ports, and their quarantine work , he deals with pilgrims, and is a member of many committees such as those of the Indian Red Cross Society, the British Empire Leprosy Relief Association and the King George's Anti-tuberculosis Fund As secretary of the governing body of the Indian Research Fund Association and its Scientific Advisory Board, he is closely concerned with medical research Not the least important of his duties are those connected with the new central Advisory Board of Health, of which he is secretary.

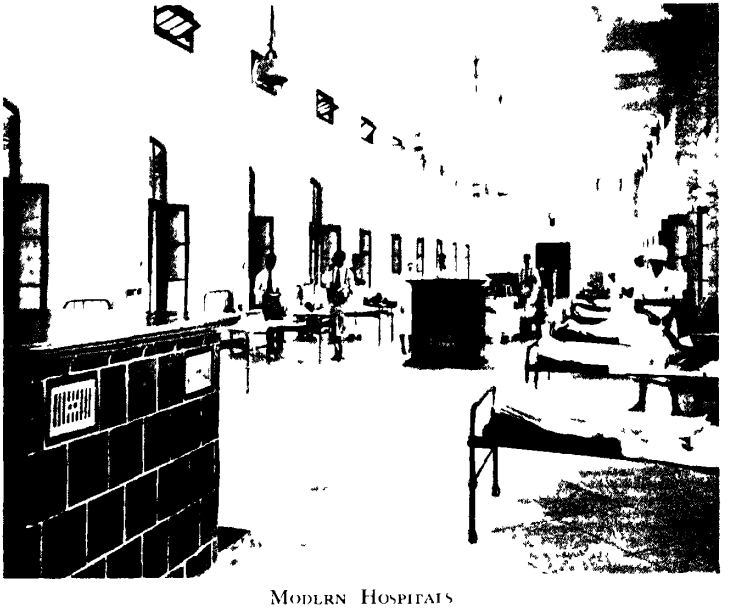
19 *Research* —Although there was no regular organization of medical research till the early years of the present century, many great discoveries have been made by workers in India The epoch-making discovery that malaria is conveyed from man to man by certain kinds of mosquitos is the best known of these It was made by Surgeon-Major Ronald Ross, I M S ,* in 1898 as a result of pertinacious work carried out under great difficulties Mention may also be made of the discovery by Leonard Rogers † of emetine as a cure for amoebic infection and of the modern treatment of cholera, and of the great additions made to our knowledge of malaria by Richard

* The late Sir Ronald Ross, K C B , K C M G

† Major-General Sir Leonard Rogers, K C S I , C I E , F R S (I M S retired)



MODERN HOSPITALS
King George's Hospital at Lucknow



MODERN HOSPITALS
A ward in the Mayo Hospital at Lahore



MEDICAL WORK IN THE VILLAGES
A baby clinic conducted by touring Government nurses



MEDICAL WORK IN THE VILLAGES
A Government vaccinator on tour

Christophers * These men have achieved international fame for their work, but there are many others, both Indians and Europeans, who have rendered great services to India and the rest of the world by their discoveries in connexion with plague, *kala azar*, leprosy, cholera, malaria, and a host of other diseases There are thousands of people in India who owe their lives to the patient researches which have been carried out by this band of workers

20 The Government of India, although its public health department has only a small staff of three technical experts, at the present time is following a progressive and enlightened policy in connection with medical research It maintains a medical research department with a staff of twenty-six workers, who are recruited partly from the Indian Medical Service and partly from outside sources The work is done in the central research institute at Kasauli, the all-India institute of hygiene at Calcutta, and in a number of provincial institutes to which members of the department are deputed India has six Pasteur institutes—at Kasauli, Coonoor, Bombay, Patna, Calcutta, and Shillong † These, in addition to treating persons bitten by rabid dogs, have recently begun to distribute anti-rabic vaccine to local centres so that preventive treatment against rabies is rapidly becoming available to patients within easy reach of their homes These institutes are maintained by the provincial Governments with the exception of that at Kasauli, which is managed by a committee Nearly 45,000 patients were treated in India and Burma in 1934

21 The Research Fund Association, founded in 1911, is financed by the Government of India, and is administered by a governing body with official and non-official members The governing body is advised by a Scientific Advisory Board composed of medical experts The amount spent by the Association on research has varied between seven and twelve lakhs of rupees yearly ‡ Numerous important investigations have been carried out in connection with the great killing diseases of India The Association maintains two very important organizations, the malaria survey of India and the nutritional research laboratories The malaria survey, which will

* Brevet-Colonel Sir Richard Christophers, Kt, CIE, OBE (I M S retired)

† There is a seventh at Rangoon in Burma

‡ Between £52,500 and £90,000

in future be called the malaria institute, has a budget of some two lakhs of rupees (£15,000) It carries out research work on malaria, advises the Government of India and provincial Governments in connection with anti-malarial measures, and trains medical men in practical malaria work, it also publishes a large number of important papers every year The work of the experts in this department is recognized as being of great value to India and the whole world The Government of India has recently distributed a large amount of quinine (45,000 lb) to provincial Governments to supplement the amount which they had previously been distributing for the treatment of malaria, and during the year 1936 it also gave to the Association a special grant of 10 lakhs (£75,000) for anti-malaria work, which will be used on the maintenance of anti-malaria projects in certain areas Nutritional research is recognized to be of very special importance to India, and about a lakh of rupees (£7,500) yearly has been spent on it in recent times

22 The all-India institute of hygiene is maintained by the Government of India for research and training in public health The Calcutta school of tropical medicine and the hospital for tropical diseases owe their existence to the enlightened and persistent efforts of Sir Leonard Rogers The school receives an indirect subsidy from the Government of India, but is maintained by the Government of Bengal and by an endowment fund provided by the Jute, Tea, and Coal-mining Associations as well as by private benefactors This school originally included an institute of hygiene, but thanks to the generosity of the Rockefeller Foundation the all-India institute of hygiene was provided with separate accommodation in a fine building It still works in close collaboration with the school of tropical medicine, but is now financed by the Government of India The two institutions, in addition to carrying out important research work, prepare students for the diploma and licence given by the State Faculty of Tropical Medicine of Bengal, for the D P H of the Calcutta University, and for other examinations

Medical Relief and Public Health in the Provinces

23 *Medical relief*—In British India there are about 6,700 hospitals and dispensaries with 69,300 beds, of which 8 per cent are controlled by private organizations, the rest being

maintained by provincial Governments, local bodies, and railways About 4,300 of these institutions are in rural areas, and each on the average serves 62,000 persons During 1935 more than a million indoor and more than 65 million outdoor patients were treated in the hospitals and dispensaries of British India

24 The medical personnel employed in the provinces consists at present of 170 officers of the Indian Medical Service, 41 of the Women's Medical Service, 103 of the Indian Medical Department, 1,798 salaried medical graduates belonging to the provincial and other services, and nearly 6,600 salaried licentiates There are also 674 graduates and 344 licentiates attached to the government hospitals in an honorary capacity, and their numbers are rapidly increasing Nearly all the provincial capitals are well supplied with modern hospitals, as also are many of the divisional headquarters and some of the district headquarters , most of the other hospitals and dispensaries are very modestly staffed and equipped In the urban hospitals 3,612 nurses are employed, but only 267 in the rural hospitals For various reasons the number of trained nurses in the rural areas is seriously inadequate , only six are employed in the whole of the Punjab, and the greatest number is in Madras, where there are 96 The work which is done by trained female nurses in Europe has to be relegated in India to male attendants and dressers, and the efficiency of the Indian hospitals is greatly impaired by the shortage of female nurses

25 A systematic effort has been made in Madras and the Punjab to supply medical aid within easy reach of every rural inhabitant In Madras, 428 doctors receive a subsidy on condition that they reside in certain villages and provide medical relief for the sick poor In the Punjab, 360 small dispensaries have been built, each of which is in charge of a subsidized practitioner These are in addition to the older hospitals and dispensaries, which are staffed by whole-time medical men The total cost of the hospitals in British India is over 392 lakhs of rupees * There are ten medical colleges with nearly 5,000 students, and twenty-eight medical schools with nearly 7,000 students, in British India

26 *Public health* —The cities and large towns of British India are fairly well supplied with officers of health, but in the rural areas the position is very unsatisfactory in most of the

* £2,990,000

provinces Only 146 whole-time officers of health holding a public health diploma (D P H) are employed in the provinces There are also seventy licentiates in public health Of the 247 districts in British India and Burma, only 128 employ medical officers of health in the remaining 119 districts the civil surgeon or district medical officer is responsible for public health administration In Madras, the Punjab and Bengal, nearly all of the districts have a health officer, whereas in Burma, Assam, Bombay, and the Central Provinces taken together there are only seven health officers

27 Some of the provinces employ a considerable number of health inspectors, and the arrangements for vaccination are usually sufficient to enable everyone to obtain protection against small-pox Unfortunately large numbers of the people are apathetic with regard to vaccination, even when it is entirely free, and although the death-rate from small-pox is much smaller than it used to be, it still remains about 80,000 to 90,000 a year in British India Vaccination is now compulsory in more than two-thirds of the towns and in about two-fifths of the districts of British India Revaccination is compulsory only in Madras

28 From the above brief sketch it will be realized that in the provinces there is no uniformity, in either the system of medical relief or in that of public health, and it would be quite impossible to give a detailed account of the various provincial arrangements Voluntary organizations like the Red Cross, the Anti-tuberculosis Fund, the Leprosy Relief Association, the Maternity and Child Welfare Bureau, and the St John's Ambulance Association are making valiant efforts to reach the rural areas, but their resources are quite inadequate to deal with their respective problems in a satisfactory manner The Junior Red Cross and Boy Scout organizations have made encouraging progress, especially in the Punjab Large numbers of Boy Scouts from Lahore volunteered for work in connexion with the great earthquake in Quetta, and earned well-deserved praise for the valiant help which they gave in the face of great difficulty and discomfort The Seva Samiti organization * has also done excellent philanthropic work on the same general lines as the Red Cross It has become abundantly clear that young Indians of both sexes always

* This is similar to the Boy Scouts organizations, but is independent of them

make a willing response when their spirit of service is stirred by an appeal from leaders who can command their trust and respect

Medical Relief and Public Health under the Local Bodies

29 The Public Health Commissioner in his annual reports finds himself compelled year after year to comment on the failure of municipalities to provide adequate funds for conservancy, water-supply, and drainage—these "primary essentials of environment hygiene" In the report of 1935, which is the latest available, he states that of 163 towns with a population of over 30,000 no less than fifty-one have no proper water-supply, while of 1,131 towns having a population below 30,000 only 149 have a protected supply The municipal income of all the towns of India is about 17½ crores * of rupees the expenditure on conservancy, water supplies and drainage is about 4½ crores, or roughly 24 per cent of the income In rural areas the state of affairs is naturally much worse, the district boards † have an income of 14½ crores,‡ and their expenditure on public health works is about two-thirds of a crore, or about 5 per cent of the income In Bengal the expenditure is highest, about 13 per cent, while in the Punjab, the United and Central Provinces, Bombay, and Assam it is 3 per cent or less

30 *Water-supply*—In certain rural areas efforts have been made to supply the villages with wells or other forms of water-supply, but even when wells are constructed they often fall into disrepair through neglect An interesting advance has been made in the western part of the United Provinces where advantage has been taken of the new hydro-electric installation to pump water from tube wells for bathing and drinking purposes § The water-supply of most villages comes from (1) wells, most of them being shallow and liable to pollution, (2) tanks, which are even more dangerous, as the people usually bathe and wash their soiled clothes in the water, (3) rivers and canals, which often serve to carry

* £13,125,000

† These correspond generally to the county councils of England and Wales For a description of them, see Chapter XI

‡ £10,875,000

§ For a brief description of the tube well system, cf Chapter I, para 48, and Chapter XII, para 37

cholera infection to the villages along their banks * The steps by which improvements can be effected in the water supply of rural areas are (1) the construction of good drinking-wells, provided where possible with pumps , (2) the improvement of existing wells , (3) the protection of wells and other sources of water-supply from contamination , and (4) propaganda for the instruction of the people in the steps required for the prevention of water-borne disease †

31 *Conservancy* —The municipalities of British India spend nearly two crores of rupees (£1,500,000) yearly on conservancy, but drainage and sewage disposal are good only in a few cities and only in some favoured parts of these Water-closets are rare , the usual method of disposal of night soil is its collection by sweepers and removal in carts Considering the filthy state of the latrines and the swarms of flies which visit these, it is not surprising that cholera and other intestinal infections are common , the wonder is that human beings can survive in the conditions which exist in many towns and villages The expenditure on conservancy of the district boards is about 5 lakhs (£37,500) yearly , most of this is incurred in providing drains for a few of the larger villages In rural areas generally, the open fields are the only latrines, so that the surroundings of villages are often filthy in the extreme Efforts are being made in a number of places to test the possibility of introducing better standards of sanitation into rural areas The great difficulty is that pure water-supplies, drains, and proper latrines are costly and that the villager cannot afford them , neither can the district boards nor the provincial Governments Here again we are forced to the conclusion that the only hope of betterment lies in educative persuasion to induce the people to plan for improved standards of life As someone has rightly said, the things that people do for themselves are economical and lasting, whereas the things that are done for them are costly and short-lived

32 *Housing* —In some of the progressive localities of the Punjab the villager takes a pride in his house he aims at having strongly built walls and roof, windows, and a fire-place But in most of the small villages of India the living

* Tanks, rivers, and canals, however, are seldom used to supply drinking water if a well is available The well's liability to pollution is due chiefly to the villager's habit of bathing near its mouth

† The chief obstacle in the way of using pumps is their cost The usual method of protecting a well is to build a parapet around its mouth

places are mud huts rather than houses * In the average Indian village the conditions for the spread of the great killing diseases are ideal Rats are encouraged to live in houses by the ample supplies of food and nesting places which are provided for them Flies find collections of filth in which to breed and are given abundant opportunities for gorging themselves on food which is exposed for their benefit, unfortunately, they repay the hospitality which is offered to them by polluting the food with excrement containing microbes of cholera and other diseases which the flies have swallowed in the course of a previous meal Lice and mosquitos also find congenial conditions in which to thrive and multiply Respiratory infections like tuberculosis, influenza, and pneumonia have favourable conditions for their conveyance in the stuffy and ill-ventilated houses The cultivation and spread of the microbes of typhoid fever, dysentery, and cholera are promoted by unprotected water-supplies and by the accumulations of filth which are such prominent feâtures of most villages

33 The Indian villager is now beginning to emerge from conditions of life that are mediaeval or even primitive—a critical period, which is always accompanied by excessive risk to life and health Progressive western countries have had the same kind of experience, and their success in emerging from a dangerous environment shows that a way of escape is open to India The change cannot be brought about by the unaided efforts of the State, for even if it were possible to provide model houses, pure water, and perfect drainage, these would be of little benefit unless the habits of the people were completely changed The first step must be to arouse in the minds of the people a desire for better conditions of life This, too, can only be done by properly directed education

Maternity and Child Welfare

34 The Maternity and Child Welfare Bureau of the Red Cross Society is an unofficial organization which has done excellent work by initiating, guiding, and stimulating action for the improvement of conditions of childbirth and infant welfare The Bureau works in close cooperation with the public health departments, and has branches in the provinces and in some States These branches have committees

* Cf Chapter III, para 2

whose objects are to arouse interest in the subject, to employ female health visitors, nurses, midwives, and trained *dais*,* and to arrange for the training of women to carry out these duties The funds of the Bureau and of its local branches are not enough to enable them to cover the enormous field which urgently needs attention Efforts have been concentrated chiefly in the following directions —

(1) The training of indigenous *dais*, with a view to enable them to carry on their hereditary calling as midwives in a cleanly and skilful manner

(2) The maintenance of training schools for female health visitors There are seven such schools, of which four receive grants from the Bureau Five of these give training in English at present, but English is gradually being replaced by the local vernaculars except in the case of the central institution in Delhi, where the higher grades of pupils are trained for supervisory and administrative duties, and English is the medium of instruction Unfortunately, there is a serious shortage of suitable candidates for training Only sixty health visitors passed out of the seven training schools in 1935

(3) The production and issue of propaganda material, pamphlets, posters, films, slides, etc

(4) The provision of grants in-aid for experimental schemes which hold out promise of improving the conditions of mothers and infants

35 Although the dirty village *dai* † holds sway in most of the rural areas and only the fringe of the subject has been touched, yet encouraging progress is being made considerable numbers of *dais* have been trained in modern ideas of cleanliness, though it must be admitted that many of them fail to live up to their training Wherever good maternity hospitals are opened the women soon begin to appreciate them, with the result that training in midwifery is being extended rapidly Some provinces have taken the step of appointing a woman expert as technical adviser to the Director of Public Health, and as inspector of maternity and child welfare activities The work is still to some extent in the experimental stage progress in the provinces is often on the lines of trial and error, but this

* *Dai* here means midwife, the difference between midwife and *dai* is one of qualifications

† See Chapter II, para 55

is inevitable from the nature of the problem The urgent need of work of this kind is shown by the high infant mortality rate (164 per mille in 1935) and the high maternal mortality rate Exact figures for the latter cannot be given, but it is probably more than 20 per mille of births There are 800 maternity and infant-welfare centres in India, but many of these are hardly worthy of the name

Infant Marriage and Population-Control

36 Educated Indians know all about the evils which result from infant marriage, though many of them do not find it easy to break away from the custom If a European wishes to realize the radical difference which exists between the Indian and the European outlook on marriage, let him try to conjure up the vision of an English boy of sixteen or seventeen approaching his parents with the proposal that he should marry a girl of fourteen with a view to having children as soon as possible In all probability the economic condition of the people of England would be quite as bad as that of the people of India if infant marriage were an English custom

37 From the replies to a questionary which I issued a few years ago to the doctors of rural dispensaries in India, it appears that the average age at which Indian girls begin to cohabit with their husbands is about fourteen years, and that the average age at which these girls have their first baby is about sixteen Each mother gives birth to about six children on the average, so that before the age of thirty most Indian women must already be worn out with child-bearing Some reformers think that raising the marriage age of girls by three or four years will be a complete remedy for the existing evils If this were done the mothers would be better educated and better fitted in every way for the task of child-bearing, but on the other hand more of the babies would probably survive, with the result that the increase of the population would be greater than ever The experience of Ireland shows clearly that the problem of a swelling population cannot be solved by so simple a method as delaying marriage by a few years Conditions of life in Ireland during the first half of the 19th century were similar in many respects to those of India to-day. Early marriages (at about twenty to twenty-five years of age) caused the population to increase from 4½ millions in 1800 to about 8½ millions in 1845 Then came the famine which more

than decimated the population, while emigration relieved the pressure to the extent of a million and a half of people within a few years At the present time the population is about 4¼ millions, and the people, who are now making a deliberate effort to secure a very modest standard of economic well-being, have found it necessary to revolutionize their marriage customs More than a quarter of the population of the Irish Free State never marry at all, and 80 per cent of the males between the ages of twenty-five and thirty are unmarried In spite of this the population is still increasing, though far more slowly than formerly This example shows that population-control by delayed marriage and celibacy must be effected in a very drastic manner if success is to be achieved

38 A critic may object that Ireland is a western country where conditions of life are so different from those of India that no trustworthy analogy is possible Let us look therefore at recent happenings in an oriental country Japan is thoroughly up-to-date in her methods of dealing with preventable diseases and as a result the population has doubled itself within the past half century Dr C V Drysdale* gives almost incredible figures, and I quote them with all reserve "The birth-rate in Japan has risen from 17 per mille in 1881 to about 34 per mille, while the death-rate has increased during the same period from 11 per mille to almost double" He suggests that some vigorous form of population-control was in force before the beginning of the modern epoch, about seventy years ago The official figures published by the Japanese Government are not so striking They show that between 1890 and 1929 the birth-rate in Japan rose from 28 5 to 33·0 per mille, while in England it fell from 31 4 to 18 3 The death-rate in Japan during the same period fell from 20 7 to 20, while in England it fell from 18 5 to 11 5 The infant mortality rate in Japan rose from 15 3 per mille in 1899 to 19 2, while it fell in England from 19 to 9 3 The expectation of life for infants under one year of age in Japan was about 42½ years in 1928, having fallen by nearly two years during the previous fifteen years, in England it is about 58 years, having risen by nearly fifteen years during the past half century The experience of Japan is of special interest to India It shows clearly what can be expected to happen in a thickly populated country when a forward policy of economic development and prevention of disease is carried out while at the

* President of the Malthusian League

same time the people indulge in unrestrained reproduction Further, despite the industrial development in Japan which has greatly increased the output of commodities, the people are probably not so well nourished as they were fifty years ago

39 It must not be assumed that a rapid increase in population is in itself an evil, on the contrary, it may indicate a flourishing condition of the people For example the French settlers in Quebec have increased from 60,000 in 1759 to nearly 5 million at the present time, and yet they form a healthy and prosperous community It is when the production of the necessities of life no longer keeps pace with the growth of the population that economic standards and health deteriorate An important aspect of the population problem is that if the pressure of population on the means of subsistence becomes so great that the people are compelled to eat the entire produce of the land for the purpose of keeping body and soul together, there will be no available surplus for maintaining the structure of civilization Schools, hospitals, police, law-courts, armies, and even railways must disappear, and the community will be reduced to a condition of savagery There will be a hand-to-hand struggle for food, with the result that disease and famine must resume their functions in bringing about a natural balance between population and food-supply When people speak of Nature as a gentle mother they display lamentable ignorance Nature when left to herself does not create smiling fields but jungle and desert Her methods are excessive reproduction and wholesale slaughter Should we put a check on Nature's destructive propensities and compel her to produce food on an increased scale, we must take care that she is not allowed to get her revenge If we merely increase the food-supply and prevent disease, Nature will quietly bring about an increase in the population which, if allowed to progress without a check, soon brings us back to the starting-point When we set to work to control Nature, we must be wary to see that the control is complete Nature is a cruel mistress, but an excellent servant, and it is our business to see that she is made to work for us, not to dominate our lives In one respect Nature must always be supreme She has fixed once for all the inherited structure and the limits of longevity of each human being But within the limits thus imposed we have great scope for shaping our lives Throughout the ages mankind has often realized the necessity for restricting the population if comfortable economic standards of life are to

be maintained In uncivilized countries the usual method has been infanticide and slaughter, while in civilized communities the births are restricted by celibacy, delayed marriage, continence, and the use of contraceptives All these methods are merely forms of population-control *

40 Population-control should always be dealt with as a biological and economic question, it is quite wrong to insist that people should employ any form of control which they consider wicked or repugnant All that is needed is to convince them that *some* kind of control is essential to their well-being and they will then choose whichever method they prefer Some western countries are practising population-control to such an extent that they are faced with the prospect of race-suicide Certain opponents of population-control argue that the experience of these countries shows how dangerous it is to try to regulate the number of the people, this argument is just as reasonable as it would be to advocate gluttony because some people injure their health by a slimming diet There is one shining example of properly conducted population-control in Stockholm, where the prosperous members of the community have larger families than the poorer classes There is no reason why properly directed education should not secure this happy state of affairs in other places

41 The subject of population-control has been emphasized because it forms the foundation of all public health effort Nobody can pretend for a moment that a healthy community can exist when there is not enough food to go round But emphasis on this aspect of the problem should not deter us from the equally important effort to reduce deaths from preventable disease Again, there are certain critics who argue that the triumphs of disease prevention in cool climates cannot be repeated in a tropical country like India Let the facts speak for themselves In 1852 the death-rate among British troops in India was 69 per mille, by 1875 it had fallen to 20, by 1900 to 13, and at the present time it is about 2½ per mille The death-rate among Indian soldiers has fallen from 11 per mille in 1900 to just over 2 per mille in 1935 Among prisoners there has been a corresponding improvement From the appalling figure of 100 per mille in

* The term birth-control would be more suitable, but it has unfortunately been earmarked as a designation for the use of contraceptives, and therefore is now regarded as a highly controversial subject

1859, the death-rate has fallen to about 10, a figure which would have been regarded as remarkable even so recently as 1900, when the mortality rate in the jails was 35 per mille These figures show what has actually been achieved in controlled populations in India by improved sanitation But a similar degree of success can never be secured in the civil population of India until there is a radical change in their outlook on life The first requirement of a successful public health programme is to bring about this change in outlook

Drug Addiction in India

42 Europeans have a tendency to exaggerate the evils of the opium and other drug habits which exist in India Colonel Chopra, who has made a special study of the subject, points out that in extensive areas of all provinces the consumption of opium is less than that laid down by the expert committee of the League of Nations as being suitable for the medical and scientific needs of the population Indeed, many people who have lived long in India have hardly ever seen an opium addict Opium is taken by the mouth in small quantities by large numbers of people, but everything goes to show that very few opium-eaters become slaves of the habit Probably the average Englishman suffers greater injury from alcohol than the average Indian does from opium Opium-smoking, which is much more pernicious, is rarely practised except in certain parts of Assam, the Central Provinces, and Berar In Assam there is one opium-smoker for every four opium-eaters, in the other areas the proportion of smokers is much less The Government of India and the provincial Governments have succeeded to a considerable extent in checking the habit of opium-smoking by legislative and executive measures So far as opium in general is concerned, the Government of India has sacrificed a valuable source of revenue by severely restricting the manufacture of opium both for export and for internal use Owing to the fact that poppy cultivation is completely under government control it has been possible to carry out these restrictions in a very effective manner, though at a great sacrifice of revenue * In certain areas of

* Poppy can only be cultivated under licence from the opium department All crude opium must be sold to Government, and the manufacture of opium is a government monopoly The revenue derived from opium has fallen from over 6 crores of rupees in 1891–92 to 2¼ crores in 1920–21, and to 25 lakhs, or one-quarter of a crore, in 1935 36, a sacrifice of over £3,800,000

northern India, the morphia habit has been introduced this has not attained large dimensions, but according to Colonel Chopra it needs careful watching, as its effects are far more serious than those of opium addiction

43 Throughout India the ancient but pernicious custom of giving opium to infants is still practised to some extent. The action of opium in checking diarrhoea and cough is usually the reason alleged for giving it to infants, but the sorely tried mother too often resorts to the practice for the purpose of putting her fretful baby to sleep Many women who are employed in factories adopt this easy method of keeping the child quiet during working hours The custom is, of course, not in the interests of the health of the involuntary addict

44 Indian hemp is a plant which grows wild in many places in north India, and is easily cultivated elsewhere Its leaves (*bhang*), flowering tops (*ganja*), and a resin which exudes from the plant (*charas*),* have a strong narcotic action, but only a small proportion of the population (0 5 to 1 per cent , according to Colonel Chopra) are addicted to its use None the less this plant is responsible for a considerable amount of injury to the mental and bodily health of large numbers of people in India

45 From the replies to a questionary which I issued to doctors in Indian agricultural villages it appears that only 12 3 per cent of the villagers take alcohol in appreciable quantities Very few villagers can afford to drink alcohol in quantities which are likely to do them much harm Cases in which indulgence becomes a dangerous vice are much less numerous than in western countries The alcoholic content of the " country liquors " is low † they are usually prepared by the fermentation of *mahua* (*Bassia latifolia*), rice, or palm-juice, and are comparable to beer in strength The policy of Government is to restrict the sale of alcoholic drinks to a limited number of licensed shops which are strictly controlled and are liable to have their licences cancelled in cases of misconduct Universal experience has shown that the use of alcohol can be severely restricted by imposing stiff excise duties, but when these exceed a certain amount, or when total prohibition is attempted,

* Of these *charas* is the most powerful and *bhang* the least powerful narcotic *Charas* is for the most part imported from Central Asia

† Their strength varies from 25 to 50 degrees under proof

the consumption of alcohol always increases The abolition of alcohol in India as in other countries would be of great benefit to the community, but the best practical policy is to reduce its consumption to the greatest possible extent by nicely regulated duties Education and propaganda must be relied on to combat the " will to drink " People can be encouraged to be temperate, they cannot be compelled to be abstainers so long as the materials for making alcohol are within their reach Prohibition is being tried as an experiment in some localities in India, but in view of the ease with which country liquor can be prepared anywhere,* there is reason to fear that prohibition will meet the same fate as in the United States of America Taking the broad view, it appears that drug addiction is not a serious menace to the health or morals of the people of India There is scope for reform, but other health problems are far more urgent

Nutrition

46 Nutrition is the most important and at the same time the most difficult of the problems of India The progressive western countries are paying great attention to the question of the nutrition of the poorer sections of their people, but with them it is a question of poverty in the midst of plenty, whereas India has to face the far more troublesome problem of poverty in the midst of scarcity Some experts maintain that the total production of food in India is inadequate for the needs of the people others claim that it is sufficient † All, however, are agreed that the great majority of the people are poorly nourished, not so much because of a total shortage of food as because the diet is lacking in some of the constituents which are needed to provide for growth and vigour There has always been an impression that many people in India are ill-nourished, but the first scientific study of the subject was made by Lieut -Col D McCay, I M S , who showed that the diets in use by most Bengalis were seriously deficient in the proteins which are essential to bodily development and physical strength More recently Sir Robert McCarrison ‡ showed that when rats were fed on diets of the type in common use by robust Sikhs, their health was vastly better than that of rats fed on diets of the kind eaten by the people of southern India These experiments show that animals of the same

* All that is required to make a still is a few earthen pots and bamboos

† Cf Chapter I, para 80

‡ Major-General Sir R McCarrison, Kt , C I E , (I M S retired)

stock are greatly affected by differences in diet, and suggest that the great differences in physique of the people of India depend, at all events in part, on food rather than on race

47 A few years ago I tried to find out something about the diets which are actually eaten by the peasants in various parts of India The method employed was to issue a list of questions to a large number of doctors working in dispensaries in typical agricultural villages From the replies it appeared that the average amount of milk taken by each adult was only $3\frac{1}{2}$ oz daily and the amount of *ghi* about $\frac{1}{2}$ oz The amounts varied greatly in different provinces , in the Punjab the daily ration of milk was 10 oz , while in Bengal, Madras, and the Central Provinces it was 2 oz or less The doctors were also asked to classify the people of their villages as " well nourished," " poorly nourished " and " very badly nourished " The replies gave an average for the whole of India of 39 per cent well nourished, 41 per cent poorly nourished, and 20 per cent very badly nourished These figures cannot be claimed to have any statistical accuracy, but they probably do not exaggerate the degree of malnutrition which exists in India From the same survey it appeared that about $2\frac{1}{2}$ millions of people were suffering from rickets and more than $3\frac{1}{2}$ millions from night-blindness Both of these diseases are due to vitamin deficiency and their occurrence indicates serious defects in the quality of the diet of the affected communities The real object of this diet survey was to provide a *prima facie* case for a proper enquiry into the nutritional condition of the people of India Within the past three years or so great interest has been aroused, and several workers are now engaged in making an accurate survey of the diets in various parts of the country Dr Aykroyd (Director of the nutritional research laboratory which is maintained by the Research Fund Association) has done important survey work in Madras, and has fully confirmed the opinions expressed by McCay, McCarrison and myself that the diets of most of the inhabitants of India are grossly deficient in proteins and vitamins Dr Aykroyd has also carried out a very interesting experiment on a group of boys of eleven to fifteen years of age living in a mission boarding-house in Madras Half of the boys were given 8 oz of dried skim-milk in addition to their usual diet, while the other half had their usual food After fourteen weeks it was found that the average gain in weight of the boys who had taken milk was considerably more than that of the others

Also, in that short time the boys who had milk showed an average increase in height of one-third of an inch more than those who had no milk This experiment showed clearly that the ordinary diet of these boys had been insufficient to provide material for proper bodily growth and also that milk, even when skimmed, is a valuable addition to the usual diet of children in southern India

48. Dr. Aykroyd has given the following examples of (*a*) an adequate and well-balanced diet costing about Rs.5/8 a month, and (*b*) of an inadequate ill-balanced diet costing Rs 2/8 a month, such as is eaten by millions of people in southern India Unfortunately the adequate diet costs twice as much as the other, and so is beyond the reach of most peasants. It will be seen that when cost is a primary consideration the quality of the diet suffers more than the quantity

	Insufficient and ill-balanced diet	Adequate and well-balanced diet
Rice	15 oz	10 oz
Cambu *	—	5 oz
Milk	1 oz	8 oz
Pulses	1 oz	3 oz
Green-leafy vegetables	0 25 oz	4 oz
Non-leafy vegetables	1 5 oz	6 oz
Fats and oils (gingelly) †	0 5 oz	2 oz
Fruits (mangoes and ripe plantains)	—	2 oz

Composition of the above Diets

	Insufficient and ill-balanced diet	Adequate and well-balanced diet
Proteins	38 grammes	73 grammes
Fats	19 ,,	74 ,,
Carbohydrate	367 ,,	408 ,,
Calories	1,750 ,,	2,590 ,,
Calcium	0·16 ,,	1 02 ,,
Phosphorus	0 60 ,,	1 47 ,,
Iron	9 milligrammes	44 milligrammes
Vitamin A	500 units	7,000 units
Vitamin B	160 ,,	400 ,,
Vitamin C	15 0 milligrammes	170 milligrammes
Monthly cost	Rs 2 8 0 (3*s* 9*d*)	Rs 5 to 6 (7*s* 6*d* to 9*s*)

* Tamil name of *bajra*

† Another name for sesamum.

49 The low standards of physical development of the majority of the population in India are associated with improper nourishment, as also are the prevalence of such diseases as rickets, osteomalacia, keratomalacia, anaemia of pregnancy and one form of beri-beri Lowered resistance to many other diseases such as dysentery, tuberculosis, leprosy, and pneumonia is caused by malnutrition. But it is useless to tell people to drink more milk, or to eat more fruit and vegetables, unless we can show them how these articles can be obtained *in addition to* and not *instead of* part of the usual diet Already many people cannot obtain enough rice and other bulky cheap foods to satisfy their hunger To suggest expensive foods to these people would be just as reasonable as the remark attributed to Queen Marie Antoinette who, when told that the people of Paris were clamouring for bread, was said to have replied, " If they have no bread, why don't they eat cake ? "

50 The increase which is occurring in the population adds greatly to the difficulty of providing an adequate food-supply, and it must also be remembered that much of this increase has taken place since the last widespread failure of the rains, so there is cause for anxiety as to what will happen when famine conditions next occur Improved methods of agriculture, the proper use of cattle to provide a milk-supply, and the abolition of many wasteful customs would bring about a great increase in the food-supply , but even if these potential sources of income were exploited to the greatest conceivable extent, their benefits would soon be neutralized if early and improvident marriages continued to impose a heavy handicap on the community

51 Sir John Russell in his recent report on the work of the Imperial Council of Agricultural Research states that during the period 1909 to 1918, 0 89 of an acre was devoted to food crops for each person, and that in the period 1929 to 1933 this had fallen to 0 79 of an acre Probably the yield from each acre has increased , but even if this has happened to such an extent that the people are now getting more food than formerly, there would be little reason for complacency, for the present diets are admittedly inadequate, considerable leeway has to be made up to bring them to a proper level, and at the same time provision has to be made for a rapidly increasing population It is quite unnecessary to lay down precise rules with regard to diets We have only to look at the

splendid specimens of humanity seen in some parts of the Punjab to realize that their diets are excellent despite the fact that they have never heard of calories or proteins or vitamins Plenty of water should be drunk, especially in hot weather, and preferably between meals

52 There is a small but growing section of the community in India which suffers from excess of food rather than from scarcity ; the well-to-do professional men of the large cities suffer to a remarkable extent from diabetes. The chief causes of this are excessive indulgence in sweet and starchy foods, combined with lack of exercise Heredity plays a very small part, as is shown by the fact that the people of the same races who lead active lives in the country do not suffer from the disease

Dietetic Diseases

53 *Protein starvation* —It has already been shown that the diets of most Indians are deficient in proteins The analysis of the foodstuffs does not tell the whole of the story, because the proteins which are derived from vegetables are decidedly inferior in body-building value to those which are of animal origin A real vegetarian could not attain a good standard of growth and health however carefully he selected his diet. Fortunately, there are few real vegetarians, for the people who call themselves by this name have no hesitation in drinking milk, which is the best of animal foods , many also eat eggs, which are scarcely inferior to milk as a source of animal proteins Flesh foods are quite unnecessary, provided that animal proteins are supplied in the form of milk or eggs If every growing child in India could have a pint, and every adult half a pint of milk daily in addition to their present diets, the physique and health of the people would undergo nothing short of a revolution. An important point in connection with proteins is that rice eaters cannot make up for the low protein content of the grain by eating more rice most of the proteins contained in a small meal of rice can be absorbed and utilized in the body, but the same thing does not happen when a bulky meal of rice is eaten, because the digestive organs are unable to cope with the larger meal so that most of the protein is passed out in the stools. The only remedy for the ill-health caused by protein starvation is to supply more animal proteins, preferably in the form of milk and eggs Protein starvation is not mentioned in the text-books as among the dietetic diseases,

but in reality it is one of the most important of them more than half of the people of India are suffering from it to a greater or less extent

54. *Vitamin deficiency as a cause of disease*—Apart from general malnutrition, there are several dietetic diseases caused by special deficiencies in the diet. Many years ago it was known that sailors who lived for long periods on stale foods were very liable to scurvy, and that this disease could be prevented and cured by lime-juice or fresh vegetables. Recently it has been discovered that not only scurvy but several other diseases are due to the shortage in the diet of certain substances, to which the name vitamins has been given. These vitamins have been intensively studied, so that it is now possible to find out how much of each is contained in any article of diet The chief vitamins which have been clearly recognized are called vitamin A, vitamins B and B2, vitamin C, vitamin D, and vitamin E

55 (1) *Vitamin A deficiency*—Vitamin A is present in abundance in butter, eggs, pure milk, and green vegetables, there is very little in rice Shortage of this vitamin causes night-blindness in extreme cases there is a chronic inflammation of the eyes, which often goes on to keratomalacia, and may result in total blindness if proper treatment is not carried out An old Indian remedy for night-blindness was goat's liver, which has been proved to be rich in vitamin A A more potent remedy is cod-liver oil this is one of the richest sources of the vitamin

56 (2) *Vitamin D deficiency*—Vitamin D is found in milk, butter or eggs, and to a less extent in green vegetables Lack of the vitamin causes rickets in children, and a terrible disease called osteomalacia in young women of child-bearing age In both of these diseases the bones become soft and deformed. The quickest way of curing these two maladies is by giving cod-liver oil, which is specially rich in vitamin D as well as in vitamin A Lack of sunlight greatly aggravates the ill-effects produced by deficiency in vitamin D, so that the diseases caused by shortage of this vitamin are specially common among women and children living in *purdah* Prevention is by giving butter, fresh milk, eggs, and green vegetables, and by exposure of the body to sunlight The serious deformities caused by osteomalacia are often permanent, hence the importance of early diagnosis and treatment

57 (3) *Vitamin C deficiency*—Scurvy is caused by a diet deficient in vitamin C, which is absent from rice, flour, butter, sugar, and dried vegetables, and is abundant in green vegetables, tomatoes, mangoes, potatoes, oranges, lemons, and in most fresh fruits In India we do not see many cases of full-fledged scurvy, with bleeding spongy gums and effusions of blood into the body tissues ; but large numbers of people suffer from general ill-health, anaemia, and debility because they do not get enough of the vitamin to keep the body in good condition. A proper ration of fresh vegetables or fruit is a complete safeguard against any tendency to scurvy Dry, stale, and over-cooked foods contain much less of this vitamin than uncooked foods. When fresh vegetables and fruits are scarce, they may be replaced by sprouted grains McCarrison's method of causing grains to sprout is to soak these (*dal*,* gram, wheat, peas, etc), in cold water for 24 hours, then spread them on a damp blanket and cover them with a cloth, which must be kept constantly moist by sprinkling water on it After two to three days the grains will have sprouted if kept in a warm place . they should be eaten raw or very lightly cooked

58 (4) *Vitamin B deficiency.*—Vitamin B is sometimes known as the antineuritic vitamin, because it prevents a kind of neuritis which is usually regarded as a form of beri-beri There is still a good deal of obscurity about vitamin B ; at least two separate vitamins (B_1 and B_2) are included under the name, but what the layman needs to know is that rice, especially over-milled or polished rice, contains very little of it. Wheat, millets, pulses, green vegetables, milk, and eggs contain a good supply of this vitamin, so that two or more of these articles should be taken with each meal

59 A word of caution must be given with regard to beri-beri, for although one form of the disease is caused by deficiency in vitamin B, there have been many cases and outbreaks of a disease to which the name beri-beri has been applied, although there has been no deficiency of vitamin B Epidemic dropsy is regarded by some as a form of beri-beri , it is common in Calcutta and other towns in Bengal, and always attacks rice-eaters It appears to be a form of food-poisoning, which is

* *Dal* is here used in its original meaning of pulse The name, however, is usually given to a decoction made from peas or pulses, resembling coarse pea-soup, which is eaten with rice or other food-grains

generally considered to be due to the formation of a poison by the action of certain bacteria on rice which has been stored in hot and damp places Other experts suspect a poison which is sometimes present for some mysterious reason in mustard-oil When this disease occurs, the safest way of prevention and cure is by cutting off both rice and mustard-oil from the diet so long as any cases continue to appear

60 For every person suffering from obvious disease due to vitamin deficiency, there are many whose health is impaired by shortage of vitamins No special knowledge of vitamins is needed , and diet which contains pure milk, butter, flour, *dal*, fresh fruits and vegetables in fair quantities is sure to contain plenty of vitamins of all kinds *Ghi*, which is a form of clarified butter, is a doubtful source of vitamins, as it is often cooked to such a degree that most of the vitamins of the original butter are destroyed

Appendix

Note on an enquiry into some Public Health aspects of Village Life in India

A reference has already been made in para 37 to a survey of public health conditions in rural India The table gives a summary of some of the results of this enquiry The figures are based on replies received from 571 doctors working in typical agricultural villages The doctors were asked to give facts which came within the scope of their personal knowledge, and, although statistical accuracy is not claimed for any of the figures, the table can be regarded as giving a substantially true picture of most of the conditions which are recorded The figures for infant mortality may not be strictly accurate as there is often a doubt as to the exact age of a child at death, so that possibly children who were more than one year old at death may have been included The figures for diseases like rickets, night-blindness, syphilis, gonorrhoea, leprosy, and tuberculosis cannot be accepted as reliable, but they are included as throwing some light on the degree to which these diseases occur.

	Assam	United Prov	Central Prov	Madras	Bengal	Bihar	Punjab	Bombay	Average for British India
Number of villages surveyed	48	88	82	95	69	37	83	69	
Total population dealt with in the survey	22,552	52,055	85,351	278,377	93,921	35,748	108,813	68,700	
Average number of acres cultivated by each family	6 9	9 6	16 5	6 3	5 0	5 7	17 3	13 8	8 4
Average number of members of each family	5 6	5 4	5 0	5 0	5 5	5 8	6 2	5 2	5 4
Percentage of "well nourished"	53	40	32	46	22	42	42	45	39
Percentage of "poorly nourished"	38	39	50	36	47	40	38	44	41
Percentage of "very badly nourished"	9	21	18	18	31	18	20	11	20
Average daily consumption of milk by each adult—in ounces	2 3	5 0	0 8	1 7	2 0	3 0	10 0	4 0	3 5
Average percentage of the people who take alcohol	24 3	3 0	8 4	20 4	10 5	22 5	7 7	8 9	12 3
Number of cases per mille of population: Rickets	7 2	2 5	2 6	3 0	21 5	3 2	1 6	3 4	6 6
Number of cases per mille of population: Night-blindness	3 4	25 3	2 2	2 2	12 8	14 4	3 9	0 8	10 4
Number of cases per mille of population: Syphilis	3 1	7 8	10 8	30 5	28 2	8 0	2 6	6 5	15 6
Number of cases per mille of population: Gonorrhœa	12 1	18 0	13 5	35 0	38 3	14 1	3 1	4 9	21 5
Number of cases per mille of population: Leprosy	1 5	1 4	2 3	3 5	2 8	2 0	0 1	0 7	2 1
Number of cases per mille of population: Tuberculosis of lungs	2 7	1 9	0 9	6 4	7 0	4 8	5 1	1 7	4 4
Number of cases per mille of population: Insanity	1 5	0 7	0 4	1 2	1 2	0 6	0 5	0 5	0 8
Number of cases per mille of population: Congenital mental defect	1 7	0 6	0 2	0 4	2 2	0 8	0 6	0 3	0 9
Number of cases per mille of population: Blindness	3 5	12 8	2 8	1 7	5 4	4 5	5 1	2 1	5 5
Average age at which males begin to cohabit	21	16	17	20	19	17	17	18	18
Average age at which girls begin to cohabit	15	14	13	14½	14	14	13½	14	14
Average age of mother at birth of first child	17	16	16	16	16	16	17	16	16
Average age of child at weaning	1 8	2 0	1 6	1 8	1 6	1 9	2 0	1 9	1 7
Infant mortality during 1st year (per 1,000 births)	250	303	296	198	189	242	206	214	232
Maternal mortality (per 1,000 births)	26 4	18 0	8 2	13 2	49 2	26 6	18 7	20 1	24 5

CHAPTER VII

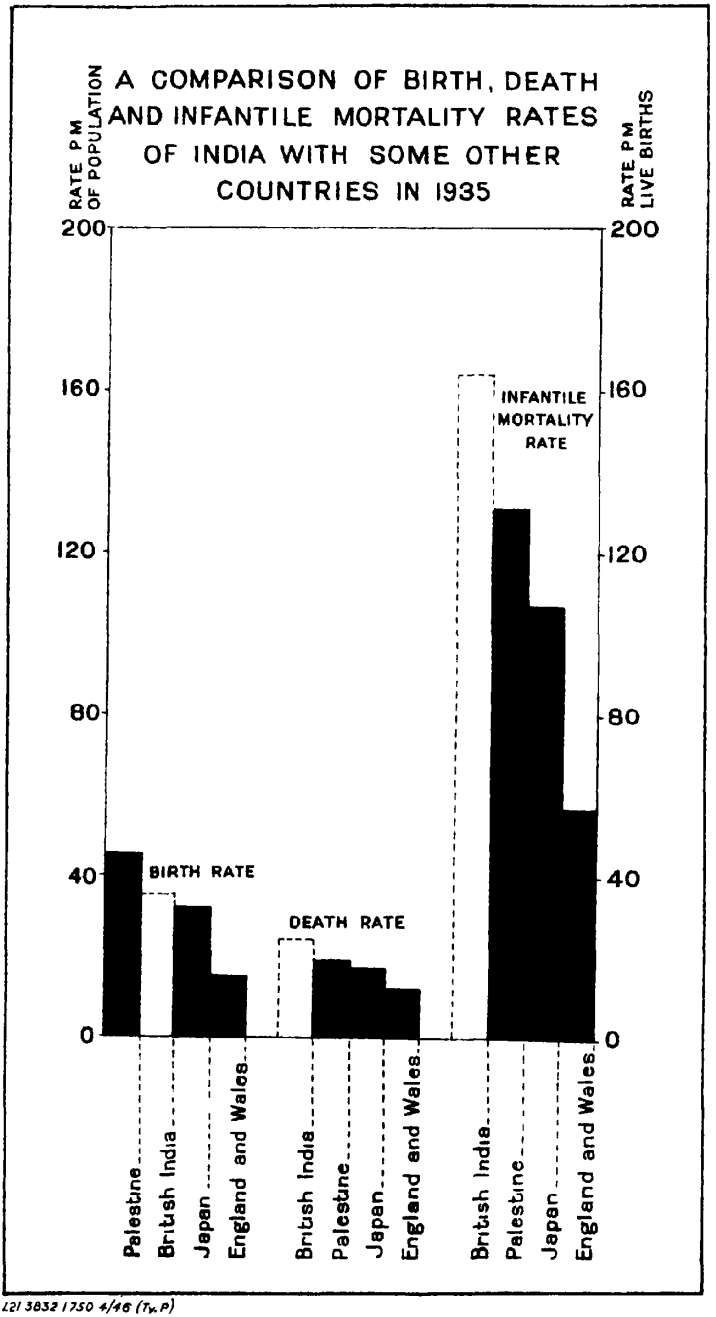
By SIR JOHN MEGAW

Public Health. The great Diseases of India

Diseases in General

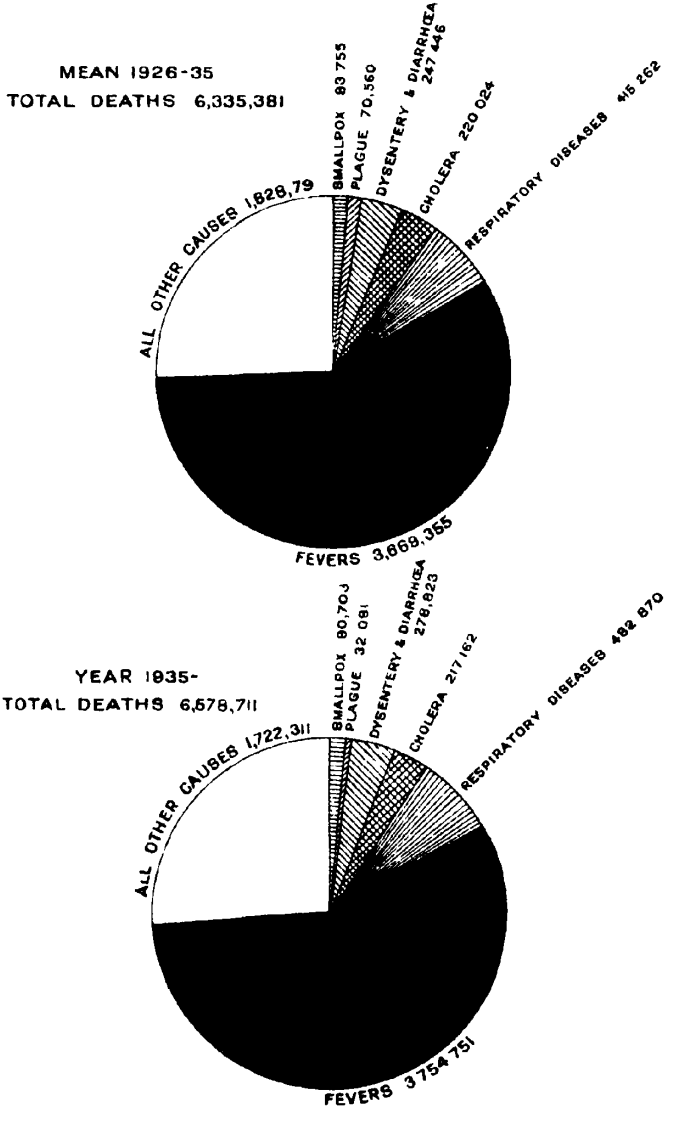
1 Some of the ancient theories of the causes of disease are still accepted by uneducated and even by some educated people in India Among these views are that disease is a punishment for the sins of the sick man or of his ancestors, a visitation by angry gods, a possession by evil spirits, or a derangement

2. Various ancient systems of treatment are still popular among the masses . of these the Ayurvedic, which is influenced by religious beliefs, has great popularity among Hindus, whereas the Unani system is specially favoured by Musalmans Homoeopathy has a number of adherents in the cities and towns These systems of treatment are based on traditional theories of disease, and their practitioners have been aptly described by Mr Gandhi as being " devoid of the spirit of humility and research " During the past hundred years or so, medicine has become scientific and has almost completely escaped from the baneful influence of tradition its practice and teaching are based on the results of accurate observation and experiment Progress in the acquisition of further knowledge is now more rapid than ever The stock of valuable knowledge built up by the old systems is by no means ignored, but the medical scientist is no longer prepared to accept anything on authority , every theory or statement is subjected to strict scrutiny and test by observers all over the world To call a medical scientist an allopath is an insult , he refuses to subscribe to the allopathic theory, just as firmly as he rejects all other dogmas which are based solely on tradition and fail to stand the test of critical examination Some of the greatest discoveries in medicine have been made by non-medical



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BRITISH INDIA
COMPARATIVE DIAGRAMS OF DEATHS BY CAUSES



scientists—for example, Pasteur was a chemist—and everything that helps in the diagnosis, treatment, and prevention of disease is seized eagerly by the medical profession, no matter from what source it is derived There can, ultimately, be no room for any system of medicine other than the scientific system which has already become universal throughout the civilized world None the less, the indigenous systems are of considerable importance even at the present time In spite of the rapidly increasing popularity of modern hospitals the majority of the people are still treated by practitioners of the ancient systems, some of whom have a considerable degree of skill and experience In several provinces attempts are being made to restore the ancient systems, partly from an honest belief in their efficacy and partly from sentimental or political reasons It would be just as reasonable to restore alchemy or astrology as to restore systems based on dogma ; but just as there are many adherents of astrology even in progressive countries, so also there will for many years be believers in dogmatic systems of medicine in India

The Chief Causes of Disease

3 With the introduction of powerful microscopes a flood of light has been thrown on the causes of many diseases Within the past sixty years or so the " infinitely little " parasites of cholera, plague, leprosy, tuberculosis, malaria, and a host of other diseases have been revealed These parasites can be identified with as great certainty as crops in a field There is no longer any discussion about the " germ theory of disease."

4 The chief causes of disease may be classified as follows —

(*a*) Microbes, which cause most of the great killing diseases.

(*b*) Parasites, which are larger and more highly organized than microbes Hook-worm is an example of a parasitic disease

(*c*) Lack of some essential element in the diet is responsible for a large group of diseases , for example, scurvy, rickets, and some forms of beri-beri are due to deficiency in one or other of the vitamins

(*d*) Poisons, of which alcohol is the greatest offender

(*e*) Physical agencies , for example, exposure to the excessive heat causes heat-stroke

(*f*) Inherited defects of body structure are responsible for a few diseases, such as haemophilia and some diseases of the nervous system

(*g*) There is also a small group of diseases, the origin of which is somewhat obscure, the most important of these is cancer.

5 For the prevention of infectious diseases we must know how they are transmitted, and fortunately scientists have had as great success in acquiring this knowledge as in discovering microbes The following are the chief means by which the important diseases of India are transmitted.

(1) By swallowing material containing the microbes Some of the chief diseases conveyed by infected food and drink are cholera, dysentery, and typhoid fever

(2) By inhaling droplets which are sprayed into the air by infected persons this kind of infection is called "droplet infection" Persons who have influenza, tuberculosis of the lung, or any of the numerous respiratory infections often cough or sneeze, in doing so they send out a spray of droplets of sputum, each droplet may contain hundreds of microbes, which thus gain an entry to the respiratory passages of anyone who breathes the infected air The droplets soon dry up after being expelled, and so may remain floating in the air of a closed room for a long time In the open air or in a well-ventilated room the droplets soon get carried away by air-currents, so that the obvious means of preventing the spread of infection is to keep infected persons in the open air or in a well-ventilated room, where the only risk to other persons is by coming within the range of bombardment of the patient when he coughs or sneezes

(3) Several important diseases are conveyed from man to man by insects which have previously bitten infected persons. Malaria and dengue are conveyed by mosquitos, sand-fly fever and *kala azar* by sand-flies, and relapsing fever by lice. Plague is conveyed by fleas which have previously bitten infected rats

(4) Syphilis, gonorrhoea, leprosy, and small-pox are examples of diseases in which the microbes are conveyed from man to man, either by direct contact or by contact with articles which have become contaminated by infected persons

Some of the Important Diseases of India

Malaria

6 Malaria causes more sickness and loss of working-power than any other disease in India Many millions of people suffer from malaria every year in India We can only make a rough guess at the number of people who die of malaria in India, but on a conservative estimate the disease is responsible for more than a million deaths yearly. Many of these deaths do not occur during the actual attack, they are due to other diseases, such as pneumonia or dysentery, which strike down persons already enfeebled by malaria The loss of man-power due to malaria is enormous in some areas a large proportion of the population lose several weeks of working time every year Malaria has been known since the time of Hippocrates, but its cause, a microscopic parasite which lives in the blood, was only discovered in 1880 by a French surgeon, Laveran Sir Ronald Ross, working in Calcutta in 1898, discovered the secret of its transmission from man to man by the anopheles mosquito This epoch-making discovery at once gave the clue to the prevention of the disease, but Ross experienced bitter disillusionment when he expected that mankind would promptly adopt suitable measures to control it. Wherever anopheles mosquitos have been exterminated, malaria has always disappeared · an example is the Panama Canal zone, where after a previous attempt to cut the canal had been foiled by a terrible mortality among the workers, a thorough application by the Americans of the discoveries of Ross enabled them to keep the labour staff healthy * Malaria is caused by microscopic parasites which pass one phase of their life in anopheles mosquitos which have sucked the blood of infected persons An anopheles mosquito sucks the blood of a person who has malaria the parasites swallowed with the blood are male and female. almost at once after their entry into the stomach of the insect, they conjugate and produce large numbers of offspring, which after about eight to fourteen days penetrate the poison glands of the mosquito When the infected mosquito bites a person it injects these parasites into his body, where they soon find their way into

* Another example is connected with the Sarda canal in Oudh, of which the headworks and upper stretches lie in a very malarial tract The building of this canal was made possible by anti-malarial measures carried out by a special staff belonging to the public health department of the United Provinces.

the blood cells During the following ten days or so the parasites multiply exceedingly, and begin to generate enough poison to cause fever, which often comes with shivering and passes off with sweating Malaria, in natural conditions, is never conveyed in any other way than by the bite of infected anopheles mosquitos The attacks of fever usually come every day or every other day, and unless proper treatment is carried out the consequences are very unpleasant for the victim Anaemia, debility, and enlargement of the spleen are the chief results, and the disease tends to be chronic, with spells of freedom from fever followed by relapses Sometimes the disease runs a rapid and fatal course, but fortunately these cases are exceptional, and are only likely to occur in places which are notorious for severe malaria In such localities it behoves the newcomer to take strict precautions against infection

7 No attempt will be made to deal with the symptoms or diagnosis of malaria, for these are outside the province of the layman , but the following are some of the things that everybody in a malarious country ought to know. Malaria is very irregular in its distribution Except for places which are at too high an altitude for transmission of the parasite, the greater part of India is malarious to a greater or less degree In some places the disease is present throughout the year, but as a rule it is much more severe in the autumn than at other seasons The autumn epidemics vary in intensity from year to year , for example, in the Punjab there are annual outbreaks of moderate severity, but after longer or shorter intervals the province is attacked by very severe epidemics Places where malaria is exceptionally severe are usually notorious, but there are localities in which the whole adult population has become " salted " by attacks in early life In such places there may appear to be very little malaria, but any newcomer finds to his cost that the infection is very much alive, as he is likely to get a severe attack soon after his arrival Malaria is more common in the country than in large towns Those who aim at controlling malaria must first of all find out to what extent the disease prevails in the locality A good rough-and-ready method of doing this is to discover how many of the children have enlarged spleens * If the "spleen-rate" is above 50 per cent , the place is very badly affected, but even when

* Any doctor can show how this should be done in a few minutes

only 5 per cent. to 10 per cent of the children have enlarged spleens the place must be regarded as malarious

8 Only a few kinds of mosquitos are capable of conveying malaria even among the anopheles mosquitos only a few species are dangerous. It is a comforting thought that even if one is bitten by a mosquito capable of conveying the disease, no harm will be done unless the insect has previously bitten a person suffering from malaria, and so one may be bitten by thousands of mosquitos without getting it. Nevertheless, it is good policy to avoid being bitten by *any* mosquito, as far as possible An important point is that anopheles mosquitos rarely bite except during the hours of darkness, so that anyone who can protect himself from mosquito-bite between the hours of sunset and sunrise need have no fear of getting malaria

9 The precautions which can be taken by the untutored layman who is living in a malarious locality are as follows Avoid the bites of mosquitos from sunset to sunrise by living in a mosquito-proof room, or under a good and well-adjusted mosquito curtain Those who resent such a restriction can reduce the risk of infection by wearing clothing which protects the body, especially the ankles and neck, or by applying *sketofa*, or oil of citronella, every two hours to the exposed parts of the skin During the hours of sleep a well-fitted mosquito-net is absolutely essential in malarious localities. A thorough attack on all mosquitos in the living and sleeping rooms by flit or other insecticide spray is distinctly useful, most people prefer the smell of flit to the bite of the mosquito. The early stages of the life of the mosquito are passed in water, where the mosquito *larvae* look like little wriggling worms. In some places it may be possible to ferret out and abolish the breeding-places. If this is impracticable, the *larvae* can be destroyed by soaking a small bundle of rags in kerosene and dragging this over the surface of the water so as to create a thin film of oil, which will quickly kill the *larvae.** In a locality where malaria is really bad, the proper course is to call in an expert to make a survey of the area and advise as to what can be done

10 The risk of infection can be reduced by living at a sufficient distance from infected persons, and by seeing that everybody in the neighbourhood is thoroughly treated with

* In some places the *larvae* have been reduced in numbers by stocking ponds and tanks with little fish which feed on them.

quinine. The chief sources from which mosquitos become infected are young children, and therefore they must receive special attention when treatment is given to the people of the neighbourhood Much controversy has raged round the question of quinine prophylaxis for malaria , and it must be admitted at once that when an infected mosquito has bitten a person, neither quinine nor any known drug can be relied on to destroy the parasites during the first few days after their entry into the body For this reason true prophylaxis is still unattainable In spite of this limitation in the efficacy of quinine, it has been proved by long experience that a regular daily dose of six or seven grains of the drug will keep the disease in check when otherwise severe attacks would occur For this reason the daily " quinine parade " often saves the situation These daily doses should only be given when malaria is highly prevalent, and they should be stopped as soon as the epidemic comes to an end In spite of the daily dose, slight attacks of malaria may occur, but they usually yield readily to a course of treatment Soon after the end of the period of preventive treatment, attacks of malaria often occur even in people who have had no attack throughout the epidemic These attacks also are readily amenable to a course of treatment

11 For an attack of malaria, if no doctor is available, five grains of quinine should be taken three or four times daily for five days as a first-aid measure , but expert medical advice should be sought as early as possible, as it is very important to make an accurate diagnosis and to have a course of treatment suitable for the type of infection which is present In most cases the diagnosis of malaria is easy attacks of fever coming on with shivering every day or every other day in a person who has recently been in a malarious place, are very likely to be due to malaria , but the most dangerous form of the disease may resemble typhoid or other fevers, so that the path of safety for anyone who gets fever while in a malarious place, or shortly after being in such a place, is to take quinine at once, but also to send for the doctor The recently introduced remedies such as atebrin and plasmoquine have undoubted value in treatment, and they also have advantages over quinine in certain circumstances , but they are highly potent drugs and must only be given under medical supervision Quinine, on the other hand, is a safe and well-tried remedy which rarely fails to give excellent results, and it has the great advantage of being suitable for general distribution.

The harmful effects attributed to quinine are mostly mythical, but it does no good in fevers other than malaria ; and it fails when, as too often happens, the stock mixtures contain only a fraction of the quantity which is prescribed Quinine has a high market-value, and the mixtures supplied from dispensaries must be subjected to surprise tests, or otherwise the patients will rarely get proper doses of the drug Tablets supplied by Government or good private firms can be relied upon to contain the stated quantities of the drug, but mixtures act more promptly and surely, provided that they are of the proper strength

Kala Azar

12 In certain parts of Bengal and Assam *kala azar* is very common It used to be regarded as a form of malaria, partly because it often occurs in malarious places and partly because its symptoms resemble those of chronic malaria. Prolonged fever, wasting, and enlargement of the spleen are the prominent features of *kala azar.* Up till recently the case mortality rate was about 90 per cent , now the treatment is so successful that a cure can almost be guaranteed In the affected areas of Bengal and Assam special arrangements are made for the treatment of *kala azar* by intravenous injections of special preparations of antimony.

13. The disease is caused by a special microbe distantly related to the malaria parasite, and conveyed in all probability by a kind of sand-fly More than 138,000 cases were reported in Bengal in 1935, with 17,500 deaths The places most affected were Rangpur, Bakarganj, and Rajshahi districts There were 11,000 cases in Assam with 845 deaths, mostly in Sylhet, Goalpara, and Kamrup districts, and over 2,000 cases in Madras, nearly all being in Madras city, Ramnad and Tinnevelly districts The disease also occurs in certain parts of Bihar and Orissa, the Central Provinces, and the United Provinces Probably there were many more cases than those recorded ; but in badly affected areas the people have learned that the disease is curable and most of the victims come for treatment. A peculiar feature of *kala azar* is that it attacks certain areas and plays havoc in them year after year, but it is liable to wax and wane in the affected localities, and it has a tendency to extend into new areas while receding from others. For some reason, it is practically unknown west of a line drawn from Lucknow to Cape Comorin The control of

kala azar is one of the greatest triumphs of public health in India, but though many thousands of lives have been saved in recent years, there is still much to be done before a complete conquest of the disease can be claimed.

Dengue

14 Dengue is an unpleasant rather than a dangerous fever which comes on suddenly and lasts from three to seven days Anyone who gets dengue is convinced that he has a very serious illness, yet the risk of dying is negligible, except in the case of persons who are already in very bad health Dengue is caused by a virus invisible even with the help of the most powerful microscope This virus is carried from one person to another by the tiger mosquito, which can be recognized by the white spots on its legs and by its persistence in returning to bite after it has been driven away *

15 Dengue is far more common than is generally supposed, even by most doctors When it comes as an epidemic in a large town anyone can recognize it, but very often there are only a few cases in the locality and these may not have any special features—merely fever for a few days with pains and aches all over the body In cases of this kind diagnosis may be difficult, as the microbes which cause the disease are beyond the ken of the microscope No medicine has any really curative action, the best that can be done is to relieve the pains, which are sometimes so bad as to entitle the disease to its old name " break-bone " fever Most of the patients are treated with quinine in the belief that they have malaria, and as the temperature falls within a few days, the cure is naturally attributed to the drug, whereas Dame Nature deserves the whole of the credit No great harm is done by taking quinine, whereas it would be a tragedy to withhold the drug if the fever were really malarious Sometimes there is a spotty red rash about the third or fourth day of the fever, and sometimes there are two spells of fever, but in every case the temperature comes finally to normal within a week

* This is the mosquito which also carries yellow fever, a disease happily unknown as yet in India, despite the fact that all the conditions suitable for its spread are ready to hand with one essential exception—the virus There is good reason to believe that if the infection of yellow fever were introduced to India, the disease would spread rapidly over a great part of the country, wherefore great care is being taken to prevent any infected person or mosquito from getting into India

Sand-fly fever

16 Sand-fly fever is a first cousin or even a sister of dengue It is caused by the same kind of virus and has much the same kind of symptoms, but the infection is carried from one person to another by a sand-fly The fever comes on suddenly and seldom lasts more than three or four days There is no rash or second spell of fever, and although the victim is usually very sorry for himself he can be assured of a complete recovery, drugs or no drugs After an attack of dengue or sand-fly fever there may be a good deal of depression This is often out of proportion to the degree and duration of the fever, but it usually passes off within a few days

Relapsing fever

17 Relapsing fever is liable to occur as a great epidemic spreading over the greater part of India, especially in times of famine or scarcity Its cause is a microbe which can be seen with the microscope in stained blood films , it looks like a tiny corkscrew, and even under a very powerful magnification it appears so slender as almost to deserve the description " length without breadth " The microbe is conveyed from man to man by lice, and in no other way, although there is a closely related disease, very rare in India, which is conveyed by ticks.

18 Relapsing fever can be a very fatal disease when it breaks out among ill-nourished people It used to be common in England, where it was sometimes called famine fever, but with the great decline in the louse population the disease has disappeared, and is now unknown Louse-infested peoples are always liable to be attacked, though in a curiously spasmodic way After causing havoc for three or four years the disease dies out spontaneously and appears to have taken its departure for good , but several years later it returns and has another spell of baneful activity

19 An expert can make the diagnosis with absolute certainty by examining the blood The special feature of the disease is that in most cases there are two or three spells of fever, each lasting a few days These spells are separated from each other by a few days, during which there is no fever It is this peculiarity of the disease that has caused it to be called relapsing fever * The arsenical drugs which cure syphilis are

* Sometimes cases of typhoid and other fevers are wrongly classed as relapsing fever when relapses occur, the name should only be used for fever caused by the special microbe.

also effective in relapsing fever, but they have to be used with caution as the patients are often so feeble that they cannot stand large doses of potent medicines Fortunately, the disease can always be brought under complete control by the simple though troublesome method of "de-lousing" the affected population People who keep their skin and hair well oiled with mustard or other oil are not infested with lice and so they escape relapsing fever

Typhus fever

20 The classical form of typhus fever is spread by lice in the same way as relapsing fever, but for some reason it remains confined to the extreme north-western parts of India, so that it does not constitute one of the great public health problems of the country There are three other closely related forms of typhus which occasionally attack persons in certain well-defined localities in India , they are primarily diseases of rats and other rodents, and are conveyed from these to human beings by the bite of ticks, fleas, and mites, for which reason they are called tick typhus, flea typhus, and mite typhus respectively Cases are frequent in the neighbourhood of Bhim Tal, Kasauli,* and other regions in the Himalayas Several localities in the Central Provinces are also foci of infection, and cases have been reported from many other places in India When camping, shooting or fishing in the wilds, it is always desirable to keep a sharp look-out for ticks, and to remove these as soon as possible when they bite Unfortunately, the tick often bites without causing the slightest pain, so that the mischief may be done before its presence is detected The best precaution of all is to avoid the places where the disease is known to occur

Plague

21 Plague is steadily declining in most parts of India The yearly average number of deaths from 1898–1918 was about 500,000, whereas between 1931 and 1934 it was 50,000, and in 1935 it was only 32,000 The only province in which the disease was severe in 1935 was the United Provinces, where 23,000 deaths occurred, the mortality rate per mille of population being 0 5 In Bengal only two deaths were reported, while Assam and the North-West Frontier Province

* Bhim Tal is in the United Provinces, near Naini Tal Kasauli is near Simla

were free from the disease in that year The cause of the steady decline in plague is not quite clear, neither do we fully understand why some areas, especially in Orissa and Assam, have never been invaded by plague Plague is primarily a disease of rats, among which it is spread by the rat flea Before plague appears among human beings, it is usual to find that rats begin to die in large numbers When dead rats are found in a place where plague is endemic, the people know that the disease is likely to follow The cause of the disease is the plague bacillus, which can be found in enormous numbers in the blood of rats which have died of the disease Rat fleas which have sucked the blood of infected rats become heavily infected and convey the disease to other rats These fleas do not normally feed on man, but if their usual hosts, the rats, have died or fled, they are compelled to seek nourishment from human beings, and so convey the disease to them

22 Although the disease seems to be disappearing we have no certainty that it will not flare up in future years A few practical points must therefore be noted "No rats, no plague," is a truism, and even in places where there is no plague it is well worth while to wage war on rats, as these animals devour enormous quantities of food which is badly needed by the people The rat-population will always be found to be roughly proportional to the available food-supply, so that when all grain and other foodstuffs are stored in rat-proof stores and receptacles, the rats diminish in a remarkable manner We cannot expect to exterminate them entirely, because a few will be able to subsist on odds and ends which they find in the fields The important point is that rats invariably disappear from houses where they cannot get any food or shelter, so that the rat-proofing of houses and grain stores, combined with the protection of every kind of food in rat-proof receptacles such as covered tins will not merely protect from plague but will also be a great economy Destruction by traps, poison baits, or fumigation cause a temporary reduction in the number of rats but is not a permanent cure, for a single pair of rats can produce a hundred descendants in the course of a year if they can find plenty of food and shelter Nevertheless, a campaign of rat-destruction is a valuable measure if carried out just before the plague season, or as soon as plague begins to appear * The plague season begins in

* But see Chapter II, para 42

northern India early in January and ends in May or June, but it varies in different localities

23 When dead rats are found in a locality which is known to be liable to plague, everyone in the neighbourhood should be inoculated at once, as experience has shown that the deaths among inoculated persons are far fewer than among the rest of the population Inoculation is an essential measure when plague threatens to invade the locality, but the permanent banishment of rats from the houses by the means already mentioned is the best and cheapest scheme for preventing the disease Any houses or locality in which dead rats have been found should be evacuated at once Nothing should be taken away till the houses have been thoroughly disinfected

Tuberculosis

24 Unlike malaria, tuberculosis in India is far more common in towns than in the country Most medical experts believe that the disease is spreading from the towns to the rural areas owing to infection being carried by villagers who have contracted the disease while working in the towns No accurate survey has yet been made of the incidence of tuberculosis in rural areas, but even if the disease is not so common in the villages as some experts believe, it is undoubtedly increasing, and is threatening to become a very serious problem In every large city of India tuberculosis is terribly common, especially among girls and young women who live in *purdah*, where all the conditions favour the spread of infection and the progress of the disease In western countries the disease is steadily diminishing, whereas in India it is increasing year by year in an alarming manner

25 Tuberculosis may attack any part of the body, but in the great majority of the cases the lungs or bowels are specially affected The disease is caused by a microscopic bacillus which was first discovered by Koch in 1880 In most cases this bacillus enters the body by the inhalation into the lungs of droplets in the manner already described Tuberculosis of the bowel often occurs as a complication of the lung disease, but it also may attack persons whose lungs have not been affected In the latter group of cases the infection is usually contracted through swallowing food which has been contaminated with the sputum of a person suffering from tuberculosis of the lung Sputum is very tenacious, so that the

hands of people who are attending to tuberculous patients are very likely to convey numbers of bacilli to any food which they touch Another likely way of conveying infection is by using the earth from a courtyard for scrubbing the feeding utensils This earth is often contaminated by the sputum of persons who have tuberculosis of the lung the sputum adheres to the vessel which is being " cleaned," and so the food becomes infected Apart from infection with tubercle bacilli there can be no tuberculosis, but although the bacilli, which are the seeds of the disease, are its essential cause, another factor of almost equal importance is the soil on which the seeds are sown The soil is the human body , if this is healthy and well-nourished the seeds do not thrive unless they happen to be specially virulent or exceptionally numerous Thus it happens that in communities consisting of people who are well fed, who live in well-ventilated rooms, and are cleanly in their habits, the disease tends to disappear surely and steadily Very few people escape infection with tubercle bacilli, but they can resist ordinary doses of the germs if their bodies are in good fighting trim For this reason tuberculosis can be regarded as a " key " disease measures which are successful in its control will also prove effective against many of the other deadly diseases If the people of India were properly nourished, if they avoided living in the same room with persons who cough and sneeze, and if they took precautions to avoid swallowing infection with their food and drink, their average duration of life would be doubled But here again we must get to the root of the matter proper nourishment and proper standards of hygiene are impossible so long as immature boys and girls are compelled to marry and have children for whom they cannot make proper provision

26 Dispensaries and sanatoria are of value, but their usefulness is strictly limited unless the economic standards of life are raised An important point is that the disease is not hereditary . if the infants of tuberculous parents are removed at birth from contact with infected persons, they are no more likely to get the disease than other children It is still more important to realize that the disease can nearly always be arrested if proper treatment is started early, and continued till the patient has been completely restored to health Many tragedies result from the mistaken idea that the diagnosis of tuberculosis is the equivalent of a death warrant the dread of hearing a verdict of tuberculosis keeps numbers of people

from consulting the doctor till the disease is well established, with the result that cure is far more difficult and uncertain Wherever possible, treatment should be started at a sanatorium where the patient will learn how his case should be managed and how to avoid passing on the infection to others Nourishing food and rest are essential parts of the treatment, and patients can be looked after at home if they are properly cared for in a verandah or "lean-to" where they can have fresh air and be isolated, so as to prevent other people from becoming infected The attendant must be instructed in the means of preventing the spread of infection from the patient

Influenza

27 Influenza is caused by an infection, probably an ultramicroscopical virus, conveyed from man to man by droplet infection It is constantly present in a mild sporadic form, but its real prevalence is unknown because of the difficulty of distinguishing mild influenza from other catarrhal infections with similar symptoms At long intervals of years influenza sweeps over the world as a devastating pandemic In 1918–19 about 10 million persons died of influenza in India, so that within a few months there were nearly as many deaths from this disease as there had been from plague during the whole of the preceding twenty-four years Sooner or later there will probably be another pandemic, but it is to be hoped that this will not be so deadly as its predecessor The pandemics tend to occur at intervals of twenty to thirty years The infectiousness of the disease is extremely high, so that precautions which are adequate for preventing the spread of other respiratory infections usually fail completely in the case of influenza Apparently the virus of the disease is capable of causing infection even when it is present in the air in very small doses, so that the droplets by which it is carried have an exceptionally wide range of action Experience shows that the only way of preventing the spread of infection is by keeping the patients in the open air and by insisting that the attendants should keep well away from the "line of fire" of the droplets, which are expelled when the patient coughs or sneezes In existing conditions little can be done in India to prevent the disease even in progressive European countries the prevention of catarrhal infections has not been successful, because the people have not properly realized the importance of droplet infection, and the necessity for isolating persons who cough and

sneeze Work on the virus of the disease is progressing and it seems possible that an effective means of immunization may be discovered within the next few years

Diseases of the respiratory system

28. Pneumonia, bronchitis, and other respiratory diseases are responsible for a large part of the total mortality in India, and many of the millions of deaths attributed to "fevers" are really due to them The official returns of causes of death do not throw much light on the relative frequency of pneumonia and other infections of the respiratory system, but it is certain that taken together they cause more deaths than cholera, small-pox, or any of the other dramatic diseases The problem of these diseases is twofold on the one hand, they are caused by microbes which enter the respiratory tract by droplet infection as described in the sections on influenza and tuberculosis, on the other hand these microbes are effective causes of disease and death in direct proportion to the degree of malnutrition of the community Improvement in economic standards and in hygiene must therefore go hand-in-hand if the mortality is to be reduced

Cholera

29 Cholera used to occur in great epidemics throughout the world, but it has disappeared from every country in which reasonable standards of hygiene have been adopted There is no serious disease which is easier to eradicate than cholera, provided that an intelligent effort is made by the community Cholera belongs to the group of diseases caused by special kinds of microbes which are swallowed and then multiply in the intestine Everyone who gets cholera has recently swallowed food or drink contaminated by excreta coming from an infected person The source of infection is almost always a person who has the disease or is recovering from it, so that as cholera is a short and dramatic illness which is easily recognized, there is seldom any excuse for failing to take precautions Nurses and doctors who are constantly handling cholera patients have no difficulty in protecting themselves and others by taking simple precautions If all cases of cholera were notified *immediately* and placed under proper control, the disease would soon disappear There are exceptional cases in which persons, who are called cholera carriers, have recovered from cholera and yet continue to harbour infection for a considerable time,

but in communities where the most elementary rules of sanitation are observed there is little to fear from carriers

30 The commonest ways in which infection is spread are the following —

(1) The contamination of drinking water by the stools of patients ; if a stool is passed near a well, pond or stream, or if the soiled clothes of a cholera patient are washed in the water, the infected material may get into it

(2) The bacilli often get on the hands of person who look after cholera patients, so that unless the hands are thoroughly disinfected after contact with the patient or any article soiled by his excreta or vomit, any food or milk which is touched by the contaminated hands is likely to become infected

(3) Flies, which have made their horrid meal on infected excreta, are liable to settle down on food or drown themselves in milk, and so convey the bacilli.

31 For those who have to deal with cholera in the absence of a doctor certain precautions are essential, which should also be taken in every case in which there is sudden diarrhoea accompanied by vomiting, even though many of these cases will turn out to be some other disease Summon the doctor without delay, but in the meantime act as follows —

(1) The patient should be isolated, and should be looked after by one or two reliable attendants, nobody else being allowed to enter the room

(2) The stools and vomit should be disinfected by adding an equal quantity of carbolic acid diluted to a strength of about one part of carbolic to five of water If no disinfectant is available, the stool should be burned on a fire The soiled clothes should be burned, boiled, or put into a lotion of one in five carbolic acid

(3) After handling the patient, the hands should be washed, and then dipped for a few minutes in a lotion of carbolic acid one part, and water twenty parts

(4) Flies should be excluded by pinning muslin gauze over the windows any flies which have entered the room should be killed by fly-flaps, or by thoroughly spraying with flit

(5) All drinking water and milk used by the persons living in the neighbourhood should be boiled, and then covered to prevent flies from getting into them

(6) All food should be cooked and eaten while still hot, and no raw fruit or vegetables should be eaten

(7) A close watch should be kept on every one who has been in contact with the patient and on all the people in the neighbourhood, so that they can be promptly brought under control if they show signs of the disease

(8) Everybody in the locality should be inoculated without delay

32 The first symptoms of cholera are diarrhoea and vomiting, the stools at first show no special features, but soon they become colourless and watery with whitish flakes floating in them These are the so-called "rice-water stools" Soon also there is collapse and painful cramps in the limbs, the skin becomes cold and the features pinched The average death-rate in untreated cholera is 40 per cent to 60 per cent. The diagnosis of cholera is usually very easy, especially when an epidemic is in progress The disease which is most often mistaken for cholera is food-poisoning This resembles cholera as it comes on suddenly with diarrhoea, vomiting, and abdominal pains, but it differs in the following respects (1) there is less collapse as a rule, (2) it is usual to find that several persons who have eaten the same meal are attacked almost simultaneously, and within a few hours of eating the offending article of diet, (3) the stools usually remain brownish in colour, whereas in cholera they soon become almost colourless To the lay mind the sudden onset of diarrhoea and vomiting in several persons within an hour or so of each other is very alarming, but in reality when this happens it usually turns out that the disease is food-poisoning Food-poisoning, formerly known as ptomaine poisoning, is rarely fatal The interval between swallowing the infection of cholera and the appearance of the first symptoms is seldom less than thirty-six to forty-eight hours, and varies considerably, so that the first cases rarely appear in such rapid succession as happens with food-poisoning

33 The treatment of cholera cannot be carried out by the layman, for intravenous injections are usually necessary, but the patient's chances of recovery will be improved by giving him one of the first-aid remedies, such as permanganate of potash pills, kaolin, or the essential oils mixture Some of these medicines will usually be found even in the smallest village dispensaries No food should be given, but plenty of

water, which should be sipped in small quantities so that a pint or so is taken every hour Most of the water will be vomited, but even so it will help to wash out the poisons

34 *The public health aspects of cholera* —The disease is less common than formerly, yet it still claims about 200,000 victims every year in India Bengal, Madras, Behar, Assam, Orissa, and the United Provinces are frequently visited by great epidemics , indeed, the only provinces in which cholera rarely occurs in epidemic form are the Punjab and the North-West Frontier Province, but even in these constant vigilance is needed to prevent the disease from gaining an entry Pilgrimages are notoriously favourable to the spread of cholera , when great crowds of people gather together under conditions in which proper sanitation is well-nigh impossible, it is not difficult to realize how a single carrier of infection or a single case of cholera may convey the disease to a number of pilgrims So it happens that pilgrims often become infected at the place of pilgrimage and reach their homes before symptoms of the disease appear After the great *Kumbh melas* * which take place every twelve years at Allahabad and Hardwar,† great epidemics of cholera have often followed in the United Provinces ‡ and Bihar, even though only a few cases of cholera may have occurred in the pilgrim camps The health authorities do their utmost to protect the pilgrims from cholera, but with such densely packed masses of humanity it becomes impossible to ensure complete freedom from infection Inoculation against cholera has proved very successful during epidemics The hope of eliminating the disease lies in *immediate* notification of the first cases, *immediate* isolation of the victims under proper control, and the prompt inoculation of all the people exposed to the risk of infection Now that the masses have begun to appreciate the value of anti-cholera vaccine, it may soon become possible to introduce the wholesale inoculation of all pilgrims before they reach the camps In Bengal alone more than 2,300,000 persons were inoculated

* *Kumbha* is a sign of the zodiac, corresponding to Aquarius The *melas*, which are bathing fairs, are held when Brihaspati, corresponding to the planet Jupiter, enters this sign—an event which occurs every twelfth year

† Hardwar and Allahabad (under its Hindu name of Prayag), are two holy places of pilgrimage on the Ganges the former is near the spot where the river emerges from the Himalayas into the plains, the latter is at the junction of the Ganges and Jumna

‡ Such an epidemic has taken place in the present year (1938)

in 1935, and in Madras nearly 1,900,000 The total number of inoculations in British India was nearly 7 millions in the same year

Enteric fever or typhoid fever

35 Half a century ago there were some European medical experts who believed that typhoid fever was rare or even unknown among Indians, despite the well-known fact that a large proportion of young Europeans in the services caught the disease within the first few years of their stay in India The explanation of this paradoxical state of affairs is that the infection of typhoid fever was (and still is) so widespread, that most Indian infants suffer from the disease, and so acquire an immunity which often lasts throughout life Numbers of adult Indians do get typhoid fever, but not nearly so many as might be expected considering the unhygienic conditions in which they live Since the days of universal inoculation against typhoid, it has ceased to be normal for European officers to get the disease inoculation has provided them with an artificial immunity, resulting from the injection of many millions of killed bacilli This immunity is not 100 per cent perfect, but it has reduced the risks to a small fraction of what they used to be

36 Typhoid fever is caused by a bacillus which enters the body in the same way as the cholera bacillus The illness usually appears about ten days or a fortnight after swallowing the infected food or drink , but cases have been recorded in which the onset has been within five or six days, and others in which it has been delayed till three weeks, after exposure to infection The fever begins insidiously and lasts for two to four weeks as a rule The carriers of infection play a much greater part than in the case of cholera In the British Army in India every person who handles the food of the soldiers is tested to find out if he is a carrier before being employed , and the same rule ought to be adopted in the case of all private servants, despite the fact that the risk of dying from typhoid has been reduced by inoculation to about one-seventh of what it used to be Little account is taken of typhoid fever as a public health problem in civil life in India, because epidemics are almost unknown except in residential schools and other similar institutions , but another paradox connected with typhoid fever is that when improved hygiene lessens the risk of infection to young children, more cases occur among adults, and so the disease attracts greater attention When hygienic

conditions are still further improved the disease becomes rare ; and so when, owing to some break-down in the precautions, an epidemic does occur, it becomes front-page news

37 Typhoid fever should be suspected when fever comes on gradually, the temperature rising higher each day so that after five or six days the patient is suffering from constant high fever with prostration The precautions against infection are the same as those for cholera treatment in a hospital is desirable as skilled attention is essential The case mortality rate is about 10 to 15 per cent , but is probably much lower in infants, who often pass through an attack without its being diagnosed

38 There are three chief types of the disease known as typhoid, para-typhoid A, and para-typhoid B The vaccine used for inoculation against the three types is known as " T A B " vaccine The protection afforded by inoculation gradually disappears, so that it is desirable to repeat the inoculation at yearly intervals for three years, and afterwards every two or three years

The dysenteries

39 There are two great groups of disease of which the symptoms are frequent motions containing blood and slime these can only be distinguished from each other by expert examination of the stools and so they are both included under the name " dysentery " One of these kinds of dysentery is caused by bacilli, and so is called bacillary dysentery , the other is caused by *amoebae,* and is called amoebic dysentery The infection of both types of dysentery is conveyed in the same way as that of cholera and typhoid fever, and the prevention of all these diseases is on the same lines

40 The treatment of amoebic dysentery is quite different from that suitable for bacillary dysentery, so that expert examination is essential for the purpose of making an accurate diagnosis Many cases of diarrhoea, especially in infants, are caused by the bacilli of dysentery Among otherwise healthy persons the normal course of a case of bacillary dysentery is spontaneous recovery provided that suitable treatment is adopted , and bad after-effects are infrequent Amoebic dysentery is much more liable to become chronic relapses are frequent, and hepatitis or even liver abscess is a frequent sequel in cases which have not received expert treatment.

One of the greatest triumphs of modern medicine is the cure of amoebic dysentery and the prevention of liver abscess by emetine, which was found by Sir Leonard Rogers to have just as specific an action on the *amoeba* as quinine has on malarial parasites

Sprue

41 Although sprue is, to some extent, a mystery disease, its treatment is now so thoroughly understood that a cure can be promised, provided that the patient faithfully carries out his doctor's instructions and that the disease has not been allowed to progress too far In every case of unexplained diarrhoea which lasts more than three weeks sprue should be suspected When the disease is established the stools are frequent, colourless, and usually frothy, sores are common on the tongue, and there is a progressive loss of weight and strength Nowadays there is little excuse for allowing the disease to progress to such an extent as to cause serious deterioration of health Prevention consists in a well-balanced, properly cooked diet containing a proper proportion of high grade protein and of all the necessary vitamins Persons who suffer from sprue have usually lived on over-cooked highly spiced meals eaten at irregular times, and their diet has been deficient in vitamins Indians rarely suffer from sprue unless they have adopted a faulty European diet Dysentery and diarrhoea undoubtedly predispose to sprue. The treatment is essentially a matter of diet, but the regime should be conscientiously followed under the direction of a doctor for a considerable time after apparent cure, and care should be taken to avoid the errors of diet which were responsible for the attack

Small-pox

42 Although the microbe which causes small-pox is still something of a mystery, the means of preventing the disease has been known for many years Complete freedom from small-pox can be guaranteed to any community by the simple process of universal vaccination in infancy and at intervals of five years Several countries have completely eliminated small-pox by compulsory vaccination every ten years ; but in India where the disease persists in so many localities, the path of safety for each person is vaccination every five years and also whenever small-pox is prevalent in the neighbourhood. Critics are sure to argue that revaccination seldom " takes " when

carried out five years after previous vaccination, and therefore is unnecessary A more reasonable view of the case is that when revaccination is unsuccessful it causes no inconvenience, and gives the assurance that protection is complete on the other hand, if it does " take," we know that it was necessary, so that the slight discomfort involved is a small price to pay for the insurance against small-pox There are rare cases in which the protection afforded by vaccination becomes much diminished even after one or two years, so that revaccination becomes desirable whenever small-pox appears in the locality If the entire population were vaccinated every ten years the disease would soon be eliminated, because there would not be enough susceptible persons to supply fuel for the flames of infection Conditions are quite different in a community in which a large proportion of the people are unvaccinated or have only been vaccinated in infancy, so that there are large numbers of susceptible persons, and the spread of the disease is greatly facilitated Nobody in India should be led astray by reports of what is happening in England, where less than half of the children are vaccinated, and yet small-pox rarely causes a death Conditions in England are very different from those in India, because for some reason small-pox of the serious type has died out in England, whereas in India there were 280,000 cases of small-pox in 1935, with 90,000 deaths, the mortality rate being about 32 per cent In view of these eloquent figures it is not strange that anti-vaccinationists are rare among educated Indians If only the cranks and faddists in England who are trying to prevent Indians from being vaccinated, could be transferred in an unvaccinated condition to places where severe small-pox is raging, India would soon be released from the flood of well-meaning but dangerous propaganda to which it is now exposed

43 The infection of small-pox is spread by contact with persons who are suffering from the disease or by contact with clothing which they have worn, and probably also by flies which have settled on the infected persons and afterwards on susceptible persons Droplet infection probably plays a part in the spread of infection In a place where the disease is present there is no possibility of ensuring safety from infection except by vaccination Quite commonly people with mild forms of the disease travel by trains or omnibuses and so spread the infection The disease is most common in India during the first half of the year, the worst months being April and May

44 Leprosy used to be quite as common in Europe as in tropical countries, but with improved sanitation and a rise in economic standards of life it has disappeared from most progressive countries It is common in India probably the total number of lepers is more than a million, but this figure includes a large number of mild cases which formerly would not have been recognized The distribution of the disease is very irregular in certain parts of southern and eastern India 2 per cent. to 3 per cent of the population, in some groups of villages no less than 5 per cent or 6 per cent, are victims of leprosy On the other hand, the Punjab as a whole is remarkably free from the disease, though the Kangra valley and a few other areas are badly affected In Central India the disease is relatively infrequent Wherever a survey of an affected locality is carried out by experts, the disease is found to be much more common than was suspected, but many of the extra cases are of the mild type which would not be recognized by a layman The Mission to Lepers maintains thirty-five asylums and aids fifteen, providing altogether for nearly 10,000 lepers with the help of government grants There are also a few institutions maintained by provincial Governments and local bodies, but the total accommodation is less than 11,000 beds Most of the inmates of the asylums are impoverished, and are in an advanced stage of the disease The vast majority of the lepers in India are living in their homes or eking out an existence by begging Thanks to the work of Sir Leonard Rogers, Dr Muir, and others, leprosy has come to be recognized as amenable to treatment, and efforts are now being made in several places to establish special dispensaries where lepers can obtain treatment and advice There are about 450 such dispensaries in Madras, 200 in Assam, 200 in Bengal, 56 in Bihar and Orissa, 57 in the Punjab, 34 in Bombay, 30 in the Central Provinces, and 18 in Central India No less than 765 doctors have received special training in the diagnosis and treatment of leprosy at the Calcutta school of tropical medicine, where valuable research work on the disease is carried on.

45 The disease is caused by a bacillus which is very similar to the tubercle bacillus Infection is conveyed by contact with lepers, and an important point is that recent acute and severe cases are much more dangerous to the community than the old burnt-out cases with disfiguring

mutilations, or the mild cases of leprosy affecting the nerves Children are much more susceptible to infection than adults The disease is not hereditary, and the children of lepers, if separated from their parents at birth, run very little risk of contracting the disease The problem of controlling leprosy is on all fours with that of controlling tuberculosis it depends on the isolation of infectious persons, the adoption of hygienic habits, and the improvement in economic standards of life

46 Although leprosy may occasionally attack the rich and well-nourished when they have received a heavy dose of infection it is essentially a disease of poverty, malnutrition, and dirty habits History teaches that it will always disappear from communities which raise their standards of health and cleanliness Leprosy in its early stages is amenable to persistent and prolonged treatment, and although it cannot be claimed to be entirely curable it is certainly entirely preventable

Hook-worm disease

47 Unlike the previously described diseases, hook-worm disease is caused by a parasite which is easily visible to the naked eye when separated from the intestinal contents in which it lives The hook-worm is more than half an inch in length and looks like a piece of thread It lives in the upper part of the small intestine, where it attaches itself like a tiny leech to the inner lining of the bowel When hundreds of the worms are present they cause anaemia, which is sometimes fatal The life history of the hook-worm would sound almost incredible if it had not been demonstrated in the clearest possible manner The female worm lays a large number of microscopical eggs, which pass out of the body with the stools If the eggs come in contact with water or damp grass, each of them becomes a very tiny larval worm invisible to the naked eye If the *larva* comes in contact with the human skin, it promptly bores its way through a pore of the skin into a vein and then is carried by the blood-stream to the lungs Here it bores its way into the air passages, and wriggles along these till it reaches the upper end of the windpipe, from which it passes into the gullet It is then carried with the food to the small intestine, where it attaches itself and grows into an adult worm Infection is caused by walking in damp grass or pools contaminated by infected faeces The disease can be detected with great certainty by examining the stools with a microscope and discovering the eggs.

48 Many millions of people all over India harbour hookworms, but in the majority of cases the number of the parasites is so small that they do little harm Still the disease is of great importance, as in many localities a large percentage of the people suffer from anaemia and weakness, and a considerable number of deaths are due directly or indirectly to the worms

49 The method of controlling the disease is simplicity itself, it consists in the use of proper latrines from which the *larvae* have no chance of reaching the skin of human beings. Bored-hole latrines have been found very effective in many localities, but any kind of latrine which is protected from the rain and kept clean is quite adequate The whole secret of success in connection with latrines is that they should be the most convenient and comfortable places for defecation, otherwise people will continue to ease themselves in a promiscuous manner and so infect the surroundings of the house and village. The wearing of leather shoes is a protection for those who have to walk in damp grass contaminated by faeces, as the *larvae* usually find their way into the body through the skin of the feet and ankles The treatment of the disease must be carried out under medical supervision, as the worms can only be expelled by potent drugs which are dangerous in unskilled hands

Venereal disease

50 The most important of the venereal diseases are syphilis and gonorrhoea Both of these diseases can be conveyed by non-venereal contact, for example, a good many surgeons have contracted syphilis when operating on infected patients, and infants often become infected with gonorrhoeal ophthalmia at the time of birth Still, it is true to say that the vast majority of cases of syphilis and gonorrhoea result from sexual intercourse with infected persons Both diseases are distressingly common in many parts of India, especially in the cities and large towns Venereal disease has not hitherto been tackled in India with the energy which is demanded by the gravity of the problem, although in Madras and some other provinces steps have been taken to organize modern treatment The best method of combating venereal disease is to enlighten the community with regard to the damage which is done thereby, not only to those who suffer in consequence of their own fault, but also to the innocent wives and children on whom are visited the sins of their husbands and fathers

51 It may truly be said that " the fear of venereal disease is the beginning of wisdom " The false modesty which prevents Europeans from discussing venereal disease is probably responsible for the failure of the voluntary organizations in India to carry out a campaign of propaganda against an evil which is doing so much to sap the health of the people We cannot stamp out venereal disease by ignoring its existence

52 Prevention of the disease is extremely simple it consists in the avoidance of irregular sexual intercourse The treatment of syphilis is now exceedingly effective in the hands of well-trained experts, but these are far too few and millions of people are deprived of the opportunity of regaining their health because of the lack of properly trained specialists Specific remedies for gonorrhoea are now under trial, and although these are not yet so effective as the drugs employed for the cure of syphilis, much can be done by skilled treatment to diminish the duration of the attack and to prevent the serious complications which result from neglect of the disease

Hydrophobia

53 Everybody knows that hydrophobia results from the bite of a rabid animal, usually a dog or a jackal When bitten by any animal, whether rabid or not, it is a wise precaution to apply a little pure carbolic acid to the wound by tying a swab of cotton-wool, which has been soaked in the acid, tightly round the end of a thin stick of wood, which should be of such a size that the acid can be thoroughly applied to the wound right down to its deepest part

54 In every case of a bite by a jackal it must be *assumed* that the animal is rabid, and anti-rabic inoculation should be started at the earliest possible moment Any doctor can tell the patient where the treatment can be obtained In the case of a dog's bite, the nearest doctor should be consulted as to the necessity for treatment in cases of doubt, the patient should go to the nearest hospital where anti-rabic treatment is available Dogs which suddenly become furious and rush around biting everyone who comes near them are nearly always rabid, and immediate treatment is necessary If the dog which has bitten a patient appears to be healthy it should be securely tied up and kept under observation for a week if at the end of that time it is still well, there need be no fear of its having been rabid at the time of biting

55 Bites by poisonous snakes are far less frequent than is commonly supposed To avoid the risk of treading on a snake in the dark, it is an invariable rule to carry a hurricane lantern or electric torch when walking about after nightfall, either indoors or outside But in the daytime snakes usually keep to their holes, and if they do wander about they are almost blinded by the light, so that they cannot strike with accuracy unless they are actually touched In the unlikely event of being bitten by a snake the best course is at once to tie a band tightly round the limb just above the bite, and also above the elbow or knee so as to arrest the flow of blood to the part The inner tube of a bicycle or a rubber cord is far more effective than an inelastic band, but if nothing else is available a piece of cloth or handkerchief should be used, and tightened by inserting a stick under the band and twisting it round Then examine the wound If there are two rows of small punctures the snake is almost certainly harmless But if there are only one or two puncture marks the snake is likely to be poisonous, and usually there will be a painful swelling at the site

56 If a poisonous snake has really struck home with its fangs, drastic action is necessary Several criss-cross cuts should be made with a sharp knife in the skin right down to the bottom of each puncture, and as much as possible of the poison should be squeezed out Free bleeding is to be encouraged If a snake-bite outfit is available, permanganate of potash crystals should then be rubbed into the depth of the wounds made by the knife The ligature should not be kept on for more than half an hour, but within this time it should be possible to get rid of most of the poison in the manner described Two pieces of rubber catapult cord about twelve inches long, a sharp knife, and a small bottle of permanganate crystals form a good snake-bite outfit which can easily be carried about by those who are exposed to special risk of snake-bite If anti-venene is available, this should be injected at the earliest possible moment The patient should be kept quiet while treatment is being carried out, as exertion is likely to promote the absorption of the poison into the circulation The essentials in dealing with a bite by a poisonous snake are the *immediate* application of a ligature to the limb and the *immediate* removal of the poison which has been injected

57 There are probably two million blind persons in India although the census tables record only 601,000 Most of the cases of blindness are either preventable or curable Cataract, which is common in old people, is easily cured A well-known Indian surgeon in the Punjab has operated on well over 100,000 eyes affected by cataract, and in the vast majority of these operations has been completely successful in restoring sight Cataract is most frequent in dry, hot places like the Punjab, where there are several hospitals which specialize in the operation for the cure of this disease Most victims of the disease can obtain complete relief by going for a few days to one of these hospitals Failures are very few in the hands of any of the highly skilled operators who are available

58 Most of the other forms of blindness are entirely preventable Keratomalacia is the chief cause of blindness in southern India this is due to deficiency of vitamin A in the diet, and its prevention and cure have already been stated Gonorrhoeal ophthalmia is nearly always caused at birth, the eye being infected by the microbe of gonorrhoea which is present in the vagina of a mother who is suffering from the disease In many places the midwives are taught to put a few drops of a weak solution of nitrate of silver into the eyes of every new-born babe when this is properly done the disease is always prevented The reason for applying the drops to every baby is that many cases of gonorrhoea are impossible of detection, so that the only safe plan is to treat all new-born children Trachoma is a disease highly prevalent in some parts of India if neglected the eyes may become blind The prevention of this form of blindness is thorough and prolonged treatment of all cases of trachoma by a skilled doctor There are other forms of disease caused by infection with microbes carried into the eye by dust, flies, or the pigments which are so often used to " beautify " the eyes of children Cleanliness is the best preventive of these, and if all forms of inflammation of the eyes were promptly and skilfully treated, subsequent cases of blindness should never occur Syphilis is a cause of blindness , this disease is both preventable and curable A syphilitic mother should always be thoroughly treated during pregnancy In advanced stages of leprosy blindness often results , early treatment of the disease and proper care of the eyes of lepers are the obvious means of prevention Small-pox is another important cause of prevent-

able blindness Many cases of blindness are caused by the use of domestic or quack remedies, which are widely used in the treatment of diseases of the conjunctiva The great majority of cases of blindnesss are therefore preventable or curable only a very small proportion are due to inherited defects or to diseases for which the cure is still unknown

Summary of the Methods of Disease Prevention

59 From the foregoing account of the commonest diseases of India, it is apparent that the average duration of life could easily be doubled and that most of the terrors of existence could be removed by the universal application of the following simple rules

(1) Maintain the nutrition of each individual by increasing the production of milk and other nourishing foods, and by regulating the output of babies so that this may bear a suitable relationship to the supply of the necessities of life

(2) Protect food and drink from contamination with faecal matter resulting from direct pollution or from the activities of flies

(3) Avoid inhaling air which is infected by droplets expelled from the air passages of persons who have respiratory infections

(4) Avoid the bites of mosquitos, lice, fleas, and other insects

(5) Keep fit by outdoor exercise

(6) Avoid poisons such as alcohol and opium

(7) Avoid promiscuous sexual intercourse

(8) Seek the advice of a good doctor when you feel ill, or when any infectious disease breaks out in the locality in which you are living

CHAPTER VIII

By SIR GEORGE ANDERSON

Education

The Early Stages of Educational Development

1 Little is known of the state of education before the commencement of British rule At that time literacy was either an accomplishment for the few or else acquired as necessary for certain vocations, such as the priesthood, commerce, and public service According to the old religious books, the training for the priesthood was extremely elaborate. A Brahman boy of the age of eight became the *chela*, or disciple, of a *guru*, or religious teacher, and spent some fourteen years under his tuition Hindus other than Brahmans received their learning from private teachers or in schools maintained by private persons in the towns or large villages, which were known as *pathshalas* Higher education was imparted chiefly in religious institutions by learned pandits, who specialized in certain branches of Sanskrit learning, and often received stipends from kings or pious patrons. Young Muhammadans, in the same way, were taught by learned maulvis in schools attached to mosques, which were known as *maktabs* The chief principle of this ancient system of education was the individual relationship that existed between teacher and scholar—the relationship of a tutor with his pupil, not of a master with his class The media of instruction were Sanskrit for Hindus and Arabic or Persian for Muslims—which languages, so far as India was concerned, were dead languages

2 The East India Company as a commercial institution had no concern with education When it became an administrative body it recognized, though slowly, that it was the duty of an Oriental ruler to patronize learning, and it was in partial fulfilment of that duty that Hastings founded a Madrasa of Islamic studies at Calcutta in 1781, that Jonathan Duncan founded the Sanskrit College at Benares in 1792, and that the

Company for many years continued to pay stipends to learned pandits and maulvis But its concern was with learning rather than with education, for it was not till a much later date that education was regarded as a function of government

3 In the beginning of the nineteenth century, however, a demand for education in English arose amongst those castes and classes that were accustomed to take government service, which they desired to learn because it was not only the language of the administration but also of the law courts The first persons to provide English education in India were certain Baptist missionaries at Serampore From about 1811 Lord Minto, as Governor-General, and an evangelical group led by Wilberforce in England began to press for English education in India , and under this pressure the Company, very unwillingly, agreed to the insertion of a clause in the Charter Act of 1813, which authorized educational expenditure amounting to one lakh * yearly for the "encouragement of learned natives of India, and the promotion of a knowledge of the sciences" For a while this allotment was not spent In 1823 a committee of public instruction was appointed to distribute it, and at first spent it entirely on the promotion of oriental studies But the popular demand for English education grew stronger, and the committee split into two factions—Orientalists and Anglicists The result was a deadlock until Lord Macaulay was appointed president of the committee in 1834, and in his famous educational minute of February 1835 declared himself an Anglicist Lord William Bentinck, then Governor-General, took the same view, and in a resolution of March 1835 decided that "the object of the British Government should be the promotion of English literature and science" From that time higher education in India became, and has since always remained, education in western knowledge of all kinds, whilst the old oriental learning has for the most part sunk to the position of an optional subject in university curricula Owing to the backwardness of the vernaculars there were only four possible media of instruction, namely Sanskrit, Arabic or Persian, and English The first three were dead , the fourth was not only alive but also in regular use It would have been just as difficult to translate the terminology of English learning into Sanskrit or Arabic as it would have been to translate it into the vernaculars Whichever of these three languages

* Equivalent at the time to £10,000

was selected as a medium of instruction, the student must learn it as a language before he could receive instruction in other subjects through it And so the medium selected was, not unnaturally, English , and so far as secondary and university education are concerned, is so still to a very large extent

The Educational Frame-work

4 Coming to more recent times, the policy defining the development of modern education in India is laid down in five important documents

(*a*) Sir Charles Wood's despatch of 1854 ,
(*b*) the despatch of 1859 ,
(*c*) the report of the Hunter Commission of 1882 ,
(*d*) the Government of India's resolution of 1904 ,
(*e*) the Government of India's resolution of 1913

5 In these successive pronouncements the State recognized its responsibility for providing " those vast material and moral blessings which flow from the diffusion of useful knowledge," and, in striving to carry out that purpose, it has associated with itself other agencies which are encouraged by grants-in-aid to maintain schools and colleges The main function of Government, therefore, has been to guide and control the progress of education , and accordingly departments of public instruction were established As that control should be exercised with impartiality, a policy of strict religious neutrality was adopted by Government in respect of its own institutions *

6 Sir Charles Wood's despatch also provided for the creation of universities which, by the award of degrees, would standardize the teaching given in the colleges Accordingly, the universities of Calcutta, Madras, and Bombay were created in 1857 , that of the Punjab in 1882 , and that of Allahabad in 1887 In 1904 the Universities Act was passed as a result of the findings of a commission appointed by Lord Curzon, its main object being to reconstruct the governing authorities of universities and to vest in them the power to control and inspect colleges It is now a matter for regret that Lord Curzon did not apply his great energy and capacity rather to strengthening the school foundations at a time when

* *Vide* Sir Philip Hartog, *Year-Book of Education*, 1932, pp 685–700, in which a valuable sketch of the early beginnings will be found Also Dr W Meston, *Indian Educational Policy its Principles and Problems*

that task would have been comparatively easy In later years the number of universities has been increased to seventeen * While the earlier universities were of the affiliating type whose functions were confined very largely to the work of examining, some of the later universities are of the unitary type and are responsible directly for the provision of teaching

7 A radical change, largely unperceived at the time, was introduced by the Montagu–Chelmsford reforms in 1920 Hitherto the Government of India, subject to the orders of the Secretary of State (himself responsible to the British parliament), had been primarily responsible for education, especially for the definition of educational policy , and even such measures of decentralization to provincial Governments as had been adopted were jealously guarded both by the Secretary of State and by the Government of India As a result, there was a danger of lifeless uniformity and a stifling of local initiative In 1920, however, education, along with other nation-building activities, became a " transferred subject " and was controlled by Education Ministers, each responsible to the local legislature Though many advantages resulted from this innovation, there was the disadvantage that there ceased to be an educational policy for all India The Government of India no longer took part directly in the development of education in the governors' provinces, and also became debarred from correcting by means of subsidies the wide disparity in provincial finances which are available for education

8 It soon became apparent, however, that the transition from centralized control to provincial self-sufficiency and exclusiveness had been too abrupt The Government of India began to realize that a government which is not concerned with education is in danger of holding aloof from the main stream of national activity , and provincial Governments themselves became aware of the dangers of isolation and felt more and more the need of fuller information regarding what was going on elsewhere Accordingly, the Inter-university

* In addition to the five older affiliating universities there are Benares Hindu (1915), Patna (1917), Aligarh Muslim (1920), Lucknow (1920), Dacca (1920), Delhi (1922), Nagpur (1923), Andhra (1926), Agra (1927), and Annamalai Universities, together with the University of Mysore and the Osmania University, Hyderabad The University of Allahabad is now of the unitary type, its affiliating functions having been inherited by the University of Agra

Board was instituted in 1924, and in 1935 the Central Advisory Board of Education was revived and reconstructed The latter body includes the Education Member of the Government of India, the Educational Commissioner, provincial Ministers or Directors of Public Instruction, representatives of the Inter-university Board and of the central legislature, and nominees of the Government of India *

Educational Organization and Agency

9 A further preliminary to a discussion of the present system of education in India is a brief description of its structure and agency There are two branches of the school system (1) the English or Anglo-vernacular branch, stretching from the English or Anglo-vernacular middle schools to the high schools and leading to matriculation and beyond, and (2) the vernacular or, as it might be termed, the rural branch, comprising the vernacular middle schools The main distinction between these two branches is that whereas in the former the study of English occupies a dominant (some think too dominant) place in the curriculum and the English medium is used, especially in the higher classes, in the latter English is only taught, if at all, in optional classes and the medium is vernacular As will be seen later, this distinction is now being widened by attempts to impart to the vernacular branch a rural bias The opinion is now held that the employment of the English medium is apt to blunt the intelligence of the pupils and that more rapid progress would be made by the employment of the vernacular medium Though the vernacular medium is now being used more extensively, linguistic studies (including Arabic, Persian, and Sanskrit) still predominate in the schools

10 Each branch is divided into stages, though, as will be indicated later, the objective of each stage is ill-defined

(*a*) *University stage*—The university course is usually divided into (i) a two-year intermediate stage, (ii) a two-year pass or honours degree stage, and (iii) a two-year post-graduate stage leading to the M A or M Sc degrees In some universities such as Dacca, Allahabad, and Lucknow, students are admitted to the university after the intermediate stage, in some, again, there is a three-year honours course

* *Vide* Sir Philip Hartog, *Year-Book of Education*, 1937, pp 467–85

(*b*) *School stage*—The school course is divided into the primary, middle, and high stages, but there are considerable variations both in duration and terminology *

(*c*) *Vocational schools*—There are also a much smaller number of industrial and technical schools of varying grades The correlation between general and vocational education is unsatisfactory, and pupils embarking on vocational training have rarely acquired a sufficient grounding of general education † There are also professional courses leading to degrees in medicine, law, engineering, agriculture, commerce, and education

(*d*) *Schools for domiciled community*—Children of the domiciled community are normally educated in European and Anglo-Indian schools, but pupils often join Indian colleges after having passed the matriculation or intermediate examinations or their equivalents

(*e*) *Chiefs' colleges*—There are five chiefs' colleges ‡ which cater for the ruling chiefs and the landed aristocracy The present tendency is to approximate their methods and standards to those of the ordinary schools and to liberalize their rules of admission

(*f*) *Doon School*—The Doon School at Dehra Dun is of interest in that it seeks to absorb such of the traditions of English public schools as may be suitable to India

11 *Examinations*—Examinations occupy a prominent place in Indian education The completion of the vernacular course is marked by the vernacular final examination On the English side an Anglo-vernacular middle school examination is held in some provinces , and in all provinces there is later either the matriculation or equivalent examination In the university there are in succession the intermediate, the bachelor's, and the master's degree examinations This frequency of examinations is often criticized From an early age Indian pupils are subjected every two years to the ordeal of a public examination , after each interruption they spend perhaps half a year in accommodating themselves to new

* The diagram facing p 274 will remove ambiguity

† *Vide* A Abbott, *Report on Vocational Education in India* Mr Abbott was formerly H M Chief Inspector of Technical Schools, Board of Education, England

‡ These are Mayo College, Ajmer , Daly College, Indore , Rajkumar College, Rajkot , Aitchison College, Lahore , Rajkumar College, Raipur

conditions and often to new surroundings, and half of each second year in cramming for the next examination Thus there can be little continuity of study or training of character, and this is the main reason why the many improvements in the internal economy of schools, which are widely canvassed in India, are so rarely adopted Moreover, these examinations have little purpose or significance, they are but as milestones along the often unprofitable road towards a degree in which but few are successful The casualty lists in each successive examination are appalling

12 The excessive value attached to university qualifications is accentuated by the importance given to them by Governments in their recruitment even to subordinate posts in their service The Central Advisory Board were so impressed by the dangers of this practice that they recommended that "candidates desirous of joining the subordinate clerical services of Government and of local bodies shall pass such qualifying examinations as may be prescribed and should not be more than nineteen years of age at the time of their examination" *

13 *Statistics*—In actual form there is considerable uniformity in educational statistics, which are incorporated in annual and quinquennial reports in accordance with statistical tables prescribed by the Government of India, but in practice there are disturbing complications In Madras and Bombay, Standards V–VII on the vernacular side are classified as "primary" and not as "secondary," as is done in other provinces As a result, the enrolment and expenditure in primary education are inflated, while they are deflated in the secondary sphere in comparison with other provinces There is a reverse practice in the Punjab and the North-West Frontier Province, where there are large numbers of lower middle schools with only six classes These schools are

* The Government of India has recently issued a circular letter to the provincial Governments dealing with this matter They suggest that in the case of posts for which the requisite qualifications can be secured without a collegiate course the maximum age should ordinarily be nineteen, and that in other cases the age should be twenty-one They also suggest the holding of a competitive examination at the age of seventeen which would be an indispensable preliminary to candidates for practically all official appointments Success in this examination would give no prescriptive right to a government appointment, but failure in it would constitute a final bar to such service—*Times Educational Supplement*, February 19th, 1938

classified as "secondary" and not as "primary," with the result that pupils even in the primary classes of these schools, together with the expenditure on them, are included in the figures for secondary education The explanatory notes in Punjab reports do not altogether remove the ambiguity *

14 *Maintenance of colleges and schools*—Colleges and schools are ordinarily maintained by private agency or by local bodies, Government itself maintaining only a few colleges and high schools and scarcely any institutions below that status Christian missions † have played a valuable part in the maintenance of schools and colleges Primary schools are ordinarily maintained by local bodies in the United Provinces, the Punjab, the Central Provinces, Bombay and Assam, but in Bengal, Bihar, Orissa, and Madras either by private associations or individuals

15 *Control of colleges and schools*—The control of colleges is vested in universities in accordance with a number of Acts which have been passed from time to time, before 1920 by the central legislature and after that date by the provincial legislature concerned The intermediate classes form a difficult border-line between school and university In the United Provinces they are part of the school system and are subject to the Board of High-school and Intermediate Education, which conducts the examinations equivalent to matriculation and intermediate in other provinces There is a similar board at Dacca in Bengal In the sphere of high schools control is often divided between the university and the education department Whereas the latter authority administers grants-in-aid, the former authority usually conducts the leaving examination and prescribes the courses for it In Bombay and Bengal, for example, schools are inspected by both authorities

16 A provincial department of education exercises its control over schools in accordance with the Educational Code, a dull but important document That control is necessarily more stringent in its own than in other schools All schools, however, are subject to annual inspection , and the conditions

* The main educational figures are published annually by the Educational Commissioner in the *Statistical Abstract*

† *Vide* the report of the Lindsay Commission on Christian higher education in India , also *Christian Education in India*, by Sir George Anderson and Bishop Whitehead

for grants-in-aid should be a potent lever for ensuring efficiency Efforts not altogether successful have been made to insist on reasonable security of tenure for teachers in privately managed schools , and in most provinces there are provident funds on a contributory basis

17 Subject to local self-government Acts, the control of primary schools is vested in local bodies or, as in Madras and the United Provinces, in specially constituted local authorities , but provincial Governments have reserved to themselves only limited powers to correct abuse and inefficiency In Bombay, for example, even the responsibility for inspection has been transferred to local bodies, with the result that the Ministry of education possesses only scanty means even of ascertaining whether the large sums of money voted by the legislature have been wisely spent

18 Technical and industrial schools are ordinarily controlled by the provincial departments of industries

19 *Controlling agencies* —The agency for exercising control also requires brief description In the Government of India education is included in the portfolio of the Member-in-charge of the department of Education, Health and Lands, who is assisted by the Educational Commissioner In the governors' provinces it is controlled by the Education Minister, himself responsible to the provincial legislature, and is administered by the Director of Public Instruction In most provinces there is an Education Secretary who is a member of the Indian Civil Service, while in a few provinces the Director of Public Instruction also acts as deputy secretary and deals direct with the Minister

20 There are a number of inspectors and inspectresses of varying grades and responsibility In all provinces except Madras there are Divisional Inspectors, and subordinate to them are Deputy, District, Assistant, and other grades of inspectors * The task of the inspecting staffs in India is more complicated than in England, as they are not only responsible for the inspection of schools but are also executive officers engaged in duties other than those of inspection These additional duties impose on them a severe strain and a divided allegiance For example, while they inspect all schools in their

* A useful summary of the inspecting staffs in each province, together with an account of their several duties, is given in an appendix to *Education in India*, 1935–6

several areas, they are also in direct control of government schools in those areas Again, a District Inspector is in the delicate position of having to serve two masters—the district authority and the education department, and the claims of these two masters are often conflicting In theory, an inspector should be confined to the task of inspection and be therefore in a position to give an impartial account of the schools which he inspects, and executive officers should be appointed by the local bodies concerned A few such officers have been appointed, but it is open to question whether further additional expenditure would be justified on that account

21 *Educational services* —The educational staffs of governments, including teachers in government institutions, are included in the educational services Until recently there were the Indian, provincial, and subordinate educational services The first of these services was recruited by the Secretary of State and the two others locally On the advice of the Lee Commission, recruitment to the Indian Educational Service was abandoned, and, after long delay, new provincial services have been created In all provinces except Madras the present services are divided into Classes I and II, with separate cadres for men and women The subordinate services, including as they do the vast majority of posts and of varying scope, must inevitably be unwieldy In most provinces there is a time-scale which is apt to place a premium on seniority and thus beget apathy In a few provinces the service is divided into grades, promotion from one grade to another being dependent on efficiency rather than on length of service

22 *Training institutions* —Bearing in mind that the well-being of an educational system primarily depends on the efficiency of teaching, the training of teachers is of great importance In most provinces there is at least one training college preparing students for the degree of bachelor of teaching In some provinces there are other colleges or classes preparing students with intermediate or matriculation qualifications for a diploma or certificate There are also in each province a number of institutions for the training of primary school teachers Most of these are maintained by Government, but in Bengal the *guru*-training * schools still persist, though they appear to have outlived their usefulness

* For *guru*, see para 1 In later times the *guru*'s chief duty was to communicate to his disciple the prayer of initiation into any particular sect

23 An attempt to appraise the merits or demerits of the system of education thus introduced and organized would be beyond the scope of this chapter The intention is rather to examine the position from the point of view of the social services, especially in rural areas wherein reside nine-tenths of the population of India Even this limited scope is formidable enough, as education is the central subject which holds the key to improved well-being in a number of directions

24 On the one hand, education is enchained by forces over which it has little or no control It is difficult, for example, to be optimistic regarding future progress so long as parents are living in penury and are steeped in debt , there can be little wonder that children are withdrawn from school as soon as they can work in the fields and add, however minutely, to the family income * It is difficult also to expect regular school attendance so long as children are enfeebled by ill-health and inadequate nourishment † The task of providing schools is also embarrassed by the lack of easy communications, which often renders it necessary to create more schools than would otherwise be required Even the construction of school buildings is attended by peculiar difficulties , in the north-west, for example, intense heat, biting cold, and all-pervading dust have to be taken into account

25 The persistence of social customs such as *purdah* and early marriage presents further complications Not only is it usual for girls to be educated, if at all, separately from their little brothers, but it is also rare for women to teach even in primary schools for boys Little boys are therefore denied the more sympathetic and efficient teaching which is expected from women It is unnecessary here to dilate on the influence of the home in education and of the mother in the home In consequence of the backwardness of girls' education, pupils tend to live dual lives , half of each day is spent at school, where they are engrossed in school studies and school activities, but the other half of each day is spent in an environment which is often antagonistic to those studies and activities

26 Communal dissension also leads to an unnecessary multiplication of schools In Bengal alone more than 900,000

* Cf para 32 below ("wastage")

† Cf Chapter VI, paras 46 *et seq* ("nutrition")

pupils attend *maktabs* * or schools attached to the local mosque It is also doubtful whether it is advisable for children to be brought up from early childhood until early manhood in the narrowing atmosphere of a communal institution Segregation in education is rarely advisable A further contributory cause of the multiplication of schools is the attitude towards the depressed classes Until recently the normal method of supplying the needs of these unfortunate children was by means of separate schools, thus crystallizing the stigma of inferiority

27 Perhaps the most depressing obstacle to educational progress is the very dullness of village life The poverty of communications, in spite of recent improvements, still throws villagers very largely on their own limited resources and denies them contact with the outside world † Relapse into illiteracy is therefore frequent , and village boys and girls, once they have left their homes to receive education in the towns, are reluctant, not unnaturally, to return and serve the countryside Thus village life is lacking in leadership

28 Such are some of the main difficulties which beset the path of education, but there is another and equally important side of the picture The other beneficial services are themselves dependent very largely on education for their successful development An education department, with its network of schools and with its staff of inspectors of varying grades, has at least the advantage of intimate contact with the innumerable villages of a province, and its active cooperation is imperative And in India the village schoolmaster has perhaps a richer scope and a wider responsibility than elsewhere , he may even be the only literate adult in the village Though in England, for example, the progress of the countryside is often promoted by the landed squire, the village parson, and the country doctor, these agencies if they exist at all in India are often even antagonistic to reform Oliver Goldsmith was fully justified in his warm appreciation of the Irish parson, who was the prop and stay of the village, and was " passing rich with forty pounds a year " The urgent need of the Indian countryside is a constant supply of vernacular

* See para 1

† But see Chapter I, paras 57 *et seq* and Chapter II, para 61, where the extent to which this isolation has been removed by improvement of communications is indicated

teachers, of the village and from the village, suitably selected and suitably trained, who will be " passing rich " with forty rupees per mensem

29 There are many ways in which such a teacher can assist, often indirectly, in the regeneration of a village. In the sphere of public health, for example, he can at least assemble the children together with their parents for the purpose of vaccination or inoculation, and subject himself first to the much-dreaded ordeal, he can also, on the outbreak of an epidemic, take early precautions such as disinfecting the village well, and, bearing in mind the importance of early action in such cases, he can give timely notice to the nearest local authority Similarly, provided that he has become acquainted with the rudiments of Co-operation, he can at least influence the villagers in the right direction and, as soon as the ground has been sufficiently prepared, advise the local official that the time is ripe for instituting a co-operative society, that done, he can assist in its management If in a larger school, he can organize a society for the benefit of the pupils In agriculture, again, the school farms and gardens can be such that villagers will be stimulated to believe in and to give a trial to improved methods and implements

30 These are not mere suggestions, as much has been done already in these directions—so much so that a friendly critic has recently deprecated the tendency to overburden schoolmasters " with responsibilities beyond their powers ", and has urged that " the schools should not have tasks for the enlightenment of the adult community forced upon them and then be left alone to perform them Unless the other services can provide someone of purpose who is in a position to give continuous aid to the schools in the discharge of its wider activities, it were better that the school limited itself to its own modest, but always exacting, duty of educating children " He further pleaded for " a closer cooperation between education and other services which have the welfare of the rural community at heart It is obvious that the efforts of these other agencies are bound to be wasteful unless the seed is sown on fruitful ground, and the only fruitful ground is a physically responsive and educated community In other words, the education service and the health service, with which it ought always to be associated, should be recognized, and openly recognized, as the basic social services " He also

suggested that " one of the crying needs of India is an effective schools medical service " *

31 It is not open to question that the main duty of a schoolmaster lies within the four walls of his school and that he can best promote rural and social reform by an efficient discharge of his school duties In other chapters accounts are given of many laudable measures which are being taken in the direction of reform, but these measures, however salutary they may be in themselves, lack the essential conditions of success There is not at hand a peasantry sufficiently educated to appreciate their value, nor is there a resident and indigenous agency to guide their development Success should not be dependent on spasmodic efforts from *without*, there should be a widespread movement from *within*, and that movement is itself dependent on a suitably devised system of education. We shall now consider how far these two conditions are likely to be supplied

Primary Education

32 *Number of schools*—There are approximately 170,000 primary schools in India, and, in addition, a smaller number of primary departments of secondary schools, vernacular and Anglo-vernacular The primary stage is limited to four or five classes The enrolment of these classes approximates eight and a half million pupils The average enrolment of a primary school is only 52 The output of these classes, especially from the point of view of attaining literacy, is disappointing On an average, only 25 per cent of the boys and 13 per cent of the girls reach Class IV, where literacy may be expected This serious diminution in numbers is due mainly to " wastage " and " stagnation " By the former term is meant the premature withdrawal of children from school at any stage before the completion of the primary course, by the later term is meant the retention in a lower class of a child for more than a year

33 *Girls' education*—The position of girls' education is even more disappointing The enrolment of girls is only in the ratio of 1 to 4 of boys and this disparity is largely increased in the secondary and university stages The separate girls' primary schools are usually minute in size and single-teacher

* S H Wood, *Report on Vocational Education in India*, Preface, pp 14, 15 Mr S H Wood is Director of Intelligence, Board of Education, England

schools predominate It is difficult to define this disparity in terms of money, as the expenditure on girls enrolled in boys' schools is debited to boys' education , but the ratio of 1 to 6 will not be wide of the mark The Hartog Committee recommended that " in the interests of the advance of Indian education as a whole, priority should now be given to the claims of girls' education in every scheme of expansion " * This advice has been largely unheeded It is not surprising, therefore, that in view of these depressing circumstances drastic remedies are advocated , notably by an extension of co-education and of compulsion The latest figures indicate that about 40 per cent of the girls at school are educated in co-educational schools † Apart from Madras, where more girls attend co-educational than separate schools, the practice of co-education is unusual All provincial Governments, however, are now striving to extend the practice and, as a necessary preliminary, to increase the supply of women teachers, special efforts being made to provide for the training of wives of village teachers This is of vital importance, as co-education should not be confined to the pupils, but should be extended to the staffs Girls should not be admitted to boys' schools merely on sufferance

34 *Compulsory education* —The application of compulsion is in accordance with a number of provincial Acts and is permissive at the option of local authorities, who are often reluctant to face large additional expenditure from their limited resources The period of compulsion is six years, unless the primary course has been completed before that time In the Punjab, compulsion is applied to about 3,000 village school areas and to sixty municipalities, but it has been found difficult to devise means for enforcing attendance

35 Success depends very largely on the conditions in which compulsion is applied Suppose, by a stretch of imagination, that the teaching in schools became so admirable and attendance so regular that every child of school-going age completed the primary course in four years, not only would the results be pre-eminently satisfactory, but the cost would be comparatively small Suppose, on the other hand, that the

* Indian Statutory Commission (Hartog Committee), *Interim Report*, p 347

† This percentage includes Burma, where co-education is prevalent , it will be much smaller for India proper

teaching became so defective and attendance so irregular that no pupil completed the course even in six years (the limit of the compulsory age), not only would the results be disastrous, but the cost would be immense In other words, as was pointed out by the Royal Commission on Agriculture, it is better first to eliminate " wastage " than " to strain after the last truant " It is also of doubtful morality to compel parents to send their children to school unless the schooling is worth while There is the further danger of flooding the countryside with attendance officers who might batten on the poor and make education a byword and a reproach Compulsion, therefore, should be applied wherever conditions are favourable, but only in such cases , and this is an argument in favour of applying it to schools rather than to larger areas In Madras an interesting variant has been introduced by which once a child has entered school, he should be compelled to remain there until the limits of the compulsory age or the completion of the primary course But an essential preliminary to widespread compulsion is improvement both in the teaching and organization of schools

36 *Primary curricula* —Much criticism is levelled against the curricula of primary schools, especially on the ground of their limited scope , but it is the methods rather than the scope of the teaching that is open to objection Children in the infant classes in India spend too much of their school days in immobile " study " They spend too much time with books, pens, and pencils Little is attempted to satisfy and to develop their wider interests Mr Wood has made a valuable generalization which needs careful attention " It has been impressed upon us," he says, " that the main purpose of primary education is to secure permanent literacy We regard this as an unbalanced view of the purpose of education at any stage , and even if we accepted it we could not subscribe to the present method of attempting to secure literacy Literacy, like happiness, is not achieved by pursuing it as a narrow objective , it is a by-product of satisfying activities Literacy does not consist in reading and writing, but in the use of reading and writing, and, it may be added, of speaking and listening A child will not master these simple skills nor form the habit of using them unless they are required for purposes which are significant to him rather than to his teacher Conning books, learning by heart, and chanting in unison have their legitimate place in the discipline of training,

but they do not by themselves constitute an education for young children " *

37 *Training of male teachers*—The teacher is therefore of greater importance than the curriculum, and it is by better training that the teacher can be improved Only 55 per cent of the primary school teachers have received training, the percentage ranging from 79 6 in the Punjab, 72 3 in the United Provinces, 67 6 in Madras, to 48 5 in Bombay, 31 3 in Bengal, and 29 5 in Assam Moreover, the qualifications even of those who have been trained are often inadequate The most suitable qualification for admission to a vernacular training institution is the vernacular final examination, as pupils who have completed the course in vernacular middle schools should not only possess a reasonable measure of general education but also be in touch with village conditions, the matriculate who has spent much of his time in acquiring only a superficial knowledge of English and is often divorced from village life, is rarely suited to village work Unfortunately, in provinces where the vernacular system is weak, the right type of recruit is seldom available The Hartog Committee offered trenchant, but valuable, advice in this connection " As matters stand in India," they say, " effective arrangements for training vernacular teachers must, ordinarily speaking, precede the expansion of primary schools, and the training of vernacular teachers itself depends upon a good supply of recruits from the vernacular middle schools Hence, money spent on expansion and improvement of vernacular middle schools and on vernacular training institutions will find a larger and more permanently fruitful return than money spent on almost any other of the many objects which are dear to the heart of the educationist " †

38 The arrangements for training are unsatisfactory in many provinces, in that training is provided in large numbers of small classes attached to schools, a policy of concentration in larger and more effective training institutions is required There are usually both junior and senior training courses, but only the better teachers are admitted to the senior course after having completed the junior course The junior course is usually of one year, and the senior course of one or two years In this connection, Mr Wood has made both a

* *Vide* S H Wood, *loc cit*, pp 10–11

† Indian Statutory Commission (Hartog Committee), *Interim Report*, p 77

pertinent criticism and a valuable suggestion "The lowest age of admission to a training institution is a year or two in advance of the age at which an intelligent boy would complete the middle school course There is thus a gap during which some boys, having no defined course to follow, may be lost to the profession or spend their time, until they are old enough to enter a training institution, unprofitably We think that the future teachers should be 'caught' early, and instead of being given a comparatively short course a year or two later, should at once be admitted to a vocational course of at least three years' duration" *

39 *Training of women teachers* — The training of women primary school teachers is a problem even more complex The general backwardness of girls' education and the paucity of vernacular middle schools render it difficult to obtain suitable recruits for training, but the chief difficulty is that young women, not unnaturally, are reluctant to face the uncongenial and sometimes unsafe experience of service in remote villages

40 *Salaries of primary school-teachers* —The salaries of village teachers are often inadequate, even in progressive provinces they approximate only Rs 20 (or 30*s*) a month, while in Bengal they often do not exceed Rs 5 (or 7*s* 6*d*) a month

41 The position of the village teacher is one of difficulty, the words of Mr Wood are again apposite "The village teacher may be single-handed He may have to work in quite unsuitable and overcrowded premises, he may be faced with the complete indifference of parents and neighbours, and he may even be subjected to political and other pressure which, if he does not bow to it, will threaten his security of tenure The head teacher, if there is one, may be unsympathetic, and the children whom he has to teach may be apathetic, troublesome, or irregular in their attendance, because of disease or ill-nourishment or from other causes He may be ill-paid and lack the status in the community which his vocation merits" * In these circumstances the village teacher needs all the guidance, encouragement, and support that he can get It is therefore disappointing to read from reports that in most provinces the inspectorate is weak both in numbers and in quality It is in their relations with village schools and teachers that officers of the district staff can give valuable assistance,

* S H Wood, *loc cit*, p 25

and, by joining in their recreations, they can also do much to mitigate the charge of "immobile study" It is also essential that the teachers should attend refresher courses "There must surely be in India people of good will and distinction, not directly concerned with education, who would be willing to attend refresher courses for the purpose of living with teachers for a few days and talking to them about experiences and issues in a way which would release them from too narrow a concern with their own problems and relate them and their vocation to the world at large" *

42 *Primary school administration*—Even the model teacher, however, needs to work in a school system which is satisfactorily administered Unfortunately, the Indian primary system is poorly administered, especially in a faulty distribution of schools Whereas in some places there is a glut of schools, in others there is a grave deficiency A Director of Public Instruction was once moved to complain that in each village five schools were expected where one would suffice a district board school for boys, a district board school for girls, a *maktab*, a *pathshala*,† and a school for the depressed classes Marked improvement has been made, however, in the attitude towards the depressed classes In place of the segregate schools there is now a determination in every province to admit these unfortunate children to the ordinary schools along with the less unfortunate children There is, doubtless, the danger that they will not be permitted to penetrate into the class-rooms and will have to be content with a few crumbs of instruction on the verandah outside, but old-time prejudice is fast disappearing ‡ With the advance of co-education, unnecessary duplication will be further reduced There are also signs that the *maktab* and the *pathshala* will be absorbed into a national system of primary education Many of the schools are ephemeral, especially those under individual ownership The Hartog Committee found that in the Madras Presidency "although in a single year as many as 8,226 new schools were opened, as many as 5,479 primary schools were closed" §

43 An unfortunate result of the faulty distribution and duplication of schools is the large number of single-teacher

* S H Wood, *loc cit*, p 25
† See para 1
‡ See Chapter II, para 47
§ *Report*, p 62

schools, in which a teacher, often none too well qualified, is expected to deal single-handed with three or four classes More than 50 per cent of the primary schools are of this type, the percentage of such schools to the total ranging from 80 3 in Bengal to 27 3 in the Punjab and 23 2 in the Central Provinces Many schools, again, are lower primary schools with only three classes in each (there are 40,000 in Bengal alone), and in these schools the chances of obtaining even a modicum of literacy must be extremely precarious In most provinces a policy of consolidation is now being attempted In Madras, for example, the objective is that no teacher shall teach more than one class at the same time, and that each class shall contain the full complement of pupils

44 An unhealthy feature of the administration of primary schools by local bodies is the excessive number of transfers of teachers , this practice is unfortunate in that it militates against a village school becoming a village institution in which village folk can take pride and interest

Vernacular Middle Schools

45 Vernacular middle schools open up a most promising field of development Provided that they receive encouragement and support, provided that the teachers have been suitably selected and trained, provided that the teaching is in harmony with village conditions and requirements, they should in course of time supply the two main conditions essential to success in the task of rural reform

46 *Vernacular middle schools* (1) *Bengal*—The position of these schools varies considerably in the several provinces In Bengal they have been permitted to fall into almost hopeless decay , they now number only about fifty as against 3,000 middle English and high schools The Bengal report is lugubrious on the subject " In spite of the rural and agricultural character of the province, the middle vernacular schools, in which boys might obtain a good general grounding, have never been popular The vernacular system of education, which should be the prop and stay of rural development, tends more and more to deteriorate The thought of matriculation dominates, with the result that a very large number of pupils, whatever be their bent and competence, flock to English secondary schools " * Thus

* *Bengal Education Report*, 1934–35, pp 10–11

it is that, having completed their education in the primary schools, which, being usually of the three-class and single-teacher variety, are of little value, pupils must almost inevitably continue their schooling in English schools, with their eyes glued on matriculation and in surroundings divorced from rural life In other provinces, particularly Bihar and Assam, which are contiguous to Bengal, the tendency persists for the replacement of vernacular by Anglo-vernacular middle schools Whence, then, is to arise that widespread movement and that indigenous agency which are so vital to rural reform ?

47 (2) *Bombay* —Fortunately, in certain other provinces attempts have been made to develop vernacular middle schools in a manner that should promote the interests of the country-side and stimulate a spirit of leadership in the villages The initiative was taken some twenty years ago in Bombay by instituting agricultural schools called Loni schools after the name of the first of their kind, but the experiment did not prove successful The schools were expensive and therefore unsuitable for imitation , they could not withstand the competition of the ordinary schools and therefore did not attract pupils , they may not have received the support they deserved But they failed mainly because they were prematurely vocational, and the pupils did not possess that foundation of general training which is an essential preliminary to vocational training They have now given way to what are generally known as " agricultural bias schools " *

48 (3) *Punjab* —A salutary corrective was supplied shortly afterwards by the Punjab Government in its determination to develop a sound system of rural education by the extension and improvement of vernacular middle schools Their number was rapidly increased from 656 in 1922 to 2,431 in 1930 For the purpose of rendering their teaching more in touch with rural conditions, small farms or garden plots were attached to a number of them The teaching of agriculture was entrusted to senior vernacular teachers who had received additional training in the agricultural college at Lyallpur This attempt to enrich the middle vernacular course was subsequently developed by the introduction of the subject of rural science, which is taught on practical as well as on theoretical lines The Punjab Government also realized that the mere prescription of new and improved courses, by

* See Chapter IV, para 51

themselves, would be of little value unless the main body of teachers understood both the letter and the spirit of the new ideas The courses of training for all vernacular teachers have therefore been recast and the senior course extended from one to two years Efforts are also made in the training institutions to stimulate a practical interest by the teachers in matters concerning the improvement of rural conditions

49 (4) *The United Provinces*—Progress has also been made on similar lines in the United Provinces " There can be little doubt that vernacular middle education is the most efficient and valuable section of the educational system of these provinces For a sum commensurate with the income of the parent a boy receives an education in most of the subjects that he is likely to need on leaving school The school is in or near the village, the course is designed for village life Text-books and curriculum alike put emphasis on the rural character of vernacular middle education While the high-school boy and the B A are generally divorced from the atmosphere of village life and are definitely trained to think and act in terms of city life, the boy who passes the vernacular final examination is definitely a product of the country " *

50 (5) *The Moga school*—Perhaps the most complete illustration of what a vernacular middle school should be is provided by the American Presbyterian Mission in its school at Moga in the Punjab, which has attempted to carry out the advice of the Fraser Commission,† a body which was appointed by an inter-missionary conference to consider the position and the prospects of village education in India The school is a model of its kind , its teaching is such that it escapes the depressing " wastage " so common in India , and the school farm and village crafts provide the right background of village service Even more valuable is the class for village teachers, who are trained in matters pertaining to the advancement of the countryside and later become the prop and stay of village folk among whom they serve ‡

The Urgency of School Reconstruction

51 This brief description of vernacular middle schools and of the vital place which they should occupy in a scheme

* *Education Report of the United Provinces*, 1934–5, p 18

† *Village Education in India*, pp 50–51

‡ Visitors are always welcomed by the Rev and Mrs A E Harper, who are in charge of this admirable institution

of Indian education would appear to indicate that the key has been found to a well-devised system of rural education, and that all that is now required is steady improvement and expansion of what already exists Unfortunately, the vernacular system is depressed by a false conception of the values of education In the popular view the vernacular and English systems are not parallel schemes of education, as there is a decided implication of superiority attached to English studies and of inferiority to vernacular (or rural) studies Hence, vernacular education labours under the handicap of inferiority It is in this way that the English system is antagonistic to rural progress , and that, at the very time when an indigenous agency is so urgently required for guiding measures of rural reform, the better gifted pupils, who might in time have supplied that agency, are being sucked into the towns in order to pursue a purely literary and urban form of education Such being the conditions of village life, it is difficult to expect them on the completion of their education in the towns to return and serve the countryside

52 Unfortunately, a similar inferiority is attached also to vocational or industrial schools, with the result that not only are they comparatively few in number, but they attract, generally speaking, only those pupils who are of inferior attainments In consequence, Indian industry does not receive the support that it needs , and the qualifications of the foreman class, so vital to the progress of industry, are sadly defective. Thus, the well-being of Indian industry as well as of the Indian countryside are jeopardized by the present trend of Indian education * Unfortunately, also, owing to the fact that the English system of education is almost entirely of the literary type, pupils prolong unduly a purely literary form of education and thus become averse from practical training and occupations Hence, India is faced not so much by a problem of

* " All sections of the community, with their different occupations, traditions and outlook, and with their different aptitudes and ambitions, have little, if any choice of the type of school to which they will send their children In fact, the present type of high and middle English school has established itself so strongly that other forms of education are opposed or mistrusted, and there is a marked tendency to regard the passage from the lowest primary class to the highest class of a high school as the normal procedure for every pupil There is nothing corresponding to the exodus from many English secondary schools either into practical life or into a vocational institution " (Hartog Committee, *Report*, p 104)

unemployment as of unemployables Those who might have promoted the well-being of Indian industry and of the Indian countryside now loiter in the market-places, seeking work and finding none It is not surprising, therefore, that high schools and colleges are being congested more and more by pupils and students who are unfitted for the type of education which they provide, and are thereby prevented from giving to the more gifted students, whether from town or country, the education and training which they deserve and which the country needs *

53 The system of English education has therefore been subjected to much scrutiny and criticism † The Central Advisory Board in its meeting in December, 1935, made a valuable summary of the position and expressed the following opinion "The following considerations, among others, necessitate a new attitude towards educational problems

"(*a*) the increasing desire among educationists and others to bring about changes in the educational system in view of the altered conditions of life ,

"(*b*) the growing volume of unemployment among the educated classes ,

"(*c*) the emphasis laid on a purely literary form of instruction in schools ,

"(*d*) the inadvisability of too frequent examinations ,

"(*e*) the large number of 'over-age' pupils in the senior classes of high schools ,

"(*f*) the increasing number of students in universities who are unable to benefit by university instruction and, in consequence, the difficulty in making satisfactory provision for the better qualified students and for research ,

* The number of university students of all kinds rose from 67,000 in 1922 to 92,000 in 1927 and to 98,000 in 1931 , the number now stands at 117,000 , *vide Education in India*, 1934–5

† The following references are of value Calcutta University (Sadler) Commission, *Report*, Indian Statutory Commission (Hartog Committee), *Interim Report*, 1929 , Government of India, *Tenth Quinquennial Review*, 1927–32 , Punjab University Enquiry Committee, *Report*, 1932–33 , Unemployment (Sapru) Committee, *Report*, *Resolution* of Government of United Provinces, dated August 8th, 1934 , *Resolution* of Government of Bengal, dated July 27th, 1935 , *Report* of Hyderabad Government, by the late Mr A H Mackenzie and Fazil Muhammad Khan, 1936

" (*g*) the need of developing training of a more practical type than at present and of making provision for such training, especially for those with little or no literary bent, and of adjusting it to the scheme of general education ,

" (*h*) the advisability of developing a suitable scheme of rural education by which boys and girls in rural areas shall be given such training as would develop in them a capacity and desire for the work of rural reconstruction."

The Board then recommended that " a radical readjustment of the present system in schools should be made in such a way as not only to prepare pupils for professional and university courses, but also to enable them at the completion of appropriate stages, to be diverted to occupations or to separate vocational institutions " The Board proceeded to define the several stages and to suggest for each a definite objective The primary stage was to extend over four or five years , the lower secondary stage over five or four years , the higher secondary stage over three years , and the degree stage was to be of three years

54 In forwarding the resolutions to provincial Governments, the Government of India endorsed the view that expert advice would be of value, especially " for the planning of vocational training," and offered to bear the expense thereof As a result, Mr S H Wood, Director of Intelligence to the Board of Education in England, and Mr A Abbott, formerly Chief Inspector of Technical Schools, visited India during the winter of 1936–7 and paid particular attention to the position in the United Provinces, the Punjab and Delhi province, thereafter writing their report, which is well worth reading They supported the general scheme of reconstruction as contemplated by the Board , and they emphasized the importance of a basis of general training in lower secondary schools on which vocational schools should be established and developed Mr Abbott also suggested that the vocational training thus given should be of a general nature and that the staffs of " junior vocational schools " should be as fully qualified as those of the secondary schools Both emphasized the importance of vernacular middle schools, which they regarded " as potentially the most significant educational institution in a country in which about 90 per cent of the population

live in rural areas There is little hope of permanently improving the conditions of village life and of making the rural population responsive to fruitful ideas unless the younger generation is educated beyond the primary stage up to an age when boys and girls realize that they are becoming social and economic assets to the community " *

Higher Education in Rural Areas

55 A further handicap from which vernacular middle schools suffer is that facilities for a continuance of education on similar lines are very meagre The agricultural colleges, which are described in another chapter,† provide facilities for study up to the degree standard , there is also the Imperial Institute of Agricultural Research, which has recently been moved from Pusa to Delhi These institutions, in conjunction with the university departments of science, have done much in the direction of research, but they are not such as to promote a spirit of leadership in the countryside " What India needs to-day, more perhaps than anything, is a new and a wider system of education in the villages, a system which will be capable of expansion, which will be in harmony with village conditions, which will train up boys and girls desirous of remaining a part of the village and of spending lives of service to the progress of the countryside " ‡ The possibilities of expansion in this direction have been indicated at Moga, with its training class for village teachers That part of the training which is associated with village improvement could be made applicable to many categories of village worker , and, in addition, an institution thus enlarged would provide a locus for refresher courses, the importance of which has been stressed by Mr Wood

The Education of Adults

56 Reference has already been made to the deadening influence of village life and to the serious relapse into illiteracy It is therefore unfortunate that such efforts as have been made in the direction of adult education have achieved only modified success, especially in rural areas The methods of instruction are often unsuitable An adult desires to make more rapid progress than a child and, not unnaturally,

* *Report on Vocational Education in India*, p 13

† See Chapter IV, para 50

‡ Anderson and Whitehead, *Christian Education in India*, p 104

becomes wearied by conning a school primer It is unreasonable also to expect that a teacher, after carrying out his duties by day, will attack with eagerness his additional duties by night , or that an inspector can inspect schools both by day and by night * Perhaps the most effective preliminary to the successful introduction of adult education in the countryside would be to stimulate a desire for learning by providing vernacular literature of the right type, by practical lectures and talks, by the display of lantern pictures or preferably cinema films, by broadcasting and other such means Promising beginnings have been made in these directions , and the broadcasting department in Delhi † has already taken the initial steps for bringing the countryside under its influence

57 Progress has also been made in providing facilities for physical recreation not only for school children but also for adults In the Punjab, for example, some sixty certificated teachers have undergone an intensive course in physical training, while a few of them have been assisted subsequently to attend further courses in Europe These men have been appointed physical supervisors and, as such, have given similar courses in all vernacular training institutions, with the result that most village teachers should now be competent to impart physical instruction These supervisors have also done valuable service in stimulating a love of games and physical exercise, even among adults in rural areas The Y M C A physical training school in Madras has made a similar contribution in these directions Indians possess considerable skill in the playing of English games such as cricket, football, and hockey (especially the last), and the Olympic Association has done much to afford encouragement ‡ These games, however, require money, time, and space, which are not always available in India It is therefore advisable to encourage other games such as volley-ball and Indian games such as *kabadi* §

* In the United Provinces, where adult schools have been set on foot by co-operative rural welfare societies, it is the practice to turn them after three years into reading clubs

† See Chapter I, para 64

‡ At the present time there are not only an all-India and provincial Olympic associations, but district Olympic associations, too These hold their sports and send their winners to compete in the provincial associations' sports, whilst winners in the latter are sent to represent their province in the sports of the all-India association

§ This game resembles prisoners' base

58 To this task the Boy Scouts and, to a lesser extent, the Girl Guides have made great contributions Indeed, they can claim already to have afforded widespread facilities for healthy and inexpensive recreation , they have instilled in the youth of India a desire for service , and they transcend the narrowing limits of caste and creed The main criticism of their activities is that they are too dependent on the schools and the school-teachers There is thus much scope for young officers on the district staffs in these directions, and also in teaching you. g India to play English games

Madras —A pupil can join any class or form of a secondary school for which he is found fit There is no restriction whatever in passing from an elementary (vernacular) school to a secondary (English) school There is no departmental rule determining the class in which a pupil may begin the study of English In secondary schools it is usual to begin English in Class IV , an earlier commencement of the study of English is discouraged In some elementary schools English is taught in Standard IV, and higher standards if a teacher qualified to teach English is available

Bombay —In some selected vernacular schools arrangements are made to teach English in Standards V, VI, and VII by attaching separate classes, which are known as " English classes " In addition, there are special classes in English for boys, who have passed the vernacular final examination, in which a special and intensive course is followed to enable them to complete Anglo-vernacular Standards I—III in one year

Bengal —In Bengal pupils who have read English as an optional subject in a vernacular school may pass from Class VI of such a school to Class VII of a high English school, while others pass to Class V

United Provinces —The bottom three classes have been detached from Government high schools They now form a distinct class of schools known as " preparatory schools "

Punjab —In the Punjab also the tendency is to detach from each Government high school the first four classes

Bihar and Orissa —In Bihar and Orissa, those who have not read English as an optional subject in the vernacular school pass into Class IV of an English school, but in some schools they pass into a class (below Class VIII) in which special instruction in English is given to such boys Those who have read English may pass into Classes VIII, VII, VI, or V according to the progress they have made in that language

Central Provinces —In the Central Provinces, English may also be taken as an optional subject in a vernacular school from Class V

Assam —In Assam, primary classes are not attached to any high or middle English schools English has been introduced as an optional subject in middle vernacular schools

**Special Classes* —In the United Provinces, Punjab, and the North-West Frontier Province there are two special classes attached to certain Anglo-vernacular schools. Boys who have passed the vernacular final examination and desire to enter an Anglo-vernacular school are required to spend two years in these classes, mainly in the study of English, before proceeding to Class VIII in the United Provinces, and Class IX in the Punjab and the North-West Frontier Province In the Punjab if a boy desires to go over to an Anglo-vernacular school after passing Class VI of a vernacular middle school, he can do so by studying for one year in the first special class, after which period he can join Class VII of an Anglo-vernacular school , pupils in vernacular middle schools who have passed in optional English in the vernacular final examination can proceed direct to Class IX In the North-West Frontier Province, a pupil having completed the lower middle school course, after receiving instruction in the special class attached to a high school for one year and having successfully completed the course may join Class VII of that school

CHAPTER IX

By SIR FRANK NOYCE

Industrial Labour

Classification of Indian Industries

1 The industries of India, according to the census terminology, fall into two classes—organized and unorganized An industry is regarded as organized if it employs in all not less than 10,000 persons, in establishments that employ not less than ten persons each The unorganized industries are the numerous handicrafts such as are carried on in cottages and workshops These unorganized industries are of great importance, for not only are they the old indigenous industries of India, but they still give employment to a far larger number of workmen than the organized industries At the census of 1931, out of a total of over twenty-six millions employed in plantations, mines, industry, and transport, five millions was taken as the probable figure for organized labour *

Organized Industries

2 In 1929 a representative Royal Commission † presided over by the Rt Hon J H Whitley, who had a short time previously resigned the speakership of the House of Commons, was appointed to enquire and report on the existing conditions of labour in industrial undertakings and plantations in British India, on the health, efficiency, and standard of living of the workers, and on the relations between employers and employed The Commission's masterly report, which was published in 1931, forms the principal basis of the account of industrial labour contained in this chapter, so far as it relates to organized industries These can be arranged in classes according as they are connected with factories, mines, railways, dockyards, and plantations. It will be convenient to begin by a brief account of these various classes separately

* *Census Report*, India, p 285

† Referred to in this chapter as the Labour Commission

3 *Classification of factories* —Factories can be subdivided into regulated and unregulated A regulated factory is one to which the Factories Act of 1934 applies, and is defined in that Act as " any premises, including the precincts thereof, wherein twenty or more workers are working, or were working on any day of the preceding twelve months, and in any part of which a manufacturing process is being carried on with the aid of mechanical power, or is ordinarily so carried on " The unregulated factory is one in which mechanical power is not used or less than twenty workers are employed , but the provincial Government may declare any factory in which ten or more workers are employed to be a regulated factory, whether power is or is not used

4 Regulated factories fall under the Act into two classes, the seasonal and the non-seasonal or perennial A seasonal factory is one which is concerned with the handling of a particular crop as it becomes available, and is open for less than 180 days in a year Under clause 4 of the Act, factories engaged in cotton-ginning, cotton and jute-pressing, the decortication of groundnuts, and the manufacture of coffee, indigo, lac, rubber, sugar, and tea are all classed as seasonal , but the provincial Governments may exclude from that category any of those factories that normally works for longer than 180 days, and include in it any other kind of factory that normally works for less than that period To a newcomer from Europe the most striking features of industrial life in India are the predominance of three industries—the spinning and weaving of cotton and jute, with engineering and metal works , the importance of the seasonal factory , and the absence of a permanent factory population

5 *Geographical distribution of factories* (*a*) *Non-seasonal or perennial* —There are in all some 5,000 perennial factories, employing some 1,300,000 workers Of the latter, about one-half are employed in two industrial areas, namely Calcutta and the Hooghly tract around it, and Bombay, both city and island Both Calcutta and Bombay, as important ports and commercial centres, possess a considerable variety of industries, but each has its own speciality, namely jute and cotton respectively With the exception of four mills in Madras * and one in Bihar, all the Indian jute mills, employing some 290,000 operatives, lie in a strip of about sixty miles long and two miles

* These Madras mills, however, use a fibre differing from true jute

broad on each side of the Hooghly above and below Calcutta Bombay, where the first successful cotton mill was started in 1853, still dominates the cotton industry in spite of its increasing tendency to expand into smaller towns conveniently situated in the cotton-growing country Of these, the most important are Ahmedabad and Sholapur in Bombay and Cawnpore in the United Provinces * The cotton industry employs about 428,000 people , the Bombay presidency is responsible for about 75 per cent of its output Of minor industrial centres, the most important are the provincial capitals, such as Madras, Delhi, Lahore, Lucknow, and Nagpur, in each of which there are a certain number of large factories and many small ones, which serve the miscellaneous needs of the city and its vicinity Other industrial towns of importance are Cawnpore, with its cotton and woollen mills, its leather, saddlery, boot, and brush factories, and its chemical works , and Jamshedpur,† the centre of the iron and steel industry, which has attracted to itself other subsidiary industries There are two other large iron and steel works in Bengal,‡ and Government ordnance factories at Cossipore, Ishapur, Dumdum (Bengal), Kirki (Bombay), and Jubbulpore (Central Provinces) The engineering workshops of the railways are situated either in or near provincial capitals, such as those of Moghalpura near Lahore, Lillooah near Calcutta, Matunga and Parel in Bombay, Perambur near Madras, and Lucknow , or in railway settlements that have become towns, such as Khargpur in the Midnapore district of Bengal, and Jamalpur in Bihar , or in towns that have no other industry, such as Trichinopoly in Madras, Jhansi in the United Provinces, and Dohad in Bombay There are many engineering workshops of other kinds in the larger towns, for the upkeep of tramways, telegraphs, motor-transport, electrical works,§ and shipping , the number of these is especially large in Calcutta and its

* The total number of cotton mills in British India in 1933–34 was 313, of which there were 209 in Bombay, twenty-nine in Madras, twenty-three in the United Provinces, nineteen in Bengal, eleven in the Central Provinces, ten in the Punjab, six in Delhi, five in Ajmer-Merwara, and one in Bihar and Orissa There were also fifty-five mills in the States and three in the French settlement of Pondicherry

† For Jamshedpur, see Chapter I, para 53 Jamshedpur has now 100,000 inhabitants

‡ One of these is at Barakar, near Raniganj It was founded in 1875, and is the oldest factory of the kind in India

§ There are also hydro-electric generating works outside the urban areas See Chapter I, para 48

neighbourhood Iron foundries, usually on a small scale, are widely distributed, whilst the manufacture of kerosene oil-tins is employing an increasing number of workmen in the presidency towns

6 It will suffice to describe the main distribution of other perennial factories by provinces Flour mills and printing presses are to be found in all provinces , so, too, are oil mills, but they are most numerous in Bombay Bengal possesses rice and paper mills, potteries, chemical works and factories which produce cement, lime, leather, glass, lac, paints, soap, and matches , whilst recently no less than ten factories, with 4,500 operatives, have been started to produce rubber shoes In Bombay there are paper, woollen, and silk mills, dyeing and bleaching works, and soap, match, and glass factories—the last a new venture Madras has rice mills, tanneries, and brick and tile factories In the United Provinces, apart from the Cawnpore factories, there are woollen and paper mills, leather, glass, and match factories, tanneries, and a resin distillery The Punjab has cement works, carpentry works, and woollen mills, and has recently started a rubber works Bihar and the Central Provinces produce cement, lime, and pottery, and Bihar bricks and tiles * It is to be noted, moreover, that in recent years some European manufacturers, to avoid the high duties imposed on their goods, have begun to set up branch factories of their own in India The leading cigarette-makers in the United Kingdom now send manufactured tobacco to India, where it is rolled into cigarettes Some of the leading soap-manufacturers of the United Kingdom are now producing most standard brands in their Indian branches The Dunlop Rubber Co supplies the Indian market from its factory at Calcutta with all kinds of rubber goods, notably tyres Messrs Courtauld & Co have set up an artificial silk factory near Bombay Finally, the famous Swedish and Japanese matches, formerly imported in large numbers, are now being manufactured in the country—to a certain extent, out of wood from the Indian forests

7 (*b*) *Seasonal* —There are in all some 3,700 seasonal factories employing about 300,000 workers Of these, about 130,000 are in cotton-ginning and pressing factories which are found mainly in Bombay, the Punjab, Madras, and the Central

* Labour Commission, *Report*, pp 6–10 and 77–8 , Annual Reports on the working of the Factories Act, *passim*

and United Provinces, and form the most important group of such factories The cotton-ginning season varies from two to seven months in different areas, but there is practically no time of year when cotton is not being ginned in some part of India Jute presses are confined almost entirely to Bengal, their season extends from July to December The number of factories which make sugar direct from cane has increased enormously in recent years, and is now about 170, they are most numerous in the United Provinces, Bihar, and Bombay, but there are some in Bengal, the Punjab, and Madras The season varies, but nowhere does it exceed three months,* in the United Provinces it lasts from the end of December to the beginning of March, whilst in Madras it does not begin till the end of February There are tea factories in Assam, Bengal, and Madras, in Northern India they are not open in the cold weather, and the work is everywhere intermittent as well as seasonal †

8 *Unregulated factories*—The conditions of labour, especially of child labour, which prevail in many unregulated factories are very unsatisfactory, and the Labour Commission drew a lurid picture of the abuses which they found existing in some of them The manufacture of *bidis* (Indian cigarettes), for instance, is an urban industry, partly carried on in the home, but mainly in small workshops Many of these are dark, crowded, ill-ventilated, and insanitary, with damp mud floors on which workers sit or squat through a long working day—for hours of work are seldom regulated and the workshops are open day and night There is no regular recess and no weekly day of rest Children of five years of age are often made to work for ten or twelve hours on a miserable pittance, and controlled by corporal punishment and other strict disciplinary measures ‡ The provincial Governments could do something to improve the lot of these workers if they

* This is due chiefly to defective production Different types of cane mature at different times, but at present the cultivator rarely grows more than the type which matures earliest In the United Provinces attempts are being made to induce him to grow all types, so that he may keep up a supply of cane to the factories for a longer period, in which case they will probably become perennial

† Labour Commission, *Report*, pp 75–9, Annual Reports on the working of the Factories Act, *passim*, Indian Sugar Committee, *Report*, 1920

‡ Labour Commission, *Report*, pp 90–8 Other industries in which similar abuses prevail are shellac manufacture and leather-tanning

would use more freely their power to extend the provisions of the Factories Act to any manufacturing establishment employing at least ten persons But the difficulties of the problem —one of which is the heavy cost of providing an adequate inspecting staff—and the urgency of other labour legislation have so far proved obstacles to the passing of an all-India Act, though the Government of India has recently made proposals for such legislation to provincial Governments

9 *Mines and quarries* —The geographical distribution of Indian minerals has already been described * Coal, far the most important of them, accounts for over three-fifths of the quarter of a million people employed in mines and collieries, and four-fifths of those who work underground † About 80 per cent of the present output of coal, which during the last decade has ranged round 20 million tons, comes from a group of coalfields in Bengal and Bihar—Raniganj, Jharia, and Bokaro, lying in a narrow tract running westwards from Raniganj for about 100 miles Adjoining them further to the west is the smaller Karanpura field, with the Giridih field about fifty miles to the north Of the other fields, the most important is the Pench Valley field in the north of the Central Provinces

10 Indian coal-seams are much thicker than European Most of the seams exceed 10 feet , the Jharia seams average 20 feet, whilst some are from 60 to 80 feet thick In the Bokaro field there is one seam of over 100 feet thick, which produces nearly a million tons of coal a year, and is worked from the surface The Indian miner, therefore, is more fortunate than the European miner, for he can almost always stand upright at his work ‡ On the other hand, most seams of good-quality coal in India give off fire-damp, and the local explosions due to it are both strengthened and lengthened by the presence of coal dust, which is a source of danger to all mines, for a very small amount is sufficient to render the atmosphere inflammable § The Indian coal-miner is also liable to a common and even greater danger In the early days of coal-mining, extraction was often excessive The pillars that are left are

* See Chapter I, para 56

† Chief Inspector of Mines, *Report*, 1936, pp 62 and 103

‡ Labour Commission, *Report*, pp 112–14

§ Coal Mining Committee, *Report*, 1937, pp 54–7 This contradicts the opinion of the Labour Commission, who held that inflammable gas was unknown and that most mines could be safely worked with naked lights

often inadequate to support the remaining coal and their premature collapse may lead to a sudden subsidence in which lives may be lost both above and below ground, as well as much valuable coal Such a subsidence may be followed by dangerous fires caused by spontaneous combustion * This peril exists in most Indian coal-fields, but is most serious at Jharia, where there are now about forty permanently burning fires in twenty-two different collieries † The other minerals which are extracted in India—iron, gold, manganese, mica, salt, and a variety of building stones and materials—give work between them to about two-thirds of the number of persons that are employed in the collieries

11 *Railways*—Indian railways extend over some 43,000 miles In 1934 the exact figure was 42,953, a length which exceeds that of any other country except the United States of America Thus the railway administrations, with their total staff of about 800,000 men, are the largest employers of organized labour in India, and their policy in respect of wages and other labour problems has important reactions on the labour conditions throughout the country But that policy is by no means uniform, nor is the practice which is based on it This lack of uniformity is in part due to differences in the nature of the administrations themselves About 45 per cent of the total mileage is directly managed by the State,‡ the remainder being directly managed by private companies which, except in the case of certain branch lines, are domiciled in England The supreme authority is the Railway Board, consisting of a Chief Commissioner and three other members § But whereas in respect of labour matters it has full control of the state-managed railways, it can only make suggestions for reforms and improvements to the company-managed railways Again, in both classes agents have full powers to regulate the appointment, pay, promotion, leave, and dismissal of subordinate workers , but whereas the agent of a state-managed railway is responsible to the Board which delegated those powers to him, the agent of a company-managed railway is

* Coal Mining Committee, *Report*, 1937, p 32

† Chief Inspector of Mines *Report*, 1935, p 21

‡ About 74 per cent is *owned* by the State The system in respect of ownership and management is highly complicated See Anstey's *Economic Development of India*, pp 130 *et seq* , especially p 133

§ One of the members is in charge of general administration and personnel, which includes labour matters

responsible to his directors There are other factors which prevent uniformity of practice in the treatment of labour matters on different railway systems Amongst these are the length of the railway itself, the climatic and ethnological attributes of the territories through which it passes, the intellectual and economic conditions of the people living in those territories, the nature and extent of the traffic available, and the earning capacity of the system itself

12 *Plantations*—There are in India plantations of tea, coffee, cinchona, and rubber *, but of these tea is far the most important The coffee industry suffered severely from blight and insect pests in the period 1862–85, and the production is now small The cinchona area is also small, and the crop suffices for only a part of the Indian market † Rubber has passed through many vicissitudes in the last twenty years, and its future is still uncertain But tea is one of the chief Indian exports Out of the total labour force in plantations of over a million, nearly seven-eighths are employed in tea gardens and over one-half in the tea gardens of Assam There are factories attached to these plantations, which are classed under the Factories Act as seasonal ‡ The chief difficulties in these plantations are connected with their labour supply—a matter dealt with elsewhere §

Sources of Labour in Organized Industries

13 Everywhere in India the organized industries draw their unskilled labour not from the towns but from the villages For the most part they are able to confine recruitment to the surrounding rural areas, but in some centres they are compelled for different reasons to go further afield Bombay, being hemmed in by the sea on the one side and a narrow coastal plain flanked by high mountains on the other, draws its labour mainly by sea from the densely populated Ratnagiri district to the south and by land from the precarious Deccan districts of Ahmednagar, Poona, and Sholapur to the south-east Labour must be imported from a distance to the Hooghly area because the Bengali people have less inclination for factory work than other Indian races, though their dislike of it is rapidly diminishing, to Jamshedpur, because it was established

* For their locations, see Chapter I, para 54

† The main source of supply for the whole world is Java

‡ See para 4 above

§ See para 23

in a tract of almost virgin forest, where labour was not to be found, and to the tea plantations of Assam, because they lie in tracts that were originally uninhabited or sparsely inhabited The main collieries in Bengal and Bihar, which lie in or near country inhabited by aboriginal tribes, originally drew the whole of their labour force and still draw most of it from those tribes, but they are now recruiting workmen from more distant areas in ever-increasing numbers, because they are more adaptable, more assiduous, and more regular in attendance than the aboriginals The tracts from which all this labour principally comes are the eastern districts of the United Provinces, the western districts of Bihar, the northern and eastern districts of the Central Provinces,* and Orissa, whilst the northern districts of Madras also supply labour to the tea plantations, and there are few provinces which are not represented in the labour force of Jamshedpur † But workmen in other centres than the three mentioned and in other mines and quarries, ‡ the railway gangmen, porters, pointsmen, signalmen, and shunters, the dockyard labourers,—these are all recruited in the neighbourhood of the places where their work lies

14 *Characteristics of the labour supply*—It is in the fact that factory labour in India is drawn from rural areas and frequently from long distances that the Labour Commission found the most fundamental difference between the factory worker of India and the West "The latter is drawn mainly from persons brought up in the towns, and partly from those who have abandoned the country for the towns The Indian factory operatives are nearly all migrants But the difference does not end here In India the migration from the rural areas to the factories is not in the main a permanent exodus, it is, in the minds of those who undertake it and to a large extent in fact, a temporary transfer, and the recruit to industry continues to regard as his home the place from which he has come" § For a true understanding of the position it is necessary to amplify this statement In the seasonal factories, which deal only with agricultural products after they have been

* These districts also supply the labour of the large manganese mines in the same province

† Labour Commission, *Report*, pp 10–11

‡ The salt mines of the Punjab are worked by hereditary miners, who depend entirely on the salt mines for their livelihood

§ Labour Commission, *Report*, pp 11–12

harvested, and where no great degree of skill is required, the workers are essentially agriculturists, most of whom, in fact continue to live in their own homes * In the collieries many of the aboriginal workers were attracted by the grant of land and live on colliery property, devoting a part of their time to agriculture , whilst others live sufficiently close to the coal-fields to be able to return to their home for periods, long or short, when agricultural work is plentiful Again, on the railways many gangmen live in villages near the permanent way and are apt to desert the line and return to the land at seed time and harvest But it would be a mistake to suppose that the main industries of India are manned entirely by agricultural labourers who foresake the plough to add to their income by a brief spell of work in the city The employer is no longer compelled to engage men who are prepared to work only for a few months in the year , though the industrial exodus may be temporary, it is now prolonged The true position is that most industrial labourers are at heart villagers, with a village upbringing and a village tradition The great majority of them come from the agricultural classes, though some look back to village crafts rather than to village fields But these emigrants, whether they be cultivators or artisans, look on their villages as their homes even though they have taken their families with them All through their period of exile they nurse the hope of returning to their homes when their work is over, and do their best to maintain contact with them, even if the contact consists in nothing more than sending remittances to close relatives It is only in a few centres, such as Ahmedabad, Nagpur, and Madras, that any large numbers of labourers have no ties with the village and look upon the city as their home—such folk as the Moslem weavers of Ahmedabad, and members of the depressed classes in all three centres, whose interest in the land was never substantial

15 What drives the villager to migrate to an industrial centre ? Poverty is the most potent cause Over large parts of India there are already more persons on the land than are required to cultivate it, and in present conditions more than it can comfortably support † There has always been a large class of landless labourers, earning a meagre living in good seasons and reduced to penury in bad ones, which is constantly receiving fresh recruits as the result of indebtedness, quarrels,

* A large proportion of them are women

† Cf Chapter I, para 77

and the need or desire of a landlord to increase his own cultivation Even among families which retain their holdings, individual members are frequently forced to abandon their ancestral occupation from such causes as a rise in rent, the growth of debt, or an increase of the family itself Nor is economic pressure confined to agriculturists The village craftsman feels the blast of competition from the factory The textile mills employ many weavers whose families used to work on handlooms The village leather-worker, the carpenter, and the blacksmith must transfer their allegiance to the rival which is supplanting them Another potent cause of the migration from agriculture to industry is to be found in the serious social disabilities from which large strata of the population * suffer , these disabilities lose much of their force in the industrial areas, and those who suffer from them have shown themselves increasingly eager to take advantage of the freedom that industry offers Lastly, the world of industry also offers a refuge to those who would escape from family conditions that have become intolerable, from the penalties of the law, or from the more severe penalties with which the caste visits offences against its moral and social code †

16 Whilst these causes explain the villager's willingness to leave his village, they do not explain his anxiety to return to it, which the Labour Commission regarded as the most striking element in that migration The chief cause is the deep attachment which every Indian peasant feels to his land, his home, and his family ‡ If he migrates elsewhere, then he must sever himself from the first two and probably from the third as well, for industrial employment suitable for women and children is scarce § and the problem of their maintenance can be solved more easily and more cheaply in the village than in the town *Linquenda tellus, et domus, et placens uxor* Such migration, moreover, may involve complete change of environment The worker will often find himself amongst strangers, whose language, culture, and customs are all alien to him His health will often suffer from changes of climate and diet

* I e the depressed classes

† Cf Chapter II, para 31, on the weakening of caste authority and the means of escaping from it

‡ Cf Chapter I, para 79

§ Of all the workers in regulated factories, about six-sevenths are males over fifteen years of age , the number of children is about 12,000, and is rapidly diminishing

His sanitary habits may be fraught with peril in his new surroundings, yet cannot easily be altered There are also other dangers from sickness and disease and from the new and insidious temptations of city life His working hours are transformed , continuous labour under rigid discipline takes the place of spasmodic work with long hours of leisure Lastly, the constant turnover of the labour force which, for these causes and others peculiar to Indian labour, occurs in most industries, prevents the establishment of personal and friendly relations with his employer The driving force in industrial migration comes from the village end of the channel The city, as such, has no attraction for villagers, and few of them would remain in industry if they could secure sufficient food and clothing in the village They are pushed, not pulled, to the city

17 Contact with the village, however, has some substantial advantages Most industrial workers possess better physique than could be built up in many industrial centres Holidays, which many workers can spend in their villages, are a great source of strength of mind and body There is usually some kind of home to fall back on when need arises, and the benefits are not solely economic Migration probably quickens the minds and enlarges the outlook of a far greater number of workers than it corrupts The industrial worker brings to his village when he returns to it a new education, and helps to diffuse throughout the countryside a conception of liberty and independence that is new to village society Whatever view may be taken of the distant future, it is not advisable that the most striking feature of Indian industrial conditions, the long-continued connexion of the industrial labourer * with the village, should be discouraged

Recruitment of Labour

18 (*a*) *Factories*—In the early days of Indian industrial development there was an acute shortage of labour, which was mainly due to the rapidity of that development, and employers had to seek their workers in the highways and byways But this shortage is at an end and most managers of perennial factories can now obtain the workers they require at their own gates In some factory industries, more especially engineering and metal works, labour contractors are still numerous, but

* Labour Commission, *Report*, pp 11–20

they are now not so much contractors as subordinate employees, whilst most of them also can secure labour at the factory gate Nevertheless, though it is no longer necessary to go into the villages to secure labour, relatively few employers have yet assumed the responsibility for engaging their workers The function is still left far too much to intermediaries and especially to jobbers, whose position in the Indian factory organization is one of its most striking features

19 The jobber, known in different parts of India by such names as *sardar*, *mukaddam*, or *maistri*,* combines a number of functions He is usually a promoted workman, with such a man's limited education and outlook His primary responsibility is the supervision of labour, in a large factory there may be a hierarchy of such jobbers † On occasion the jobber also acts as assistant mechanic and helps to keep the machines in running order, it is he who gives the worker all the technical training he gets He is the intermediary between the employers and workers It is generally he whom the worker must approach to get a job or a transfer to a better one It is to him that the employer goes when he wishes to notify changes to the workers or to acquire information regarding their needs and desires The jobber has many temptations to make a financial profit out of his duties, and only too often yields to them Such abuses are all the more easily perpetrated because so many of those responsible for management have an insufficient knowledge of the vernaculars and in talking to their workers must rely on the jobbers as interpreters When jobbers are in the habit of exacting a bribe on all fresh engagements, it is in their interest to secure that such engagements are numerous—which explains that remarkably large turnover in many Indian factories which has already been mentioned ‡

20 In the rice mills, which were formerly classed as seasonal factories, but are now mostly classed as perennial, the bulk of the male labour is engaged through *maistris* or contractors, and may move from mill to mill as work offers, often returning to the villages at harvest or other times In

* A corrupt form of *mistri*, meaning, literally, artificer or mechanic

† Such a hierarchy would include women overseers for the departments staffed by women, such as the rolling and winding and waste-picking departments of the cotton mills, and the sack-sewing departments of the jute mills

‡ See Labour Commission, *Report*, pp 21–4

other seasonal factories the practice varies In cotton-ginning and pressing factories, labour is predominantly local, and is generally engaged directly by the manager, but in some cases, particularly in the Punjab, a labour contractor is employed who engages workers by the day In the jute presses all labour is employed and paid through contractors, who undertake to work at a fixed rate per bale The workers receive advances, which are small if they belong to the locality, but substantial if they are recruited from distant places *

21 (*b*) *Mines and quarries*—Although collieries, like perennial factories, have now less difficulty in securing labour than they had in the past, many workers must still be engaged at a distance, and colliery proprietors must still spend, directly or indirectly, substantial funds on recruiting, which is carried on in several different ways In some cases the management sends out recruiters of its own In other cases a contractor is engaged to supply labourers who will be employed and paid by the management Occasionally, a *sardar*, himself a miner, will bring a gang of his own men to the mine and make himself responsible for the work that his gang undertakes But the commonest method is to employ a "raising contractor," who receives a fixed payment per ton in return for which he not only supplies labourers but also mines the coal and loads it into wagons In all these systems the procedure of securing recruits is much the same The recruiter or his agent visits a village, usually one with which he has a regular connexion, makes advances, pays railway fares, and brings the workers to the coalfields But an increasing number of labourers, many of them from long distances, are now finding their own way to the coalfield without the assistance of a recruiter, and frequently return year after year to the same mine †

22 (*c*) *Railways*—The railway labour force falls into three main classes, and the method of recruiting each differs The gangmen on the permanent way are recruited in neighbouring villages by the permanent-way inspectors, who also select semi-skilled workers, whilst skilled artisans are usually recruited by works subordinates The unskilled staff in the stations and goods-sheds are recruited by station-masters and traffic inspectors, whilst skilled hands are recruited by senior subordinates The workshop labourers are usually engaged by

* Labour Commission, *Report*, pp 76–9
† Labour Commission, *Report*, p 116

works managers on the recommendation of foremen. Semi-skilled workmen are usually selected for promotion if they have acquired experience in the unskilled ranks, and some ultimately develop into skilled workmen , but most of these last are men who have been trained in particular trades or, to a smaller but ever increasing extent, are apprentices who have undergone workshop training of four to six years

23 (*d*) *Docks*—The demand for dock labour is intermittent, depending on the arrival and departure of ships, the size and nature of the cargo, and the monsoon The port authorities accordingly maintain a permanent establishment, but most of the labour employed in loading and unloading is casual, being engaged by stevedores or other contractors as required

24 (*e*) *Plantations*—On the plantations labour has always been recruited from a distance , and the transfer of a constant stream of families, many of them drawn from aboriginal tribes, presented administrative difficulties from the outset. The recruiting was in the hands of professional contractors, who were ready to use undesirable devices to secure the large rewards obtainable for the supply of labour As a result of a long series of enactments which began as early as 1863, a system was eventually evolved under which recruitment was entrusted entirely to emissaries, themselves labourers, sent out from the gardens , but though it largely eradicated the former abuses, it did not remove the difficulty of securing an adequate supply of labour Accordingly, in 1932, legislation of a new type was passed, namely the Tea Districts Emigrant Labour Act (XII of 1932) Control of recruitment has been reduced to the minimum necessary to prevent abuses In any area from which emigration is declared to be " controlled," recruitment may only be carried on by approved employing interests under license, and subject to various restrictions designed to prevent misrepresentation and to secure the comfort of the recruit on the journey Any such " controlled emigration area " may be notified a " restricted recruiting area," * in which there is stricter control, whilst recruitment can only be carried on by tea-garden labourers or licensed recruiting agents The Act also contains provisions to safeguard the health of those recruited, to protect women and children, to

* No controlled emigration area has yet been notified a restricted recruiting area

secure to all emigrants and their families a right of repatriation, which normally accrues after three years' service, and to punish offences The Act is administered by a Controller of Emigrant Labour, whose special duty it is to supervise emigration from the recruiting areas and to watch over the labourers after they reach the gardens This officer has so far been a member of the Indian Civil Service, with headquarters at Shillong The Director of Public Health in Assam is also empowered to inspect plantations

Industrial Legislation

25 *Regulated factories* —The welfare of workers in regulated factories, both perennial and seasonal, is governed by the Factories Act XXV of 1934, the last of a series of similar Acts of which the first was passed in 1881 * It is a consolidated measure which replaces all former legislation It regulates working hours, and lays down in considerable detail the measures which the employer must take to ensure the health and safety of his employees In all these respects it is more favourable to the latter than former legislation And it is worthy of mention that, in the opinion of Mr Harold Butler, the Director of the International Office, the conditions prevailing in large-scale industry in India do not compare unfavourably with those in many European countries, and the regulation of working conditions in large factories is perhaps more advanced than in any other Asiatic country †

26 The adult's working hours are limited in perennial factories to ten hours per day and fifty-four ‡ hours per week, and in seasonal factories to eleven hours per day for men and ten hours for women, with a weekly figure of sixty hours Every adult must have a whole holiday on Sunday, unless he has had or will have a holiday on one of the three days immediately preceding or immediately following any particular Sunday § No adult may work for longer than six hours

* The other Acts were passed in 1891, 1911, and 1922 The present Act was amended in 1935, 1936, and 1937, but the amendments are of minor importance

† Harold Butler, *Problems of Industry in the East, with special reference to India, French India, Ceylon, Malaya, and the Netherland Indies*, 1938, pp 10–11

‡ This period is extended to fifty-six hours if a factory is engaged in any continuous process

§ This enables the substitution for a Sunday of one of the numerous Hindu or Muhammadan holidays

before he has had an interval for rest of at least one hour, nor may his hours be spread over more than thirteen hours without the special permission of the provincial Government For women, this period must ordinarily run from 6 a m to 7 p m, though the provincial Government may vary these limits to any span of thirteen hours between 5 a m and 7 30 p m —a provision which ensures to every woman a full night's rest In special circumstances the provincial Government may modify all these restrictions except the woman's daily limit of ten hours, whilst it has also power to control or prohibit the use of overlapping shifts

27 Nobody under the age of twelve years may be employed at all, and nobody under the age of seventeen years may be employed unless he has been medically certified as fit for employment Between the ages of twelve and fourteen, both inclusive, the worker is a " child " his hours are limited to five per day, they may not be spread over more than seven-and-a-half hours, and must fall between the same times as in the case of women A worker of fifteen or sixteen years of age is an " adolescent " he can be engaged as an adult if he is medically certified to be fit for adult employment, but otherwise he can only be employed on the conditions applying to a child The provincial Government has power to lay down physical standards to which children and adolescents must conform

28 In the interests of the worker's health the Act provides for the cleanliness of the factory, for its ventilation and lighting, for a sufficient supply of drinking water, latrines, and urinals, and for the prevention of overcrowding In respect of temperature and humidification, matters of great concern in a tropical climate, it lays down that the true criterion of danger and discomfort is not the humidity but the cooling power, which is dependent conjointly on the temperature of the air, its humidity, and its movement Employers are also obliged to protect their workers from inhaling gas, dust, and other impurities that may be generated in the course of work, and to provide them with water for washing wherever they come in contact with injurious or obnoxious substances In all these matters the provincial Governments have power to prescribe methods, standards, and patterns They can also insist on the provision of first-aid boxes, of crêches for the use of young children wherever more than fifty women are employed, of adequate shelters for use during periods of rest wherever there

are more than 150 workers, and they can prohibit the admission to specified classes of factories of children who cannot be lawfully employed there For the safety of the workers, the Act makes full provision for the fencing of dangerous machinery and for precautions against fire, including suitable exits and means of escape The provincial Government may make rules to protect workers from various industrial hazards, to prohibit the employment of women or children in hazardous processes,* and to regulate the working of transport within factories Finally, the penalties prescribed by the Act for offences relating to working hours and holidays and the employment of women, adolescents, and children have been increased considerably, and there is now a minimum penalty laid down for convictions after the first

29 *Unregulated factories*—As has been stated above, no central legislation has yet been passed to govern unregulated factories The Central Provinces legislature, however, in 1937, passed an Unregulated Factories Act This Act applies to workshops employing fifty or more persons and engaged in the manufacture of *bidis*, shellac manufacture, and the tanning of leather—all of them industries to which the Labour Commission had drawn pointed attention, but it can also be extended to other industries and to workshops employing as few as twenty-five persons It goes further than the Commission's proposals in some respects, notably in providing for the limitation of hours for adult workers †

30 *Mines*—As the Factories Act of 1934 is the charter of workers in factories, so is the Indian Mines (Amendment) Act of 1935 the charter of workers in mines It is the last of a series of Acts, of which the first was passed in 1901,‡ each of which was more favourable to the worker than its predecessor. Under the present Act the working hours above ground are the same as in perennial factories under the Factories Act, namely ten hours per day and fifty-four per week Below

* Instances of such are work with rubber solutions and soluble chromium compounds, cellulose spraying, sand blasting, operations relating to the manufacture and use of chemicals and explosives, certain glass-making, lead, ceramic, and cement processes, the handling of wool, hair, bristles, hides, and skins The oiling and cleaning of machinery when in motion under power is prohibited to women and children under the Act itself, and in certain cases may be altogether prohibited by the provincial Governments

† *Indian Labour Legislation, 1932–37*, pp 50–1.

‡ Other Acts were passed in 1923 and 1928

ground there is only a daily limit of nine hours, but this limit is applied to the relay (or shift), and not merely to the individual The result is that for the average worker, the time elapsing between his leaving the surface and his emerging again is nearer eight hours than nine, which period includes not only his hours of work but also the time spent in finding his way from the surface to the working place, and from the working place back to the surface The age-limit for child workers has been raised from thirteen to fifteen years, whilst it is also provided, as in the Factories Act, that no person between the ages of fifteen and seventeen may be employed below ground unless he has been medically certified as fit for such work

31 In 1928 women formed nearly 30 per cent. of the labour force employed underground in coal mines Under the Act of that year, however, Government made regulations which (1) prohibited the employment of women underground in all mines except those in the principal coalfields and the salt mines of the Punjab, and (2) provided for an annual reduction in the exempted mines of the number of women thus employed, in such a manner that by 1939 the employment of women should cease altogether The process, however, was completed by 1936, two years earlier than the time originally appointed

32 The Mines Act of 1901 had provided for the establishment of Mining Boards for the consideration of proposed legislation, the settlement of disputes between inspectors and owners regarding by-laws, and the consideration of such cases as were referred to them instead of to a court of inquiry The Act of 1935 gives the workers the same number of representatives on these boards as the employers, namely two, and provides that these should be nominated by registered trade unions if they include a substantial proportion of the miners It was also laid down that courts of inquiry, when appointed to enquire into accidents, should invariably publish their reports

33 Further mining Acts have been passed, in 1936 and 1937, to deal with the growing danger from fires and explosions These give the Government of India power to promulgate temporary regulations relating to safety in mines without previous notice or publication, and enlarge both the field that can be covered by such regulations, and the powers

of the inspectorate to issue safety orders applicable to individual mines They also provide for the formation of central rescue stations when required, for the establishment of rescue station committees, and for the levy of a cess to finance them *

34 *Railways* —The International Labour Conference † at Washington in 1919 adopted a Convention relating to hours of work, which was ratified by India in 1921, and prescribed for India that the principle of a sixty-hour week should be adopted in factories, mines, and also "in branches of railway work especially specified for this purpose by the competent authority" The Conference of 1921 at Geneva adopted a similar Convention relating to a weekly period of rest, which was ratified in 1923 These Conventions have been operative for some years in respect of railway workshops and railway collieries, which come under the Factories and Mines Acts respectively , but there were practical difficulties in extending them to other branches of railway activity, and it was only in 1930 that an Act was passed under which statutory rules were made to give effect to them These rules have since been made, and have been applied to all the state-managed railways, but so far only to three company-managed railways, namely the Bombay, Baroda, and Central India, the Madras and Southern Mahratta, and the Bengal and North-Western railways ‡ On the whole the conditions of labour are more satisfactory on railways than in factories and mines the wage rates are higher, the rules regarding the grant of holidays and leave are more liberal Because of these attractions not only is a better type of applicant available for railway service, but the supply of applicants is generally in excess of the demand

35 *Docks* —In the docks of Madras the hours of work are eleven per day, with an hour's recess , in all other ports they are limited to nine hours a day, as recommended by the Labour Commission The provincial Governments, under the provisions of the Indian Ports (Amendment) Act of 1931, have prohibited the employment of children under twelve on the

* *Indian Labour Legislation, 1932–37*, pp 30–34

† India is a member of the International Labour Organization, the headquarters of which are at Geneva she is entitled to send a delegation consisting of representatives of Government employers and workers to the annual International Labour Conference , and has a permanent seat on the governing body of the International Labour Office

‡ Labour Commission, *Report*, pp 156–7 , and *Report on the action taken on the recommendations of the Labour Commission*, 1936, p 6 The rules were applied to the Bengal and North-Western Railway in 1937

handling of goods, but the Labour Commission's recommendation that the age should be raised to fourteen, though accepted in principle by the Government of India, has not yet been implemented The safety of dock-workers has been secured by the Indian Dock Labourers Act XIX of 1934, under which an extensive code of rules is being framed, providing for the maintenance of safe approaches over wharves, docks and quays, of safe means of access to ships, for the rendering of first-aid in cases of accident, for testing lifting machinery and for reporting accidents *

36 *General labour legislation* (*a*) *Workmen's compensation* — Until 1923 no compensation was due to any workman, or to his dependants, except in the case of death The first Workmen's Compensation Act was passed in 1923, and recognized the right of compensation in all cases of personal injury by accident arising out of and in the course of employment, and in all cases of the contraction of specified industrial diseases It covered ten classes of workmen, including all those employed in factories, mines, and docks, and most railway workers The scope of the Act was greatly enlarged by the Amending Act XV of 1933 The existing classes were widened and new classes were added, notably workers in plantations and on ships of all nationalities whilst within territorial waters The Act has also been extended by notification to workers engaged in certain hazardous occupations, connected mainly with forest work It is now estimated to cover about 6,000,000 workers, against the 4,000,000 covered by the previous Act The scales of compensation have also been improved For death the amount payable, which formerly ranged from Rs 240 to Rs 2,500, now ranges from Rs 500 to Rs 4,000 For permanent total disablement, the figures are now from Rs 700 to Rs 5,600, against former figures of Rs 336 and Rs 3,500 The rates for temporary disablement have also been improved, especially at the lower end of the scale, whilst the number of diseases is constantly being increased by notification † As it was clear that workmen and their dependants had not been fully aware of their rights, the Act of 1933

* *Indian Labour Legislation, 1932–37*, pp 3–4

† The diseases are such as lead or phosphorous poisoning, benzine poisoning, and chrome ulceration See *Indian Labour Legislation, 1932–37*, pp 45–51 A further widening of the classes and additions to the diseases were made by an amending Act passed in March, 1938 For the rates, see p 406

laid on employers the obligation of reporting fatal accidents to the Compensation Commissioner, who would then inform the dependants, whilst it also enlarged the list of dependants and relieved them of the need for approaching the employer before filing an application for compensation

(*b*) *Payment of wages*—In perennial factories and on the railways the most usual method by which an employer endeavours to maintain efficiency and discipline is the imposition of fines,* and though the total loss of wages by fines was nowhere large and in all but a few centres was extremely small, yet the method was obviously liable to abuse, especially when the fines in cotton textile mills took the form of handing over to the weaver any cloth from his loom which he had spoilt in the course of manufacture, and deducting from his wages its wholesale selling price † Accordingly in 1936, the Payment of Wages Act was passed to regulate this system, and also to fix the periods for and to prevent delays in the payment of wages ‡ It applies to employees on a pay of Rs 200 (£15) per mensem or less and in the first instance only to factories and railways, though it can be extended by notification to mines, plantations, workshops, docks, oil-fields, and various transport services According to the usual practice in Indian industrial establishments, the maximum wage period is one month § Payment must ordinarily be made within seven days of the end of the wage period, and within two days when an employee is discharged Payments in kind are prohibited The Act prohibits fining of children and the recovery of fines by instalments, and limits the maximum fine in any month to half an anna in the rupee of the worker's earnings || The Act also lays down that fines may only be imposed for specified acts or omissions, of which a list must be posted for the information of the workers, whilst the sums received in fines must be spent on some object, approved by competent authority, which is beneficial to the employees as a whole Deductions from wages for damage to goods or loss of money are specifically

* This method is much less common in mines and practically unknown in plantations

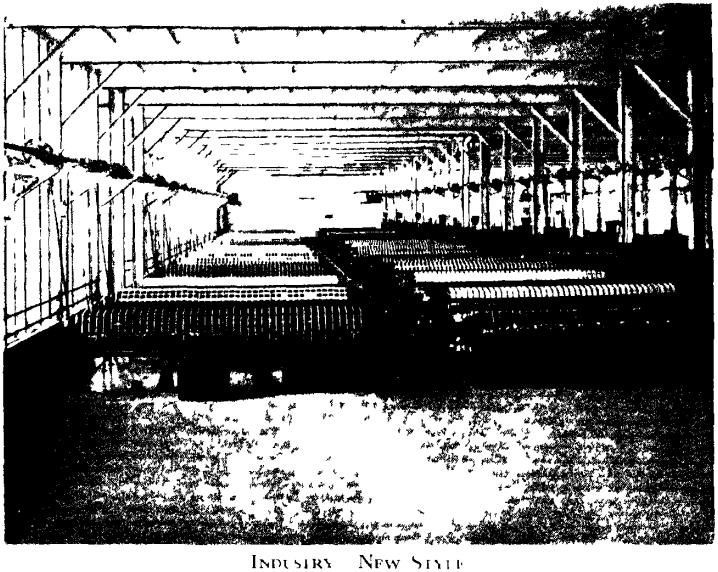
† Labour Commission, *Report*, pp 216–7

‡ This Act (IV of 1936) broke entirely new ground, for the only previous law in these respects was the obsolete Employers' and Workmen's (Disputes) Act of 1860, which was repealed in 1932

§ The Labour Commission proposed weekly payments, but public opinion was adverse to the change and the proposal was dropped

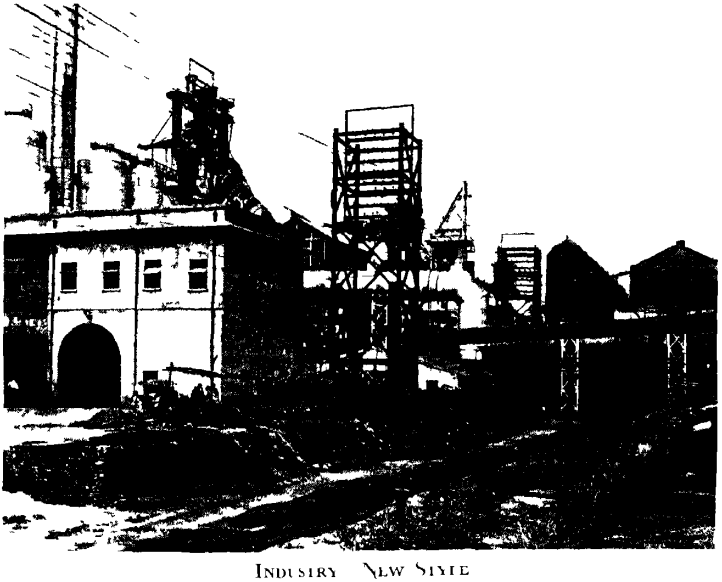
|| This is equivalent to $3\frac{1}{8}$ per cent See p 406

PLATE 13



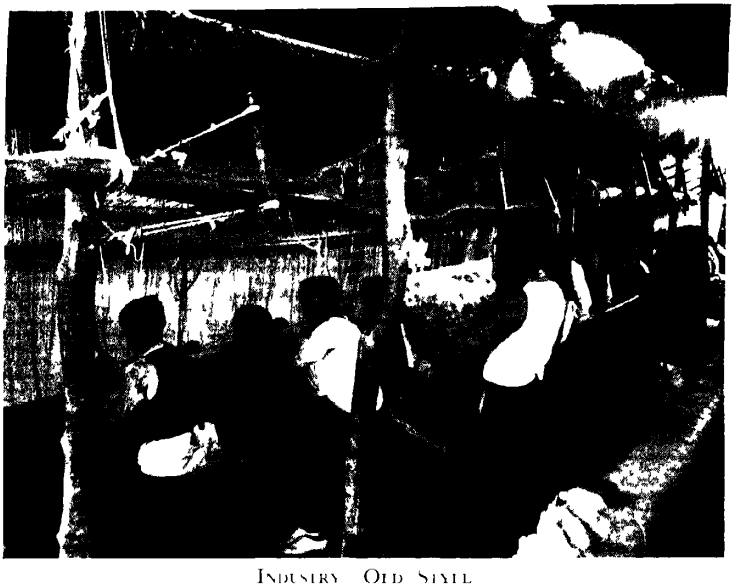
INDUSTRY NEW STYLE

A reeling room in a cotton mill of southern India

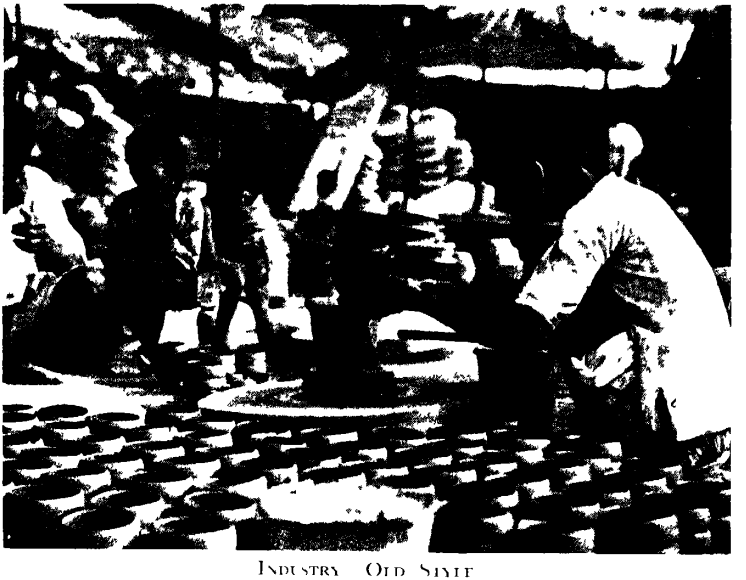


INDUSTRY NEW STYLE

Shops at Tatanagar, near Jamshedpur (See Chapter I, para 56



INDUSTRY OLD STYLE
Primitive weaving hut Agra



INDUSTRY OLD STYLE
A Delhi potter

limited to cases in which the goods or money were given to the employee in a fiduciary capacity and the damage or loss was directly due to his neglect or default Deductions are also permitted for housing provided by the employer, and for such other services as may be approved by Government, but not deductions for tools and raw materials Deductions on account of advances given before employment begins are prohibited, unless these are made from the first wage-payment, and no advances for travelling expenses can be recovered Subject to rules made by Government, an employer is able to recover up to eight days' wages where workmen collectively absent themselves without reasonable cause, whilst an Amending Act (XXII of 1937) enables employers to withhold pay from workers who, although present, unreasonably refuse to work This is specially aimed at " stay-in " strikes *

(*c*) *Indebtedness*—Indebtedness takes a high place among the causes responsible for the low standard of living of the Indian worker According to the estimate of the Labour Commission at least two-thirds of all industrial workers are in debt, most of them for a sum exceeding three months' wages The rate of interest usually charged is 1 anna per rupee per month or 75 per cent per annum The main causes of indebtedness are social and religious ceremonies, as is also the case with the peasantry, and unemployment due to sickness, dismissal, strikes, lock-outs, and trade depressions † The Commission recommended that an attempt should be made to remedy the evil by reducing the worker's borrowing capacity, and in pursuance of that recommendation the Code of Civil Procedure has been twice amended By Act XVI of 1936 imprisonment for debt was abolished, except where recalcitrance or fraud was proved Act IX of 1937 dealt with the recovery of debts through employers. In the case of servants of Government, of local bodies, and of the railways, whose pay exceeded a certain minimum, the law formerly allowed decree-holders to secure the attachment in advance of any sum up to one-half of the judgment-debtors' salaries, and there were many cases of such attachment The new Act of 1937 has greatly modified these provisions In the case of all workers, by whomsoever employed, drawing not more than Rs 100 (£7 10*s*) per mensem, attachment is prohibited. In the case of employees of Government, local bodies, and

* *Indian Labour Legislation, 1932–37*, pp 35–9

† Labour Commission, *Report*, pp 224–9

railways on higher pay than Rs 100, attachment is prohibited in respect of the first Rs 100 and of one-half the remainder No attachment in respect of the same decree or decrees may last for longer than twenty-four months in all, and when that period is over, there can be no further attachment till another twelve months have passed *

37 The Central Provinces legislature has led the way in carrying out the recommendations of the Labour Commission regarding the liquidation of debt, by passing the Adjustment and Liquidation of Industrial Workers' Debt Act (V of 1936) Like most measures of the kind its provisions are complicated, and a brief account of it will suffice A workman whose debt exceeds the value of his assets plus a sum equivalent to three months' wages † can, by setting this Act in motion cause his debts to be scaled down by a court to a sum that he can pay in a reasonable time The court has power to examine his debt transactions, and to reject such as appear to it unfair , to reduce usurious rates of interest, and in particular to disallow any aggregation of interest to a sum exceeding the principal , ‡ to liquidate the debts thus adjusted, in the first place by realization of the assets, and in respect of any remaining balance by assigning to the creditors for a period that may not exceed three years a total sum, which varies from one-sixth of the debtor's monthly wage if he has two or more dependants, to one-third if he has none

38 There are many moneylenders who, for the recovery of their debts, prefer to resort to methods of violence and intimidation rather than to the processes of law Armed with *lathis*, they are often seen waiting outside the factory gates on pay-day, ready to pounce on their debtors as they emerge The Central Provinces Protection of Debtors Act (IV of 1937) makes molestation for the recovery of a debt punishable, and includes in the term obstruction, violence, intimidation, persistent following of the debtor, and loitering at or near his residence or place of work An Act of the same character, though more limited in scope, has been passed in Bengal, namely the Bengal Workmen's Protection Act, IV of 1935 §

* *Indian Labour Legislation, 1932–37*, pp 17–18

† The term in the Act is "average income" from all sources In practice, however, average income would generally mean average wages

‡ This is according to an old principle of Hindu law, known as *damdupat*

§ *Indian Labour Legislation, 1932–37*, pp 16–22

Trade Unions and Trade Disputes

39. Trade unionism in India has had a short and chequered history As early as the eighties of the last century efforts were made to organize the mill hands of Bombay in support of proposals for labour legislation, and in 1890 a Millhands' Association was formed * But this did not survive, and prior to the War organization scarcely extended beyond the better paid railway employees and some classes of government servants The grave economic difficulties and the political turmoil of the years immediately following the end of the War led to the formation of a large number of trade organizations Most of these disappeared when conditions returned to normal, but some, more genuine than the rest, survived, and in spite of local checks and universal handicaps, others were steadily added to them The Trade Unions Act of 1926 † marks an important stage in the history of the movement The principal difference between that Act and similar legislation in Great Britain and the Dominions is that it applies only to those unions which seek registration under it, which registration is voluntary Registered unions incur certain obligations the most important are that they must confine their expenditure to trade union objects , they must furnish audited accounts , whilst not less than one-half of their executive officers must be actual workers On the other hand, registration confers on trade unions and their officers a certain measure of immunity from civil suits and criminal prosecutions

40 It is difficult to assess the present-day strength of the movement because unions vary greatly in form and character At the bottom of the scale are those unions which possess few members other than their office-bearers, who find this the easiest way of placing themselves in the public eye Such unions, however, are less numerous than they formerly were, especially in Bengal Next come the *ad hoc* unions—organizations designed to secure some definite and immediate object, which either dissolve or lapse into a state of suspended animation when they have achieved, or failed to achieve, the purpose for which they were formed But most unions are now permanent and regular organizations The railways, including railway workshops and transport workers, provided about 150,000 of the 270,000 members of unions registered in 1935–36,

* By Mr N M Lokhande, the first of India's labour leaders For the pre-War period, see Anstey's *Economic Development of India*, pp 314–15

† This Act came into force on January 1st, 1927

whilst seamen provided another 26,700 Textile unions have been slow to organize and register, and their membership in 1935–36 was small, below that of the seamen's unions * The movement in Madras began in 1918, when the Madras Labour Union, consisting of workers of the Buckingham and Carnatic Mills, came into existence , and Madras still remains a focus of trade union activity In Ahmedabad the workers, with the exception of the Moslem weavers, are organized into groups of craft unions, which participate in a common federal association called the Textile Labour Association † Elsewhere the tendency is to organize by individual factories, and not by occupations Mining workers are poorly organized and plantation workers not at all If one judges purely by figures of membership in the unions making returns, trade unions are strongest in Bengal, the Punjab, and Bombay,‡ but the figures are heavily weighted by the membership of the railway unions , and outside that field, it is probably as true today as it was when the Labour Commission reported, that trade unionism is strongest in Bombay and weakest, having regard to the potentialities, in Bengal §

41 There are various obstacles to the development of trade unions in India Amongst them are the migratory nature of labour , the desire of many workers to escape, sooner or later, from industry , the poverty of the average worker, to whom a small subscription is frequently an appreciable burden , differences of race and language , and sometimes the active opposition of the jobbers Even more fundamental difficulties are the ignorance of the workers and their consequent exploitation by politicians India has still to produce trade union leaders such as have made trade unionism in Great Britain both powerful and respected "They do not realize that the functions of a trade union leader differ widely from those of a leader of a labour community , " || that his business is not to destroy the present capitalistic system but to do the best that he can for labour within it Communists in and outside India have made strenuous efforts to capture the movement, not without success , the labour troubles in

* *Note on the working of the Indian Trade Unions Act during 1935–36*, p 4.

† For a description of this association, see A Mukhtar's *Trade Unionism and Labour Disputes in India*, Chapter IV

‡ Labour Commission, *Report*, pp 317–21

§ *Note on the working of the Trade Unions Act, 1926*, p 3

|| A Mukhtar, *op cit* , p v

Bombay in 1928, for instance, are supposed to have been fomented by communist propaganda Dissensions in the labour ranks came to a head at the end of 1929 Most of those unions which were under the more experienced and responsible leaders seceded from the old All-India Trade Union Congress, which came into being in 1920, and formed themselves into the All-India Trade Unions Federation In May, 1931, the All-India Railwaymen's Federation tried to bring the two bodies together at a unity conference which was convened in Bombay This conference, however, was unable to frame a constitution for an amalgamated organization which would prove acceptable to both parties , and yet another body, the National Federation of Labour, was formed In 1933, however, this body and the old All-India Trade Unions Federation were amalgamated under the name of the National Trade Unions Federation, which is now the largest and most representative labour organization in India *

42 Another obstacle to the development of trade unionism is the unwillingness of employers to recognize unions, for which there are various reasons—that the members are only a minority of the workers concerned , that other unions are already in existence , that outsiders have been introduced into the executive , that the unions have declined to dismiss obnoxious office bearers , or that they are not registered under the Act. Following a recommendation of the Labour Commission, Government has set an example by issuing revised rules intended to facilitate the recognition of the unions of their own non-industrial employees, and by encouraging them to secure registration †

43 Trade unions in India have almost exclusively confined their activities to securing concessions from employers, and few of them have done anything in the way of mutual help The Ahmedabad Textile Labour Association has shown what can be achieved in that direction, in spite of the difficulty of raising any appreciable subscription from Indian workers. Its elaborate range of welfare work includes the maintenance of a savings bank, a hospital, a number of educational institutions, and circulating libraries It has also purchased land on which it has built model tenements for workers ‡

* A Mukhtar, *op cit*, Chapter V

† *Report regarding administrative action taken by Governments on the Labour Commission's recommendations, 1936*, p 16

‡ A Mukhtar, *op cit*, Chapter IV

44 *Trade disputes* —Closely connected with the question of trade unions is that of trade disputes These reached their maximum in 1928, when there were 203 disputes involving over half a million workers and the loss of nearly 22 million working days The strikes of that year showed a remarkable increase in picketing and intimidation, sometimes resulting in violence and bloodshed, whilst the influence of extremist leaders was apparent in a resort to lightning strikes without any indication being given of the nature of the workers' grievances After 1928 there was a striking decrease in industrial unrest, and in 1935 less than one million working days were lost by some 134,000 workers There were several causes for this decline Firstly, the appointment of the Labour Commission and the publication of its report was followed by a period of intense legislative and administrative activity on the part of the central and provincial Governments, designed to improve the lot of the worker and to promote industrial peace Secondly, there was a substantial fall in the cost of living, coupled with the rise in " real " wages resulting from the time-lag and other causes A third factor was a marked reduction in the activity of extremist leaders * For some months past, however, another wave of industrial unrest has been sweeping India It is probably due in part to a rise in prices, in part to the desire of labour—or at all events of labour leaders—to take advantage of the opportunities presented by the inauguration of democratic government in the provinces

45 *Trade disputes legislation* —The investigation and settlement of trade disputes are governed by the Trade Disputes Act of 1929 The machinery which it provides takes the form either of a court of inquiry or a board of conciliation The court is intended to investigate and report on such questions connected with the dispute as may be referred to it by Government , the board is intended to secure if possible a settlement of the dispute The object of both is to utilize public opinion in order to prevent or shorten industrial disputes The Act penalizes lightning strikes and lock-outs in public utility services, and declares illegal any strike or lock-out which seeks to further any object other than a trade dispute within the industry to which the strikers or employers belong, or to coerce Government by inflicting hardship on the community The life of the Act was restricted to five years, but it was made

* *Industrial Disputes in India, 1929–36*, pp 2–4

permanent by Act XIII of 1934 An amending Act passed in April, 1938, empowers provincial Governments to make permanent or temporary appointments of conciliation officers, whose duty it will be to mediate in trade disputes and to promote their settlement These officers may be appointed for particular areas or particular industries and are given powers of entry and inspection The amending Act also extends the definition of public utility service to tramways and inland steamer services

46 This amending Act has been anticipated in some respects by the Bombay Trade Disputes Conciliation Act, which was passed in 1934. It at present applies only to Bombay city and its suburbs, and only to the textile industry, but can be extended to other parts of the presidency and to other industries It provides for two appointments first of a labour officer, whose primary duty is to watch the interests of workmen with a view to promoting harmonious relations between employers and workmen, and to obtain redress of their grievances , and secondly, of " conciliators," whose primary duty is to enquire into and settle disputes The Commissioner of Labour is the Chief Conciliator, but Special Conciliators may also be appointed for particular areas, whilst Assistant Conciliators can be appointed as required Conciliators have power to institute proceedings either on application or on their own motion, to compel employers to appoint delegates to such proceedings, to enforce attendance and the production of documents, to take evidence, and to enter premises If the workmen do not appoint delegates to conciliation proceedings when requested to do so by the Conciliator, the Labour Officer is required to act as their delegate Thus the Act not only secures conciliation by official agency, but provides for the official advocacy of workmen's interests, both in formal and informal dealings with employers *

47 Due in no small measure to the personalities of the two Labour Officers so far appointed,† the Act has worked both smoothly and effectively, and deserves to be widely imitated Somewhat similar machinery, which is at present in the experimental stage, has recently been set up for railways by executive orders A Conciliation Officer has been appointed with head-

* *Indian Labour Legislation, 1932–37*, pp 23–27

† The first was a member of the Indian Civil Service , the second of the Indian Police

quarters at Calcutta His duty is to establish contact with the administrations of the East Indian and Eastern Bengal railways, with recognized trade unions of railway workers, and with other committees and similar bodies which are concerned with the relations between the administrations and their employees He is also responsible for endeavouring to settle trade disputes and to maintain harmonious relations between employers and employed Ultimately, an Industrial Advisory Board, consisting of three members, will be set up , it will deal with disputes referred to it by the Conciliation Officer in which he has failed to secure a settlement, and report its decision to the Railway Board or the agent concerned

Housing

48 The Labour Commission in their report draw a vivid picture of the miserable conditions in which industrial labour is too often housed In most industrial centres the growth of population has outstripped the available accommodation, with the result that congestion and overcrowding are common, sanitation is neglected, and the paucity of latrines enhances the pollution of air and soil Houses often lack plinths, windows, or ventilation , and except in Bombay, where lack of space has given birth to the *chawl*, they usually consist of a single small room into which the only entrance is a doorway so low that a man must often stoop to enter it *Chawls* in Bombay are tenement houses, three or four stories high, with at least one family and occasionally more residing in each room *

49 Housing in the mining areas presents special difficulties. There is a shortage of sites possessing solid foundations, due to the subsidences which frequently result from underground work Again, miners who come from the same village or group of neighbouring villages prefer to crowd together in the rooms of one block even though more accommodation is available elsewhere , whilst those who work in different shifts often arrange to live in the same set of rooms alternately In 1915–16 the Governments of Bengal and Bihar established boards of health for the Asansol area in the Raniganj field and for the Jharia field respectively , but though these boards have devoted much attention to the housing of labour in the mining areas the conditions, for the reasons given, are still

* Labour Commission, *Report*, pp 270–4

far from satisfactory The companies usually provide rent-free houses, but though these are made of brick and cement concrete, they are seldom fitted with windows, and are therefore dark and badly ventilated As in the factory areas, sanitary arrangements and latrine accommodation are both inadequate * On the plantations it is the usual custom for employers to provide rent-free houses for their resident labourers at their own expense, without assistance from Government or any other public or private agency Though the housing conditions are better than in other industrial areas, yet even in the plantations plinths are seldom provided, space is often insufficient, and light and ventilation are often entirely ignored † It is clear from this account that the housing problem, perhaps more than any other of the problems relating to the welfare of industrial labour, demands more attention than it has yet received, whether from Government, the local authorities, or the employers Of the three, the employers, or at all events a section of them, are the least open to criticism They have done most, though their responsibility is the smallest The one bright spot in the gloomy picture, according to the Labour Commission, is that in a number of centres the more progressive employers have made an effort to provide housing The quality of that housing may vary greatly, but nevertheless the worst accommodation provided by employers is almost everywhere better than the best alternative accommodation available The Commission recommended that the Land Acquisition Act should be amended to enable industrial concerns to secure land for the housing of their employees This recommendation was carried out by the Land Acquisition (Amendment) Act, XVI of 1923, which provides for the acquisition of land not only for workmen's dwelling-houses, but also for the provision of amenities connected with housing ‡

Unorganized Industries

50 No survey of the problems of industrial labour in India would be complete without some account of those

* The boards of health mentioned above, however, have done much to prevent diseases, to improve medical arrangements, and to control sanitation, whilst the Jharia water board has provided a large and well-protected water-supply On the general question, see Labour Commission, *Report*, pp 133 and 279–80

† Labour Commission, *Report*, pp 408–9

‡ *Indian Labour Legislation, 1932–37*, p 14

cottage and small-scale industries which do not come within the purview of the Factories Act and are not likely to come within the purview of any future Act that may follow it These unorganized industries are of two kinds The first consists of those village handicrafts, dating back to the earliest times and scattered all over the country, which produce the simple articles needed to clothe and house the population and to provide them with tools, utensils, and furniture These handicrafts include the manufacture of cheap textile goods pottery, basket-making, wood-work and metal-work, work connected with the preparation of ordinary agricultural products, such as the grinding of grain, the milling and husking of rice, the pressing of sugar, and similar work connected with any special products of the locality, which vary from coir and hemp to indigo and perfumes There has never been any great scope for expansion in such industries, for even today the Indian peasant is content with the simplest of clothes, the simplest of houses, and a minimum of tools, utensils, and furniture * Even the well-to-do villager will be content in the matter of clothes with a coat, a couple of loin-cloths, and a strip of cloth to tie round his head , in the matter of housing, with a hut made of mud, bamboos, and *arhar* thatch , in the matter of furniture, with a rope bedstead, a lamp, a mirror, and a few utensils of metal for cooking his food and of earthenware for storing his goods The second class of unorganized industries also date back to very early times, and are situated for the most part in various urban centres They were connected with the production of specialities and luxuries for export abroad, and for use at the courts and amongst the wealthier classes Amongst the goods produced by these industries are textiles of superior quality, such as the brocade (*kincob*) of Benares, the embroidered muslin (*kamdani*) of Lucknow, and the printed calicos of both these places and of Farrukhabad There are also ornaments, vessels, and articles of all kinds, made in gold and silver, in carved ebony, sandalwood, stone, marble, and ivory , a large variety of artistically-wrought metal goods—iron, brass, copper, and bell-metal—together with gold and silver thread, glass, embroidery, leather, enamel, and jewellery of all kinds These industries, though they serve an extensive market, are carried out by the same simple methods and tools as are employed in the village handicrafts They continued to flourish during the first half of the nineteenth

* See Chapter III, para 3

century, but when the Indian market was invaded by the cheap products of factories they began to decay The village hand-loom industry suffered from the competition of imported Lancashire goods Industries such as dyeing, pottery, and oil-pressing have lost ground before large-scale substitutes such as aniline dyes, metal utensils, and kerosene oil , whilst brass and copper have been replaced by imported enamelled ironware, glass, and crockery Finally, such processes as the grinding of grain, the milling of rice, and the pressing of sugar are now carried out in seasonal factories—flour mills, rice mills, and sugar factories The luxury industries, though they have not been so seriously affected by the competition of machine-made goods, have suffered from changes in taste amongst both foreign and Indian consumers Since the middle of the last century there has been a marked decline in the attention paid by European customers to quality, design, and workmanship The foreign tourist is now only too easily satisfied with any trash so long as its pattern contains a sufficient number of goddesses, bulls, tigers, and lotus flowers The Indian prince who used to buy brocades and silks now buys European broadcloths Instead of furnishing his palace with the artistic products of Indian craftsmen, he causes it to be furnished by London firms Instead of buying elephants and decorative elephant-housings, he buys silver-plated motor-cars

51 Nevertheless, though some of these industries, notably hand-spinning, are dead and some others are dying, yet there are many which still survive The cotton-weaving industry, for instance, is still important , its importance may be gauged from the fact that the number of handlooms still at work is nearly two million, and the number of workers is over two-and-a-half million * Cotton-spinning and silk-weaving and spinning are included in these figures, but the number of workers engaged in them is small The village artisan in wood and metal, the potter and the tanner, still have their regular clientèles † Many of the luxury industries, moreover,

* These figures are taken respectively from the report of the Cotton Textile Tariff Board of 1932 and the tables in the Census Report (India) of 1931 The number of bales of cotton used by the industry is estimated at 750,000 annually Handloom cloth is still much in demand by the villagers, because it is more durable than mill-made cloth, whilst for certain ceremonies the cloth used must be handwoven

† See Chapter II, Appendix I on *jajmani*

have never been affected by factory competition, and are still carried on in large or small urban towns practically all over the country Within the United Provinces, for instance, there are the manufactures of brocade, silk muslin, satin and velvet cloth, embroidered cloth, printed calicos, carpets, art metal-wares (brass, copper, and silver), fancy pottery, toys and lacquer wares, bead and glass bangles, carved woodwork and perfumes , and the list does not pretend to be complete It is true that many of these industries are no longer as prosperous as they were in the past Trades that used to be permanent are now seasonal , for instance, it is only during the summer that there is any demand for *chikan* work or silk muslins, and only festivals and the marriage season create a demand for brocade or satin Nevertheless, they still show considerable vitality and deserve encouragement, not only because of their value in providing work for the hereditary craftsmen engaged in them, but also in furnishing subsidiary occupations for the peasant when agricultural work is slack, thereby enabling him both to increase his income and to use profitably time which would otherwise be wasted

52 The economic condition of cottage workers, however, leaves much to be desired Their extreme poverty renders them an easy prey to merchants, who advance materials at high prices, together with cash just sufficient to enable them to eke out a poor subsistence, and in return take over the finished goods at prices entirely incommensurate with their real value In some cases the seasonal nature of the demand for their goods makes it difficult for them to make both ends meet in spite of hard work and long hours, whilst if the crops fail the demand for the products of cottage industries falls and the earnings of the cottage workers also fall They are, in fact, less able than ordinary agriculturists to resist calamity, and they present a special and somewhat difficult problem to Government in times of famine Many of them, moreover, work in small workshops, where the conditions are as unhealthy as they are in those unregulated factories which have already been mentioned * Perhaps the most important obstacle in the way of improving the lot of the artisan is his own ignorance of modern commercial methods He works in a little shop in some back street of a small town , he is quite content to produce sufficient goods to finance his daily needs, and if he

* See para 8 above

receives an order, sees no reason why he should not postpone carrying it out until his daily needs once more become pressing In such circumstances it is difficult to foster the introduction of Indian art-wares into foreign markets Lastly, there is little organization for marketing such products and few attempts are made to cater for the taste of the consumer *

53 Nevertheless, something has been done in recent years to improve the lot of cottage workmen They are the special care of the departments of industry in all provinces, and of the industrial conferences which have, of late, been annually convened by the Government of India Special grants have from time to time been made to promote the development of the cotton handloom industry and of the silk and woollen cottage industries In all provinces the departments are striving to demonstrate new and improved processes and to give practical training in them , to solve technical difficulties , and to form co-operative societies for the purchase of materials and the marketing of the finished products In some provinces there are schools maintained for the instruction and training of artisans, generally in their ancestral crafts There are, for instance, weaving schools for boys, as well as weaving institutes for adult artisans, in Bengal, Bihar, Orissa, Madras, the Punjab, and the United Provinces There are similar schools for other handicrafts, such as dyeing, knitting, carpet-making, the making of toys, and the weaving and spinning of jute The number of exhibitions, either organized or assisted by Government, is rapidly increasing, and these play an important part in stimulating a demand for the goods exhibited From time to time, also, Governments send exhibits of their provincial products to foreign exhibitions † But much still remains to be done, and more organization is necessary if the small industries are to produce for their workers a reasonable standard of living

ADMINISTRATION

54 Before April 1st, 1937, when the new Government of India Act came into operation, labour was a provincial reserved subject—in other words, the provincial Governments in dealing with labour matters were subject to the superintendence, direction, and control of the central Government Under the

* S G Panandikar, *Industrial Labour in India*, Chapter XVI

† E g the Wembley Exhibition of 1924 and the Toronto Exhibition of 1935 India also participates annually in the British Industries Fair

new constitution, however, the regulation of labour, together with safety in mines and oil-fields remains a completely federal subject Unemployment is in the sphere of the provincial Governments, whilst the federal and provincial legislatures have concurrent powers in regard to factories and welfare of labour, conditions of labour, provident funds, employers' liability, workmen's compensation, and health insurance, including invalidity pensions and old-age pensions In respect of these matters, therefore, a provincial law which is repugnant to an existing federal law can only become valid if it receives the assent of the Governor-General or of His Majesty, and even so may be overridden by further federal legislation In the Government of India labour questions are handled by the department of labour, which was formed as recently as November 8th, 1937 The new department is in the charge of a Member of the Governor-General's Executive Council, and has as its administrative head a Secretary to Government The Chief Inspector of Mines is its adviser in all matters connected with mines, his headquarters are at Dhanbad in the Jharia coalfield There is a somewhat similar organization in the provinces Labour questions are dealt with by a department of the secretariat, which has as its administrative head a Secretary to Government, and since April 1st, 1937, is in charge of a Minister No province has as yet a separate department of labour with a specialist head directly responsible to Government, though the three presidencies have officers who carry out some of the duties that would fall to such a department Madras has a Commissioner of Labour, who is Commissioner for Workmen's Compensation and Registrar of Trade Unions as well, and is also responsible for the administration of the Factories Act and of other matters connected with labour In Bombay the Commissioner of Labour, in addition to being responsible for statistics and intelligence,* is also Commissioner for Workmen's Compensation, Registrar of Trade Unions, and Chief Conciliation Officer, but is not concerned with the administration of the Factories Act In Bengal the Labour Commissioner is a Deputy Secretary to Government, and is also Registrar of Trade Unions and administers the Factories Act There is, however, a separate Commissioner for Workmen's Compensation In the United Provinces the Director of Industries, whose headquarters are at Cawnpore, is *ex officio* Labour Commissioner, and also *ex*

* This branch of work is more developed in Bombay than elsewhere

officio additional Inspector of Factories * In provinces other than those already mentioned, each of which, it should be noted, has a Chief Inspector of Factories, the Director of Industries is usually Registrar of Trade Unions and acts as general adviser on labour matters The Chief Inspector of Factories provides expert advice within his own sphere and frequently on labour matters which do not fall strictly within it In the Punjab Commissioners of divisions, in the Central Provinces all District Judges, in Berar three additional District Judges, in the United Provinces, Bihar, Orissa, and Assam all District Magistrates, and in Bihar also a few Subdivisional Officers, are Commissioners under the Workmen's Compensation Act All District Magistrates are Inspectors of Factories under the Factories Act and may, subject to certain reservations, exercise the powers of Inspectors of Mines under the general or special orders of the provincial Government

* The United Provinces Government has recently appointed a whole-time Commissioner of Labour

CHAPTER X

By C F STRICKLAND

Co-operation

Co-operation in other Countries

1 It is not generally realized that the number of co-operative societies in India exceeds that of any other country in the world India has 104,000 societies, Germany 52,000, France 35,000, U S A 31,000 * The co-operative movement in India is not, therefore, a curious sideline which only enthusiasts follow, but an element of outstanding importance in the national life

2 A co-operative society is a voluntary organization of persons in a group to work on an equal footing for the promotion of their economic interests It should be noted that the group (1) is voluntarily formed , (2) places all its members on an equal footing , (3) aims at a common end which is of benefit to all the members (it will be shown later that the economic advantage may be indirect, such as health, no less than a direct increase of wealth) , and (4) expects each member to work for that end It is not sufficient to take shares and thereafter do nothing, as a shareholder in a joint-stock company may do if he pleases

3 Certain primitive types of association existed in various countries from the earliest times, but, having no legal basis, were often temporary Cheese, for instance, was manufactured from milk by farmers who worked in rotation in Swiss and Italian villages Co-operation in its modern sense, however, as defined above, dates from the end of the eighteenth century, the first English " store " having been founded in 1795 Many others followed, but were short-lived, and the

* *International Labour Review*, xxix, 6, 1934 The U S S R had 210,000 collective farms, but these are not co-operative societies , almost all the free societies of the U S S R have been suppressed India had 108,000 societies in 1936

beginning of distributive Co-operation, i e wholesale purchase and sometimes joint manufacture of domestic and other necessaries for sale to the members from their own co-operative shops, is now reckoned from the opening of the Rochdale Pioneers' Society in 1844 The fundamental principles of consumers' Co-operation are that (1) goods be ordinarily sold at their market price, (2) the resulting *surplus*, (which in the hands of a private trader would be his *profit*, and is often, though incorrectly, so called in a co-operative society), be divided among the members at the end of each year, after provision for a reserve fund to guard against losses, and each member's dividend be proportionate to the business which he has done with the society during the year, only a moderate rate of interest being paid on shares, and (3) payment for goods be made in cash Broadly speaking, these principles have been maintained, while consumers' Co-operation has spread throughout the towns of Europe, North America, and Australia In southern and eastern Europe there is a tendency to demand sales below the prevailing market-price—a policy which facilitates business with the poorest classes, but exposes the society to greater risks, if an unexpected loss during the year has to be met from a smaller surplus In northern and western Europe and in Great Britain also there is a tendency to grant credit instead of insisting on cash payments, either in order to help those members whose incomes are low during a strike or other unemployment or because well-to-do members find it inconvenient to pay cash for daily purchases Nevertheless, the three principles quoted are still very widely acknowledged and generally observed In India and throughout Asia the co-operative shop has made little progress Its difficulties will be mentioned later

4 In the same decade which saw the foundation of the Rochdale Pioneers, the distress and impoverishment of the poorer classes, rural and urban, in Germany led Raiffeisen and Schulze-Delitzsch to form co-operative societies of a different type but with similar principles In 1848 Raiffeisen and in 1849 Schulze-Delitzsch, working at first on a basis of philanthropy, created associations for the supply of money, raw materials, or domestic goods to industrious villagers or artisans After a short experience they adopted in place of philanthropy the principle of mutual help, and co-operative credit societies began to multiply in Germany and to be imitated elsewhere The Schulze-Delitzsch societies operate

for the most part in the towns and have comparatively large share capital and wide membership, in which many agriculturists are included The Raiffeisen societies are smaller, with small shares and a rural (though not exclusively agricultural) membership, and this difference between the two types, due to the different needs and conditions of urban and rural life, has persisted wherever the credit movement has been extended The liability of members in an urban society is usually limited, since there is less mutual acquaintance among them, the larger share capital also gives a certain protection against losses and offers security to depositors and other creditors In a rural society, in which the members, living in a single village or commune, know one another well but cannot afford to take up big shares, the liability of each member towards his society is unlimited i e in the event of of the society's liquidation, *but not otherwise*, each member is liable with all his property for the repayment of deposits or other sums which the society owes It is, however, not uncommon to find urban credit societies in which the members are artisans or labourers adopting the plan of unlimited liability, while rural societies of which the members are well-to-do farmers or in which large loans are granted (e g mortgage associations) prefer a limited liability

5 Co-operative credit, in one or other of these two forms, has spread throughout the world It has brought relief to the peasant or small farmer, offered him a road of escape from the high interest-charges of the private moneylender, and taught him the value of honesty, thrift, and punctual payment of his dues In all co-operative societies (1) membership is voluntary, and consequently no person who voluntarily enters a society is justified in objecting to penalties which may fall upon him if he fails to comply with its rules, (2) the members in general meeting or through the managing committee which they elect are entitled to refuse the application of any person for admission if they regard him as likely to be an unsatisfactory member By no means all credit societies achieve their objects If the members are disloyal and do not repay their loans, if they elect an incompetent or selfish committee, or if they seek to make profits by lending or investing in an unsafe manner, societies fail and have sooner or later to be liquidated, but thousands of small and large societies in towns and villages, managed by simple but honest men, are flourishing and bringing happiness to those who

would in their absence be unable to borrow, even for the most useful objects, or would only be able to do so at excessive interest

6 The intention of the co-operative shop and of the co-operative credit society is to secure for men of small means, who are willing to bind themselves by rules of loyalty, mutual help, and prompt payment, the same advantages which a wealthier person, buying, selling, or borrowing on a bigger scale and with substantial property to support his credit, can enjoy in his independent dealings A bank will not be willing to lend at a moderate rate of interest, if at all, to a five-acre farmer from whom it will be difficult to realize the money in case of default, but it will more willingly lend money to, and an individual will more readily deposit his surplus funds with, a group of thirty to fifty such farmers, since they are not all likely to become dishonest or to be unable to repay their loans at the same moment Similarly, a housewife making her daily purchases must, when buying from an ordinary shop, pay the full retail price, including the profit of the shopkeeper, but when 500 wives and husbands take shares in a co-operative shop their money is used to make wholesale and therefore cheaper purchases Each then pays to the shop the retail price, but receives back the difference in the form of a dividend on purchases at the end of the year

7 Fifty or five hundred persons in association being stronger than one, then fifty or five hundred societies will be stronger than one society wherever the desired object—loan-money, sound goods, or a favourable selling market—has to be procured from persons or institutions who find it convenient, as it usually is, to deal with big customers Credit societies therefore join together in co-operative banks, which receive deposits from the public or loans from commercial banks on terms more advantageous than a single society could obtain, and thus render the money cheaper and more readily available to their member-societies The co-operative banks of several counties or districts may unite to set up a provincial or regional bank, and the edifice may be crowned by a national co-operative bank

8 The same idea has been applied to a vast number of enterprises in which individuals have grouped themselves in order to obtain more economically or more effectively what they require or to sell their agricultural or industrial produce

on better terms Agricultural purchase and agricultural marketing by farmers, grouped in supply or sale co-operative societies, were soon undertaken in Germany and elsewhere, not only by those who had learned in credit societies the enhanced power given to them by association, but also by others whose first need was not of money-credit but of reliable and tested implements, manures, and feeding stuffs, or of a better market for bulked and graded wheat, fruit or livestock Thus though supply (purchase) and marketing (sale) co-operative societies have been organized in thousands by European farmers or artisans and have worked side by side with the credit societies, the credit movement has been insignificant in comparison with co-operative supply and marketing in Australia, Canada, New Zealand, South Africa, and the United States of America * The great co operative organizations for the sale of grain and fruit, cattle, sheep, and pigs, tobacco and cotton in these countries are comparable in size and efficiency with any commercial company , yet at the base they rest on local associations of farmers who through their delegates control the district and regional unions and through them the national federations

9 If good manure is to be profitably used, if good milk or meat is to be profitably produced, the farmer must understand his business, and separate societies, often registered under the co-operative law, have been found necessary for agricultural improvement, for the maintenance of bulls or other breeding stock, for the propagation of selected seed or trees, for the hiring of expensive machinery The producer, too, and his family must be in good health if he is to work vigorously and well Co-operative housing, health societies, education societies, thrift and provident societies, are as essential to the prosperity of the farmer or any other producer, urban or rural, as credit or a co-operative shop The exact requirements of the citizen which Co-operation in a given country is suited to meet and the precise form which his co-operative societies will assume depend on local circumstances and have to be thought out by the co-operative leaders, though always with reference to the experience gained, sometimes at heavy cost, in the rest of the world There is no advantage in repeating

* In a few European countries, notably Denmark, the credit society has been of less importance than other types A small country with a negligible internal market has no use for credit unless it can sell its goods overseas

an expensive mistake in order to assert independence. Knowledge is bought at a price and nothing is gained by paying twice over for it

Development of Co-operation in India

10 The normal holding * of a farmer varies in different parts of India, but seldom exceeds ten acres and is often much less Some of these peasant farmers own their land, others are tenants, with or without a protected (occupancy) tenure,† on the estates of landlords , the proportion between the two classes also varies in different places,‡ but few farmers of either class possess any fluid capital , they live close to the margin of subsistence, and a considerable proportion of them are supported from one harvest to the next by means of loans from moneylenders, grain-merchants, or co-operative credit societies, which they repay partly or in full when the harvest has been reaped and the produce sold § If the creditor is a grain-dealer the produce may be delivered to him and no cash will change hands at all The peasant being a simple and frequently an illiterate man, with little idea of punctuality in payment of debt and with a great respect for the social rules which bind him to expenditure on marriages and at other festive occasions, the tendency is towards an increase of his indebtedness The monsoon is uncertain, crops may fail, and only the fortunate or the very provident farmer succeeds in reducing or completely clearing his obligations to his creditors Credit, too, is now more freely allowed to him by individual lenders than of old In the days of insecurity which preceded British rule lending money to a peasant was a risky proceeding. The borrower might disappear through one cause or another, and if a suit—an unusual remedy—were brought in a court of law, the conduct of the judge was not always strict, nor was there a regular and easy procedure for recovery of money decreed against the debtor Credit was therefore seldom given But when, under British rule, the land was at peace, rights to property were clearly laid down, and the courts

* The normal holding is much the same as the economic holding See Chapter IV, para 32

† See Chapter III, paras 20, 24, 25

‡ See Chapter III, paras 19 *et seq* The difference depends on the nature of the proprietary and tenant rights of different provinces

§ On the general question of agricultural indebtedness, see Chapter III, paras 59 *et seq*

applied a recognized system of law and a regular method of recovery, lending became safer, and the peasant, who was unaccustomed to credit, hastened to borrow His own imprudence, together with the high rates of interest which it necessitated, soon brought about an enormous increase of indebtedness, and the problem of relieving rural debt presented itself to the Government of India

11 An agricultural bank, which was to receive special privileges from the Government, was proposed in 1882, but the plan was rejected on account of the heavy cost of paying off the peasants' prior debts, by means of public money, in the area in which it was to operate * Government loans on a more cautious system were authorized in India by the Land Improvement Loans Act and Agriculturists' Loans Act of 1883–4, and such loans (*taqavi*) are still granted by revenue officers under a close supervision which guards against loss but inevitably hampers their issue on a generous scale Sir Frederick Nicholson, I C S , deputed by the Madras Government in 1892 to study methods of agricultural credit abroad, reported in 1895–7 in favour of the co-operative credit society, saying, "find Raiffeisen" Nicholson referred to the indigenous *Nidhis* or *Chit* funds of Madras as indicating that the co-operative idea might take root in India †

12 Experimental societies were meanwhile being tried in Bengal, the United Provinces, and the Punjab, but were registered, if at all, under the complicated Companies Act The Famine Commission of 1901 endorsed the co-operative plan and the Co-operative Credit Societies Act was passed after careful deliberation in 1904 It was based to a large extent on the Friendly Societies Act of Great Britain, and withdrawing the societies from the provisions of the Companies Act provided for the appointment, in each province, of a Registrar of Co-operative Societies, with such Assistant Registrars as might be required The Registrar was to arrange the annual audit of each society , he might refuse the application of any group of persons for registration, and liquidate any society

* The experience of Egypt subsequently proved the danger of lending to individual small farmers from an agricultural bank

† "The members of these *Nidhis* pool their savings by fixed monthly subscriptions Every month lots are drawn, according to which the monthly collection is taken by one member" L C Jain, *Indigenous Banking in India*, p 199

which he held to be insolvent or to be working in a manner contrary to the by-laws (framed in accordance with co-operative principles), which had been approved by him at the time of registration These are still the chief legal powers and duties of a Registrar of Co-operative Societies, though in practice, owing to the circumstances of the Indian population, he directs also a force of Inspectors who guide and advise the societies but have seldom a legal authority

13 In 1912 the Co-operative Societies Act was passed, enlarging the field of Co-operation to cover (1) primary societies of other types than credit, and (2) central or secondary societies, i e every kind of bank, federation, or union In 1915 the Maclagan Committee reviewed the position of the whole movement, and its report, though in certain respects now out of date, is still of high value for all students of Co-operation in India Several provinces * have implemented the power given to them under the Government of India Act, 1919, to legislate for Co-operation as a transferred subject The changes made by these laws in the all-India Act of 1912 have been in the direction of increasing the power of the Registrar to deal with recalcitrant individuals and societies by compulsory arbitration of disputes, supersession of managing committees, or more vigorous action in liquidation The major Indian States have followed the example of British India in passing co-operative laws, appointing Registrars, and assisting the education and supervision of the societies In certain States money is directly advanced by the ruling authority to finance the societies, but this practice is rare in British India

Co-operative Credit in India

14 In view of the general rural indebtedness, it is not surprising that the credit society should have proved more acceptable to the Indian peasant than any other type of organization So long as the burden of debt, much of it inherited from his father and grandfather, weighed on his shoulders, he was unwilling to listen to argument about selected seed, to buy improved cattle and tools, or to join with his neighbours in an effort towards the combined sale of

* Bombay 1925, Burma 1927, Madras 1932 A few amendments have been made by the United Provinces, Central Provinces, and Bihar and Orissa , and a comprehensive revision of the Act is now contemplated in Bengal

produce He was not at liberty, indeed, to sell his produce otherwise than to the moneylender or grain-dealer from whom he had borrowed, and from whom he would certainly need to borrow again His constant care was to satisfy this creditor, whom he dared not offend until a better and an equally sure source of credit was opened to him The credit society, then, was rapidly multiplied In 1912, when the revised Act was passed, there were over 8,000 societies, in 1922 the number had risen to 50,000, in 1929 to 100,000 * , and 80 per cent of these were credit societies, rural or urban Since 1930, in consequence of the agricultural depression, there has been little change in the net total , liquidations have been approximately equal to new registrations, though the health and stability of the movement are being slowly restored Rural credit societies in India follow the example of the Raiffeisen societies in Germany in limiting their area to a single village, or sometimes a closely adjacent cluster of hamlets, and adopting unlimited liability The normal Indian society will consist of thirty or forty members,† cultivators (owner or tenant) for the most part , but it frequently includes also one or two village artisans, landless labourers, and even small shopkeepers There is seldom an office building, the registers being of moderate size and such as the secretary may without inconvenience keep in his own house The officers and members of the managing committee are unpaid Wherever a literate resident of a village can be found to act as secretary without payment, as is very often the case, the entire annual expenditure on the " office " may be a rupee or two for a new account-book and some annas' outlay on postage stamps In the absence of a literate resident, itinerant paid secretaries may serve a group of perhaps eight to ten societies, and member-secretaries sometimes receive an annual honorarium of small amount Once in the year the members come together in a general meeting, listen to the annual balance-sheet and statement of accounts, as explained to them by the president, secretary, and treasurer, and proceed to the discussion of any general questions which arise—such as the relations with the central co-operative bank or banking union which finances them, the possibility of lowering the rate of interest on loans,

* There are 660,000 villages in India, excluding Burma

† In southern and western India the membership tends to be higher · 60–70 in Madras and 100–120 in Bombay In the United and Central Provinces, Bihar, and Orissa it is often much lower

the action to be taken against defaulters—and to the election of officers and a managing committee for the coming year The maximum amount of deposits or loans from the bank or other non-members which this committee is empowered to accept during the year is also fixed by the general meeting , for their liability to creditors of the society being unlimited, this is their opportunity to limit with prudence the risk which they consent to carry Other general meetings are called whenever occasion arises throughout the year, for instance, on the arrival of a co-operative officer who may have useful advice to give

15 The managing committee, of perhaps five or seven members, carries on the business of the society in numerous meetings An active committee may hold several meetings in a week, a sluggish committee will not sit once in three months Meetings are called at short notice by means of a village messenger—a prescribed day or date is uncommon—and are very informal The committee has to consider applications from members for loans, to examine the real necessity of the borrower and the appropriateness of the sum for which he asks, to supervise the preparation, by the secretary, of the bond or promissory note for each loan given, to accept two other members offered as sureties by the borrower, and to sign the bond and the minute-book in token of their approval The committee arranges the borrowing of funds from the bank, directs the treasurer to remit to the bank the available surplus when recoveries have been made, controls the demand-statement showing the amount due from each debtor which the secretary draws up, and decides whether legal or other steps are to be taken against a defaulter or whether an extension of time is to be granted A maximum limit of credit which may in case of need be allowed to each individual member has to be laid down at the beginning of each year, and the total borrowings of a member may not exceed the limit thus set for him Loans are granted for (1) productive objects, such as cultivation and trade , (2) objects which are not immediately productive but are necessary to productive activity, such as house-building, medical attention, payment of rent and taxes, or the education of children , and (3) certain domestic expenditure on marriages, funerals, and other similar ceremonies,* which cannot be avoided but which should be

* See Chapter II, para 22

kept down to a level within the means of the borrowing member. The facilities for borrowing offered by the private moneylender are such as to tempt the weaker characters away from the co-operative society and into his counting-house. It is only the stronger minds which will recognize the advantages of controlled credit at a moderate rate of interest and of punctual repayment even at the price of discomfort, over easy credit for any and every object at a high rate of interest, without embarrassing pressure for full repayment until the total debt has crept up to a ruinous figure, and consequently the co-operative societies in India, knowing the unstable character of many borrowers, their illiteracy and simplicity, and the importance of removing them from temptation, endeavour to meet *all* the legitimate requirements of their members, for ceremonial as well as productive purposes, and by giving reasonable but not extravagant advances to leave them no excuse for resorting to the moneylender at all Societies in Europe and America lend for productive purposes only,* but the foresight of the cultivator is better developed in these continents and social pressure towards reckless expenditure is less severe.

16 The proceedings described above are those of a society which is working as it should work, it cannot be claimed that more than a small percentage are thus satisfactory and truly co-operative in their methods Societies are classified annually by the Registrars as A, B, C, or D, and the central banks advance money to A and B societies after less detailed inquiry as to the intended use of the loan than in the case of C societies The D societies receive no new loans, and are under threat of cancellation and liquidation An A society is one which conducts its own affairs in a punctual and business-like manner in conformity with the law and its own registered by-laws, receiving no help from official or non-official staff other than the annual audit required by the Act For the purpose of this audit a staff of co-operative auditors is maintained in each province, sometimes as employees of the provincial Government, elsewhere under a provincial co-operative union or the central banks B class societies are those which work wisely and well, keeping their own accounts,

* Yet the rule of "productive loans only" is very often ignored in practice, and in Europe too it is found inadvisable to drive an otherwise sound member to the moneylender by denying him when he is determined to incur a reasonable but unproductive expense

issuing and recovering loans, but not so securely co-operative in spirit or method that they can dispense with periodical visits of advice and stimulation from the Supervisors or Sub-inspectors employed by the provincial union The majority of Indian societies, however, are classed as C, i e. not useless nor under threat of cancellation, but either unable to keep their own accounts (in which case no society, however excellent in other ways, is classified higher than C), or hampered by the default of many members in repayment of loans The lessons of punctuality and integrity are not easily taught or learned among an illiterate peasantry, and if the members of the managing committee are reluctant to take action against recalcitrant debtors or, still worse, are themselves the heaviest borrowers and the most stubborn defaulters, then the position becomes serious Nevertheless in C societies too there will usually be found a minority of members who repay their loans at the due time, have no dealings with moneylenders, and are practising thrift and reducing their ancestral load of debt The C society, it must be repeated, is not useless , but the Supervisor, who lives and works within a circle of thirty to sixty villages, writes up or checks the accounts every two or three months, teaches the officers, the managing committee, and the members, urges them to mend their ways, and assists in the preparation of demand-statements at harvest time Some provinces engage itinerant secretaries to write the accounts of groups of societies which include no literate member , but these men, who are less responsible and often less trustworthy than Supervisors, are diminishing in number The provincial unions hold classes for the instruction of secretaries and office-holders, and the evil of rural illiteracy is slowly, very slowly, being overcome by juvenile and adult education The success of many illiterate societies is, meanwhile, quite astonishing, and it should not be imagined that illiterate peasants cannot, if they really desire, understand Co-operation and manage a good credit society

17 The number of societies of all types in an Indian province or State may vary widely * On the official side they are registered, inspected, audited, and when necessary struck off the register by the Registrar, who is supported by one or

* According to the latest returns (1936), there were 23,500 in Bengal, 22,500 in the Punjab, 13,400 in Madras, 5,800 in Bombay, and 4,300 in Gwalior State The Madras and Bombay societies are larger than those of Bengal and the Punjab

more Deputy Registrars, a handful of Assistant Registrars, and a staff of Inspectors The Maclagan Committee recommended the appointment of an Assistant Registrar for every 1,000 societies and an Inspector for 200 Those provinces in which the societies are most numerous are gradually appointing an Assistant Registrar in each district and an Inspector in each *tahsil* or *taluka* * Within such limits the charge of co-operative officers may considerably exceed the figure of 1,000 and 200 societies, and it is desirable to aim at a contraction of the area under an Assistant Registrar or an Inspector The non-official organization consists of local unions † of societies for mutual supervision, central banks in each administrative district or section of a district for finance, a provincial co-operative union for the employment of Supervisors ‡ and sometimes of auditors (licensed by the Registrars), and a provincial co-operative bank There is an association of all the provincial unions, and another of the provincial banks The former conducts a Co-operative Review, as do also some of the provincial organizations for their own areas The field work of the Supervisors is controlled by the Inspectors and the Assistant Registrars, provincial unions and provincial banks work in friendly collaboration with one another, but a Registrar in India is not, as is the Registrar of friendly societies in England, a sedentary officer He and his staff are continually on tour and in close touch with the primary societies and their unions and banks The primary societies are the sole members of the unions and the majority of members in the banks The latter contain also individual shareholders whose business experience and education adds strength to these institutions

18 The Maclagan Committee on Co-operation, which reported in 1915, dealt with the movement in all parts of India Local crises led subsequently to several provincial inquiries The King Committee (1922) recommended a decentralization of control and finance in the Central Provinces, where centralization had been exceptionally close The Oakden Committee (1926) brought about, amongst other administrative changes, a transfer of the supervisory function

* In the United Provinces there is one Assistant Registrar per division, and one Inspector per district

† It is not possible to mention all the provincial systems The employment of Supervisors by the central banks is diminishing, and provincial unions have taken the place of the latter in most provinces

‡ In some provinces they are called Sub-inspectors

in the United Provinces from the central banks to a provincial union, the Townsend Committee (1928) made a number of proposals concerning Madras, where primary societies had been granting long-term credits on the lines of a mortgage institution Mortgage banks are now being set up to perform this duty

19 Despite the weaknesses which were brought to light in these inquisitions, the co-operative movement appeared to be healthy and strong in general when the blast of the agricultural depression struck it in 1929–30 Agricultural prices fell disastrously, cultivators became entirely unable to pay either their taxes or their debts, and credit was for the time destroyed It should be emphasized that (1) the depression was not confined to India, but was world wide, it fell on agricultural countries, such as India and China, somewhat later than on industrial countries, but with more disastrous effect, since the cultivator has no alternative occupation to farming, (2) the blow was not felt only by co-operators but by every person in the country, rural or urban It did not indicate any defect peculiar to Co-operation Nevertheless, many Indian credit societies for the time ceased to function Borrowers did not and indeed could not repay their debts, central banks refused to finance primary societies and reserved all their funds to meet the prior claims of their depositors The result was that in a comparatively short time old and new deposits began to accumulate in the banks, since money was everywhere idle, but the deposited money could not be lent to societies, which were unable to repay what they already owed Arrears of principal and interest mounted up, and though an exact estimate of rural debt in India cannot be made, the suggested figure of Rs 900 crores (£675,000,000) * of rural debt before the depression is now believed to have risen by 50 per cent or even to have been doubled The same evil may be observed throughout the world, capitalism and other economic systems were not less distressed than Co-operation

20 Relief was to some extent given by the action of the provincial Governments, which remitted large sums due on account of land revenue and taxes and reduced by special legislation the burden of rents and debts †

* This is the estimate of the Banking Enquiry Committee See Chapter III, para 59

† Cf Chapter III, para 65

Endeavours were also made to liquidate ancestral and accumulated debt by means of debt conciliation boards, to which we shall refer again * Co-operators at first awaited a recovery of agricultural prices, and when this did not occur, proceeded to exert pressure on the worst defaulters by means of compulsory arbitration, enforcement of awards through law courts, and the seizure of property in execution Thousands of societies were cancelled and brought into liquidation, but cultivators in many instances were really unable to repay and even those who could have done so received much support in refusal from their fellow-villagers Land seized in execution frequently found no buyer

21 More recently the creditor central banks and the Registrars have been engaged in an attempt to revive all but the hopeless societies by means of (i) a general reduction of rates of interest on loans and deposits throughout the movement, (ii) an extension of the period of repayment of outstanding debts, and (iii) a reduction of the debts themselves by applying *retrospectively* the lower rates of interest fixed for the future The reserve funds †* of the societies and their subsequent annual surpluses were thus substantially lowered, but the debtor, whether individual or society, saw his debt brought down to a less alarming magnitude, and was more inclined to repay whatever he could Prior to the depression, interest on loans to societies by central banks had ranged from $7\frac{1}{2}$ to 12 per cent per annum,‡ and on loans by societies to members from $9\frac{3}{8}$ to $18\frac{3}{4}$ per cent As much as 7 per cent was often paid on a fixed deposit for a year In Bombay, Madras, and the Punjab the lower of these lending rates is now general and there has been a similar reduction in some societies elsewhere The annual rate on fixed deposits in central banks is now 3 to 4 per cent § or less The result has been a certain unfreezing of credit Money is being lent and repaid again in the better organized provinces and the great block of idle

* Cf also Chapter III, para 65

† This fund enables the society to reduce and ultimately to stop its own borrowings, and also to reduce the rate of interest on members' loans

‡ The figures here given are the normal figures There were lower rates—and even higher !

§ Some central banks now lend at 5 per cent or 6 per cent to societies which are punctual in repayment In the east of India, however, $18\frac{3}{4}$ per cent is still often charged by primary societies against their members

funds is slowly being dissolved Liquidation of bad societies continues, but the power of supersession of managing committees, bestowed on the Registrar by some of the new co-operative Acts of the provinces, has been utilized where it seemed likely that vigorous action might restore the situation Madras has in particular adopted this policy , agents were appointed in 1937 in more than 1,000 societies

22 At the same time co-operators, asking themselves why their societies did not face the depression with more courage, have decided that lack of co-operative education is the cause An illiterate cultivator, close to the margin of subsistence, requires skilled and patient teaching if he is to understand the value of a sustained effort towards punctuality and thrift, and is not merely to regard a co-operative loan as manna from heaven or bounty from the Government His teachers, then, must themselves be well taught, and many of the Supervisors and Inspectors have in the past enjoyed too little opportunity of really understanding co-operation Only the Punjab had held an annual training course of adequate length (two months, now four months) for candidates under selected (co-operative) educational Inspectors, and had added to this a year's practical training in the field before appointment The grant of Rs 15 lakhs (£112,500), allotted by the Government of India in 1934 for the benefit of the movement, has been reserved for co-operative education of the staff and of the societies, and has been distributed among the various provincial Governments for this purpose A training course for Inspectors, less advanced and shorter courses for Supervisors and Sub-inspectors, classes for the instruction of secretaries, office-holders, and members of managing committees of societies, are now being held or planned in all provinces under the control of the Registrars where the teaching of Inspectors is concerned, and under the provincial co-operative unions or institutes in other cases

23 It is not less important that the Registrar himself should be fully trained for his highly technical and responsible duties A study of Co-operation in India and in Europe, experience in the field before appointment to the highest post, and continuous reading and thought during his tenure of office will qualify a competent man , without these he is likely to find his equipment inadequate, and the earlier Registrars are aptly described in the report of the Commission

on Agriculture as " blind leaders of the blind " The registrarship is not a charge which can be entrusted to an officer, however able, as a mere alternative to duty in a district

24 Reference has been made to the pressure of India's rural debt and to its recent increase The credit society of the Raiffeisen type is intended to meet short-term needs, and the by-laws of such societies in India provide for the repayment of ordinary loans, intended for the raising of crops, the marketing of produce, or the purchase of requirements, within a period varying from six months to two years, and only in exceptional cases should advances be made for a longer time The cultivator, however, who is paying 25 per cent, 37½ per cent, or even a higher rate per annum to the moneylender, is always anxious to borrow at 9, 12, or 15 per cent from a credit society and to pay off the moneylender's dues His repayments to his society thus fall into arrears and the Raiffeisen society is being misused for the purpose of clearing old debt For this its funds are insufficient and the joint unlimited liability of the members is unsuitable Moreover, some cultivators are really insolvent and cannot hope to pay their old debt at its face value, which always includes a large proportion of compounded interest * The remedy freely proposed in India is the mortgage bank, raising its funds at a low rate of interest by the issue of debentures to the public, and lending to individual landholders on the security of their property for a long term of years It will be realized that the basis of such a bank is quite different from that of the Raiffeisen society Its security is property, not the joint pledge and mutual supervision of a group of persons in a single village, who know one another well and will accept unlimited liability because they can watch the application of all money lent and can exert pressure on the borrower to repay at harvest time None of these things is true in a mortgage bank The members are scattered over a wide area, do not know one another, and can only enforce payment by seizure of a defaulter's land A village mortgage society is impracticable, for it could not afford to pay for the skilled management which mortgage business demands The mortgage banks of Germany (*landschaften*), the mortgage credit associations of Denmark, and the similar institutions in other European countries, in North and South America and in Japan, are not co-operative societies, though there is a limited liability of all members for the debts

* Cf Chapter III, para 62

of their bank In India, too, the mortgage banks, though registered under the co-operative law and supervised for the sake of convenience by the co-operative officers, are not and cannot be co-operative in the same sense as the institutions of short-term credit

25 The first co-operative mortgage bank in India was that of the Jhang district in the Punjab, registered in 1920 The maximum period for any loan was twenty years and the maximum amount Rs 5,000 (£375), and no loan was to exceed twenty times the land revenue paid on the mortgaged property There are now twelve mortgage banks in the Punjab, but with one exception their area has been restricted to a portion of a district in the hope of assuring some mutual control by borrowers over one another They have been financed by advances made by the Government through the provincial co-operative bank and by an issue of Rs 5 lakhs (£37,500) of debentures with a government guarantee of interest Only one or two of the banks have worked successfully, and arrears, which had begun to appear before the depression but were of manageable amount, have now become very heavy The banks are particularly hampered in this province by the legal restriction on the sale of agriculturists' land to other classes * It is fair, however, to point out that mortgage banks throughout the world have been seriously embarrassed during these years

26 Mortgage banks have been founded with a limited range in other provinces The latest returns show ten (with a central mortgage bank) in Bombay, ten in the Central Provinces, and five in the United Provinces and Bengal, but only in Madras has notable progress been made There the central mortgage bank, created in 1929 and reinforced by a special Act (X of 1934), had eighty-two affiliated banks in 1936, each operating in a confined circle of villages Debentures are issued by the central bank at 4 per cent or less with a government guarantee, and money is passed on to the local banks at 5 per cent, which lend to individual borrowers at 6 per cent. The working capital in 1936 was Rs 89 lakhs (£667,500), a mere drop in the ocean of rural debt, which was estimated by a recent investigator at Rs 200 crores (£150,000,000) in Madras alone Nevertheless, a cautious beginning has been made, and Madras enjoys the advantage

* This restriction is the result of the Punjab Land Alienation Act.

over the Punjab of assessing the mortgaged lands at post-depression values * instead of their earlier price.

27 An almost indispensable ally of the mortgage bank is the debt conciliation board Rural debt includes so much compounded interest and agricultural prices have fallen so disastrously that creditors are willing to accept a much smaller sum than that which is nominally due if they are sure of receiving it Conciliation boards bring together the debtor and all his creditors, estimate the amount which he can pay in a reasonable number of years, fix instalments for the payment of this amount, and cancel the balance The local officers of Government are usually made responsible for recovering the instalments due and given the necessary powers † In the Central Provinces, under the Debt Conciliation Act of 1933, fifteen boards have been established and have settled many lakhs of old debt New boards are being created, while others complete their task and are dissolved , and if it proves feasible to coordinate the conciliation boards with mortgage banks, and thus pay over immediately to the creditors the entire sum awarded, creditors will no doubt be ready to abate still further their claims for money which would otherwise have been irrecoverable The problem, however, is far from simple, and the remedy for an evil may have curious reactions Money is borrowed freely from private lenders for extravagant purposes, while a co-operative society does not lend for extravagance , yet in some provinces the claims of societies are scaled down by conciliation boards as severely as those of extortionate lenders One consequence, therefore, of the establishment of a board may be a refusal of co-operative debtors to pay what they owe to their societies, pending a reduction of the amount A debtor, moreover, who is suddenly released from his burden, lacks the strength of character which is built up by steady effort, and will seldom be punctual or

* The post-depression value of land is much below the pre-depression value, a fact due to the depression itself In the United Provinces debt legislation of 1934, whenever it was a question of selling or transferring land to satisfy pre-depression debt, the amount of land to be sold or transferred was calculated at its pre-depression and not at its post-depression value e g with a pre-depression value of Rs 100 per acre and a post-depression value of Rs 50, the amount of land to be sold or transferred in satisfaction of a debt of Rs 500 would be five acres instead of ten acres

† The procedure under the United Provinces Encumbered Estates Act is similar to that here described, but the agency is a court of law specially appointed, not a conciliation board

conscientious in repayment to a mortgage bank Foreclosure on a large number of mortgages is politically and economically inadvisable, and in those States, such as Bhavnagar, in which the Government, already the landlord of the cultivators, clears their debts at its own cost by "conciliation" and becomes the sole creditor, a dangerous situation may arise In some provinces debts due to co-operative societies are excluded from the scope of the boards, which thus assign the entire surplus income of each debtor to his other creditors, leaving nothing for the society.

Other Forms of Co-operation in India

28 Attention has hitherto been devoted to the question of debt and credit because this evil darkens the horizon of the Indian cultivator, artisan, labourer, or clerk, and almost excludes other matters from sight For the same reason the co-operative credit society developed before other branches of the movement It has not, however, occupied the entire field Supply societies providing for the joint purchase of goods for the benefit of members number about 1,000 , production societies and sale societies (not always distinguishable from one another) 4,700 , consolidation of holdings societies 1,500 , and health, thrift, better living, and irrigation societies about 1,000 each Smaller groups comprise insurance of men or livestock (250), better farming (250), housing (300), arbitration (100), labour (100), stock-breeding (200), and many others *

29 The weakness shown by the credit movement under the stress of the agricultural depression has led many to hold that amongst a simple and largely illiterate rural population with a low standard of living, as in India, the principles of co-operative credit cannot be fully grasped unless a general enlightenment of the peasant, a stimulation of his energies, and an elevation of his ethical and commercial standards accompany or even precede the invitation to thrift, loyalty, and foresight which the credit society offers In other words, pressure on the vicious circle in which the peasant moves must be exerted from a number of directions and in coordination The campaign of "uplift" or rural reconstruction to which this belief has given rise will be discussed in a later chapter , but it has induced some co-operators to argue that credit societies should not have been the first organized in India

* The figures here given are not intended to be exact

Marketing, for instance, should have come before credit. Such thinkers point to the great development of co-operative marketing in America, Denmark, and elsewhere, but it should be borne in mind that (1) the cultivator in those countries was never so heavily burdened with debt as the Indian cultivator, in *proportion to his capital and other resources;* (2) newly broken soil may be more productive than old soil, and America has turned towards credit organization in recent years since her new land has all been taken up, (3) some countries, such as Ireland, organized the credit society first, as an alternative to the moneylender, and gave their attention to marketing later on The same may be done in India It is improbable that the Indian peasant would have been loyal to or submitted to the strict rules of a marketing society before his burden of ancestral debt had been lightened *

30 Consumers' Co-operation in the form of shops is rare in India, the most successful example being the Triplicane Society of Madras, which also grants credit Other stores are located in colleges and institutions, where a measure of continuous and disinterested supervision is given by the staff Many co-operative shops in the towns were founded during the period of high prices at the end of the War, but soon failed for lack of skilled management or through the disloyalty of their members The margin of profit secured by the private shopkeeper in commodities of daily use is not wide in India, and though the quality of his goods may be uneven or bad, consumers in general are not yet ready to pay a higher price for higher quality or to give their labour and their loyalty continuously in order to keep the price down

31 Agricultural supply societies, ordering on an indent from members and maintaining no shop, are not often needed in India, peasants being content with an occasional joint purchase of seed or fertilizers through a credit society, but societies of handloom-weavers and other artisans, whose demand for raw material is constant, purchase it in bulk to the great advantage of their members These societies, numbering about 3,000, frequently undertake the marketing of manufactured commodities as well, and may be placed in the categories of either supply or sale

* See Commission on Agriculture, *Report*, p 403 and para 14 above A marketing society would be useless when the only possible purchaser was the *bania*

32 The marketing of agricultural produce has been hindered by the inability of the peasant to deliver it in a clean condition at the promised time and also by a certain reluctance of commercial firms to deal with co-operative bodies Close supervision over the quality of goods and over the punctuality of supply is needed, together with the employment of skilled agents to negotiate with the buyers , and agriculturists may be unwilling to pay for such skill and are often incompetent to control their own agents, who may then succumb to temptation Joint sale of cotton is, nevertheless, conducted effectively by a group of societies in Bombay Presidency which are supported by co-operative pressing or ginning factories, and have overcome boycotts and other obstacles Milk societies (250) in Bengal maintain a central pasteurizing plant in Calcutta, and there are dairy societies which rise and fall in other provinces Cane is sold through special societies in the United Provinces, and there are cane-growers' societies on a smaller scale elsewhere In Madras the loan and sale society and in the Punjab the commission shop receive the produce of members for storage and subsequent sale without bulking or grading Reference has already been made to sale by artisans' societies Co-operative sale is growing, but is subject to many infant maladies The Government Marketing Officers, lately appointed, will be in a position to give valuable advice * A possible line of advance is through such bodies as the provincial co-operative marketing society of Madras, which is to link together the loan and sale societies and the co-operative stores and place them in touch with the general market

33 Housing is an intermediate form of co-operative activity, between purchase and sale In a housing society the members either unite their forces, their credit, and their savings to build houses which are occupied and owned by them individually when the purchase-instalments have been paid, or set up an apartment-building in which individual members become tenants, paying rent to the society The construction of the houses is not undertaken by the members , a joint contract is given by them through their society to a builder In Europe the building society is not, as a rule, registered under the co-operative law, though its practice is usually co-operative In India building societies seek co-operative registration, the members feeling the necessity for guidance and supervision,

* See Chapter V, para 49

which would not be available on the same terms if an ordinary company were formed The latest returns show over eighty societies in Bombay and 200 in Madras. Nearly all are urban, but there was an ambitious scheme for a rural model town adjoining Lahore in the Punjab which, after a promising development in the first few years, fell later into trouble The provincial authorities advance money to housing societies on favourable terms, but the project for a central housing society in Madras which would distribute these funds to primary societies was not approved by the Madras Government

34 When a definition of a co-operative society was given at the beginning of this chapter, it was noted that the economic advantage pursued by the members need not be direct A direct advantage is generally sought, as in the cases of Co-operation for credit, purchase, or sale , but when we turn to such matters as the improvement of agricultural methods, the pursuit of health, the education of adults or children, the avoidance of extravagance or evil habits, and the inculcation of thrift, then the object is not itself so immediately profitable in a financial sense, though it is obviously a means of gaining a real benefit The readjustments in the social life of India which have followed upon contact with European nations have been slow and painful, and not free from harmful elements Legislation for social ends is still a comparatively novel conception to the bulk of the Indian population, while the traditional social structure, however well adapted to the requirements of the country several generations ago, does not readily accommodate imported ideas and practices which it may, nevertheless, be inevitable to introduce The co-operative society, itself an importation, having proved acceptable to India and being of a very flexible nature, is well suited to become the seed-bed of new thoughts and the testing-ground of their fitness for application in practice Hence there have sprung up in India, more than anywhere in the world, original types of co-operative society, some of which deserve to be described

35 Most conspicuous of all achievements is the consolidation of holdings An Indian cultivator's farm of normal size, if all situated in one place and intensively cultivated, is sufficient to provide a reasonable living whether in Europe, in America, or India But it is composed in India of tiny fields scattered at a distance from one another and unsuited

for intensive or intelligent farming. This fragmentation * causes immense loss to the agricultural population as a whole. The same evil formerly existed in Europe, but has been overcome during the last two centuries by legislation which brought about, on the application of a majority of farmers in any village, a compulsory reallotment of the land in consolidated blocks The Indian peasant, it was held, was not ready for such compulsion, and co-operative societies for voluntary consolidation, organized in the Punjab from 1920 onwards, have now reallotted nearly 1,000,000 acres with the help of village accountants (*patwaris*) lent to the societies by the Government The United Provinces have recently followed suit with 100 societies, Baroda State has nearly as many, and the experiment is being tried in other areas also.† In the Central Provinces from the first and in the Punjab subsequently contributions towards the cost of the work have been made by the farmers , but even without such payment it is a remarkable triumph to have induced the peasant to surrender his beloved though uneconomic fields and accept a new holding Confidence in the co-operative staff and a recognition of what co-operative credit has done for the peasant's benefit were the causes which led him in the first place to listen to so alarming a proposal ‡

36. Better farming is an end pursued in diverse ways and under various titles Irrigation societies (1,000 in Bengal and a few elsewhere) embank a stream or a channel in which only seasonal water flows in order to use the stored water in the dry months Land-reclamation (by prevention of erosion or eradication of harmful weeds) is carried on in every province on a minor scale Crop-protection societies fence or wall round the cropped area of the village, and have in Bombay been granted the legal right to compel a recalcitrant minority Seed-unions multiply improved seed for distribution to members , other better farming societies maintain demonstration plots in order to convince members that a selected variety of seed, recommended by the agricultural officers, is really better than their own and will grow in their own soil § Yet

* For a full account of fragmentation and subdivision of holdings, which should be distinguished, see Chapter IV, paras 30 *et seq*

† For similar action in the Central Provinces, taken under a special law, see Chapter III, para 58

‡ For a description of an actual case of such consolidation, see appendix to this chapter, p 342

§ Cf Chapter V, para 6

another type pledges its members to come together and listen to the agricultural officer and to adopt experimentally, in their own fields, one at least of the seed varieties or implements or methods of cultivation which he lays before them It is, indeed, this assembling of the peasants to listen in a receptive mood which is the chief service of the better farming society Agricultural officers can reach the large-scale farmer and can spare time for him , but scientific knowledge does not, in India at least, filter down from big to small farmers The latter are distrustful, and it is only when a group of thirty, fifty, or more are collected that the expert can afford to argue with them and they will consent to weigh his arguments

37 The same principle—a mutual promise by a group of men to do jointly what each of them knows that he ought to do but few will separately carry out—underlies the co-operative adult schools, in which members meet, under the village schoolmaster, to learn to read and write * These schools sometimes preceded the organization of an adult literacy class by the education department, but the zeal of the latter has now in most districts rendered co-operative pioneering superfluous Compulsory education societies are those in which the parents of children of school-age, in a village in which the compulsory education law is not yet in force, bind themselves to send their children regularly to school and to submit to a fine, imposed by their own society's committee, in case of failure to do so Where such societies prosper, the compulsory education law is often applied to the village, and the society's work is finished

38 Co-operation for health is most advanced in Bengal, where over 1,000 co-operative anti-malarial societies are registered, and pledge their members to combat the mosquito and to adopt preventive measures against malaria † They depend greatly on the collaboration of the local authorities (union boards ‡), but are valuable in stimulating these bodies to action and need not be entirely ineffective where the local authority remains inert Medical societies also exist, as in Japan and Yugoslavia, for the employment of a doctor and the maintenance of a dispensary or hospital in tracts in which the Government cannot yet afford to establish one In all these

* In the United Provinces such co-operative adult schools are usually turned after three years into reading clubs

† See Chapter XII, para 18

‡ See Chapter XI, para 37

cases the members pay a recurring contribution towards the cost, and are in consequence more inclined to use the facilities which, if provided freely, they only too often disregard

39 Thrift is a natural ally of co-operative credit and indeed of all social welfare Most Indian credit societies inculcate thrift in their members by demanding regular instalments of share money,* to which a compulsory annual deposit is added in certain provinces Persons who have a constant income, on the other hand, ought not to require credit unless in exceptional circumstances, and are invited to make provision for future expenditure which can be foreseen, such as weddings and education, and also for unforeseen emergencies, such as sickness and funerals, by means of thrift societies in which they make deposits of a stated amount in every month These arrangements are popular among schoolmasters, but are not confined to this class About 1,500 cash or grain thrift societies are registered in the Punjab, and the idea is now spreading in the United Provinces and other parts of India

40 Mention should here be made of Co-operation among women A movement so intimately touching domestic life and finance will not flourish without the housewife's help In the distributive societies (stores) of Europe the wife is often a member as well as her husband, and is always the principal buyer Indian women are less easily taught and organized, on account of their general illiteracy and the restrictions imposed by custom, but attempts have been made to reach them An Inspectress and a small staff of Sub-inspectresses in the Punjab promote thrift and better living through 250 women's societies, and the same idea is taking root in Bengal, Bihar, Orissa, and the United Provinces It will spread, but is hampered by the scarcity of literate women who are able to undertake the duty of a whole-time and trained co-operative organizer

41 Thrift should be accompanied by the avoidance of extravagant and wasteful expenditure In the arbitration society, members pledge themselves to bring all their disputes before the committee, which if it cannot reconcile the parties refers the matter to arbitrators chosen from a panel of respected local men Their award is to be binding, and though no man

* In rural societies a share is usually Rs 10 or Rs 20, paid up in ten or twenty instalments Urban societies may have a share of Rs 100, paid in 100 monthly instalments

may lawfully be prohibited from resort to a legal tribunal, it is lawful for the society (through its committee) to fine a member if he goes to the law-court in contravention of his pledge Co-operative arbitration societies grow slowly, but exceed a hundred in the Punjab, which has been a fertile field of experiments in "social" co-operation They require the participation, as members, of almost the entire population of the village if quarrels are really to be prevented Other kinds of society may settle disputes between their own members, who will perhaps be only a section of the inhabitants, but only a special arbitration society can secure a general peace and save the village from the ruinous cost of litigation

42 It is possible, further, if the consent of the whole or almost the whole village can be obtained, to pursue a variety of social objects through a co-operative better-living society When this type was first evolved, the intention was to check, by a mutual pledge of the members, the excessive expenditure on ceremonies, especially weddings, which only too often left the married persons and their parents saddled for ever with an intolerable debt Certain forms of ceremonial outlay were forbidden by resolution of a general meeting, while a maximum standard was prescribed for others, e g for presents of jewellery to the bride Since expenditure on social occasions is largely competitive, this plan of mutual restraint was welcomed and several hundred societies were organized, which had a useful influence The agricultural depression, however, rendered extravagance less likely for the time, and better-living societies or rural reconstruction societies in the Punjab (750), in the United Provinces (350), with minor groups in Bengal, Bihar and Orissa, Bombay and Madras, occupy themselves with health and medical assistance, agricultural and technical education, and practice erection of walls and fences, destruction of water-hyacinth,* encouragement of local crafts, reform of undesirable customs, and so on The association of the co-operative movement with the rural reconstruction campaign is discussed in a later chapter It should, however, be borne in mind that in such a country as India, in which democratic institutions are being set up, the training of the citizen and the peasant in the ideas of joint effort for the public good, of toleration for opinions conflicting with his own, and

* An agricultural pest, common in Assam, Bengal, and Madras See Commission on Agriculture, *Report*, pp 380–1

of amicable argument for the settlement of differences is absolutely essential if a national government is to be stable and progressive No centre of education, no form of discussion is so good a training ground as the co-operative society Here a man learns to listen and to speak, to convince others, and to admit his own error He becomes an intelligent citizen of the new India

43 Some co-operators hold that the co-existence of several societies for different purposes in the same village is inconvenient, since it multiplies the books and accounts, which have all, in the end, to be kept by a few village leaders General-purpose societies have accordingly been registered in several areas, e g in Orissa, which take power to give credit, to buy and sell produce and requirements, and to do anything which the village may need Europe and America, on the contrary, emphatically support the single-purpose society, and experience in India leads towards the same conclusion, though the general-purpose society may be serviceable for a while in very backward districts Co-operation seeks to teach even the humblest to take part in the management of his society or societies, and he will best do this if the proceedings and accounts are simplified by the treatment of only one class of business in each institution

Comparison of Various Provinces

44 It is somewhat invidious to attempt a comparison between the achievements of the various provinces in the co-operative field Recent inquiries, conducted at the time of the distribution of a special grant by the Government of India for the promotion of the movement, indicated that the position was most secure in Bombay, Madras, and the Punjab , ground was being slowly regained in the United Provinces, but Bengal, Bihar, and the Central Provinces were comparatively unstable * The strength of Bombay lies in (i) the financial resources and business efficiency of the Bombay central co-operative bank, which operates both as a provincial institution and also, through branches in several districts, directly as a district bank , and (ii) in the ability of the Bombay provincial co-operative institute to recruit and train honorary organizers, who perform certain of the duties entrusted by the institutes of other provinces to their paid employees

* Orissa and Sind had not yet been constituted separate provinces

The substitution of such honorary workers for full-time paid servants is regarded by many co-operators as a step forward, though a certain proportion of full-time men will always be required Bombay is also entitled to pride itself on its urban societies for credit, housing, and the cotton-sale societies at Gadag and elsewhere Madras has two claims to distinction in the first place a system of district banks, headed here also by the provincial bank, which has been accounted by touring observers the best in the country , and secondly, a development of co-operative mortgage banking which may, if cautiously promoted and not hurried, go far to solve the problem of ancestral debt and enable the landowner to undertake improvements A defect of Madras Co-operation in the past has been the grant, by credit societies intended only for short-term lending, of long-term loans on the security of landed property, and the immobilization of resources resulting from such loans led to the appointment of the Townsend Committee in 1928 Mortgage banks remove the danger of and the necessity for such loans by credit societies The Punjab has built up a more independent primary village society than other provinces , the human material available in the villages is more vigorous than elsewhere, and the lower density of population renders possible, especially in irrigated districts, a higher standard of living Co-operative societies in the Punjab appear to govern themselves more fully than in southern or eastern India, but mortgage banking has been unsuccessful The importance of training the inspecting and supervising staff has been long realized, and the Punjab system of co-operative education has been examined by co-operators from other parts of the country with a view to imitation To this education is largely due the expansion of the movement in the direction of thrift, better farming, and better living

45 The United Provinces reorganized, after the report of the Oakden Committee in 1926, the methods of supervision and guidance of societies which had been followed by the central banks Supervisors were brought under the control of a provincial non-financing institute, and after a necessary period of consolidation, a new move forward was made on lines of rural reconstruction through " centres " in which the activities of all departments are co-ordinated * Co-operation is regarded

* Reference is made to these centres in Chapter XII, para 37

as part of a wider effort towards better living, and the progress thus made in the United Provinces has influenced the views of co-operators throughout India Credit societies and certain district banks are, however, still embarrassed by frozen debts, and the economic and mental condition of the tenants in the eastern half of the province renders difficult the creation of self-governing village societies A beginning has been made in a similar campaign of reconstruction in the Central Provinces, but the co-operative form of organization is here less frequently employed for the purpose The structure of the movement in the Central Provinces was for many years highly centralized Unwise financing of societies by the central organs together with the neglect of co-operative education led to a crisis in 1921–2, from which a recovery has not yet been effected

46 The eastern provinces have been hampered by the same lack of independent spirit among the peasantry, most of whom are tenants or subtenants, which affects the east of the United Provinces The number of societies in Bengal is large, but the credit societies are weak Praise is due to the anti-malarial societies and the irrigation societies, which have proved that even a depressed peasantry is capable of self-help for an object recognized to be desirable and not calling for daily action or self-restraint, such as is necessary in co-operative credit Training of the staff and of the co-operators has been deficient in all the eastern provinces

47 Indian Co-operation lies in the trough of the wave, but to speak of failure is absurd The world is recovering from an economic disaster , and co-operators everywhere, cutting their losses, have been forced to devise new methods of working, new safeguards against trouble The probable lines of development in India during the next decade are

(i) A stricter separation than in the past between short-term credit from the ordinary credit society and long-term credit from the mortgage bank ,

(ii) An expansion of the non-credit societies, both in the direction of supply and marketing and towards the general rural reconstruction which India needs ,

(iii) Fuller education of the staff and members in the meaning of Co-operation, and a closer control over the movement by a skilled official or unofficial agency, until the process of education has made a great advance

APPENDIX —NOTE ON THE "CONSOLIDATION OF HOLDINGS" IN KISHANPURA VILLAGE, RUPAR TAHSIL, AMBALA DISTRICT, PUNJAB

The entire village area of 344 acres was handed over at the end of 1933 by its 116 landowners and occupancy tenants In consequence of the abolition of numerous field-boundaries, an excess of 2 acres was found after the completion of the work in 1934 Every owner and occupancy tenant received the same amount of cultivable land in one or two places which he had formerly held in (on the average) six places The twenty-two fields of Santokh Singh, marked in red, and the fourteen fields of Ajit Singh, marked in green, were brought together in a single block for each man , they will now be able to sink wells in their own holdings There are many similar though less striking cases The number of fields into which the 344 acres had been formerly divided was reduced from 643 to 179 The excess area resulting from the abolition of boundaries was used for three purposes

(i) one acre near the village was reserved for a school, together with a playground ,

(ii) a drain, marked in blue, was dug to carry off the surface water from the village ,

(iii) cart-roads, marked in yellow, were provided for every owner to reach his fields, without passing over the fields of others than near relatives

The land immediately surrounding the residential village itself, which was formerly held in common and was a frequent cause of quarrels and litigation, was divided at the request of the people Plots were reserved for shops, for a bathing-place, and for the residences of village menials, while the remainder was shared out among the villagers for the purpose of separate cattle-sheds and manure-pits

The landowners and occupancy tenants paid a voluntary contribution of 9½ annas * per acre of cultivated land, amounting to Rs 212 in all, towards the cost of consolidation, and a further sum of Rs 200 was subscribed by all residents for the division of the area adjacent to the village The rights and claims to this latter area were complicated, and much time and labour were required These payments did not, however, cover the entire cost of employing a *patwari* on special duty for eight months or of supervising his work through superior staff The cost to Government, which is difficult to reckon in the case of a single village, will have been about Rs 600

The Kishanpura co-operative consolidation of holdings society was registered with the 116 owners and occupancy tenants as its members The by-laws bound each member to accept the land allotted to him in repartition, but no compulsion was necessary, all differences of opinion being amicably decided

* About 10½*d* Rs 212=£15 18*s* , Rs 200=£15.

CHAPTER XI

By C F STRICKLAND

Local Government and Social Administration

Introductory

1 There are two principles on which a system of local government may be based Neither of these can be applied in its entirety without leading to either a state of disorder or an unduly intense centralization The local authorities may be regarded as parts or agents of the central government, which controls them in all essentials, leaving them only such discretion as is necessary in order to adapt its instructions to the conditions of the locality , or the local body may be treated as an autonomous entity, existing of its own right (even though created by a law of the central government) as a separate but subordinate government, and subjected only to such control as will ensure reasonable efficiency in administration Such control, even under the former system, may be so lax as to leave the local body virtually autonomous , or, under the latter system, so close as to cramp the freedom of local authority and deprive it of the stimulus towards good work

2 It will be useful for students of local government in India to examine briefly the principles and methods of local administration in foreign countries It is undesirable simply to transplant to Indian soil an institution which is adapted to other conditions and may have its roots laid deep in a national history Such experiments are seldom successful , the initiation in India of what was supposed to be the British system may have been too close and necessary adjustment to Indian requirements may have been neglected Such adjustment is in itself a difficult process, calling for knowledge both of India and of the country in which the institution grew up Nevertheless, comparison and contrast of foreign and Indian methods

should be profitable, providing food for thought to administrators and their critics, and tending to check the pace of over-hasty reformers

Local Government in England

3 The English boroughs, having a history of growth as long as that of the King's government—for many English boroughs are as old as Parliament and must have enjoyed a consciousness of common interest for an even longer time—have always been treated as autonomous in principle, though subject to the central power Rural government lay, however, in the hands of local magnates who, as justices * of the peace, maintained law and order and were gradually entrusted with other functions From 1600 onwards they were called upon to name overseers of the poor in each parish and to levy and spend a rate for poor relief The rate was assessed on the annual value (i e the actual rent, or the estimated rent if it were not rented) of every house and building in the parish, and though all agricultural land and some industrial establishments have recently been exempted from assessment, this local rate remains the principal source of revenue for all English authorities †

4 Special committees for education, health, and highways were formed in the nineteenth century, but it was the Local Government Acts of 1888, 1894, and 1929 which built up the present English system There is now a county council for each county ‡ and for London, under which are urban district councils and rural district councils in the counties, and borough councils in London, and under them again a parish council or (in small parishes) a less formal parish meeting Very large and wealthy regions of each county (except London) are, nevertheless, separately incorporated as county boroughs and enjoy independence of the county councils There are no district councils under the county boroughs Other towns are incorporated as boroughs without having the status and functions of a county borough, and hold a position similar to that of an urban district council , for the purpose of this

* Comparable with rural honorary magistrates in India

† The English local rate rests on a wider basis than the Indian rural rate on land only, and resembles the house and property tax of Indian towns

‡ Certain very large counties, such as Yorkshire and Lincolnshire, have more than one county council

summary review it is needless to distinguish between the two last types of authority

5 The members of all these councils are elected *, but county councils and boroughs appoint aldermen, either from their own number or from outside District councils have no aldermen All councils elect their own chairman (known in a borough as the mayor), who may be a non-member County councils, borough councils, and district councils divide their duties among committees (for education, finance, roads, etc), to which are co-opted persons who are not members of the council The police committee of each county consists half of members of the county council and half of justices of the peace These two "non-democratic" elements in English local government, the co-option of aldermen and the co-option of non-members on the council committees, deserve attention as illustrating the freedom of English politicians and citizens from an excess of logic—a vice of which, indeed, Englishmen have seldom been accused—such as would render their democratic institutions unworkable The aldermen, who serve for six years, enable the council to maintain, if desired, a continuous policy, while the non-members, as aldermen or as members of the committees, supply direct or expert knowledge frequently lacking in the councillors

6. The parish meeting is the descendant of the primitive community gathering which in every country of the world originally settled the common affairs of the village or the town-parish and elected, if necessary, a parish council for current business After falling into the background in the nineteenth century, the parish councils and meetings were given a legal footing by the Act of 1894, just as village *panchayats* † have in the last few decades been revived by law in India The liveliness of a parish authority ‡ varies with the size of the population and the temper of the leading citizens Its main duties are to manage parish property, if any, e g common land, to maintain rights of way, to provide small allotments of land for cultivation, and to complain to the government or a higher local authority if it objects to the

* For three years, one-third retiring annually, aldermen hold office for six years, one-half retiring after each three years

† See Chapter III, para 14

‡ The legal parish is not always, especially in urban areas, a parish of the Church, though it sprang from the ecclesiastical parish which was once the natural unit of self-government

proceedings or the negligence of the district council A parish council may also undertake, under a series of "adoptive" Acts,* to establish and manage a public library, playgrounds, baths and wash-houses, lighting, a fire brigade, and a cemetery. Its services are supervised by a clerk, sometimes receiving a small salary, and an honorary treasurer A rate up to sixpence in the pound on land and buildings may be imposed by the parish authority, but is collected on its behalf by the district council The parish authority has ceased to be important in the towns There are about 13,000 rural parishes They have not, as have the majority of village *panchayats* in India, a judicial duty of any description Proposals have been made for the abolition of parish councils, on the ground that under modern conditions the minimum unit of local government should cover a greater area, but there will always remain certain "parish pump" business which is best conducted on the spot, and there is value in fostering a community spirit even in so small a unit as the parish

7 Above the parish stands the rural or in some cases the urban district council There are about 600 and 800 councils of these two classes The rural district council† may extend over twenty or thirty parishes, from each of which one representative is elected to it for three years, one-third of the members retiring annually It is the rate-collecting authority both for its own purposes and for those of the county council above it and the parish councils below it Thus a county council may fix in any year a rate of 5*s* in the pound for its own needs, and each rural district council will add to this a further sum, perhaps another 5*s*, on its own account, and will collect the 10*s* ‡ from all assessees having land or buildings within its jurisdiction If any parish has imposed a further rate of its own, say 3*d*, the rural district council will collect 10*s* 3*d* in that parish, and will pay over to the county and the parish councils the shares due to them

8 The district council, rural or urban, is intended to be the authority most immediately in touch with the ordinary citizen, carrying out most of the administrative duties which

* I e Acts which allow an authority to extend its field of activity by special resolution

† Distinguish this official and legal authority from the unofficial and voluntary rural community council, discussed in the next chapter

‡ I e 10*s* in each p
value"

affect him either in its own right or on behalf of the county council It is concerned with public health, education, roads, housing, lighting, recreation grounds, libraries, cemeteries, and water-supply, and a host of minor functions, and entrusts them (i) to committees of members plus co-opted non-members, and (ii) to officials who are appointed by the council and work under the general guidance of the committees The chairman may or may not be active, according to his temperament, but has in any case no specific powers There is a council clerk who exercises a general supervision, and a treasurer, an engineer, a surveyor, a health officer, and a sanitary inspector The central government lays down certain qualifications for the four last officers and contributes towards their pay or the cost of the services which they carry on, thus maintaining the requisite control and a suitable standard of efficiency The tendency is towards an increasing centralization of power in the hands of the county councils or the central government, especially where the weaker rural district councils are concerned, in order to secure the proper execution of duties which are of interest to the nation as a whole Health and highways, for instance, are obviously not solely of local importance, yet some rural authorities are unable to provide either the necessary cost or fully qualified personnel It has, therefore, been suggested that at least the rural district councils be abolished (the urban districts are richer and have fewer difficulties to face), and that the county councils or higher regional bodies undertake all that the parishes cannot do Efficiency might thus be enhanced, to the detriment of local responsibility

9 The county councils are also elected for three years, but all members except half of the aldermen retire at the end of that period, some continuity being assured by the remaining half of the aldermen Certain county boroughs have their own police forces and manage their own higher education The county council is the sole authority for police, for higher education, and for elementary education in the rural areas * It is the principal road authority, though it may and usually does have the work done by the district councils , it maintains such institutions as mental hospitals and reformatories, which are not needed in each district , and it possesses a general power of intervention if a district council or a non-county

* The rural district council assists the county council as its agent in respect of schools, roads, and other functions.

borough neglects to carry out any important task incumbent on it Agriculture, too, is the business of the county council rather than of smaller local bodies, and experts in agriculture as well as inspectors of education and other services keep the county council informed of the necessity for action The clerk is often a lawyer, on a substantial salary of £1,000 or more , he has little legal power, but is able by means of his expert knowledge and tact to link together the work of the technical officers and of the committees and to exert a quiet but real influence on the proceedings of the council Urban districts and the smaller boroughs enjoy a somewhat fuller independence than the rural districts, especially in the matter of building by-laws and of education , they lie, however, within the field of the county councils

10 The improvement of communications throughout England and the organization of more economical services over large areas are leading towards a system of regional boards or joint committees for the control of such matters as river-drainage, supply and distribution of electricity, water-supply, hospitals, and higher educational institutions Joint arrangements of this kind are usually made by county councils and county boroughs in combination, though smaller authorities are also at liberty to combine, e g for the appointment of a joint health officer This tendency towards regional organization is growing stronger under pressure of necessity, but all local bodies in England, high and low, are jealous of their rights and powers, and much regrettable friction and waste is the consequence

11 In addition to their income from rates on land and buildings, county councils and county boroughs for many years before 1929 received from the State grants calculated at varying percentages of their expenditure on various objects, which amounted to about one-fifth of their total income of £400,000,000 annually Two-fifths of this income were derived from rates and two-fifths from trading services such as transport, water, and light From 1929, however, a system of block grants was introduced which were based on population, though allowance was also made for comparative needs in order to rectify the inequality of resources between rich and poor districts The change resulted in a reduction both in the total amount of grants and in their proportion to the total income of the local bodies , but new specific help has subsequently been given The recent transfer

of unemployment relief to central control, for instance, has relieved local authorities of a large part, though not the whole, of the cost The government has also now agreed to meet the bulk of the expense on local precautions against air raids

12 County councils pass on a share of the block grant to the district councils and smaller boroughs for the service which they render in respect of such objects as education and health District councils may in their discretion assist parishes to carry out works of public benefit such as drainage Money from the central government thus filters down to the most remote villages In return, the various Ministries of Health, Education, Labour, and Agriculture through their own inspectors watch over the use of the money, whilst the auditors of the Ministry of Health audit the accounts of all local authorities except the larger boroughs

13 Loans for productive or unproductive works may be raised by local authorities with the sanction of the Minister of Health The amount now outstanding is over £500,000,000

14 The hierarchy of authorities has been so briefly described that it may appear to be more regular and orderly than it actually is There is in reality a great diversity of methods and a variable distribution of powers which an observer may according to his preference characterize as flexible or chaotic Historical causes have made the English system a jig-saw puzzle into which new pieces have from time to time been fitted and are still being inserted as opportunity offers But any attempt to establish local government in England on a logical plan would evoke strong opposition The system works well enough in England, though not ideally ; but the British Dominions have not attempted to imitate those parts of the system which are clumsy and illogical, and no other European country has imitated it at all It is not a system of completely independent and autonomous local bodies, which could not anywhere be created without disrupting the State The United States of America rejoices in a still more flexible and chaotic system, but it is not that of England Certainly no English method or institution should be adopted for use in India without close examination and a comparison with the ways of other countries

Local Government in Foreign Countries

15 American local government has grown out of systems familiar to the original settlers, who were Dutch, French, and

Spanish as well as English In conformity with the principle of separating legislative and executive functions which underlies all American administration, the control of administration by directly elected councils is far from general , on the contrary, it is often the mayor and the chief executive officers who are elected by a popular vote, while the council, which may be either directly or indirectly elected if it exists at all, has less control than in England over the proceedings of the officials The local authorities are those of the township, the county, the borough, and the city The township is a rural area, larger than the English parish, but without its historical background , and it is losing some of its importance because the prosperous American, for various reasons, does not display the same interest and pride in its government as the English farmer, parson, or squire The counties are also losing importance because their councils, or boards of supervisors, have little authority over the directly elected officers The borough is smaller than in England, falling within the township area, but has certain powers of its own The city until recently lay in the jurisdiction of the county , but the larger cities have now secured virtual independence, and are moving towards the position of the English county borough There is a tendency for the States * to take over the duties of the rural bodies, both township and county, but they seldom interfere in urban affairs unless a grave scandal occurs , and the big cities are perhaps more autonomous than anywhere in the world Income is derived mainly from a tax on the *capital* value of land and buildings, whereas the English assessment is on the *annual* value , the State's government makes few grants to local authorities, and in a number of States a city may add to its powers of taxation and to its administrative functions by its own will

16 The results of this municipal freedom have been that (1) a bolder policy is followed in America than in England, and more has been undertaken and done , (11) there has been mismanagement and corruption, by no means universal but sufficiently widespread to cause comment Seeking to preserve the virtue of vigour in local government and to cure the attendant evils, Americans have had recourse to three remedies, all of which are strange to England though one is now being applied in India Firstly, the mayor, who in America is directly

* I e , the States which are united under the federal government

elected by the people (not, as in England, by the council), has been given a dominating position in which he overshadows his councillors and himself appoints many of the municipal officers These "strong mayors," as they are called, have proved effective and vigorous, but not always impartial or impeccable * The second remedy is that in place of a mayor and council the people elect commissioners,† who divide the duties among themselves, thus combining the legislative and administrative powers which America usually prefers to separate The "commission" system is popular in cities of moderate size, though in the largest cities the administration is too technical to be controlled by non-technical commissioners The third course, which is being increasingly adopted in American cities, in some American counties, and in a few European cities as well, is the appointment, by the commission or the council, of a "manager" who is the chief executive officer, preparing the budget, carrying out all council resolutions, and appointing all his subordinate officers The commission or council who appoint the manager lay down the lines of policy and sanction expenditure This plan secures vigorous administration and enables the elected body to prevent abuses

17 A check on the local council or manager may also be exerted by retaining for the electorate the rights of (1) requiring a referendum on certain classes of proposal, (2) initiating action in the council by a petition or requisition signed by a certain percentage of the electors, and (3) dismissing an official from office by a public poll taken on the demand of a certain percentage These devices are perhaps useful where an officer has been publicly elected, but not when he has been appointed by an elected council which has itself, sooner or later, to come before the electorate again

18 The maximum amount which each local authority may raise by loan is fixed for it by law of the State in which it lies, a fresh sanction is not, as in England, required on the issue of each loan, but on reaching its maximum a local body falls into grave difficulties

19 In Europe the totalitarian States have abolished the right of free election to local bodies and have sometimes

* Other mayors in America are armed with less power, and may in consequence be virtuous but ineffective

† Five is a usual number

dispensed with local councils entirely. Where they survive, they have only a consultative function Local government is in the hands of a prefect, who is the agent of the central government

20 In the U S S R the town and village soviets are elected by the people, but these soviets then elect the higher local bodies, and so on up to the highest authority The process is controlled throughout by the communist party, and has not yet been tried in a country in which opinion is free The experiment would be interesting

21 Other European countries have elective local authorities, but the prefect (comparable with a district officer in India) possesses a controlling power In France, the best example of this system, every city, town, or village * is a *commune* with a municipal council, which sits for six years and elects its own mayor The council is entitled to pass resolutions on any matter of local interest, but major financial expenditure has to be approved by the prefect and some questions regarding fairs and markets require the approval of the council of the *département* The mayor, who frequently receives a salary, is the executive officer of the *commune* and is also the agent of the central government He may be suspended by the prefect and dismissed by the government

22 In addition to *arrondissement* † councils, which are not very active, there is an elective council of each *département* which elects its own chairman and (like the county councils in England) imposes certain taxes, assessing on each *arrondissement* the amount to be so raised, approves loans, and maintains institutions (major roads, training colleges, mental hospitals) which concern the whole of its area Its executive officer is the prefect, who with a small advisory council, appointed by the government, nominates the officers of the *département*, prepares the budget for its council, and supervises the mayors and the *communes* The principal source of income for *communes* and *départements* is a cess calculated on the State taxes on land and buildings and on trades and professions ‡

* Sometimes the *commune* is a group of villages

† *Arrondissement* corresponds to the Indian *tahsil* or *taluka*, *département* to the Indian district

‡ These taxes are no longer levied by the State, but their assessment roll is kept up as a basis for the calculation of the cess The cess was formerly collected together with the taxes, as in the case of the Indian local rate, which is collected together with the land revenue

There are also minor local taxes, and octroi survives in some *communes*, but is gradually being suppressed By recent legislation the right of the prefect to interfere in the business of *communes* has been slightly curtailed, but he remains the dominant figure in the picture of local administration, and his control over all councils, especially those of the *communes*, is continuous and close No resentment against this practice is felt by the majority of French citizens, who prefer order to chaos and are as a rule content to leave action and even the lesser matters of policy to an executive officer, when they have had an opportunity for a frank expression of opinion and for a pronouncement on the major questions of general policy The councils in France have seldom a historical background, for the entire country was redistributed in *départements* after the French Revolution There is therefore a greater disposition than in England to place efficiency before local jealousy The presence of the prefects also checks the corruption which has invaded America

23 Reference must further be made to the "administrative courts" by which in nearly all European countries a dispute between two local authorities or between an authority and an official or a private citizen is decided There is no recourse, as in England and America, to the ordinary courts of law The final appeal in such disputes is to the council of state, consisting of ministers, of administrative officials, and of other councillors nominated by the government

Local Self-Government in India

24 We have now reviewed three different plans of administration the English, in which local pride and tradition tend to obstruct efficiency, and which is only made to work, in the haphazard English fashion, by the public spirit of the citizen as councillor and by the supervision of the central government as the source of money-grants , the American, in which public spirit is less continuously in evidence, but business efficiency is saved by substituting a strong man or commission for unreliable councils , and the French, in which public opinion willingly surrenders the task of administration to official authority, preserving democratic control only over the principles of policy and guarding against excessive bureaucracy by the right of electing a council and of action in an administrative court We have to compare the Indian plan of local government with these three

25 It is unnecessary to consider the administration of Indian towns before the days of British rule, there is no evidence of an autonomous municipal authority In the villages the *panchayat*, a group of elders, self-constituted or nominated by the various occupational classes and castes, managed the daily business of the community, but had no statutory basis In British times local government goes back to 1687, when Madras was given a municipal constitution by a charter of James II The corporation consisted of a mayor and twelve aldermen, fully equipped with silver mace and scarlet robes Seven of the aldermen were Indians, and there were also burgesses The corporation had both judicial and administrative duties, the administrative duties consisted in the levying of taxes for the building of a guildhall, a jail, and a school-house, and for "such further ornaments and edifices as shall be thought convenient for the honour, interest, ornament, security, and defence" of the corporation and the inhabitants, and also for the payment of the salaries of the municipal officers, including a schoolmaster The principal reason for introducing this municipal constitution was that the Company believed that the people would more willingly pay "five shillings to the public good, being taxed by themselves, than sixpence raised by our despotical power" But the corporation neither raised taxes nor carried out any of its administrative functions, though it rendered good service as a judicial body It is recorded that on one occasion the mayor asked permission to levy an octroi duty that he might provide the necessary funds for cleansing the streets In 1726 this constitution was extended to all the three presidency towns, the corporation was apparently a non-official body, for neither the mayor nor the aldermen (seven of whom were English) were Company's servants The functions of this corporation were mainly judicial The Charter Act of 1793 enabled the Governor-General to appoint justices of the peace in the presidency towns, who in addition to their judicial duties were to provide for scavenging, road-repairs, and watch and ward, to be paid for from the proceeds of a tax on houses and land It will be noted that this early legislation closely followed the English models of the time The next great change occurred after the passing of the Indian Councils Acts in 1861, when the local legislatures set themselves to introduce new municipal constitutions, and since then each presidency town has been governed by its own Act At the present time

a majority in all three corporations are elected by the ratepayers or by special constituencies, such as chambers of commerce and universities, and only a minority are nominated by Government The president in Bombay and the mayor in Calcutta are elected by the corporation, but in Madras he is appointed by Government

26 The British Government began to extend local government beyond the presidency towns as early as 1842, when an Act was passed for Bengal only, to enable " the inhabitants of any place of public resort or residence to make better provisions for purposes connected with public health and convenience " It could only take effect on the application of two-thirds of the householders, and as the taxation was to be direct, the law nowhere met with popular acceptance It was only introduced in one town, the inhabitants of which, when called on to pay the tax, not only refused but prosecuted the Collector for trespass when he attempted to levy it Another Act followed in 1850, which applied to the whole of British India , like its predecessor, it was permissive, but it was also more workable, as it made provision for indirect taxation It was freely used in the North-Western Provinces (now the Province of Agra), and to some extent in Bombay, though in Madras and Bengal it was ineffective From 1864 to 1868 a series of Acts were passed by the local legislatures, as a result of which many municipalities were formed under commissioners, who were, in fact, generally nominated (except in the Punjab and the Central Provinces), though election was made permissive Between 1871 and 1874, as the result of a resolution of Lord Mayo's Government of 1870 in which stress was laid on the need of arousing local interest in the management of funds devoted to local purposes, another series of provincial Acts were passed, which introduced the elective principle and greatly widened the sphere of municipal activities In 1881 Lord Ripon declared in a famous resolution that he desired to promote the political education of the people and to induce intelligent men to take a share in the management of their own local affairs and in 1883–84 provincial Acts were passed which carried local administration, both urban and rural, a long step forward The elective principle was greatly extended , many towns were given the power to elect non-official chairmen , and municipal finances were increased, partly by relieving them of the cost of the old " town police," partly by transferring to them some items of provincial

revenue Most municipalities, however, still had official chairmen ; the post was usually held by the District Officer, who for all practical purposes was also the board's executive officer, whilst expenditure to a certain extent was officially controlled , for as the Indian citizen was entirely unaccustomed to responsibility or self-government, a controlled system of this kind was inevitable and reasonable at the time The taxpayer and ratepayer gradually realized, especially in the towns, that a higher standard of sanitation, road-maintenance, and other amenities was worth paying for, and even in the villages the connection between payment to Government and the return from Government in the form of services was slowly perceived Roads and schools were appreciated more readily than sanitary measures, but hospitals for men and beasts, at first regarded with suspicion, began to attract patients

27 It was in Bombay that local government was first introduced into rural areas, where in 1869 an Act was passed which associated non-official committees, whose members were government nominees, with the District Officer in the management of a cess raised to finance such local objects as roads, schools, and dispensaries From 1870 onwards the progress of rural self-government followed much the same lines as municipal self-government A series of provincial Acts were passed in the early seventies, and another series in the early eighties, which were based on the resolutions of the Governments of Lord Mayo and Lord Ripon respectively The provincial systems differed widely , but all that need be said of them here is that in all provinces except Assam there was a district board, whilst in Madras, Bombay, Bengal, and the Central Provinces there were also subdivisional boards,* which stood to the district board in much the same relation as the rural district council does to the county council in England In Assam the boards have always dealt each with a subdivision of the district, and there are no district boards Everywhere the principle of election was recognized , but the president or chairman was almost always an official,† and usually the District Officer, who was also the board's executive officer, acting directly or through officers of his own staff or of the board, who looked to him for guidance As in municipal

* Called " *taluka* boards " in Madras and Bombay, " local boards " in the Central Provinces

† In the United Provinces some boards were given the power to elect a chairman, but in fact almost invariably elected the District Officer

boards, a measure of official control over expenditure was preserved

28 Much progress had been made when the Decentralization Commission in 1909 recommended the grant of fuller liberty to existing local bodies, especially to municipalities, with an increase in the proportion of elected members, and also the revival of the village *panchayat* on a legal footing Little, however, was done till 1918, when the Government of India issued an important resolution which affirmed the desirability of removing official control of local bodies by securing a large elective majority, by lowering the franchise, by providing for an elected non-official chairman, and by removing certain restrictions connected with the preparation of the budget, the imposition of taxation, and the sanction of works It also reiterated the plea of the Decentralization Commission for revival of the village *panchayat* *

29 The last was a proposal of immense importance The sense of village unity had never died out many matters of common interest were still settled in a caste meeting or by a circle of responsible men sitting in the village meeting-house or under a shady tree, and certain very disputable questions, e g the distribution of a total sum, assessed as land revenue, over the lands of the village, or the rotation of the supply of canal water to the cultivators of fields on each outlet from the canal, were referred by the departmental representatives of Government to the village community, and only decided by official order in those cases in which no agreement was reached Yet the spirit of individualism had penetrated the village as well as the town, and elders complained of inability to influence their fellow-peasants and to exact customary service from the village menials as in the past Statutory support for their authority had manifestly become necessary, and a feeble but slowly growing desire was perceptible among other villagers for a right to manage their own local affairs The World War awakened the peasant to the political and economic reactions of the international situation on his own life , an improved standard of living, not only in the shape of bicycles and gramophones but also of better health and a broader understanding, was regarded as no longer unattainable , and those in particular who returned from military service in Europe, themselves nearly always peasants, had

* See Chapter III, para 14

seen European peasants living in a style which, though far from affluent, was very different from their own Both town and village were ready for a move forward

30 The last twenty years in India have consequently seen a stream of amending Acts on local government in every province, all of which are based immediately on the resolution of 1918 Official presidents have disappeared from nearly all the municipal committees and from a number, though not from all, of the district or local boards The result was at first a fall in efficiency, sometimes also in integrity, and provincial Governments have been compelled in the public interest to use the power, reserved to them under the same amending Acts which enhanced municipal liberties, to take over the management of municipal affairs in several towns, replacing the municipal committee by their own nominee for a period of years, though instances of such supersession are not numerous * Amendments of the provincial laws dealing with local government and in one case a special Act have further empowered the provincial Governments to insist on the appointment of an executive officer, resembling the American city manager, in those municipalities which are not satisfactorily managed by the councillors This weapon has been used with moderation, but the provincial Government reserves to itself the right to approve the qualifications and salary of the executive officer whom the committee is to appoint, and to allow his removal only by a substantial majority of the commissioners In some provinces the Government, like the Ministry of Health at home,† may insist also on the appointment of a secretary, an engineer, a health officer, and a sanitary inspector, with the same reservation as to their qualifications, salary, and dismissal

31 The duties of municipal committees and district boards resemble those of England and Europe The former are charged with the construction and maintenance of roads, culverts, markets, slaughter-houses, bathing-places, and drinking fountains , the maintenance of schools and hospitals, the regulation of offensive and dangerous trades, sewerage or other conservancy arrangements , water-supply, lighting, and fire-protection , provision for relief in time of famine or scarcity ,

* Similar action has been taken in England (Poplar and elsewhere), the Irish Free State (Dublin), and most countries in Europe

† See para 8, above

the registration of births and deaths (but seldom of marriages), public vaccination and primary education The instruction in the schools and the medical work in the hospitals are to a considerable extent subject, as in other countries, to the appropriate departments of the provincial Government The provision of transport is not specified as an important function, and falls in most of the Acts under a general head of "other services" * which a municipal committee may undertake Since a loan for such an undertaking would presumably be necessary, the sanction of Government has to be obtained, but apart from this restriction, the municipal undertakings of India are less ambitious than those of England, and such moderation is advisable until a high standard of executive action and of civic responsibility is attained

32 Income is derived from a tax on the annual value of land and buildings within the municipal area, and from taxes on such objects as professions, vehicles, and servants Tolls are sometimes levied, and octroi and a terminal tax are not uncommon in north India, but these sources of income, though popular with the ratepayers, are discouraged and are diminishing † There are also charges for domestic lighting, water-supply and conservancy, and possibly profit on a transport service Provincial Governments make grants, mainly for education but also for roads and health ‡, the percentage of municipal income from government grants varies from about 5 to 10 per cent of the total It will be noted that the police are not municipal, but are subject to the provincial Government, and there is no general poor law, indigent persons in India being supported by their relatives and caste fellows or by begging There are a number of charitable orphanages

33 The municipal franchise is based on a low property qualification, about 20 per cent of adults being on the roll Women are qualified both as voters and councillors The great majority of members are elected, but a minority (usually

* These "discretionary" services include the provision of public parks, gardens, libraries, museums, and rest-houses, with survey, census, and secondary education

† The preference for indirect over direct taxation is even stronger in India than elsewhere Many municipal or rural authorities would probably return to clumsy tolls and octrois if not discouraged by Government

‡ Mostly in the shape of a share of pay of health officers, sanitary inspectors, and vaccinators, and of the maintenance of hospitals and veterinary dispensaries

limited to a maximum of one-fifth) may be nominated by the provincial Government Persons of position who would not be willing to face an election, members of the depressed classes who would not succeed if they did, and officials with technical knowledge are thus brought on to the committees, and the opportunity is taken to redress any grave disproportion between the numbers of elected commissioners from the various religious communities

34 District boards have, on paper, a list of duties very similar to those of municipal committees In practice, however, they are chiefly concerned with roads, the maintenance of hospitals and dispensaries, vaccination, primary education, and veterinary work, including the maintenance of dispensaries, the charge of pounds and ferries, and in some provinces with land conservation, irrigation, and agricultural farms , whilst they have much less to do with preventive health measures, lighting, and drinking-water than the urban areas * Education is the principal business of both authorities The subdivisional boards, already mentioned, have subordinate powers, but the multiplication of still smaller union boards or village *panchayats* is leading to the abolition of those subdivisional boards

35 District boards are financed by the cess or local rate, which is added, as in France, to the land tax (in India known as land revenue)† of the provincial Government ‡ The board may also levy fees for education, fairs, pounds, ferries, and other public services, for the registration of births and deaths,§ and may impose a few taxes Generous grants from Government are made for education and health, and expenditure on education is sometimes as much as 50 to 60 per cent of the total expenditure The government grants vary from 15 per cent to 50 per cent of the total income, and an attempt

* Hospitals in rural districts are numerous, but prevention of disease and sanitation are difficult The rural campaigns of several provinces on behalf of health and general welfare are discussed in the following chapter

† See Chapter III

‡ The customary rate was until recently 6¼ per cent of the land revenue In several provinces, however, local authorities have now increased the rate, in some cases to the legal maximum of 12½ per cent

§ Registration of marriages, other than Christian marriages, is not generally undertaken in India The persons who may celebrate a marriage are not exactly specified and local endeavours to secure registration have ended, as a rule, in failure Registration is most desirable



URBAN INDIA OLD STYLE
A bazaar in Peshawar City



URBAN INDIA NEW STYLE
A view of Calcutta

PLATE 16



BOY SCOUTS WITH POLICE AT THE KUMBH MELA
(See Chapter XII para 22)



A SCOUT'S GOOD DEED
(He is looking after a child which has lost itself in the crowds of the Kumbh Mela

has been made in recent years to help the weaker districts by "weighting" the grants, as in England District boards are thus more dependent on State subventions than are municipal committees, while at the same time the members are less conscious of their civic responsibility (the unit of administration being so much larger and less coherent) They may, too, be less highly educated, though not necessarily less sound in judgment The right of the provincial Government to nominate members is therefore fuller Elective members form the majority, though elective vacancies are not always contested Nominated members may not exceed one quarter of the total in certain provinces, elsewhere there is no limit The officers of a board are the president (or chairman), who may or may not be an elected member and in some provinces may be an official, a secretary, an engineer, and a health officer Sanitary inspectors are less common, and the District Inspector and Assistant District Inspectors of schools are servants of the provincial Government

36 Compared with foreign systems, the Indian scheme of local government has the obvious merit of offering the people a means of directing their local affairs through elected bodies and training their representatives in the practical work of administration Its equally obvious demerit is that, except where the president is an officer of Government (and in that event the virtue of conscious self-government may be absent), there is frequently no vigorous executive by means of which efficiency can be secured * Such an executive is not found in England, but in England local government is traditional, jealously guarded, and sustained by the public spirit of the councillors and of the electors While India is gradually developing such a spirit—and there have been striking examples of non-official efficiency—many authorities are not yet strong enough to ensure an adequate control by unpaid councillors over their paid servants The latter may be insufficiently paid or insufficiently controlled Provision may be made, as in the Bombay Acts, for a chief officer, but if this is to be the president himself, he may well lack the time, the will, or the ability to supervise the complicated machine of the local authority If then Indian opinion is unfavourable to the retention of a government servant as principal

* As in America, for instance, there is much "delinquency" in the payment of municipal taxes and other dues Severe steps against defaulters are unpopular

executive, the alternatives are either the payment of an unofficial president who knows or will learn how to do the work, or the appointment, voluntarily or under compulsion, of a whole-time and competent executive officer enjoying reasonable security of tenure A special Act in the Punjab authorizes the provincial Government to demand such appointment, and the same power is given by the Bengal Municipal Act of 1932 Executive officers, comparable with the city managers of America, are accordingly working in sixteen of the Punjab municipalities

37 Below the district boards and the subdivisional boards are the union boards and the village *panchayats*, representing an attempt to reconstitute the indigenous and informal village government of pre-British days on a statutory footing The headmen of villages in Madras from 1819 and in Bombay from 1879 had been given judicial powers to try petty suits, certain authority was also given to headmen in the United Provinces in 1889, and control over the village watchmen was granted to *panchayats* in Bengal in 1870 * These steps were followed by the creation of union committees (later called union boards) for groups of villages in Bengal in 1885, and of sanitary committees for cleaning villages in Bombay and the Central Provinces in 1889 and later in Madras, but the great change came shortly after the War, when the recommendations of the Decentralization Commission (1909), reinforced by the Government of India's resolution of 1918, were implemented not only by the enlargement, already described, of local liberties in the municipal committees and district boards but also by legislation in every province for the encouragement of village authorities

38 The *panchayat* (or the union board) may cover one village or many, and may perform judicial or administrative duties or both There may even be separate authorities for these two functions, the judicial body having often a wider jurisdiction The unit is the single village in the Punjab and the United Provinces, in Bombay the authority may have jurisdiction over a single village or many, but all fall into the same category as *panchayats* In Madras there are two categories, major and minor *panchayats*, of which the latter have

* See *Panchayats in India*, by J G Drummond Headmen in other provinces also exercised authority over village watchmen in a less precise manner

lower powers of taxation and administration In 1936 there were 450 major and 5,300 minor *panchayats* in Madras, the former having more than three times the income of the latter and approximating in some respects to the semi-municipal status of the "small towns" * of other provinces A small rural town with the adjacent villages may possess a major *panchayat*, while minor *panchayats* are formed in one village or in two or three hamlets The union boards of Bengal † have ordinarily an area of 10 to 15 square miles and an average population of 10,000, the centre being a small town or large village A *panchayat* or board is everywhere composed of five or more villagers, who may be all elected, all appointed by Government, or partly elected and partly appointed according to circumstances In the Central Provinces there is adult suffrage in *panchayat* elections

39 Broadly speaking, *panchayats* in Bombay and Madras do not exercise judicial functions, but are solely administrative For judicial duty there are village *munsifs*,‡ or honorary magistrates sitting singly or as a bench In the Central Provinces, the Punjab, and the United Provinces, on the other hand, judicial work is the largest part of the *panchayat's* business, and in other provinces the position is intermediate They try petty criminal cases, inflicting fines up to Rs 50, and civil suits of a value up to Rs 200 The advantage of such trials lies not so much in the chastisement of an offender as in the hearing of the dispute in an atmosphere and surroundings familiar to the parties In a village the true facts are known to everybody, and there is little inducement towards that hard swearing which is a customary feature of litigation before a regular judge Many quarrels are settled by compromise, and bitter feelings are soothed With this method of peace-making and summary trial, (for the records are very simple, and legal practitioners are not admitted), may be compared the work of those English justices of the peace, who do not confine themselves to fining or imprisoning offenders, but occupy their time, in many districts at least, in warning and "binding over" those who err Justices formerly administered also the English poor-law and the highways, and are still responsible for licensing premises for the sale of alcohol The Indian

* Such as the "notified areas" and "town areas" of the United Provinces

† Created by the Bengal Village Self Government Act of 1919

‡ Civil court judges of the lowest grade

panchayat is in most provinces still at this early stage, at which local jurisdiction and local administration are exercised by the same persons There is no necessity to separate them where the combination works well, but a time will no doubt come when more specialized business, judicial or administrative, will have to be conducted by men chosen out of the *panchayats* rather than by the whole membership In Bengal, for instance, a bench is constituted by selection of individuals from the union boards

40 In the administrative field a *panchayat* will deal with the village lanes, ponds, and wells, drainage of the village site and measures (e g vaccination) against epidemics, the maintenance of the school building, and measures for keeping a watch by night The provincial Acts allow a *panchayat* further to undertake lighting and libraries, the improvement of agriculture and handicrafts, management of festivals and of travellers' houses, and a variety of similar tasks The union boards of Bengal and the major *panchayats* of Madras are bolder in such enterprises than the smaller *panchayats* of Madras and other provinces The *panchayat* has, it will be noted, powers far exceeding those of an English parish council, but less than those of a French *commune*

41 These powers are, nevertheless, inadequately used by most *panchayats*, and the reason is largely psychological Village opinion is backward, cautious, or conservative, and the *panchayat* cannot, or cannot usefully, force on the villagers an improvement which they do not themselves desire While, moreover, the *panchayats* do not lack means of raising an income which would pay for improved administration, the attempt to raise such income in the form of a rate would be highly unpopular To persuade villagers to tax themselves is uphill work Income from judicial fines or market fees is preferred, but is insufficient to meet any considerable expenditure In Madras the district board is required to hand over to each *panchayat* a share of the cess or local rate which it collects on its own account, and this appears to be the simplest though not the most educative way of circumventing the peasant's reluctance to pay for what he is at last beginning to demand No province has yet made the levy of a village rate compulsory, and it would be impracticable at present to enforce the collection of any village tax which had not been voluntarily imposed, except by adding it to the local rate of the

district (as in France or England) The total income of 450 major *panchayats* in Madras in a recent year was Rs 27 lakhs (£202,500), but many of these are semi-urban, 5,300 minor *panchayats* received Rs 8 lakhs (£60,000), an average of £11 6*s* apiece, and over one-third of this consisted of government grants. The position is the same in those Indian States which have imitated the policy of the British provinces in creating a *panchayat* system Out of 11,000 *panchayats* in Mysore State only one hundred have imposed a tax, though useful work is carried out in the improvement of water-supply, drainage, and roads They depend for the most part on grants and fees Yet the income received is not fully spent, and each year's report from Mysore records an increasing unspent balance, now over Rs 30 lakhs, for the whole State Similarly in British provinces the funds available in the hands of District Officers for the purpose of aiding village improvements often remain idle, because the objects to which they may be devoted do not yet appeal to the mind of the peasant Thus the *panchayat*, while possessing greater powers than an English parish council and an equal or greater opportunity of obtaining a revenue, does not achieve, in the majority of villages, striking results in the form of visible public works

42 Three points should, however, be remembered

(i) the conciliatory influence of judicial *panchayats*,

(ii) the supply of voluntary labour by Indian peasants in lieu of rates The peasant has more leisure at various times of year than the English rural labourer, and village roads may be repaired by a levee *en masse* better than by a levy in cash,

(iii) the educative effect of possessing powers of self-government, even if inadequately used The more progressive section of the villagers, especially the younger generation who may not personally be assessed to rate, will soon learn to demand that the powers be used and that the amenities of the village be improved

Future Developments

43 It is unreasonable to expect that the Indian *panchayat*, which is a reconstitution for new purposes and on an altered foundation of a body which had formerly a traditional authority and was employed for purposes familiar to all

residents of the village, will establish itself and succeed in taxing an unwilling electorate, unless both the members of the *panchayats* and the rural population as a whole are taught the value of the powers in their hands and trained in their use Such training may be given in two ways Firstly, several provinces have appointed *Panchayat* Officers whose duty is to visit the *panchayats* in their circles, audit their accounts, supervise elections, advise them on administrative policy and procedure, and stimulate them to action The *Panchayat* Officer has no direct control over their judicial business, but is in a position to make recommendations to the District Officer as to personnel and to comment on the impartiality and discretion of the bench It seems obvious that such officers should be appointed in every province and State, the District Officer and his assistants being too busy to make more than occasional flying visits Moreover, a comparative knowledge of other *panchayats* in the district and also some idea of the principles of local administration in India and elsewhere are essential The *Panchayat* Officer who is to train others should himself be trained, and there is much for him to learn The person who trains the *Panchayat* Officers should himself have studied the English parish council and the French *commune* on the spot and be familiar with the general literature on local government Where is such a person to be found ?

44 The answer will best be given by describing the second agency for the education of the local electorate and of the elected councillors, whether in the village or in the higher grades It must be admitted that the officers of local authorities, the councillors, and even District Officers and others who advise or control the authorities, have less knowledge of local administration in principle and in practice than is desirable There are in England the associations of county councils, of municipal corporations, and of local government officers, in America the association of city managers, etc , and similar organizations in many countries There is an international union of local authorities in Brussels, and there are many national unions or institutes This movement has spread to India, where an Indian union of local authorities was founded in 1936 We have provincial institutes of local self-government in Bombay, Calcutta, and Lahore , others will no doubt soon keep them company The objects of the Bombay institute (1926) are to arrange for conferences , the collection of information , propaganda ;

the representation of the opinion of local authorities, and the promotion and improvement of local government. Grants are made to the institutes by the provincial Governments, and courses of three to four months are held for the training of local government officers. Resolutions have been passed in favour of the multiplication of *panchayats*, and the Bombay institute has organized conferences of *panchayat* members. There is a field of very beneficial activity open to such non-official institutions, supported by private citizens, by local authorities, and by Government. The provincial Governments of the three provinces have approved the affiliation of local bodies to the institutes and the payment of expenses to those who attend their conferences. Municipal and district board officers have much to gain from courses of training, and it is advisable that local bodies should give preference in appointment to candidates who hold the institute's diploma.

45. The situation regarding the training of *panchayat* members and *Panchayat* Officers is at present slightly different. Where an institute can hold conferences of *panchayat* members in a rural locality, villagers will no doubt attend and profit from the discussions if the speakers are acquainted with rural life and the local dialect. Peasant farmers cannot go far from home or remain long absent, nor will they be interested in a discussion in urban terms. The institutes will perhaps, when their resources permit, employ specially selected men, and also women, who will visit the villages and explain to the peasant and his wife what a *panchayat* is able to do for them and why it is worth paying for. Until, however, the institutes possess funds for this purpose, only the *Panchayat* Officers employed by the provincial Governments can reach the village, and their approach to the subject will necessarily be narrower than that of an unofficial organizer. The *Panchayat* Officer has to examine books and audit accounts, only a portion of his time will be free for propaganda among the public. The wisest way of uniting the forces of Governments and of the institutes would be to establish joint courses for *Panchayat* Officers, conducted by the academic leaders of the institutes and the practical field-workers—government servants in every department, missionaries, "Servants of India," or "Servants of the Untouchables"*—who know the immediate problems of the village, the point at which a

* Non-official bodies whose functions are sufficiently indicated by their names.

panchayat may attack them, and the obstacles which the *panchayat* will meet when it tries to do so District Officers and their assistants and officers of the technical departments might themselves with advantage attend a specially arranged course, in which would be explained and debated (1) the functions of local bodies, urban and rural, higher and lower, and (2) the scope of voluntary societies * in carrying further and supporting the work of the local authorities

46 The District Officer, though he has ceased to be the president or the executive officer of local bodies in the greater part of India, has still certain powers of sanction, especially in financial matters, his opinion is also weighed when such sanction has to be given by a Commissioner or the provincial Government, for not only the merits of a proposal from the point of view of the local body which makes it but also its reactions on the remainder of the district or on other districts have to be taken into account Alternative uses of water for irrigation or drinking, the location of secondary schools, the acquisition of agricultural or common land for a road, are examples of projects which may concern more than one authority The officers of all departments, but in particular the District Officer and his assistants, have now more than ever a duty of advice, conciliation, and encouragement, and members of local bodies welcome the opportunity of an informal talk on matters of local interest They will welcome it still more if the adviser has acquired a knowledge, in India or on leave, of the way in which local administration is managed elsewhere Reference to unfortunate consequences, which have ensued from an ill-advised scheme in England and America, will be more effective in dissuading a hasty but sensitive councillor than a direct condemnation of his pet idea The besetting evil of Indian municipalities, the failure to collect taxes and other dues, may gradually be overcome by pointing to the vigour with which London and Oxford collect their rates Even the hankering after octroi may be quieted by explaining that Europe and even China have now abandoned this cumbrous and costly method of indirect taxation The District Officer has still great influence, but he must know how to use it

47 Again, new problems are likely to arise in Indian administration, on which an adviser with real knowledge will

* See Chapter XII

be most useful to Government and to the people The evils of vagrancy and destitution are becoming graver in the big towns, and as the industrial worker cuts himself off more and more from his original village home, unemployment can no longer be ignored in times of depression The next two or three decades may see proposals for the passing of a poor-law, applicable at least to the major towns, or for the establishment of health-insurance and unemployment-insurance systems The time has passed when a civil servant or a legislator, however able and devoted, could study European systems on paper and transmute them into Indian terminology Indian society and administration are becoming too complicated for such empiricism, and the imported expert, though indispensable when new plans of large scale are being drawn up, is naturally handicapped by ignorance of India The men who could give the greatest help would be civil servants, legislators, or other citizens who had really studied local administration in India and abroad, by visits or by reading, and had no personal bias towards a particular solution of a problem If some at least of these men are not found among the civil servants who have to work out the details of a scheme and also among those who have to apply it, the policy of unemployment relief or insurance or any similar problem will go sadly astray Such policies have to be *applied* locally The preparation of the scheme in the secretariat is relatively (though not absolutely) easy, its local application to individuals is very difficult

48 The tendency now visible in England, Europe, and America towards the amalgamation of urban or rural authorities or the constitution of joint committees and regional boards for services rendered to a large area, embracing a number of local jurisdictions, is likely to become increasingly strong in India. Even where there is no "over-riding" service, such as an electricity supply-system or (in a circle of *panchayat* villages) a tube well, the improvement of communications may lead to a readjustment of administrative boundaries Local boards, for instance, for a part only of a district have become superfluous in Bengal and Madras and are disappearing, leaving the *panchayats* and the district boards in possession of the field *Taluka* boards in Bombay are also characterized in official reports as unsatisfactory The result may be that only the *panchayats*,* big or small, and the district

* Union boards in Bengal.

boards will survive, and that groups or conferences of *panchayats* may be informally organized to negotiate with the district boards when necessary Above the district boards a series of technical authorities, an electricity commission, a provincial highways board, a regional board for secondary education, may come into existence to meet particular needs, and be composed of representatives of Government, the local bodies, and possibly some co-opted persons with special knowledge It will not then be necessary for the civil servant to have scientific knowledge on a par with his technical colleagues on such a provincial or regional authority, but he will still play his part in conciliating various points of view, such as those of the representatives of diverse areas, and in explaining to the latter the major interests to which their own must in some degree give place

49 A word must be said in conclusion about the control of local authorities by Government Enthusiasts for municipal autonomy sometimes speak and write as though local bodies in India were hampered and tied in a degree far exceeding that of Europe and America In reality the reverse is true The control of the District Officer over municipalities and district boards in India was, before the post-War changes in his position, roughly equivalent to that of a French prefect towards the council of the *département*, and weaker than that of an Italian *podesta* or a German burgomaster of today He has now little officially to say to the municipalities, except as an external officer representing the interests of the rest of the district, while he is president of the district board in certain provinces only.* On his withdrawal the Indian local authority, as noted above, only too often lacks vigour in administration , and whereas in England laxity or mismanagement are corrected, there being no prefect or District Officer, through the action of Government by means of inspection, warning, withholding of grants, and very exact regulations for their use, the widespread idea in India that local bodies should develop a spirit of autonomy and the general desire to make them a training ground for leaders of the national life have caused the provincial Governments in the last twenty years to interfere much more sparingly with local proceedings than would be the case in England. Local bodies in India, it may with a slight exaggeration be said;

* District boards have the right to ask the provincial Government to introduce a system of election to the post of president Such a request is ordinarily granted if made

are neither controlled by their own chairmen nor by an outside authority, and one or other of these guiding agencies seems to be needed for those committees and boards in which lack of experience or of public spirit renders policy imprudent or administration (e g collection of taxes) feeble A remedy has in some places been applied by the more or less compulsory appointment of a paid executive officer or city manager on American lines, but in other places the disorder has, through a tender regard for municipal independence, continued so long that the committee has in the end been suspended by Government from its functions Inspection and control on either the English plan, by Government, or on the French plan, by the prefect, should avert such disasters and afford a better training in the use of civic liberties

CHAPTER XII

By C. F STRICKLAND

Voluntary Effort and Social Welfare

Introductory

1 All the activities of Government in a civilized and progressive State are directed towards the welfare of the community Defence against external aggression, the maintenance of internal order by the police, the encouragement of trade and commerce, the construction of highways and other means of communication, are clearly necessary and conducive to the welfare of all law-abiding citizens In a more restricted sense, however, social welfare is now understood to mean the mental and bodily health of the individual citizen, the development of his intelligence, the removal of obstacles to his economic freedom, and the increase of his personal happiness These objects are pursued in varying degrees and by sharply contrasted methods in every modern State, both by the authorities, central or local, and by voluntary associations operating under the law The amount of liberty granted to voluntary bodies is greater in democratic and liberal countries, where the expression of conflicting opinions is allowed, than in authoritarian countries where one attitude alone is regarded as legitimate The work actually done by voluntary bodies, nevertheless, may be as great in an authoritarian as in a liberal country, for no government department can penetrate beyond a certain point into the life of the individual or be so flexible in administration as to meet the needs of every case There remains always a wide field in which voluntary group organization and personal contacts are indispensable, and we shall mention some of the institutions which are busy in this field in England and in India The experience of the last thirty years further shows that since the objects set before themselves by voluntary bodies are naturally specific and limited—for otherwise their energies would be dispersed and they would effect nothing—there is need of a coordinating

scheme in each district or county, perhaps also in the province or country as a whole, to prevent overlapping of efforts and areas, to note gaps in the provision for welfare and to find the right person or institution to fill each gap, and finally to link up the several government departments and the local authorities with the voluntary societies which ought to serve as interpreters and intermediaries between the individual and the State

2 A voluntary society should, in principle, organize its own members, (who may be quite ordinary persons of modest status, not wealthy philanthropists), either to do something useful to themselves, or at least to do, as members of their society, something which is useful to the community Examples of the former in England are co-operative, friendly or savings societies, men's and women's institutes, adult educational classes, societies for drama, dancing or music, young farmers' clubs, Boy Scouts and Girl Guides, while among the latter are the Red Cross and similar associations for health service, councils for the preservation of rural England, prisoners' aid societies, and rotary clubs

Voluntary Associations in England

3 Voluntary associations have a long history in England, and continue to spring up wherever a new need is felt and has to be satisfied In several cases their work has eventually been taken over by the State Thousands of voluntary schools, for instance, preceded and provoked the creation of a national system of education, private libraries were supported by their subscribers, including many poor persons, before assistance was granted to them from the rates, and the encouragement given to friendly and mutual aid societies under the official scheme of insurance suggests that these too may—for good or evil—finally be absorbed

4 Consider the ways in which English men and women in town or country may enlarge their interests by joining voluntary bodies Since the year 1915 no less than 5,600 women's institutes have been formed in villages and affiliated to county federations and a national federation. They are occupied with the instruction of women in horticulture, fruit-growing, handicrafts, domestic economy, health, and recreation, and are now organizing market stalls for the sale of garden or farmyard produce In the towns the guilds of townswomen under their

national union carry on similar business of a kind suited to urban residents Men's clubs and institutes are counted by thousands, but are not linked to a single centre There are also dramatic societies attached to the British Drama League and to its county committees , folk song and dance societies which preserve old ballads, often with a local interest, and perform morris dances, sword dances, and other old dances , and musical societies, sometimes affiliated to county unions and taught by instructors from music schools Literary and debating societies are innumerable

5 Two points in this English manner of association deserve the particular attention of students of Indian social life In the first place, all these English organizations are spontaneous They proceed from the desire of individuals to do things which amuse or edify or profit them, and though local authorities and the national government regard with favour the cultivation of happiness among the people, there is no compulsion or pressure No public servant takes part in their proceedings except in his private capacity and on an equal footing with other members Secondly, they are maintained by the subscriptions of their members, contributions from the State or local authorities being of very minor importance and usually absent from the balance sheet The English citizen, though as ready as any other to find fault with his government, seldom demands an initiative from the official side in social matters, and only expects the State to bear the cost of a social service when the necessity of extending it to the whole nation has been made manifest by the success of voluntary enterprise We have seen in the last chapter that the social services which are now supported by the State are very great and costly, but private citizens and benefactors had always opened the road and borne the maintenance charges for many years before the State accepted responsibility

6 Three types of voluntary work must be specially mentioned before we turn to the question of coordination Thrift is represented by (1) trade unions, which collect large sums annually from their members as benefit contributions , (2) friendly societies such as the Oddfellows, Hearts of Oak, and the British Legion, the organization of ex-soldiers, which have no trade connexion but aim at good comradeship, thrift, and benefits , and (3) national savings associations and share-out clubs, some 50,000 in all, voluntary but stimulated by the

official National Savings Committee which is appointed by the Treasury It is noteworthy that in 1937 the national savings groups held over £500,000,000, while £850,000,000 more lay in the Post Office or the trustee savings banks This is the money of the labourer, the artisan, the small clerk, and the shopkeeper's assistant

7 Adult education classes are conducted in town and village by the English universities,* which have taken charge of areas surrounding their headquarters and often covering several counties, by the Workers' Educational Association, and by a series of settlements and colleges for adults They contemplate not so much a general diffusion of knowledge, which can be left to literary societies and to lectures arranged in public libraries, as an intensive study of a chosen subject (economic, literary, or scientific) by small groups of men and women, who pledge themselves to attend on one evening in each week or fortnight for one year, two years, or three years The sacrifice of time and labour thus demanded is considerable, but the large majority of students are of the labouring or clerical grades described above

8 Lastly, we should observe the multitude of clubs and associations for the young Institutions intended for adults usually admit members at about eighteen years, but the boys' clubs, of which there are 1,500 in the National Association, and 4,300 girls' clubs, under county federations and a National Council, provide a training of character, health, manual skill, and aesthetic taste for the drama or music which are invaluable to the adolescent A more recent movement is that of the young farmers' clubs, of which there are 330 in the National Association, which teach boys and girls how to keep gardens or livestock profitably, and how to work peaceably and sensibly for a common purpose The capacity for leadership is brought out by club management The Boy Scouts and Girl Guides associations now extend throughout the world They teach resource, courtesy and honesty, unselfishness, and citizenship ; but since they are well known in India no fuller description of them is here attempted

9. There can be no question that some of the associations which are so marked a feature of English life compete with or

* Reference throughout is made solely to England in order to economize space It is not intended to imply that other parts of the British Isles are in any way less progressive

overlap another On grounds of principle it might be argued that, for example, only one educational association should organize adult classes in each town or country, or that Boy Scouts, young farmers, and boys' clubs are doing almost identical work and should be merged in one another The energy and personnel thus set free could be employed in localities at present neglected But such a regimentation is quite unpalatable to the English taste and has serious disadvantages in any country It leads to a control, official or semi-official, to which some of the keenest voluntary workers will not submit There is value in local enthusiasm, even in diversity preserved for the sake of diversity, and value also in experiment, which a unified system could not freely admit The remedy for overlapping, therefore, which is being more and more generally accepted in England, is the formation of a non-official council—the council of social service in a town, the rural community council in a county—on which all the federations of voluntary clubs and societies are represented, and also various institutions of national scope, such as the Workers' Educational Association and those which have a regional connexion (e g the nearest university) * The council is non-official, but since the organizations affiliated to it are engaged in social service (agriculture, education, health, recreation, and culture), with which the local authorities are intimately concerned, the latter too are represented by officers of the borough or county council, in order to secure the maximum of mutual understanding and the minimum of wasted effort Above all the councils of social service and the rural community councils stands the National Council of Social Service, on which are represented these councils themselves, the national federations of voluntary bodies, and the departments † of the national government This too is a non-official and voluntary institution, which depends on private subscriptions, though it receives grants from the State for services rendered and from the Carnegie and other trusts

10 The problem of overlapping, which means waste, quarrels, and omission of work which ought to be done, may arise in the smallest village Where are local clubs to meet, and when there is a meeting place, who is to have the first

* There is now a tendency to unite the urban councils of social service with the rural community council This has already been done in Kent Proposals for even wider regional unification have been put forward

† The Ministries of Agriculture, Education, Health, and Labour.

choice of date and time, if several clubs prefer the same day of the week? A village hall,* preferably involving no obligation to a benevolent landowner or a religious denomination, is the solution of the problem, and with the assistance of the Carnegie trust and the National Council of Social Service, such halls have been built in hundreds of English villages, while the construction of others, by village labour and always with a large contribution from the villagers towards the cost, is being continued Village clubs and institutions then set up a committee of management for the hall, and since everyone in the village is able to make himself heard through one or other of the delegates, the net result is a village *panchayat* of the kind which a thousand years ago managed the business of an English village and, much more recently, of villages in India In a few cases there has been created a village community council on the lines of the rural community council, but the committee of the village hall ordinarily serves the purpose The proceedings not being over-formal, it is easy to introduce any subject which it is in the general interest to discuss

11 The government departments in England come into contact with individuals in the welfare field through the local authorities rather than directly There is a certain duplication in this respect as in so many others Scholarships, for instance, for literary or vocational education are granted from both sources, agricultural advice may be obtained from travelling experts of the central government as well as from the county council, and national federations of every kind normally deal with the appropriate ministry, while their town or county branches approach borough or county councils The day-to-day contact of individuals, however, is with the local body, and it is through the latter that the national policy is applied to private citizens, either individually or in voluntary groups Reference has been made to young farmers' clubs for boys and girls, adult farmers are similarly brought together in branches of the National Farmers' Union, in smallholders and allotment holders' associations, or in specialized societies for a single class of livestock or crop, and where a question of debatable policy arises—as distinguished from a simple order, enforcing the law or a regulation under the law—the town or

* The Congress ministry in the United Provinces attaches much importance to the establishment, as a part of its scheme of rural development, of a *panchayatghar* in every village, which is apparently to serve the purpose of a village hall

county council will usually ask such associations as these for an opinion, in preference to consulting separately a number of individuals Arrangements for education classes, in the same way, where negotiation is required, will be made with institutions rather than individuals, and the agricultural association or educational institution will itself consist of the individuals whose welfare the local authority is trying to promote In the absence of such voluntary associations, representing local opinion and local needs, the promotion of social welfare would be much more difficult

12 In respect of unemployment, employment, and health, while the voluntary association is as urgently necessary, its mode of operation is often different from that adopted in the cases of agriculture or education It may function not so much as the representative of the individuals whom it affects, as for their benefit and instruction with little or no initiative on their part The persons affected may even be suspicious of or hostile to it, for those who investigate unofficially (we are not here concerned with official action) the needs of the sick, the unemployed, or the indigent may be dealing with persons demoralized in body or mind, perhaps through no fault of their own, and will be compelled to discriminate in their treatment between the stronger and the weaker, the law-abiding and the anti-social individuals Case-work, as this discriminating treatment of persons is termed, is the essential feature of well-directed charity, and its superiority to mass-treatment, to which official regulations inevitably lead, is emphasized with vigour by the London Charity Organization Society, and its branches or corresponding societies It is obvious that an official staff cannot in any country be provided on a scale and with the training and attainments which would allow a detailed and sympathetic examination of each individual's circumstances Every *rule* must be general, and if it enters into details it creates hard cases This may be avoided by reference to an unofficial group of social workers Such groups as the personal aid societies of many English towns may use the unpaid services of their own members to visit persons in adversity, and to give that advice which is frequently more helpful than money They know or have access to an expert who knows the law, the facilities offered by the authorities, the authority who should be approached (medical, educational, legal, or recreational), and the way in which an application should be presented Or they may use a paid officer, where expert advice must be

carried into the home Public and private hospitals, for instance, now employ "almoners" to follow up patients who are discharged and to encourage and instruct them so to live as to avoid a recurrence of sickness In the rural areas are societies of the same type, many but not all under a rural community council, such as after-care associations to watch tuberculous cases in the home after treatment, nursing associations for the maintenance of rural nurses and health visitors, rural industries guilds, which send skilled artisans about the villages to improve the designs and implements of handicraftsmen, Borstal associations and prisoners' aid societies (in town and country alike), temperance societies, and a host of others The many organizations for urban and rural children have already been mentioned A voluntary body does not cease to be voluntary because it receives official support, either in the shape of subventions or of recognition or favour, the land settlement association, which places groups of men, usually from among the unemployed, on small agricultural holdings and teaches them their business, is the most prominent in this semi-official class

13 The really essential point to be noted by a reader who is to compare English with Indian conditions is that in England, when the law, the regulations under the law, and the central or local officers have done all that lies in their power, voluntary societies of private citizens go further afield, beginning where official effort is bound to end They may undertake a task which seems to them worth performing and which no authority has yet attacked, such bodies are common in the aesthetic and adult educational spheres, though not confined to them. When they have proved the value of what they are doing, they will perhaps ask for direct or indirect grants, e g to rural industries guilds for the technical education of craftsmen Or they observe, it may be, that scholarships are available but remain without holders, because parents are unaware of their existence or fear that there is a "catch" somewhere in the offer, farmers and artisans admit the superiority of an implement or process and may even buy the implement, but it lies idle or broken, sick men are cured for a while, but return to habits, possibly to a profession, which will soon renew the trouble, and so forth, through every sort of missed opportunity and loss It cannot for a moment be said that all gaps are filled or all societies are achieving their objects, but it *is* true that the citizen in England associates himself from day to

day with his neighbours to improve the conditions of life for everybody in his community, welcomes the aid of national and local authorities, sometimes clamours for such aid when it is not required or justified, but nevertheless sets himself to work and spends his own money for ends which he thinks good, whether official aid is forthcoming or not Personal service and money-subscriptions—these are the tests of a genuine desire for social welfare in any country

Voluntary Associations in India

14 The structure of Indian society was eminently well suited to serve the welfare of all classes, except the depressed castes,* in the circumstances which surrounded the Indian individual before contact with Europe The caste, whether in the looser form of a number of persons who might be widely scattered but were related or believed to be related to one another by blood, or in the closer form of a professional guild, assured to each man the assistance of caste fellows † through his life and at his death and met the needs of which he was conscious Apart from certain religious observances,‡ he was not conscious of a need for detailed regulation of the public health, though some sort of drainage in the cities was frequently provided, by the householder for his house and by authority for the streets, from the days of Mohenjo-Daro onwards Nor, again, was the ordinary man conscious of a need for education as now understood He enjoyed a cultural knowledge of scripture and poetry , but his profession was predetermined, and literature and learning were the privileges of certain castes whose members lived by their possession and use Agricultural improvement consisted in the fencing of crops against wild animals, the sinking of wells, and the breaking up of waste land Primitive associations for such objects were no doubt created and dissolved as occasion arose, but farmers who cultivated principally for their own subsistence were little inclined to scientific research or to the production of a surplus for which there was no market Broadly speaking, therefore, the Indian individual up to 200 years ago—and indeed much later—was not required to join with his neighbours in voluntary associations The village meeting and his caste were non-

* See Chapter II, paras 19, 46–47

† This assistance would, in practice, be rendered by the *biradari*; see Chapter II, para 18

‡ See Chapter II, para 43

voluntary associations, into which he was born and which controlled whatever the ordinary man could hope to control Beyond them lay an inscrutable earthly ruler and the inscrutable forces of nature and of God

15 In this general account one exception must be allowed The early savings associations—*Nidhis*, *Chit* funds,* and various kinds of *anjuman* †—offered an opportunity of thrift to those who handled cash, i e for the most part the town-dwellers They admitted only too often an element of chance which is incompatible with true thrift, but were not without value The rural population dealt less often in cash, and the accumulation of grain or other food beyond the owner's requirements was, while communications were scanty and insecure, an idle occupation

16 The idea, therefore, of lasting association with other individuals for the common good, as distinguished from temporary collaboration for a specific act of construction or production, only became familiar to India when commercial crops could be sold, when the proceeds could be spent on luxuries hitherto unknown or unattainable, when education opened a road to advancement in official or private occupations, and when medical science revealed the possibility of living more comfortably and living longer , .in other words, when under British rule the country was pacified, a regular administration was established, trade began to expand, and scientific knowledge of the causes of health and sickness to be acquired It was not unnatural, then, that voluntary associations should come but slowly into existence, and first in the urban areas, where European influence was most strongly felt Social reform was in the early part of the nineteenth century ancillary to religious change, especially among Hindus, whose social and religious ideas are so intimately interconnected The Brahmo Samaj and later the Arya Samaj,‡ two outstanding Hindu movements, showed marked signs of reaction to European influence, as well as of independent Hindu thought, in the religious, social, and political fields , but Muslim society remained comparatively little affected before the closing

* See Chapter X, para 11, and note

† Assembly or society

‡ The Brahmo Samaj was a religious sect, founded by Ram Mohan Roy in 1828 Its doctrine was theistic, and on the social side its objects were the spread of English education, the reform of the Hindu family, and the abolition of *sati* For the spread of English education, see Chapter VIII, para 3 For the Arya Samaj, see Chapter II, para 33

decades of the century From that time forward the principle of individual action through association for the common good—not only the good of the family, caste, or tribe—was increasingly applied by Indians, and was instilled into students at the universities and in the higher schools The caste or tribal organizations, though vital and powerful in many personal matters, were inappropriate for business concerning India as a whole, and voluntary associations of the English type began to appear

17 The most numerous and most highly integrated body of voluntary associations are the co-operative societies, to which a previous chapter has been devoted It is, however, necessary to remind the reader of their prominent place in the sphere of social welfare As already explained, many associations which in Europe lie outside the co-operative fold lie within it in India, precisely because an association for social welfare is still a novelty and there is advantage in securing for it a framework and a backing which will induce its members and other people to regard it as a recognized institution and treat it seriously We shall not, however, discuss co-operative societies here as a separate class A social end may be achieved without co-operative registration as well as with it, *provided that* the members of a group hold together, observe the rules which they have laid down for themselves, including the payment of promised subscriptions, and actually carry on the work which they have undertaken to carry on * Nor shall we discuss the operations of the several " beneficent " or " nation-building " departments of Government, as they are frequently called in India , for these too have been set out in the preceding chapters We are here only concerned with voluntary societies for the purpose of social welfare, and the coordination of such societies amongst themselves and with the departments of Government The simplest method is to select, in the first place, a few unofficial bodies from various parts of India and to describe their work

18 The Bengal central co-operative anti-malarial † society of Calcutta, founded in 1912 by Dr G C Chatterjee and reorganized in 1919 as a central institution of the anti-malarial societies which he and his friends were creating in the villages,

* It should be remembered that in India, as in most other countries, only a *registered* co-operative society may call itself co-operative The law of England does not impose this useful restriction

† For malaria, see Chapter VII, paras 6 *et seq*

has now some 2,000 such dependent bodies affiliated to it About half of these are registered co-operative societies The anti-malarial movement aims at bringing together parties of men and women who believe in self-help and discard the fatalist view that malaria is unavoidable and an act of God Before medical research had traced its origin to the anopheles mosquito, this disease was held to be due to evening mists arising from water, especially from stagnant water , and Bengal being peculiarly subject to floods from the rivers and watercourses, the people saw no remedy for their affliction Dr Chatterjee and his disciples proceeded to impress on the villagers that the teaching of officials and doctors concerning the mosquito was really true, and to form societies for filling up swampy depressions, oiling pools, and taking quinine All this had been preached by health experts for years , but it was not until an unofficial and unpaid propagandist came to him in his home that the illiterate, suspicious, and apathetic peasant could be moved to action The floods of Bengal in themselves brought no malaria, provided the water did not remain in stagnant pools and swamps in which the mosquito could breed Consequently, the later efforts of the anti-malarial societies have been directed towards freeing the watercourses from unauthorized and unregulated dams, above which the water stood stagnant Engineering schemes of this nature are expensive, and the voluntary societies, through their central society, have rightly turned to the Bengal Government for technical advice and financial help These have been forthcoming, and the control of floods by this collaboration between voluntary and unofficial agencies has benefited considerable areas and afforded a striking example of co-ordinated welfare work The village anti-malarial societies have also in some cases been supported by the union boards in the maintenance of local dispensaries, but many boards are uninterested, and much yet remains to be done The central society derives its income from annual subscriptions and from the endowments collected and invested by Dr Chatterjee, but its resources are small in comparison with the task before it

19 An urban institution of value in Calcutta is the Bengal Social Service League This body, founded in 1915, conducts an industrial school, a school of popular education, and some adult schools to combat illiteracy It promotes agricultural conferences, carries on co-operative propaganda, and organizes

relief on the occasion of floods and famines The first Indian social conference of 1916 was due to the initiative of the league Its income proceeds from subscriptions and from government grants, but popular support is not yet sufficient to allow the promoters to do much outside Calcutta itself Nevertheless it is evidence of a growing spirit of social service in India Similar bodies, such as the Seva Sadan, may be found in other Indian cities , all are of recent date, for the new spirit is that of the new generation

20 Two other Bengal organizations deserve attention Firstly, the women's institutes (*Mahila samitas*) affiliated to the Saroj Nalini Dutt Association and through it allied with the women's institutes of England and the world, number several hundreds in Bengal and Assam, with outlying societies in other provinces and Ceylon They are found for the most part in rural towns, and encourage their members in the study and practice of handicrafts, horticulture, education, and hygiene Organizers from the central association visit the local institutes , a monthly magazine is also published The movement is notable not so much for what it has hitherto achieved, as for the natural and healthy outlet which Indian women enjoy in it for self-expression and for self-education in questions of domestic and social interest Joint societies of men and women are not yet congenial to India, but in the atmosphere of an institute the Indian woman, urban or rural, feels free to speak and to learn The women's co-operative societies in the Punjab and the United Provinces, some 300 in each case, are really women's institutes under another name

21 The second Bengali organization is that of Bratachari, which in the last few years has begun to revive popular songs and dances and to bind its members in a national or community movement for knowledge, labour, truth, unity, and joy The pledge includes promises to be kind to animals, to live by the labour of one's body, to smile in misfortune, and *not* to develop a corporation ! Bratachari may be compared on the one side with the Boy Scouts and on the other with the folksong and dance societies of Europe

22 Prominent among societies for children in all parts of India are the Boy Scouts, numbering about 250,000 , the parallel army of *Seva Samiti* , and the Junior Red Cross with 400,000 members, in which children are trained in ideas of health and service The competition or overlapping of these

three movements is regrettable All are good, and the record of boys who have assisted at religious festivals,* where masses of people are crowded in a narrow space, has been very creditable Girl Guides are less numerous, because of the limitations on the freedom of girls and of early marriage, but they are advancing, and training camps are now regularly arranged for them Camps for boys are also regularly held

23 Associations in a somewhat different category are those which concentrate their energies on a village "centre" and hope to produce within this narrow range so obvious an improvement that adjacent villages will spontaneously imitate them or at least ask for advice As an example we may take Khed Shivapur in Poona district, where for a series of years the Deccan Agricultural Association, in alliance with the Poona Seva Sadan and the Servants of India society, has carried on propaganda for better agriculture, health, and female education A gymnasium and a demonstration farm, a midwife and a sewing class, a Marathi magazine and a free library are all part of the picture Appreciable results are obtained in "centres" of this kind if the propaganda is continued for many years and if a trained and intelligent organizer resides in the village Otherwise the effect tends to be transient

24 Rural reconstruction centres on the same lines are attached to the Bombay co-operative institute and the Madras co-operative union A Supervisor, ordinarily paid though not on the scale of his possible earnings in another occupation, is posted in each village and builds up a local committee There being few voluntary societies in Indian villages, the members of the committee serve in a personal capacity and seldom represent, as they would in an English village, a club or association having a special object If the local response has been cordial and local leaders appear to be forthcoming, the Supervisor is sooner or later transferred to a new centre and the welfare work of his village is left in the hands of a young men's association This is the ideal outcome of concentrated work in a "centre," since a welfare organizer cannot be placed by Government or voluntary societies in each of the 660,000 villages of India it is essential that (1) the local committee be backed by a sufficiently large progressive (but not too radical) element among the population, if it is not to be defeated by the stolidity of the last-ditch conservatives, and (2) contact

* E g the *Kumbh Melas* see Chapter VII, para 34

be retained with a central organization at a district or provincial headquarters, by which guidance and information may from time to time be supplied

25 We have referred to several types of local institutions, urban or rural, each of which occupies itself either with a single kind of welfare activity over a relatively large area or with all kinds of welfare work in a small area Reconstruction on a national scale, however, postulates a combination of all kinds of welfare activity at the same time in the whole of India, though such action need not be directed from a single point In view of the great size of India, the province or the Indian State is probably a better unit of management , and since voluntary and official efforts should for reasons of effectiveness and economy be coordinated, a provincial or State scheme, put into force through district branches and village committees, is more likely to extract the maximum result than either an intensively centralized national and all-India scheme or a multiplicity of small local institutions which proceed from no general idea and arrive at no common end The mean has to be preserved between an excessive stimulation and control by authority, which would hamper the initiative of private citizens, and an undue detachment of voluntary societies from official help with which they ought to be linked

26 The most striking example of voluntary welfare organization in India, in which the initiative, the driving force, and most of the cost are provided by non-official persons and bodies, is the rural demonstration centre of the Y M C A at Martandam in the south of Travancore State Here and at a few similar centres in Madras presidency, such as Ramanathapuram in the Nilgiris and Indukurpet in Nellore, the Y M C A has established a rural station at which better agriculture and handicrafts, co-operative methods in credit, marketing, and production, juvenile and adult education including recreation and the drama, scout and guide training, and health and sanitation, are taught in practice as well as in theory The Martandam centre owes much to the leadership of Dr Spencer Hatch, an American, and its influence now extends to more than one hundred surrounding villages, where Y M C Associations have been set up for propaganda and welfare activities on the same plan as at Martandam , but inquiries and visitors arrive from much further afield The institution in charge of the work in each case, however, is the

village rural development association, of which persons of every religion, caste, and community are members , the Y M C A is an important force in the organization of public opinion, but is not essential to the plan. No religious distinctions are introduced into social welfare

27 Four points emerge from the plan of the Martandam rural development association points to which we shall recur when examining other plans, and which are prime elements of success in any scheme of rural reconstruction

28 (1) The attack on the rural problem is made all along the line It would be unjust to regard as valueless those partial treatments of rural poverty and backwardness, which are adopted by some agricultural experts, credit co-operators, doctors, schoolmasters, or others They are not valueless, but half their potential value is lost through the narrowness of their front A small farmer cannot or will not accept new seed, improved implements, or methods of cultivation, or buy, breed, and maintain better livestock so long as he is indebted, illiterate, and constantly sick through malaria or hook-worm He will not collaborate loyally with his fellows and impose on himself the discomforts of co-operative credit, such as limitation of expenditure on ceremonies and publicity in respect of loans, so long as, in addition to being illiterate and sick, he is unable to extract from his land, through faulty agriculture, more than the barest subsistence Nor will he open his mind to adult education or send his children to school regularly for at least six years if he is sick, indebted, and poor , on a low scale of living the ignorant man fares as well as the wise Medical and hygienic precautions, again, seem to him weird if not impious ideas, a defiance of the will of Heaven, so long as he is dulled by the burden of debt, half-starved, and ignorant Consequently the remedy—not a simple remedy—for the social evils of India is to combine an increase of income and relief from old debt with an opening of his mind in youth and in mature age, and with a release from stomach-aches, head-aches, and lassitude All the evils which beset the poor man in India, and in lesser degree also the more prosperous man, must be dealt with at the same time, his friends uniting in a concerted effort to show him that his life *as a whole*, even on the modest plane of an artisan, labourer, or peasant-farmer, might be something different from and better than that which it now is Accounts of other countries may give him courage,

successful experiments in communal improvement in India will convince him that a change is possible Then he will believe, and begin to move his own hands and feet for himself. And the same is true of his wife

29 Now one great virtue of the Martandam plan is that it proceeds on a broad front, or, to change the metaphor, pierces the vicious circle in which thousands of Indian peasants and labourers revolve at a number of different points on the circumference While ploughs and poultry add to the village's income, co-operative credit and marketing reduce his losses , literacy, followed by libraries and craft schools, fits him to seize new opportunities , bored-hole latrines, ventilators, windows, and quinine render him and his wife and children stronger to do their daily business

30 (2) The agents and propagandists of rural development are trained for their task This has been a comparatively rare feature of social welfare work in India in the past , devoted men have plunged into a sea of difficulties without preparation and have learned only by painful experience how to surmount them It should be remembered that in such cases the pain of the experience is not confined to the welfare worker, but is shared by those whom he is trying to help Unfortunately, a course of all-round training for such persons is not easily obtained in India, and though facilities for an urban course are not entirely lacking in Bombay, rural training cannot well be given in a city Martandam and Ramanathapuram have now for some years conducted rural courses of five or six weeks, attracting students from other parts of India as well as from Travancore and Madras They are practical rather than theoretical, and a considerably longer period of study is really required by those who are to carry responsibility in any social welfare scheme , but the principle of employing trained men and women for social welfare is recognized and applied in these Y M C A centres, and is of fundamental importance

31 (3) In the third place, welfare work in order to be worth doing should be not only broadly conceived, not only carried on by a trained personnel who will avoid the blunders committed by untrained organizers all over the world, but should also aim at making its results permanent Only too often enthusiastic individuals after attaining results which appeared splendid have lost their zeal or been removed from the scene, and it has then become plain that the whole achieve-

ment depended on their presence and collapses in their absence Since, therefore, the Indian peasant or labourer cannot in a few years, probably cannot in a single generation transform his outlook and his habits, social welfare work, and particularly rural welfare work, must during the interval be promoted and sustained by an institution which is itself permanent It must *not* depend on individuals who may very shortly disappear The only permanent bodies which can fulfil this function are (i) Governments, and (ii) voluntary associations having a stable existence, an adequate income to pay their staff, and a continuous policy In the past the majority of the latter have been Christian, but there is no reason why non-Christian societies, such as the " Servants of the Untouchables " or village industries associations, should not be equally successful The two types of agency—Governments and voluntary societies—will effect most if they remain in touch with one another and work as allies Government departments are permanent, but cannot always reach the people , voluntary societies reach the people, but may lack resources or knowledge which Governments can supply. The Y M C A , moreover, in its " centres " relies on local committees of the people in order to create and foster a real demand for social changes which will be permanent because the people make them their own Ultimately the local associations should be able to stand by themselves, calling in an officer of Government or an employee of the Y M C A (or other central institution) when required, but not depending throughout on such persons for initiative This will take time, but the Y M C A is stable and has a continuous policy. It is in alliance with the officers of Travancore State and of British districts, and while its leaders would be the first to admit that they have not won their battle or done all that they hope to do, the Martandam plan stands out as an example of welfare work so steady and so well coordinated with official effort that it should be studied and imitated wherever possible in India

32 (4) Lastly, the cost is low, and while high-grade experiments, such as the Rockefeller health units, may well be worth while on account of the special information derived from them, India cannot afford, nor is it intended, to multiply them throughout the country Martandam and the other centres avoid expensive buildings and plant Grants are annually made to Martandam by Travancore State and to Kosamba centre by Baroda State ; another part of the cost is borne by

the Y M C A , there is income from handicrafts and some subscriptions , but the bulk of the work in the villages themselves is carried on by local honorary people, many of them modest in education and status This is what India can afford , and provided that honorary welfare-workers are themselves trained to a certain point and are guided by persons, official or non-official, of higher training, the plan is capable of indefinite extension at a relatively small cost

Official Schemes of Rural Development

33 From voluntary associations let us now turn to official schemes Clearly a Government commands experts and resources on a scale with which those of other institutions cannot be compared, and if it is recognized that in social welfare the government servant suffers from certain handicaps —he may be over-influential, he has many other occupations, he may be transferred from the locality—and that un-official help is indispensable in order to make individual citizens really act on expert advice and learn the nature of their difficulties, then under the conditions of India today a social welfare scheme, directed and financed by the provincial or State Government and carried into effect through semi-official district bodies and voluntary village committees, is more likely to succeed in producing useful results than either a number of keen but isolated departments or a medley of uncoordinated voluntary societies without money or trained staff

34 Four provinces of India have now a provincial scheme of rural development or welfare The Punjab set up in 1923 a rural community board in Lahore, under a minister as chairman, and with the heads of rural departments and of the major unofficial organizations, such as the Red Cross, as members In each district was established a district community council (now called the Dehat Sudhar committee) with the District Officer as chairman and the local departmental officers and leading non-official persons as members The object was to coordinate the activity of the departments and of voluntary welfare or economic institutions, where such existed Finance was provided by a grant from the Punjab Government to the board and from local subscriptions to the councils Joint propagandist meetings were arranged in the villages, lectures were given, travelling cinemas and lantern slides were procured, and a certain impetus was given to the improvement of agriculture, health, female education, drama, singing, and

recreation The weaknesses here, as in other provinces, proved to be the preoccupation of the District Officer with other duties, the deficiency of voluntary associations in the rural areas, and the reluctance of the people to form them or otherwise to participate in the campaign except under official pressure Many councils still function with greater or less vigour, but inter-departmental meetings of officers or " Officers' Boards " in each district have to some extent overshadowed them and left some of them without motive power

35 A remarkable campaign of " uplift " was conducted for seven years in Gurgaon district near Delhi by the District Officer, Mr F L Brayne, in which, while the district community council was not ignored, the greater part of the work done was due to the force and zeal of Mr Brayne himself The achievements of this seven-year experiment impressed public opinion throughout India and in other regions of the world, and it was demonstrated that even in a backward district the people could be led or driven by an officer whom they trusted and liked to accept changes in agricultural methods and social customs, and to abandon many unhygienic or uneconomic practices They would also subscribe money for social objects of which they approved The influence of Gurgaon on Indian social policy has been marked and lasting On the other hand it soon became evident, on Mr Brayne's departure from the district, that little permanent mark had been left on Gurgaon itself, and that slower progress with more attention to the development of unofficial committees and institutions, which might in the future function with less official stimulation, would in the end be more secure This lesson has been learned and applied in varying degrees in the Bombay, Central Provinces, and United Provinces schemes The Punjab Government subsequently posted Mr Brayne as Commissioner of Rural Reconstruction to encourage government servants, community councils, and all other agencies in the work of rural welfare The Commissioner, in his publications and otherwise, lays great stress on the need for (1) female education,* without which the progress of men and boys must be halting and slow , (2) the co-operative movement, in which those who desire to make progress may support and pledge one another , and (3) *panchayats* and other village institutions, which in every country are indispensable as the focus of progressive opinion and the organ of action An

* Cf Chapter II, paras 57-58

awakening has, for the time at least, taken place in the villages of the Punjab, but it is uncertain how far the Dehat Sudhar committees have rooted themselves in the life of the people, how far they are capable of spontaneous activity There is no parallel organization in the towns, its creation is much to be desired

36 Bengal has appointed a Development Commissioner and passed a Development Act, but the line of advance is more strictly economic than in the Punjab Shortly after the formation of the rural community board and the district councils in the Punjab, reconstruction in rural areas was begun in certain districts of the Central Provinces and the United Provinces In the year 1930 Piparıya, in Hoshangabad district (Central Provinces), and a circle of fifty adjacent villages—later reduced to thirty—were selected for an intensive welfare campaign, to which the officers of the agricultural, co-operative, education, health, and veterinary departments devoted special attention Here, as in the other schemes to be described in other provinces, the improvement of agriculture (e g the use of better ploughs, seed, and implements, the sowing of cotton in lines instead of broadcast), the consolidation of holdings, the reorganization of co-operative societies, the promotion of adult schools, rural libraries, and scout troops, the digging of refuse pits or bored-hole latrines, vaccination, and better housing, were all recommended to the people and introduced if a response was met * Additional staff was employed, joint meetings of officers and non-official leaders were held, and since the Piparıya scheme was an experiment, extra expense was incurred After two years the plan was enlarged, and a village uplift board was constituted by the Central Provinces government at Nagpur, with district uplift committees in the districts Non-official members were included, and in some districts private citizens were found to be excellent agents for propaganda on behalf of village welfare A minor campaign was conducted in Drug district, where consolidation of holdings was a prominent feature The debt conciliation boards,† a somewhat later development, have already been mentioned

37 The first steps in the United Provinces were taken in the Benares, Fyzabad, Lucknow, and Partabgarh districts

* The detailed improvements recommended in a scheme will not be enumerated again They are much the same, though with local differences of stress, in all rural development in India

† See Chapter X, para 27

with the formation of "centres" and rural reconstruction societies by the co-operative department All other departments then joined in the campaign, and the publicity officers took charge of the propaganda and the touring motor-vans with slides, cinemas, and broadcasting * The United Provinces Government created a rural development board for the province and a rural development association for each district At headquarters they placed a Rural Development Officer, who was in general charge of development operations In the districts they created an establishment of inspectors and organizers under the general supervision of an officer of the district staff, also designated Rural Development Officer, who did this work in addition to his other duties In each district six circles of twelve villages are now chosen for intensive propaganda, each with an organizer, who is, however, to be supervised by a local citizen or officer of higher status Where possible, village associations are brought into being and *panchayats*, with a legal constitution under the *Panchayat* Act, are utilized for the general support of the movement An interesting and peculiar element in the United Provinces scheme is that the numerous tube wells that had been built in the large tract covered by the hydro-electric grid † are used as centres for the provision of certain suitable amenities in the shape of bathing-pools, a supply of drinking-water which is kept in tanks and drawn off by hydrants, places for watering cattle, and occasionally swimming-pools At a certain number of the wells loud-speakers have been installed which are served by the radio station at Delhi, and provide suitable programmes in which instruction and amusement are carefully blended A feature of these programmes is the market prices

38 *Taluka* development associations had existed for many years in Bombay presidency Their duty was to encourage agricultural improvements, but their effectiveness and worth varied with the circumstances of each district and with changes in the local staff In 1933 a village improvement scheme for the presidency was initiated by Sir Frederick Sykes, Governor of Bombay No central board is contemplated in this scheme, and though the appointment of a Village Improvement Officer under each of the three divisional Commissioners was approved, it does not appear that such appointments have been made The work of social welfare is primarily rural, and therefore

* See Chapter V, para 7, *note*

† See Chapter V, para 42, *note*

entrusted to district committees, of which the District Officer is chairman, with *taluka* committees and village associations Coordination may be secured either through the divisional Commissioners or through the heads of the rural and other departments, who may address their own officers and through them the district committees The reports indicate that many minor developments and improvements are proceeding, and since the Indian village is a small unit which receives great benefit from minor local works, there can be no doubt that the total benefit is considerable

39 In the last three years the Government of India has set aside large sums (nearly £3,000,000) for grants to provincial Governments in aid of rural improvements Water-supply and sanitation, provision of better cattle and live stock, rural roads and consolidation of holdings were particularly specified by the Government, but grants have also been sanctioned for other purposes of a similar nature, and a certain portion was allocated to co-operative training and education This money will facilitate rural welfare work, but involves no alteration of policy The provincial Governments of Bombay, the Central Provinces, and the United Provinces are applying their allotments to their provincial schemes already in force

40 It would be a grave mistake to demand from any scheme, whether mainly under official or non-official leadership, an early crop of visible results The outlook of an adult is not easily readjusted, and if he or she lives in a remote village and is illiterate, readjustment is even more painful and laborious For this reason social reformers in India have rightly tried to teach and train the children Much is being done in schools, Scout and Guide troops, and junior Red Cross societies, and Mr Brayne's organization of children in Gurgaon was powerful The Y M C A in south India, the several "centres" of voluntary bodies such as the Deccan agricultural association, and the main provincial schemes, while doing all that they can for the present, hope for greater return from their labours when the young generation grows up in an atmosphere of new ideas We have therefore to envisage not a brief and brilliant campaign, but a sustained policy of welfare work for a generation or longer, and the provincial and other schemes have all to be examined in the light of this principle

41 (1) Are they co-ordinating all available forces, official and unofficial, and advancing on a broad front? To this we may answer that all departments are collaborating, every rural evil is being attacked, and those unofficial institutions which are non-political are brought into the scheme It is inconvenient for a government, of whatever complexion, to ally itself with a political body which is also active in the cause of social welfare, since a government in such cases is open to criticism by opponents of the political view in question, though if the welfare work of any group is entirely divorced from its political activity, a large-minded government should be able to join hands with it There is less certainty as to the share which private citizens are able to take in the business and responsibilities of the district committees, since there the departmental officers, who have a clear departmental policy and may be reluctant to amend it, play a large part In village associations the private individual is obviously on strong ground, if an organizer is not impatient and does not carry too much of the load himself, and on the provincial board, where such exists, representatives of voluntary societies and even of political groups ought to be able to help The weak spot is the district committee If not nursed into strength, it may sink to a position of unimportance, merely endorsing the decisions of officers or officers' boards Voluntary societies will then be unable to come into being or to function

42 (2) Are the provincial schemes likely to produce permanent results? Will a time come, after one or even two generations, when social welfare work will depend in greater degree on the will and in less degree on the assent, cordial or resigned, of the people? The same question as to the co-ordination of official and unofficial work and the evocation of an increasing response from the people, which we were considering in the preceding paragraph, arises here also Economic depression or political change may at any moment cause a contraction of expenditure by the Governments concerned or a diversion of official staff in other directions Results will be permanent if and in so far as, when this occurs, private citizens and voluntary societies are ready to fill the gap Some such voluntary bodies are at work—we have referred to a few of them—and in the provincial, district, and village boards and committees unofficial aid is enlisted The permanence of the impression made on the social life of India will correspond with the reality of the part assigned to such persons and

associations Even at the price of moving more slowly—and if the voluntary, sometimes less fully instructed, social workers are to keep pace, the pace must be slower than that of trained and zealous officers—it is essential to use voluntary agency more and more This policy is accepted by all the Governments and is no doubt being adopted in practice by the more long-sighted authorities and individuals

43 (3) Some training is being given to social workers in the three rural schemes of Bombay, the Central Provinces, and the United Provinces Local classes for short periods have been held, but it is difficult to believe that the majority of organizers, guides, and inspectors have yet received the training which they require It is not sufficient to call together the organizers for two or three weeks and explain to them the arguments in favour of better ploughs, bored-hole latrines, a later age of marriage, or co-operative thrift , this has been done everywhere, and perhaps most fully in the United Provinces There is still needed an institute of social service training, established and maintained by the Government and by the principal universities and voluntary societies, in which courses of varying length will be held for social workers, urban and rural, official and unofficial, according to their education and past experience Such an institute would be staffed by qualified teachers of economic and social science, and would cover in its courses an analysis of social welfare methods in other countries as well as a study of the needs of India

44 (4) The provincial schemes are costly, but so in the beginning they must be In proportion to the results attained they are probably much more costly than Martandam, Khed Shivapur, or similar local centres But the latter are local, and are supervised by men too rare at present in India for their methods to be reproduced in all parts of the country A national or a provincial scheme must utilize the average material available within its jurisdiction and must do its best in unpromising as well as in promising villages The cost of such large-scale work will be diminished when unofficial workers are recruited and voluntary societies are formed , and will be borne more readily, in the shape of taxes or rates, when the people, especially the younger generation, become accustomed to a higher standard of living and amenities, regard it as normal, and are willing and able (through the prosperity which economic welfare brings) to pay for it

The District Staff and Rural Development

45 The District Officer, and under him the Assistant Collector or Assistant Commissioner, is now occupied in ways which would have seemed strange to the administrator of fifty years ago Two outstanding changes have taken place within that period In the first place, the number of officers of the central Government, the provincial Government, and the local authorities who tour in the villages, visit the towns, and also touch the unspecialized administration of the District Officer by their specialized interests, is much greater than it used to be In addition to the revenue officers and the police, there are officers of the agricultural, co-operative, education, health, public works (roads or irrigation), and veterinary departments frequently on tour Less frequently come representatives of many technical or scientific departments, all of whom concern both the District Officer and the private citizen, and whose work can be rendered more beneficial if the District Officer acts as a connecting link between them all * He may find occasion to suggest collaboration between two or more of them for a common object or between any of them and voluntary associations or private persons having the same interest The District Officer of to-day devotes less and less of his time to trying legal cases and is hard put to it to supervise even the collection of land revenue, for which he was supposed primarily to exist Secondly, the Indian public in town and country is alive to its rights and vocal in demanding them This is a natural and healthy sign of growth, but it means that, if the administration is not to be simply repressive—and under the new system the public can always check repression by electing a new assembly or upsetting the ministry—the administrator must and should busy himself with the promotion of social and economic welfare, whether through local authorities (municipal councils, district boards, union boards, *panchayats*), or voluntary societies, instead of attempting to do the work himself He is seldom now the chairman of a local authority, but can still serve the common interest as their adviser He holds more often a post of chairman in a semi-official development board or community council of his district and may be patron or honorary president of any quantity of urban institu-

* Here are some of the occasional but not unimportant departments to which touring officers belong archaeology, audit, excise, forests, geology, income-tax, industries, meteorology, opium, post office, railways, recruiting, salt, survey, and transport registration The list is not complete

tions In this capacity his usefulness is in direct proportion . (1) to his sympathy and good temper enthusiasts are often long-winded , (2) to his judgment reformers may be hasty or timid , (3) to his knowledge of the methods employed by local authorities and voluntary societies in other parts of India and in other countries The Assistant Collector requires just the same qualities as his superior, though his suggestions may be more tentative and he will often refer a question back to the District Officer Judgment and sympathy are to some extent inborn virtues, but may also be acquired by thought and self-control Knowledge, on the other hand, is a matter of hard work, and it is open to any servant of government to acquire it and to enhance thereby his value as an adviser A young Assistant Collector should set himself to learn, without aspiring to become an expert, what every department of government within range of him is doing or trying to do Personal acquaintance with every kind of " miscellaneous " touring officer affords opportunity for mutual understanding There has in the past been loss of time and labour through excessive separation and parallelism of departments In the second place, he should discover what voluntary associations and groups are active in the districts, making the acquaintance, if possible, of their leaders , though he should not venture to advise them until he has gained knowledge and experience These associations may at present be weak, but they will be more and more important as Indian life becomes complex and the desire for social welfare general They are a necessary element in the life of a modern people and no government can now fulfil its task without their assistance The District Officer is likely to find himself very dependent on them for support in his endeavours to reach and convince the people, and though they may not always be docile, ideally prudent, or continuously energetic, they are far the best agency which he can use While searching for such unofficial social workers, the Assistant Collector, English or Indian, should not forget the missionaries, English and Indian They see social conditions from an angle at which he can never stand, some of them enjoy the confidence of the people more than the servants of government, and they are not solely engaged in proselytization Non-Christian social workers often possess equal knowledge and command equal confidence.

GLOSSARY OF VERNACULAR WORDS

Where a word has been fully explained in the text the reference is given to the chapter and paragraph where the explanation occurs (e g II, 18) Many words given here will also be found in the Index

Vowel-sounds *

a has the sound of *a* in *woman*
ā ,, ,, ,, ,, *a* in *father*
e ,, ,, vowel-sound in *grey*
ı ,, ,, sound of *ı* in *pın*
ī ,, ,, ,, ,, *ı* in *polıce*
o ,, ,, ,, ,, *o* in *bone*
u ,, ,, ,, ,, *u* in *bull*
ū ,, ,, ,, ,, *u* in *flute*
aı ,, ,, vowel-sound in *mine*
au ,, ,, ,, ,, in *house*

Ābādī : Lit populousness An inhabited site , a village

Abdār : A servant who serves drink, especially water , a butler

Abhowā : Lit water and air Climate

Anjuman : Assembly , meeting , society

Annawārī : Lit pertaining to annas A name given to a method of fixing rent-rates (See III, 47)

Arhar : A pulse The pigeon-pea (*Cajanus indicus*)

Āṭā : Flour, meal

Bāghichā : Garden , orchard

Bājrā · The spiked millet (*Panicum spicatum*)

Bakhar : Also *bākhar* A bullock-hoe or harrow (See IV, 26)

Bandhān : Embankment , dam

Baniā : A merchant, trader, shopkeeper, moneylender Formerly used as a caste name , as such, practically equivalent to Vaisya

Banjāra : A professional carrier of grain, salt, etc , a caste of the same name

Barī barsāt : " The great rainfall " (See I, 31, *n*)

Bejhar : Lit a mixed crop Usually barley with peas or gram (northern India)

* Taken from the *Imperial Gazetteer*

Bhā'ibānd : Lit brotherhood Group of fellow castemen resident in a particular place (See II, 18)

Bhang . Also *bhāng* Lit the hemp plant (*Cannabis sativa*) Its leaves, which are used to make an intoxicating drink

Bhānjgar : A reputable man (village elder) (See III, 6)

Bhog : Lit enjoyment Money , revenue

Bhom : More correctly *bhūm* Soil, land

Bidi · An Indian cigarette

Bigha : A measure of area equal to five-eighths of an acre (See IV, 34, *n*)

Bijā'i : Usually, the portion of seed-corn which the poor may glean from the fields Seed-capacity (See III, 51)

Birādari · See *Bhā'ibānd*

Biswa : A measure of area, one-twentieth of a *bīgha* (*q v*)

Byāh : Marriage , used only of a virgin bride

Cambū : Tamil name for *bājrā* (*q v*)

Chaktarāsh : A settlement term , soil-classifier

Chanā : Chick-pea, commonly called gram (*Cicer arietenum*)

Charas · Resin collected from the flowers of the hemp plant and used as a drug

Chatā'i . A mat , used to express the local jurisdiction of the *birādarī's panchāyat* (See II, 18, *n*)

Chauka . Lit square piece of ground The space in which a Hindu cooks and eats his victuals (See II, 13)

Chauki · Outpost , generally, police post

Chawl : A tenement house in Bombay

Chelā . Lit a servant, a house-slave A disciple , cf *gurū*

Chhoti barsāt . " Small rainfall " (See I, 51, *n*)

Chikan : A method of working flowers on muslin or other cloth , embroidery, needlework , embroidered cloth

Chit (fund) . A savings society in Madras with an element of gambling (See X, 11, *n*)

Chulhā : A fireplace , oven (See II, 13)

Chupatti : More correctly *chapātī* A cake of unleavened bread

Dai : Also *dhai* Nurse , wet-nurse , a midwife

Dāl : Lit split-pea or pulse Usually, a soup or porridge made of peas or pulse

Dastūr-deh : Lit village customs Part of the village record of rights (See III, 44)

Deh A village, in the sense of a collection of houses

Deodar · correctly *dev-dārū* The cedar tree (*Pinus deodar*)

Devasthān A temple (See III, 9)

Doāb : A tract between two rivers (See I, 46, *n*)

Dofasli · Double-cropped used of land in which two crops are grown in the same year (See I, 53)

Dugla : Basket for lifting water (See V, 40)

Dumbā : The fat-tailed sheep (from *dum*, a tail)

Dūn . A valley at the foot of hills, especially the Himalayas

Eki chulhe kā pakkā khāte hain . A phrase meaning "they eat food cooked on a single oven" (as members of the same joint family) (See II, 8, *n*)

Gām, gānw : A village, hamlet, equivalent to *deh* (*q v*)

Gām-balāhi . A village messenger or menial (*balāhī* is the name of a particular depressed caste)

Gameti . Village headman

Gānjā : More correctly *gānjhā* The flowering tops of the hemp plant (*Cannabis sativa*), which are dried and smoked as an intoxicating drug

Garāsi, gandāsi A small chopper

Garbhādhān · Lit conception One of the *sanskāras* (*q v*), the object of which is to invoke a blessing on the consummation of marriage (See II, 52, *n*)

Gauna The ceremony of bringing a wife home to her husband at the age of puberty (See II, 52, *n*)

Gaz : measure of length, about 33 inches Usually translated yard (See I, 57, *n*)

Ghi : Clarified butter

Ghol . A company, crowd, gang, used to express the local jurisdiction of a *birādarī*'s *panchāyat*

Gojā'i . A mixed crop of wheat and barley

Gotra · Lit family, parentage Subdivision of a caste amongst the twice-born (See II, 2, *n*)

Gur : Raw cane-sugar

Gurū · Lit a venerable person A spiritual preceptor, a religious teacher

Hakim · Lit a wise man A physician practising the *Unani* system

Hākim : Lit one who gives orders A judge, magistrate, or government official

Hal : A plough

Halāl : Lit lawful Used to express the "lawful" (Muhammadan) method of killing an animal intended for food (by cutting its throat)

Hasya : More correctly *hansīyā* A sickle

Hina-jātyo : Low tribes (obsolete)

Hina-sippa : Low trades (obsolete)

Ilāqa : Lit estate A name given to the local jurisdiction of a *birādarī*'s *panchayat*

Jāgir : A fief or estate, usually land granted by the State for services rendered, and often revenue-free

Jāgirdār : The owner of a *jāgīr* (*q v*)

Jajmānī : The customary clientèle of an artisan or menial (See II, Appendix I)

Jamābandī A word of many meanings *Jamā* means (1) the rent-roll of an estate, (2) the land-revenue demand payable by a landlord *Jamābandī* means the assessment or settlement of land revenue, but it is now used to describe a register, the nature of which differs in different provinces, sometimes it is the register of holdings as in III, 43, sometimes it is a record of payment of rents by tenants, as in the United Provinces

Janeo . The sacred thread worn by members of the twice-born castes

Jāt, jāti : Lit breed A caste

Jhil · A swamp

Juār The great millet (*Andropogon sorghum*)

Juwār Original meaning uncertain A name used for the local jurisdiction of the *panchāyat* of the *birādarī*

Kabādi A game played by Indian boys, resembling prisoners' base

Kābar · A soil found in Bundelkhand

Kachchā . Lit undressed, uncooked, unripe, immature, unfinished, rough, imperfect It is used of many things, from bricks, food, and wells to houses, roads, and (officiating) appointments Its opposite is *pakkā* (*q v*) (For wells, see I, 39 For foods, see II, 12)

Kālā azār The "black sickness"

Kallar More correctly *kalar* Sterile soil (See *usar*, of which it is a synonym)

Kāmdānī Embroidered muslin

Kankar : Nodular limestone

Kāns . A weed (*Saccharum spontaneum*) (See III, 37 and 50)

Kānūngo . More correctly *Qānūngo* Lit expounder of the laws A title for superior revenue officials who are in inspecting charge of *patwāris*

Karma . Lit work The law of automatic retribution (See II, 15)

Katha · Lit a fable A sacred recitation

Kharbūza : The marsh melon

Khardā · Lit day-book from which the *khataunī* is extracted in some provinces and States, the rent-roll (See III, 10)

Kharif : The crop sown in June and July and reaped in October and November

Khasra . The register of the fields of a village, a field-book (See III, 42)

Khatauni-jamābandi · Lit a *khataunī* is a ledger drawn up from a *khardā* (*q v*) or daybook In the United Provinces it is a register of tenants' holdings The *jamābandī*, or register of payments of rent, has now been combined with it to form a single register

Khewat : A list of the proprietors of a village

Khudkāsht · Lit personal cultivation, land temporarily cultivated by a landlord (For its relation to *sir*, see III, 31)

Khurpā . A weeding tool

Kilki : War-cry amongst the Bhil tribe

Kincob : More correctly *Kamkhwāb* Brocade

Kitābi : Lit scriptural, or possessing a book A Muhammadan term for religions having a divine revelation contained in a book which is recognized in the Koran (See II, 28, *n*)

Kodāli : A pick, pickaxe

Kos : A measure of distance, about 2½ miles .

Kos minār · A pillar to mark the *kos*, corresponding to a milestone

Kul . Lit assembly, family A subdivision of the *gotra* (*q v*) (See II, 17, *n*)

Kulhāri : An axe

Lambardār · A village headman in northern India

Latā-kuntā : A method of fixing and collecting land revenue (See III, 53)

Lāthi : A staff, usually made of bamboo, and often shod with brass or iron, from 6 feet to 8 feet long , the regular weapon of the rustic

Madrasa . Lit a place of study A school or college (Muhammadan)

Mahua · A tree, whose flowers are used for distilling country liquor (*Bassia latifolia*)

Maistry : More correctly *mistri* Lit a mechanic A name given to a jobber in a factory

Maktab : Lit a writing-school A school (Muhammadan)

Mālguzār : Lit revenue-payer Name given to a landlord in the Central Provinces

Māluk maqbuzā : Lit "held by an owner" The name of a class of small proprietors in the Central Provinces (See III, 30, *n*)

Malwa : A village cess in Rajputana

Mamūti : A pick or pickaxe (southern India)

Mār : A soil in Bundelkhand

Matar . A kind of pea (*Pisum sativum*)

Maulvi · A Muhammadan teacher, usually of law , a professor or learned man

Maund : correctly *man* A measure of weight=82 lbs Also a liquid measure=7½ gallons approximately (See V, 3 and 34)

Mauzā : A "village," as an administrative revenue unit (See III, 1)

Mela A fair, usually a religious fair

Mofussil : More correctly *mufassal* Lit separated, divided The country as opposed to the town, especially the headquarters town (*sadr*) (See VI, 7, *n*)

Muāfi : Lit forgiveness Rent-free or revenue-free land

Muāfidār : A holder of *muāfi* (*q v*)

Mukaddam : More correctly *muqaddam* Lit leader Used as a title (*a*) for a village headman , (*b*) for a jobber in a factory

Munsif : A civil judicial officer of an inferior grade

Nidhi : A sort of savings society found in Madras (See X, 11, *n*)

Nukh : A subdivision of the *gotra* in the caste of Bhatiyas (See II, 17, *n*)

Pakkā · Lit cooked, complete, perfect Used as the opposite of *kachchā* (*q v*)

Pāl . A hamlet

Panch . A member of a *panchāyat*

Panchāyat : Lit quintette A court of enquiry or arbitration, usually consisting of five or more members, a name given (1) to the assembly of the *birādarī*, or (2) to the committee of elders which governs a village (See III, 14) (It is also used of other similar committees, e g the committee of a co-operative society is also called *panchāyat*)

Panchāyatghar *Panchāyat*-house, corresponding to the English "village hall" (See XII, 26, *n*)

Panch Parameshwar · A saying "the council is God" (See II, 26)

Pandit Usually (in English) pundit lit learned, wise A Hindu teacher of Sanskrit learning

Parwa : A type of soil in Bundelkhand

Patel A village headman, especially in Bombay and the Deccan

Pāthshālā A Hindu school

Patwāri · A village accountant or record-keeper

Phā'orā A spade, mattock

Pur A water-bucket (leather)

Purdah : More correctly *parda* Lit curtain The custom of secluding women

Rabi : The crop sown in November and December and harvested in March and April, the spring harvest

Ragi · The small millet (*Eleusine coracana*)

Rahdāri Transit dues

Raiyat, ryot Lit a subject A cultivating tenant

Rākar : A soil found in Bundelkhand

Regur . Black-cotton soil

Reh : Lit impure carbonate of soda, but also used of soil impregnated with salt, as a synonym of *usar*

Ryotwāri : Lit appertaining to a *ryot* The land revenue system in which the cultivator pays rent direct to the State (See III, 16)

Samāj : Meeting, assembly, congregation, a society, club

Samjhānā : To explain, to make to understand

San, also **sanā'i** : The flax plant (*Crotalarea juncea*)

Sansāra : The transmigration of souls

Sanskāra : Lit perfection, refinement A domestic rite (of which there are sixteen)

Sapindā : Lit having the same *pindā* or funeral cake A kinsman having a common ancestry according to the rule called *sapindā* (See II, 7)

Sardār : Lit headman, chief, commander , the word is used of headmen of many kinds, e g a head servant A name given to a jobber in a factory or mine (See IX, 19 and 21)

Sarkār : (1) masculine—master, lord , a title of respect (2) feminine—government, ruling authority

Sarpanch : Headman of a *panchāyat*

Satī : More commonly *suttee* Lit a virtuous wife The wife who burns herself with her husband's corpse the ceremony of such burning

Sawā'ī : Lit excess by a fourth, or one-and-a-quarter Interest on advances of seed-grain at 25 per cent

Sāyar : Lit remainder Assets derived by a landlord from other sources than rent and his home-farm (See III, 33)

Sīr : Lit husbandry, agriculture The home-farm of a landlord

Srāddha : More correctly *shrāddha* A Hindu rite in honour of the departed spirits of deceased relatives (See II, 22, *n*)

Sunā'ī : A hearing (of a tale, complaint, etc)

Sundarī : A small timber-tree (*Heritiera minor*) found extensively in the Sundarbans, or "*Sundarīvana*" (Sundari forest) (For this tract, see I, 22)

Sūp : A winnowing scoop

Tahsīl : Lit acquiring, collecting A subdivision of a district in northern India, being the jurisdiction of a *tahsīldār* whose special duty is to collect revenue

Takāvī, taqāvī : Lit strengthening Advances of money made by Government to cultivators, especially under the Land Improvements Act of 1883 and the Agriculturists Loans Act of 1884

Tālūka : Correctly *ta'allūqa* Lit connection, relationship , estate A division of a district in Bombay and elsewhere

Tālūkdār : More correctly *ta'allūqadār* The owner of an estate The name of certain large landlords in Oudh

Tāt : Lit matting A synonym of *chatā'ī* (*q v*)

Tīrath : A place of pilgrimage, especially those on sacred streams , a pilgrimage

Upanayana : Lit bringing near The ceremony of initiation of a twice-born Hindu, constituting the second birth, and including investiture with the *janeo* (*q v*)

Urd : Black gram, a pulse (*Phaseolus Mungo*)

Ūsar : Saline soil (See I, 7)

Vaid : More correctly *vaidya*, commonly *baid* Lit relating to the Vedas , a man learned in the Vedas , a man of the old medical caste of Vaidyas A physician practising the Ayurvedic system of medicine

Varna : Lit colour The name given to the four original classes of Aryan society

Wājib-ul-arz : Lit fit to be represented Used as the name for the record of village customs

Wirān : Uninhabited Used of a *mauzā* that has no inhabited site

Zamindār : Landholder, landlord , originally the name given to revenue-contractors in Bengal

Zamindāri : Lit appertaining to a *zamīndār* , a landed estate That type of land-revenue system in which the landlord collects rents from the *ryots* (tenants) and pays revenue to the State (See III, 16)

Zāt : Lit breed Caste

Indian money —The unit of Indian currency is the *rupee* (*rūpīya*) There are sixteen *annas* in the *rupee* and four *pice* (*paisa*) or twelve *pies* (*pai*) in the *anna* Large sums are expressed in *lakhs* and *crores* (*karor*) A lakh is 100,000 a crore is 100 lakhs The contraction to denote rupees is "Rs " placed before the figure The Indian numerical notation differs from the European , figures are punctuated not in thousands and millions, but in thousands, lakhs, and crores A lakh, for instance, is written 1,00,000, and a crore is written 1,00,00,000 To avoid confusion the words lakh and crore have always been used in this book instead of the corresponding figures

Sums of money expressed in rupees have been changed into their sterling equivalent at the standard rate of 1*s* 6*d* to the rupee At this rate Rs 1 lakh amount to £7,500, and Rs 1 crore to £750,000

In India, rates of interest or other similar rates are often expressed, not in the form of percentages, but of so many annas per rupee Examples are to be found on pages 296 and 297 One anna per rupee is equivalent to 6¼ per cent It is this which accounts for the prevalence of such apparently curious rates as 9⅜ per cent and 18¾ per cent (see page 326)

BIBLIOGRAPHY

Note —This bibliography is not intended to be a list of the authorities consulted by contributors in writing their chapters,' but a course of reading recommended by them to I C S probationers

CHAPTER I

Elementary

1 *Imperial Gazetteer of India*, Vol I, Chaps I–III , Vol III, Chaps I–III, VI and VII Provincial articles in Vols VI-XXIV *
2 Royal Commission on Agriculture, 1928, *Report*, Chaps IV, VIII, X and XII *Appendix to Report* (Vol XIV) *
3 *Cambridge History of India*, 1922, Vol I, Chap I
4 W H Moreland and Sir A C Chatterjee *Short History of India*, 1936, Chap I
5 Sir H Butler *India Insistent*, 1931, Chap I
6 F C Hodson *India Census Ethnography, 1901–31*
7 Public Health Commissioner, *Report* (last available) †
8 *Census Reports*, 1931, Chaps 1–3 (i) India, (ii) Provincial *

Advanced

1 Vera Anstey *Economic Development of India*, 1936
2 B G Sapre *Essentials of Indian Economics*, 1927
3 R K Mukerjee *Foundations of Indian Economics*, 1916
4 R K Mukerjee *Rural Economy of India*, 1926
5 *Indian Journal of Economics*, Vol XIV ‡

* The probationer need only read the article or report relating to his own province

† The report quoted in this book is that of 1935

‡ Contains a number of articles on the population question, written by different Indian economists from different points of view

CHAPTER II

Elementary.

1 *Census Reports*, 1901–1931, Chapters on (*a*) Civil condition (*b*) Religion (*c*) Caste, Tribe and Race (i) India (ii) Provincial *
2 *Census Reports*, Chapter on Sex (*a*) India, 1911–1931 (*b*) Provincial, 1931 *
3 T. C Hodson *India Census Ethnography, 1901–1931*
4 Sir H H Risley *People of India*, 1915

Advanced

5 W Crooke *Natives of northern India*, 1907
6 W Crooke *Religion and Folklore of northern India* (revised by C E Enthoven), 1926
7 J C Nesfield *Brief View of the Caste-system of the North-Western Provinces and Oudh*, 1886

CHAPTER II (*continued*)

Advanced (*continued*)

8 Vera Anstey *Economic Development of India*, 1936
9 J D Mayne *A Treatise on Hindu Law and Usage* (8th edition), 1914
10 E A H Blunt *Caste-system of northern India*, 1931
11 *Tribes and Castes* (various provinces) *

* The probationer need only study the report of the province to which he is attached As regards No 11, each province has its own book dealing with its own tribes and castes, arranged in alphabetical order There is a huge literature on caste and religion, and only a sample selection is given here

CHAPTER III

1 *Census Report*, India, 1931
2 Royal Commission on Agriculture, 1928, *Report*, Chaps I, XII, and XIV
3 Indian Statutory Commission, 1929, *Report*
4 W H Moreland *Agrarian System of Moslem India*, 1929
5 Banking Enquiry Committee, 1930, *Reports*, Chapters relating to agricultural debt (i) Central (ii) Provincial *
6 S N A Jafri *History and Status of Landlords and Tenants in the United Provinces*, 1931
7 Lord Linlithgow *The Indian Peasant* (a pamphlet)
8 Provincial *Administration Reports* (last available) †
9 *Royal Society of Arts Journal*, (*a*) 12th March, 1937 lecture on *Village Government in India*, by Sir S Fremantle (*b*) 9th April, 1937 lecture on *Agricultural Indebtedness in the United Provinces*, by Sir E Blunt
10 Provincial Tenancy Acts *

* The probationer need only study the reports or Act relating to his own province

† Published annually

The probationer is also advised to make a practice of studying the final settlement report of every district to which he may be attached

CHAPTERS IV AND V

1 Royal Commission on Agriculture, 1928, *Report*, Chapters II–VII, IX–XII, XV, XVII, XIX Appendix to Report (Vol XIV) *
2 *Imperial Gazetteer*, Vol III, Chap I †
3 M L Darling *Punjab Peasant in Prosperity and Debt*, 1925
4 Vera Anstey *Economic Development of India*, 1936

* The probationer need only study the part relating to his own province

† An account of older conditions, worth comparing with modern conditions, as described here

There is also a mass of minor literature—monographs, bulletins, pamphlets, and reports, published by the departments, the Reserve bank, and the Central Cotton Committee—which are worth reading as occasion offers , and also the Journal of Agriculture, published by the Imperial Council of Agricultural Research

CHAPTERS VI AND VII

1 Public Health Commissioner, *Report* (last available) *
2 Sir R McCarrison *Food*, 1928
3 Dr W R Aykroyd *Nutritive Value of Indian Foods and the Planning of Satisfactory Diets*
4 Lukis and Blackham *Tropical Hygiene* (revised and enlarged by Lieutenant Colonel H D Stewart), Calcutta, 1931
5 Rogers & Megaw *Tropical Medicine*, 2nd Edition, 1935
6 Bonar *Malthus and his Work*

* Published annually last at present available is the Report for 1935

CHAPTER VIII

Elementary.

1 Educational Commissioner with Government of India *Quinquennial Review* (last available) *
2 Provincial *Quinquennial Reports* (last available) †
3 Indian Statutory Commission, Hartog Committee *Interim Report*, 1929
4 S H Wood and A Abbott *Report on Vocational Education in India*, 1938
5 A Mayhew *The Education of India*
6 Punjab University Enquiry Committee, *Report*, 1932–33

Advanced

7 Calcutta University (Sadler) Commission, *Report*
8 United Provinces Unemployment Committee (Sapru Committee) *Report*, 1934
9 A H Mackenzie & Fazl Muhammad Khan *Hyderabad Government Report*, 1936
10 Government of United Provinces *Resolution* of 8th April, 1934
11 Government of Bengal *Resolution* of 27th July, 1935
12 Sir P Hartog article in *Year Book of Education*, 1932
13 Commission on Christian Higher Education in India (Lindsay Commission), *Report*
14 W Meston *Indian Educational Policy its principles and problems*
15 Sir G Anderson and Bishop Whitehead *Christian Education in India*, 1932

* Last available is that for 1927–32

† The probationer need only study the report of his own province He should also study the annual education reports

CHAPTER IX

Elementary

1 Margaret Read *The Indian Peasant Uprooted*, 1931
2 S G Panandikar *Industrial Labour in India*, 1933
3 *Report* showing action taken on recommendations of Royal Commission (last available) *
4 *Indian Labour Legislation, 1932–7* (Bulletin 61 of Indian Industries and Labour)
5 *State action in respect of Industries, 1928–35* (Bulletin 57 of Indian Industries and Labour)

Advanced

6 Royal Commission on Labour in India, *Report*, 1931
7 *Industrial Disputes in India, 1929–36* (Bulletin 62 of Indian Industries and Labour)
8 *Statistics of Factories* subject to the Factories Act, and *Note* on the working of the Act (last available) *
9 *Note* on working of Indian Trade Unions Act, 1936
10 Chief Inspector of Mines, *Report* (last available) *
11 D H Buchanan *Development of Capitalistic Enterprise in India*, 1934 (especially Chaps 14–18, which deal with labour)
12 A Mukhtar *Trade Unionism and Trade Disputes in India*, 1935
13 A G Clow *Workmen's Compensation*, 1937 (a commentary on the Act)
14 Vera Anstey *Economic Development of India*, 1936
15 Banking Enquiry Committee, *Reports*, 1930, Chapters on Small-Scale Industries (Central and Provincial) †

* Annual publications

† The probationer need only read the provincial report of his own province

Nos 1–4 are based on, or directly related to No 6, No 5 deals with small-scale industries

CHAPTER X

Elementary (*a*) *General*

1 A H Enfield *Co-operation its Problems and Possibilities*, 1927
2 C R Fay *Co-operation at Home and Abroad*, 1936

(*b*) *Indian*

3 E M. Hough *The Co-operative Movement in India*, 1932.
4 C F Strickland *An Introduction to Co-operation in India*, 1938

Advanced (*a*) *General*

5 H Faber (translated H Hertel) *Co-operation in Danish Agriculture*, 1931
6 Horace Plunkett Foundation *Survey of Agricultural Co-operation in Ireland*, 1931
7 Horace Plunkett Foundation *Year books of Agricultural Co-operation*, 1927–38
8 T Odhe (translated J Downie) *Finland, a Nation of Co-operators*, 1931
9 C F Strickland *Co-operative Movement in China*, 1936
10 United States Government's Inquiry on Co-operative Enterprise in Europe, *Report*, 1937
11 K Walter *Co-operation in changing Italy*, 1934

(*b*) *Indian*

12 (Maclagan) Committee on Co-operation, *Report*, 1915.
13 H Calvert *Law and Principles of Co-operation*, 1933
14 Ata-ullah *Co-operative Movement in the Punjab*, 1937

Note—A number of special reports by cooperators with Asiatic experience will repay study e g, by R Boyd, W K H Campbell and L D Gammans on tours in Europe, and by C F Strickland on tours in Malaya, Nigeria, Palestine, and Zanzibar

CHAPTER XI

Elementary (*a*) *General*

1 Mrs H A L Fisher *The Housewife and the Town Hall*, 1934.
2 J P R Maud *Local Government in Modern England*, 1932

(*b*) *Indian*

3 T B Russell *Principles of Local Government in England and their Application to India*, 1930
4 J G Drummond *Panchayats in India*, 1937

Advanced (*a*) *General*

5 J J Clarke *Local Government of the United Kingdom*, 1936
6 Mrs H A L Fisher *The Citizen*, 1927
7 G M Harris *Local Government in many Lands*, 1933
8 L D White *The City Manager*, 1928
9 T G Williams *The Peopled Kingdom*, 1937

(*b*) *Indian*

10 G M Harris *Westward to the East*, 1935
11 *Review of Local Self-Government in Bombay*, 1933
12 G N Joshi *Indian Administration* (Part II), 1937
13 N C Roy *Village Self-Government in Bengal*, 1932
14 M Venkatarangaya *Local Boards in Madras*, 1934
15 Legislation relating to local bodies *
16 *Reports on Working of Village Panchayats* (last available) *

* A probationer need only study the legislation and report of his own province The *Journal of the Institute of Local Self-Government* (quarterly) at Bombay contains critical and descriptive articles

CHAPTER XII

Elementary (*a*) *General*

1 E Macadam *The New Philanthropy*, 1934
2 A G Street *Farmer's Glory*, 1932

(*b*) *Indian*

3 F L Brayne *Better Villages*, 1937
4 D S Hatch *Up from Poverty*, 1932

Advanced (*a*) *General*

5 M H Tiltman *English Earth*, 1935
6 Anonymous *England's Green and Pleasant Land*, 1931
7 J E Courtney *Country Women in Council*, 1933
8 Mrs G Williams *The State and the Standard of Living*, 1936.
9 T S Simey *Principles of Social Administration*, 1937
10 National Council of Social Service *Public social services* *

(*b*) *Indian.*

11 M L Darling *The Punjab Peasant*, 1932
12 N Gangulee *The Indian Peasant*, 1935 (chiefly Bengal)
13 A P Pillay *Welfare Problems in Rural India*, 1932 (chiefly southern India)
14 Brayne and Ryburn *Socrates at School*, 1936
15 *Manual of Rural Development* (United Provinces), 1935
16 C F Strickland *Rural Welfare in India* (1) 1932 (2) 1934 (3) 1936

* To be read with *Voluntary Service* (the annual report of the N C S S) and their monthly *Social Service Review*

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NOTES —(1) Part I of the Index relates to subjects Part II to proper names

(2) All Acts will be found under 'Acts'

(3) All books mentioned or quoted will be found under 'Books'

(4) References are to pages, the letter *n* after a page indicates a footnote on that page

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