The Cure of Stammering, Stuttering

AND OTHER

Functional Speech Disorders

By

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WITH A SPECIAL CONTRIBUTION BY

Lord BADEN-POWELL of Gillwell

Revised and Enlarged

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This Edition is inscribed,
with admiration and gratitude,
to my valiant champion,

W. REID McGLASHAN, Esq.,
M.A., M.B., D.P.M.,
Physician Superintendent, Mental Health
Services, States of Guernsey,

who chose Duty in preference to Liberty.

CONTENTS

	PAGE
Dedication	3
Preface To First Edition	5
Second Preface	6
Preface To Revised And Enlarged (Fourth) Edition	7
Preface To Revised And Enlarged (Fifth) Edition	8
Special Contribution By Lord Baden Powell	10
CHAPTER I	
Kinds And Causes Of Speech Disorder	11
CHAPTER II	
Dextrality And Sinistrality	22
CHAPTER III	
"Remedies"—Spurious And Genuine	30
CHAPTER IV	
Physical Curative Procedures	39
CHAPTER V	
Mental Curative Procedures	51
CHAPTER VI	
Some Penalties Of Voice Abuse	64

PREFACE TO FIRST EDITION

Of functional speech-disorders the late Sir Frederick Mott, F.R.S., one of the greatest pathologists and neurologists, and physician to His Majesty King George V, wrote that "they are all curable by physio-psychotherapy",—in other words, by the employment of physical and mental methods, properly chosen and combined.

That the cited judgment was correct I am convinced as a result of thirty years' experience, war-hospital and other, during which I have spared no pains in the endeavour fully to understand each case I have treated, have thrown cut-and-dried formulæ to the winds, and have adjusted—as far as has lain in my power—procedures to the types of difficulties to be overcome.

On a few previous occasions I have dealt briefly with the subject now under consideration, and in rather more detail in a short series of articles which appeared in *Health for All* for 1928. From that series (with the editor's kind permission) the wording in certain parts of this book is taken without further acknowledgment.

My thanks are due to Lord Baden-Powell for the characteristically succinct remarks he has kindly contributed to this work; also to Mr. Eustace Miles, M.A., to Mr. A. C. Stevenson, M.Sc., Lecturer in Applied Mathematics at University College, London, to Mrs. A. C. Stevenson, L.R.A.M. and to my younger son, Harold, for various kind services.

August 6, 1930 J. Louis Orton

PREFACE TO THE SECOND EDITION

INDEPENDENT of any merits this little book may possess, the success that has attended its publication has been enhanced by the vision and enterprise manifested by my publishers and by the educational authorities, throughout the British Empire, who have sponsored it. I take this opportunity of cordially thanking them.

I desire, also, to express publicly my indebtedness to Sir James Crichton-Browne, M.D., LL.D., D.Sc., F.R.S. for an appreciative, informative and suggestive letter which, whilst raising some interesting questions in physics and biology (questions to which I am now devoting attention), also emphasises the extreme importance of paying due heed to right-and-left-handedness—the subject of my second chapter. "Symmetry," he remarks, "is a very attractive theory, but it holds only to a limited extent in nature, and the right side bias pervades the nervous system. Seventy-five per cent. of boys begin by kicking off with the right foot. My calculation is that about five per cent. of human children are born left-handed, and Darwin made the curious observation that just five per cent. of hops twine from left to right, contrary to the specific rule of twining from right to left. A great majority of lobsters are right-handed."

In deference to Sir James I should add a few lines of further elucidation regarding the attitude taken in my second chapter. I had in mind the apparent tendency of nature for the week to "go to the wall." I reflected that when eyes (or ears) are conspicuously unequal in functional capacity, the tendency (unless for near distance) is to disuse the inferior organ. I observed a corresponding tendency in persons conspicuously right-handed or left-handed. Knowing the value of tempora-

ry covering of a stronger eye in order to lead to functioning of an eye the vision of which has been suppressed, and reflecting that long continuance of that procedure would tend to have disastrous consequences, I concluded that, not disuse of the better hand but, additional use of the worse hand would prove a prudent measure. My experiments convinced me that the prevalent tendency to neglect the inferior hand has a cumulative effect; and my aim was, not to induce persons to attempt the impracticable feat of attaining complete ambidexterity (it is noteworthy that Lord Baden-Powell writes his letters with his left hand) but, to prevent the proper functions of the inferior hand from being *usurped*.

September 3, 1941 J. Louis Orton

PREFACE TO REVISED AND ENLARGED (FOURTH) EDITION

During my American tour in 1937, I found Press representatives and broadcasting officials, to say nothing of the general public, desirous of learning first-hand my views on a variety of matters—especially the treatment of speech-disorders. I suppose that was hardly to be wondered at, for the New York *Herald-Tribune* (followed by a considerable section of the general Press) announced that I was "the most famous authority in the world on stammering." Naturally, other practitioners were desirous of collating the results of their experiences with the results of my own, and I acquired some data of importance to the subject. I learned, for instance, that in Elizabeth, New Jersey, the whole of the school population of fifteen thousand were induced, tactfully, to

use the right hand in writing—whether the children were right- or left-handed—and that not one of the children became a speech-defective. Reports of insurance companies and industrial boards in the United States indicate that claims for injury to a hand or arm are not associated with accompanying claims for speech-disorder. Those facts were consistent with the evidence of Professor Bestelmeyer of Munich, who cited a group of one-thousand-two-hundred one-armed persons, among whom was not a single case of stammering or stuttering; and have a strong and corroborative bearing upon the contents of my second chapter, Lord Baden-Powell's Special Contribution to this book, and my preface to the Second Edition. The consensus of medical opinion in the United States is now in substantial agreement with my own.

Many inquiries having been made regarding my psycho-physical method of voice cultivation, I beg to refer readers to the end of this volume—where they will find a reference to my latest book, *Voice Culture made Easy.*

February 10, 1941 J. Louis Orton

PREFACE TO REVISED AND ENLARGED EDITION

In preparing this edition a few additions, mainly suggested by consultations with sufferers, have been made in order to render the book as useful as possible. I am gratified, however, to find that prior editions have helped numbers of sufferers to combat successfully their own or others' speech disorders, and, therefore, have helped

to lessen some of the most distressing though not necessarily very dangerous occurrences of wartime.

J. LOUIS ORTON

"KINGSTHORPE,"
HAWTHORN DRIVE,
WILLOWBANK,
UXBRIDGE (MIDDLESEX)
January 16, 1943

SPECIAL CONTRIBUTION

BY

LORD BADEN-POWELL OF GILLWELL RELATING TO THE SUBJECT OF CHAPTER II

The Boy Scouts' Association,
25, Buckingham Palace Road,
London, S.W.I.
July 11th, 1930

Ambidexterity has not, in my case, resulted in stammering or congenital idiotcy—so far as I can judge personally. Nor has it done so in the case of my children, two of whom write and draw with the left-hand while the third is right-handed. They were allowed to make their own preference in the use of hands.

I came across a schoolmaster lately who pointed with pride to the fact that he let his pupils use their natural bent in all that they did. I rather discounted his enthusiastic statement when I remarked that without a single exception, the whole of them were writing with the right hand.

Parents sometimes forget to give full play to their children in the direction of ambidexterity, and yet it is a most valuable accomplishment whatever may be their ultimate line of life, but more especially if that line runs in the direction of surgery, mechanics, or fighting!

BADEN POWELL

CHAPTER I

KINDS AND CAUSES OF SPEECH DISORDER

Voice and Speech

Some years ago a Mr. Strathie Mackay called to see me in order that I might listen to a feat by which he was exciting considerable attention. His throat was not abnormal in appearance, and habitually he sang in a normal, but not skilful, manner. However, he could perform what had been described as singing a tenor and baritone duet all by himself. Personally I should say that he sang a melody and simultaneously accompanied it with a sort of "seconds." That he tackled his feat with a *will* may be inferred from his veiled complaint that having only one pair of lungs he found "providing wind enough for two voices" "a bit of an effort." Nevertheless, the feat was sufficiently novel and suggestive to lead to my testing whether double voice was a potential accomplishment of persons with normal throats. The results satisfied me that it was; and that assurance, coupled with other data, increased some doubts I held regarding certain commonly accepted points, in vocal physiology, with which this is not the place to deal. I shall not overstep the mark, however, by saying that voice is commonly originated by the vibration of the *true vocal cords,* two bands of elastic tissue (partly muscle) in the larynx and just behind "Adam's Apple"; that the cords are well-separated during ordinary breathing, but approach, and sometimes overlap, when voice is produced; that the cords are made to vibrate by pressure of breath; and that breath-pressure

in combination with varying degrees of stretching, and sometimes also overlapping, of the cords account for variations of pitch.

Speech necessitates voice or whisper as the basis, and involves movement of the jaws, soft palate, tongue, lips, and teeth, whereby voice or whisper is moulded, before issuing from the mouth, according to the positions these parts then assume relative to each other. There should be, and necessarily is in a considerable measure, a harmonisation, or co-ordination, actions often needing simultaneous performance.

So complicated is voice, even without articulate speech, that the number of single and combined movements of which the muscles of the larynx admit reaches a total computed at upwards of sixteen thousand!

Organic or Functional

Organic cases of speech disorder are results of *malformation, disease, or injury, of the vocal or the articulating* organs, or of a brain centre, or brain centres, or other part of the associated nervous mechanism. Cases are *functional* when the disorders are not due to organic causes, but to interference with appropriate action.

To the category of organic cases belong paralysis or straining of laryngeal muscles, warts on the vocal cords, enlargement of the tonsils, polypus, cleft-palate, hare-lip, extremely short tongue, and occasionally, tongue-tie.

Some cases that are assumed to be organic are not so. For instance, a person slightly tongue-tied may be expected to speak badly, and yet may be capable of speaking well. I myself am tongue-tied; but being unaware of that fact when a child, I overcame any difficulties of pronunciation that occurred. When at last the tongue-

tie condition was discovered, a wag expressed the opinion that in my case the tying was at the middle, and that my tongue wagged at both ends! Ignorance as to the triviality of slight tongue-tie not infrequently leads parents to instil ideas of incompetency where it does not potentially exist.

The operation for the removal of the tongue-tie condition has been performed from time immemorial, and was mentioned by Aristotle and Celsus. One wonders whether the ancients were as fond of the operation as are many moderns. The majority of children upon whom it is performed do not need it; its slight nature, however, renders many surgeons willing to accede to the ardent promptings of guardians equally well-meaning and mistaken

Gravely organic cases of speech disorder are sometimes incurable. In some cases a skilful surgeon may effect a cure; and in some instances appliances are of *much service.*

Certain cases of speech-disorder are at first functional but become organic. They are particularly concerned, in whole or in part, with abuse of the bodily parts specially called into action in voice and speech; consequently, they demand specific vocal therapy for the effecting of complete and permanent cure. More will be said regarding them later in this book.

Language—human and other

Some kinds of birds can be taught to pipe tunes, and parrots to articulate. Monkeys, birds, and certain other sentient beings, seem to communicate with one another by species of language—of very limited range, of course. Buckman claimed to have distinguished twelve different words in the language of fowls, half a

dozen or so in the mewings and scoldings of cats, and at least five contained in the conversation of rooks. He noted *ark, wa, waor, ah* and *awa.* The wild fowler, by learning and imitating the calls of different species of birds, is able to bring his prey within range of his gun. Dogs unmistakably express by different tones their states of feeling. Human beings, however, employ sounds to express *judgments;* and even the simplest judgment is based upon innumerable experiences the memory of which is stored away in the brain and recalled by association.

Language admits in a measure of two great divisions, viz., the language of *emotions* (which consists of tones, looks and gestures) and the language of *ideas*—which consists of words. The progress of mankind is particularly bound up with the language of ideas, for through it intelligent co-operation is practicable.

Intelligible and intelligent speech is impracticable until many actions which at first require conscious thought and intention have become habits. Instinctive or random exercise of the organs of speech is the first step towards a child's learning to talk. Under the guidance of hearing, meaningless articulation follows. Then, through growing observation and reflection, there comes some understanding of the signification of articulate sounds or spoken words.

Finally, speech is employed intelligently.

Type of Aphasia

If a child fails to speak at the proper stage of its general development, the weak link usually lies either in the sense of hearing or in the brain; if in the brain, but without paralysis of the speech organs, speech eventually occurs, but marked articulatory defects are retained.

The original trouble is technically termed "congenital *dysphasia*" or "*aphasia*"—"aphasia" inferring that the affection is in one or more of the nervous centres which preside over the speech organs and over the faculty of language as apart from speech.

In congenital deaf-mutes speech may be achieved by attention to the vibrations of the larynx and the skull, and to direct practice of the organs of articulation; but in such cases deficient control over the laryngeal muscles remains apparent.

Words when seen, or heard, or spoken, habitually awaken the memory of former stimuli. Interference with the language mechanism, apart from mere voice, causes aphasia that may be either *motor,* or *sensory,* or both. *Motor* aphasia is characterised by inability to perform the muscular movements essential to speech. *Sensory* aphasia may be characterised by word-blindness, or word-deafness, or both. In word-blindness,though vision may be perfect, the words are meaningless inasmuch as there is lacking the power of associating the written or printed symbol with past stimuli. In word-deafness, though hearing may be perfect, what is heard is utterly unintelligible to the sufferer. Sensory aphasia is necessarily accompanied by partial mental deficiency, most marked in the case of word-deafness. The most common form of aphasia, combines the sensory and motor varieties Where the brain-centres concerned with meaning are intact, motor aphasia, though of organic origin, may be remedied to a considerable extent.

Effects similar in manifestation to those due to destruction of brain-centres can occur through those parts not functioning. For example, one type of functional aphasia is characterised by inability to recollect required words, but without loss of the power of understanding

what is expressed verbally. Another type consists in the lack of control that should be exercised over the motor centres.

Functional aphasia was common in military hospitals. In many instances emotional shock had caused dissociation of brain centres, and made the soldiers affected unable to speak, laugh, cry, or even cough aloud. They had literally been made "dumb with fear." That their complaint was *functional* mutism was clearly apparent in many cases inasmuch as, when asleep, the sufferers would shout out and call to their companions. Though they could not talk, they could write intelligently.

Other war hospital patients had functional *aphonia;* in other words, although unable to use voice they could whisper. Many civilians were similarly affected through air-raids. However, functional aphonia is often a result of believing that a temporary hoarseness, due to congestion of the larynx, persists after it is well.

Stammering, stuttering, tremulousness, and hesitating speech, sometimes all combined in a single case, were very common in war hospitals.

Stammering and Stuttering Differentiated

The word "stammering" is sometimes given a very wide application. When rightly employed the word is used in reference to a condition which is absolutely opposite to stuttering, though both defects may exist in the same person.

In stammering, one or other part (sometimes more than one part) of the vocal apparatus is spasmodically closed and the sufferer ineffectually attempts to make it open; in extreme cases, the exertion is so pronounced that the face becomes first red and afterwards blue, the veins visibly swell, and the convulsive movements may

spread to the entire body, until asphyxia seems threatening, when the patient relinquishes his attempts at speech. In slighter cases, after a period of struggling, the spasm is eventually followed by a sudden opening of the parts and the production of the required sound. On the other hand, in stuttering there is not difficulty in producing the sound attempted, but in terminating it.

To put the matter another way:—If a person in trying to say "two" cannot for a time do so, and in the attempt to succeed press his lips together tightly, he is stammering; if he say "t-t-t-two" instead of "two," he is stuttering. Of course the difficulty may be in connection with some sound other than that of *t*, and in some instances (of a type commonly met with in war hospitals) the difficulty is over initial vowel sounds.

Characteristics of stammerers and stutterers

Some persons both stammer and stutter. Exclusive stutterers are usually shy and reserved, whereas stammerers, whether "exclusive" or otherwise, are usually impulsive and, potentially, are fluent and persuasive talkers. Stammering is usually preceded by stuttering which the sufferer has made energetic–but diffident and, therefore, wrongly-directed—attempts to overcome. Stammerers and stutterers resemble each other, it should be observed, in being, as a class, excessively impressionable and readily confused. Nevertheless, a propensity to mirth may persist in showing itself, as Charles Lamb evidenced. On one occasion he, when poor, entered a shop and asked in his stuttering way for sixpenny-worth of cheese—of which commodity his sister and he were fond. The shopkeeper sorted out a particularly maggoty piece and was about to put it in a piece of paper when Lamb protested. "D-d-d-don't trouble to wrap

it up," he said; "t-t-t-tie a piece of string to it, and it will follow me."

Among British persons of genius who were stammerers or stutterers in addition to Charles Lamb, Havelock Ellis mentions Bagehot, Robert Boyle, Curran, Croker, Erasmus Darwin, Dodgson, Mrs. Inchbald, Charles Kingsley, Maginn, Priestley, Shiel and Sidgwick. Charles Darwin would stutter occasionally. At the other extreme of the mental scale, of mentally-deficient children 75 per cent. are bad or impossible talkers and 35 per cent. evince absolute infirmities of speech. Sometimes children evince a marked inaptitude for speech, and, from an apparently trifling cause, may develop a pronounced stammer and stutter.

The jumbling speech that is apt to accompany alcoholic intoxication is well known; the effect of "strong drink" on the brain and nerves makes impracticable the complex actions essential to perfect speech. In a considerable percentage of cases of stammering and stuttering a predisposition to neurotic disease exists; and almost invariably there is considerable irritability of the nervous system. Defective speech is sometimes one of the modes in which chorea (St. Vitus' Dance) is manifesting itself. Stuttering occuring in any one without previous speech impediment may be connected with brain disease.

Of infants born with visible tails, the immense majority are females. Why? Apparently, no one has yet discovered,—nor just why the only speech-disorder more prevalent among females than males is functional aphonia. There is only one female stammerer or stutterer to three male persons similarly affected, and the majority of the females stutter. Stammering men frequently have very fluent sisters; but I believe that in such instances the males come within the category of the potentially

fluent. The difference lies in the mental constitution. Does not a proverb assure us: "Man keeps his word, woman her dictionary"?

Predisposition and actualisation

Speech being an exceedingly complex acquisition, considerable time necessarily elapses before all the co-ordinations essential to proper speech can be established. Slight tendencies to practically every kind of functional speech disorder are observable in normal infants. When however, a marked predisposition to stammering or stuttering is inherited, a lack of aptitude for speech is sometimes palpable during infancy, and may gradually develop into pronounced speech-disorder. More often, however, the defect appears suddenly, not infrequently after whooping cough or measles, but most often after a fright has been experienced. However, debility of any description is liable to be the exciting (as distinguished from the predisposing) cause of the defect.

When the speech disorder proceeds from debility, correct speech may be resumed alongside restoration to general health. Often, however, before the original debility has departed the speech-defect has become, through custom and expectation, a deeply-rooted habit.

Many a life is ruined through the rash assumption that stammering and stuttering are hereditary; the most that one can inherit is a predisposition, and the predisposition can be eradicated, or may only show itself as a momentary difficulty such as can confront anyone through nervousness or excitement. Although, on an average, one out of every three thousand persons belonging to civilised communities is an inveterate stammerer or stutterer or both, and although in one-third of the cases the sufferer has at least one near relation similarly afflic-

ted, many speech-defectives became such because they assumed that they were exhibiting a family propensity. Persons who have near relations who suffer from speech disorder are liable to view a chance occurrence as the beginning of an inevitable habit. Indeed, although the assumption of speech incompetency is not (though sometimes asserted to be) the only cause of stammering and stuttering, it is often the main, and in some cases the only, cause of their continuance. Further, what is often ascribed wholly to imitation, resulted in part from expectation. How often children have been told: "If you are not very careful, you will become a stammerer" (or "stutterer"); "people who stammer worst have got into the habit through mimicry!" If a religious turn be given to the warning, its result is apt to be doubled.

"Reversed effort"

Many cases of speech disorder connected with the War of 1914-18 were due to continued attempts to avoid thinking about unpleasant experiences. The persistence of the recollection led to hesitation in speech, and sometimes to stammering, stuttering, or even worse. What was due to hindering mental preoccupation in the first place, gave rise to a (growing) expectancy of the dire effects that consequently occurred. The symptoms manifested were results of a kind of panic which, as it were, fed upon the troubles it created.

Many pre-war stammerers and stutterers who were made worse by service at the front were passed for service because their speech-defect showed itself intermittently only, and, under some circumstances *wouldn't* show itself, the desire that it would being made non-effective by the fear that when actually useful it wouldn't. In other instances, persons of the same class, but anxious to

serve at the front, could not hide their speech-defect, being prevented by intense desire combined with fear of failure. The illustrative story of a would-be soldier who later consulted me may bear telling once more.

"The doctor won't pass you," declared the sergeant; "you are marked 'Medically unfit'—he says you stammer."

The would-be soldier was indignant:

"Stammering isn't being medically unfit," he protested.

"Perhaps not," commented the sergeant; "but if your company were stationed in the park, and when you were walking out you didn't answer the sentry's challenge, *you very soon would be* medically unfit,"

A crucial point

A question I ask many speech-defectives is: "Do you always stammer or stutter if you try to speak when alone?" (Few persons are unable to speak fluently to themselves—or to pet-animals when alone with them.) "If you do not," I say, "is not the fact clear that the first step towards cure should be the ascertainment of why you stammer or stutter at some other times?"

A bad stutterer went to a "specialist," and, after six months' tuition and arduous practice, had learned to say very distinctly: "Peter Piper picked a peck of pickled peppercorns." His friends congratulated him on the achievement. "Yes," he said doubtfully, "but it's s-s-s-such a d-d-d-damned d-d-d-difficult remark to w-w-w-work into an ordinary conversation."

If, as frequently happens, the sufferer be "drilled" in the pronunciation of sounds that he or she can pronounce except when under stress, what conceivable advantage

can accrue—unless the sufferer be very dense?—and speech-defectives who consult one are rarely that!

CHAPTER II

DEXTRALITY AND SINISTRALITY

The cerebrum

From fish up to man the ground-plan of the nervous system is identical, though, corresponding with the degree of intelligence, there is corresponding proportion and complexity of the various parts. Among mammals there is an almost complete series of gradations from brains a little higher in character than that of a rabbit to brains immediately below that of man. The most striking anatomical distinction between a normal human brain and the brain of an anthropoid ape is the enormous preponderance of the cerebrum, or brain proper; almost solely the greater size is due to that part which occupies the cranial vault and gives to the human skull its dome-like shape. In animals other than man, the lower parts of the brain (the cerebellum and the brain-stem) are relatively more developed than is the cerebrum, and have proportionately greater importance. In any normal animal, the removal of the cerebrum makes the response to a stimulus simpler, the memory records being absent. Occasionally, a human monstrosity is born that has no cerebrum, and which is therefore incapable of thought: it can nevertheless breathe, cry, suck, and swallow, in consequence of the presence of the brain-stem. In imbeciles the cerebrum is insufficiently developed; in demented persons it has deteriorated and in part perished.

The cerebrum consists of two halves, called respectively the *right* and *left* hemisphere, which are separated from each other by a deep cleft. The surfaces are arranged in folds, termed "convolutions," of "the grey matter" of the brain, which grey matter is composed of nerve cells and is the source of mental activity. The convolutional arrangement economises space.

In the lowlier forms of animal life the right and left hemispheres of the cerebrum have the same convolutional pattern, but in the anthropoid apes there is some lack of symmetry. The divergence is observed to increase as one passes to higher and higher types, and reaches its maximum in civilised man. Corresponding to these differences of form (but not of weight) in the two cerebral hemispheres, are differences of function.

The speech-centre

It has long been observed that injury to one side of the brain causes paralysis on the opposite side of the body. The explanation is that the nerves proceeding from either side of the brain cross one another at the medulla oblongata, just above the spinal cord. Marc Dax, a French physician, a book by whom was published in 1799, seems to have been the first to observe that disease of the left half of the cerebrum was associated with loss of articulate speech. From this discovery was later established the fact that in right-handed persons the executive portion of speech is particularly associated with the left cerebral hemisphere. Later it was shown that when left-handed persons, were paralysed on the left side, by disease of the right hemisphere, they lost the power of articulate speech. In 1861, Paul Broca, a French surgeon, anatomist and anthropologist, ascertained that destruction of the third left frontal convolu-

tion prevented, in a right-handed person, intelligible speech but not necessarily the understanding of spoken or written language. In a left-handed persons, *Broca's convolution,* as the part is now called, is situated in the right cerebral hemisphere. Voice is always represented in both hemispheres.

The origin of dextrality

In humans, right-handedness is usual among the uncivilised as well as the civilised, and was as universal in ancient times as it is at present. What is the significance of right or left-handedness, or, to express the differentiation technically, *dextrality* and *sinistrality?* Sir Charles Bell, in his treatise on *The Hand,* stated (in 1832):

"For the conveniences of life, and to make us prompt and dexterous, it is pretty evident that there ought to be no hesitation which hand should be used, or which foot should be put forward; nor is there, in fact, any such indecision." Sir Frederick Mott put forward and extended the like argument as an explanation of the specialisation of function. But is it valid? What of the lower animals? Do not many of them prove very expert in the use of four limbs—in self-defence, for instance? And did not Sir Charles Bell tacitly assume that a choice of limb has to be *consciously* made, unless nature has decided the matter beforehand? But the trained boxer gives special attention to the culture of the naturally less dexterous arm, and (as Sir Charles Bell himself pointed out) a trained dancer is "obliged to give double practice to the left leg."

The tendency to right or left-handedness (and leggedness) may be either inborn or may depend upon the advance made in the development of one or other half of the brain; but in either case it is constitutional.

The tendency may be observed in children of eight or nine months of age who endeavour to lift an object situated sufficiently far away to need reaching-for.

Looking at the matter from the stand-point of Evolution, the following are conclusions at which I have arrived:—In a perfectly ambidextrous creature there is no language of ideas. Anthropoid apes show, as before remarked, very little difference in the convolutional pattern of right and left hemisphere. With the development of language in primitive man, one side of the brain was favoured, and the corresponding (i.e., opposite) side of the body was also favoured, and thus became more "capable." The right hand, usually, was that which was consequently used for writing; and writing, as symbolic language, more than any other form of manual skill is connected with the speech centre.

Ambidexterity versus unidexterity

If during adult years the inferior hand be exclusively adopted for writing, the effect is not enough to disorder speech seriously; but if the change be made during childhood, the harmful effects may be very pronounced, especially if one hand is much inferior in power and dexterity to the other. However, it does not appear that typists (even if young children) are any more liable to speech disorder than are pianists, violinists, and other instrumentalists. What I venture to describe as dangerous is the suppression of the activity of the superior hand. It does not appear that the speech of more than one school child in six is seriously, if at all, affected by writing with the inferior hand; but if there is any marked difference between the vigour of the two sides, stammering or stuttering, or even worse, is favoured, and may actually occur where there is a predisposition or

marked nervous irritability. Some right-handed children who write with the right hand, and some left-handed children who write with the left hand, alike stammer and stutter, or otherwise suffer from functional speech disorder; but more children so suffer who are debarred from writing with the superior hand, whichever it may happen to be. Added to the initial difficulty, there have to be taken into account the vexation, anxiety, diffidence, and the consequently cramped attention, results of having to work "against the grain," which in themselves are often the exciting causes of stammering and stuttering. The mental and physical habits thus engendered must not be ignored when attempts at cure by re-change of hand for writing are adopted. Out of ten cases treated by re-change of hand, and reported by Dr. P. B. Ballard, not one was declared perfectly cured—notwithstanding the indirect, and perhaps direct, suggestion that I assume was at work.

Some children are far more right- or left-handed than others. In what may be described as a right-handed environment, an inclination must be strong to persist. How many pre-potently left-handed children are made "right-handed" by imitation or design—even from the cradle? And what are the mental effects?

Even when speech is not seriously affected, the working "against the grain" can be, and not infrequently is, the origin of an "inferiority complex." Experience justifies me in affirming that, indirectly, lack of efficiency in driving a motor-car sometimes results from the enforced employment of the inferior hand—in ordinary life—in place of the superior; and that the loss of fingers or even arms of persons—especially young ones—manipulating machinery has resulted from the same error.

I cannot emphasise too strongly the fact that *constitutional* right-handedness and left-handedness persist throughout life, as is indubitably evidenced by an experiment which I devised (from actual observation) and which evinces the extent of the aptitude for co-ordination of speech-organs and hand, even though the potentially inferior hand has been used in writing from infancy.

A suggestive case

In my experience have occurred circumstances from which it may be inferred that infirmities of speech that bear the semblance of lack of intelligence may sometimes be consequences of left-handed children, previously apt of speech, having been forced to use the right hand instead of the left.

One case, equally sad and suggestive, that was referred to me was that of a boy of six years and four months. His mother evinced some tendency to left-handedness, and his paternal grandfather was a left-handed blacksmith. At three-and-a-half years of age the child was a fluent speaker and able to write fairly well. He was left-handed, however, and his parents set out to eradicate the tendency. The child became mentally confused, and when four years and four months of age had almost entirely lost the capability of expressing his thoughts in speech. The child might complete, rightly or wrongly, a simple statement started by someone else as a suggestion, but to take the initial step was impracticable. Nevertheless, incoherent babbling of phrases and sentences, and parts of them, and even snatches of songs, occurred. The boy could understand most of what was said to him—and some that was not intended for his ears. Being unable to express himself in speech, and apparent-

ly craving to make his presence felt, he made a hobby of screaming. When consulted about this boy, I found indisputable evidence that, though backward and abnormal, he possessed the *ingredients* of an intelligent mind. The endeavours of his parents had been successful in the sense that he had become partially "right-handed." He not only "wrote" and drew, but preferred to reach and lift, with his right hand, but his parents informed me that he had used his left hand with far more skill. I saw him three times in all, but also instructed his parents with regard to dealing with him. My advice was evidently followed conscientiously; he made definite improvement (beginning, early, to form sentences on his own account), and I ventured (rightly) to anticipate that, with time and patience, he would completely recover. His general health was good.

Freedom essential

I have referred to "cramping of attention" as concerned with speech disorder. It is a matter with which *I* dealt at length in my book on *Rational Hypnotism*, to which I beg to refer readers who desire to pursue the matter further. I should, however, remark here that the assumption made by some that attention cannot be given to more than one thing simultaneously is incorrect; were it correct, to compare would be impracticable. In reality, attention can be either contracted and cramped, or expanded (comprehensive) and mobile; and the comprehensive and mobile variety is the more effective, and therefore suitable for feats of ambidexterity. Experiments instituted by me, and into which I entered, seem to show that when attention of the right kind is employed, no harm, but considerable good, can result from the cultivation of a considerable degree of ambidexterity.

If a left-handed child be allowed full scope for development, self-confidence, and therefore speech, is favoured. It is observed that left-handed children, *allowed* to remain so, appear to be more intelligent, on the whole, than are average children. That stupendous genius Leonardo da Vinci was left-handed. Sir Edwin Landseer could simultaneously draw two things, e. g., he could sketch with one hand the head of a stag, with the other the head of a horse. More than thirty years ago I learned from Mr. W. Francis Aitken's book on "the hero of Mafeking" that when, at an early age, the future founder of the boy scouts and girl guides evinced a marked talent for draughtsmanship, he was encouraged by John Ruskin, who urged upon Mrs. Baden-Powell not to interfere with her son's habit of drawing with his left hand. He was later accustomed to outline a sketch with the left hand and simultaneously shade it in with the right; and could draw two different pictures simultaneously, one with each hand. His letters were written with his left hand. This information derived from Mr. Aitken's book made upon me an impression that was deepened when, in the light of mental and vocal physiology, I had cause to admire his lordship's voice, speech and diction. Very naturally, therefore, when I desired to stress by an example the value of heeding left-handedness, I could think of no fitter instance. Nobody, I assume, could very well differ from his own expressed opinion that ambidexterity had neither affected his speech adversely nor made him a "born idiot."

Eustace Miles, who for many years had advocated a judicious training of the left hand, kindly communicated to me his most mature convictions on the matter. He condemned "training the left hand—and neglecting the right hand" as "entirely wrong." He did not urge

that the left hand should be brought up to "the standard of excellence of the right hand—at any rate, in the present generation"; but he would have had it made "less clumsy, less awkward." "Why," he asked, "should people be so dependent upon one hand when they have two hands?"

The Scythians of ancient Europe and lesser Asia, and the Japanese from time immemorial, aimed at the highest degree of two-handedness; and John Jackson stated of the modern Japanese that "they are the most ambidextrous people upon earth."

CHAPTER III

"REMEDIES"—SPURIOUS AND GENUINE

Demosthenes and others

It is related of Demosthenes, the great Athenian orator who flourished during the fourth century before the Christian era, that in his youth he was a stammerer but cured himself by practising speaking whilst he held pebbles in his mouth. At first sight the procedure would seem to have been devised, and proved, of value, because "the greater includes the less." However, in 1817, Itard (*Journal universal des sciences médicales*), contending that the pebbles gave the tongue support (instead of embarrassing it), advocated the employment of a small furcated instrument of metal or ivory, such as he had constructed and placed against the back of the lower incisors so as to receive the front part of the tongue between the two prongs. Itard claimed that the instrument caused immediate disappearance of the special speech-defect though, he admitted, there was left some

thickness of speech. He stated that the instrument must not be abandoned until cure was complete; in one instance the instrument was employed continuously for eighteen months.

Itard's device never became popular. Subsequently, however, certain plates of metal, placed under the tongue and between the teeth, were employed, the most remarkable of which was the glossanochon, or tongue-elevator, introduced by Wutzer in 1829, and consisting of a piece of metal or other suitable substance fitted to fill the space at the back of the lower incisors, below the tongue. An interdental plate has since been employed by some.

Only indirectly can any appliance be of use in this connection; and, almost invariably, it proves worse than useless.

Surgical theories and failures

In 1841, Dieffenbach, of Berlin, thinking he saw a similarity between the faulty action of the tongue and squinting, concluded that, by cutting certain nerves and muscles, stammering could be cured. His favourite measure was the making of a deep transverse division at the back of the tongue and the removal of a wedge-shaped slice. He had many disciples. Other surgeons, Velpeau and Amussat, the same year that Dieffenbach published his conclusions, modified his practice; they excised a section of one or both of the genio-glossi, the muscles that connect the tongue with the inside of the lower jaw at the chin. At first the results seemed most successful, free speech apparently being restored; but very soon the disquieting discovery was made that, almost invariably, directly the wounds were healed the sufferer spoke worse than ever before. Further, the operation

sometimes gave rise to severe hæmorrhage and other casualties. Even the originators abandoned the custom, and some of their erstwhile disciples openly renounced and denounced the operation in disgust.

Surgery as a remedy for stammering, proved a lamentable and ridiculous failure. But what of the temporary improvement that occurred in the patient's speech?—and what of the relapse? Some light is thrown on the matter by the consideration of other ostensible remedies.

Other artifices

Reminiscent of Demosthenes' artifice is the treatment that consists of reading aloud, the teeth meanwhile kept closed, two hours a day for two or three months,—which is at least long enough to establish a habit of "teethy" speech. One ostensible remedy for stammering is connection of all the words in each phrase by a vocal information, a procedure which at best is followed by but faulty speech, and which ignores the fact that often the impediment occurs in the middle of words. Some absurdly advise persons who stammer over phrases beginning with a vowel sound to employ a preparatory hum, which led a rector I knew to ask of his curate: "Why do you sing in the Litany: 'No lord have mercy upon us ?'" There are some persons who contend that the one great remedy for stammerers and stutterers is learning to sing, and others who advise a long-continued silence. No wonder someone is bold (or perhaps foolish) enough to declare that "the only sane and rational way to give a permanent cure for defective speech" lies in a "meathod" which has as its basis the ostensible culture and strengthening of "the chrondro-glossus muscle," a name given by the anatomist Albinus to certain fibres of what is known as the hyo-glossus muscle–which extends

from beneath the tongue to the hyoid bone, immediately underneath the chin. In reality, if attention be focussed on the hyo-glossus, the back of the tongue and the larynx tend to approximate. To prevent that, the muscles connecting the hyoid bone to the breast bone (or *sternum*), and which are called the "sterno-hyoid muscles" must come into action. Thus, exercises for the tongue are apt to be definitely harmful; as I shall show later in this work, faulty action of the tongue, is, in general, a symptom of wrong action at the voice-producing parts. To aim at *strengthening* the tongue is worse than useless.

Is there a panacea ?

Probably most of the modes of treatment to which I have referred have many cures standing to their credit. The same remark would apply to numerous other ostensible remedies to which space precludes my particularly referring here. Indeed, it would be an easy matter to invent hundreds of new procedures which would doubtless prove effective in a limited number of cases. But a statement made in this connection by that great throat specialist, Sir Morell Mackenzie, holds as true to-day as when he wrote it—in 1890. It ran: "Various plans have at different times been proposed, and each, of course, been vaunted by its inventor as infallible, and of universal application. Experience, however, has taught most of us that no remedy whatever is infallible."

Investigation and experimentation since Sir Morell Mackenzie's day, whilst bearing out his conclusion that stammering and stuttering have no *panacea*, the root causes of the disorders differing widely in character, have also increased greatly the likelihood, in capable hands, of cure. An essential point that must be taken into

account is the differentiation of types of cases—not so much in their symptoms as in their root causes. Haphazard or inefficient treatment is dangerous: it may introduce new troubles; and unless it happens to fit the case to a nicety, any possible temporary improvement due to expectation is followed by a serious relapse,—doubly serious inasmuch as the sufferer may lose hope of betterment by any method whatever. However, I do not mean to infer that there cannot be any fluctuations in the processes of cure (a young child in learning to talk has its "good" and its "bad" days); but if treatment is efficient, if it hits on the source of the disorder and either gradually or rapidly reverses the processes that caused the trouble, a slight fluctuation can be recognised by the patient as what it is in reality.

Theoretically, all cases of speech disorder due to emotional shock, to attempted suppression of distasteful ideas and emotions, to diffidence, or partly to imitation are curable.

What expectancy does

Seventeen centuries ago, Galen, "the prince of physicians," wrote: "When the imagination of a sick man has been struck by the idea of a remedy, which of itself is without efficacy, it becomes endowed with beneficent power." Sir James Crichton-Browne voiced the verdict of the medical profession as a whole when he declared:

"Imagination is one of the most effective psychical remedies we have by which we may modify the conditions of health and disease."

In infants and in animals other than human beings the extent of the effects of assumed curative agents is not always easy to determine; and in human adults the difficulty is enormously complicated by the effects of

imagination, sometimes favourable, sometimes the reverse, and sometimes neutral. Thus it transpires that genuine remedies or helps often owe to expectation part of the value wont to be ascribed entirely to them. On the other hand, an undesirable mental attitude or condition may render of little, or even no , avail an otherwise valuable agent. The main reason for the confusion prevalent regarding the real causes of and remedies for speech defects thus becomes evident; also the need that in attempting to cure, or ameliorate, the powerful nature of imagination should be kept in mind throughout, and, as far as practicable, enlisted in the patient's favour. I have been credited with having cured many cases of stammering and stuttering by vocal culture solely; but, personally, I have never made any such claim. Not that I am oblivious to the advantages of a practical and thorough knowledge of voice culture to whoever undertakes to treat functional speech defects (indeed, I emphatically assert that the usefulness of a professor not so equipped is very much restricted), but I claim that *suggestion is concerned with every cure effected*, whether with or without the aid of an operator. For that reason every educationist, as well as every medical man, and still more every student and every patient, should know how to employ suggestion methodically. Lack of this ability is a serious defect in the equipment of many—a lack all the more serious through being unrecognised.

Some cases of stammering and stuttering were caused by, and, consequently, in all likelihood can be cured by, expectation; but there are numerous cases in which, although suggestion in some powerful form is apparently indispensable for the attainment of cure, other agents besides are necessary. A humorous incident

in my own experience forcefully illustrates this fact.

"*As ithers see us*"

It was the case of a youth, a terrible stammerer and stutterer, who was brought to me for treatment many years ago. He had had various other treatments elsewhere and his case had become so complicated, his attitude so despondent, and his need for rapid improvement so urgent, that I decided to try to instil the idea that he had become very fluent. Now, the idea is widely held that if a person is convinced that he need not stammer or stutter he is thereby free from both defects. Such an idea is an evidence of inexperience. I induced in the youth an intense hypnosis, and having satisfied myself of the general efficiency of the condition as regards the induction of verifiable phenomena, and that there was no after-recollection, I reinduced deep hypnosis and suggested to the youth that thenceforward he would neither have any speech-defect nor remember that he had ever had one. The hypnosis terminated, I asked:—

"Well, how do you feel?"

"A-a-a-all right, th. (. . ank you," was the answer.

"Why are you stammering and stuttering?" I inquired.

The youth looked surprised. "I-I-I-I'm n . . . ot!" he protested.

"You just said: 'I-I-I-I'm n . . . ot!' Isn't that stammering and stuttering?"

"Well," said the youth, whose feelings were evidently much hurt by what he considered an unreasonable imputation, "O-o-o-only l . . . ike a-a-a-anybody m . . . ight do."

Nevertheless, this patient was eventually cured by procedures in which hypnotism figured largely—not so

much as a basis for methodical suggestion as a means whereby the mental reservoir of the patient was tapped and there was laid bare the root-cause of the disorder. It was an irrational association of ideas during early childhood.

When stammering or stuttering develops from a predisposition, the root-cause is something that brings in its train troubles other than speech disorder. It thus transpires that the only treatment that can be of permanent and radical character aims primarily, and necessarily, at the destruction of characteristics that make for failure throughout one's career.

The physical aspect

Not only does speech-disorder sometimes proceed from debility, the physical equivalents to the mental attitude may gradually bring about troubles which need, especially if long continued, separate attention. The rhythm of respiration (inspiration, expiration, rest) is interfered with, a curious spasm of the diaphragm (the muscular partition that separates the chest from the abdomen) before an efficient expiration has occurred becoming habitual and exercising a deleterious influence on the mind. Respiratory gymnastics are therefore indicated as appertaining to comprehensive treatment. Indeed, it sometimes happens that what predisposed to the speech-defect persists after that complaint is cured, and thus may form the starting point for a recurrence. Evidently, only that treatment is truly efficient which makes assurance doubly sure. The erstwhile sufferer ought, whenever practicable, to be placed in a better condition, physically and mentally, than before his speech-defect commenced. The various bad habits must be eradicated by reversing the processes by which they were establish-

ed (much like turning a bent sheet of music backwards in order to straighten it), and the whole tone of the individual should be improved.

In some cases the remembrance of the procedures essential to the production of voice of any kind has vanished and been supplanted by erroneous and physically harmful conceptions In one war-hospital case, for want of any except wrong direction a patient's voice had been entirely lost for nineteen months; yet three minutes personal instruction I found sufficient to put the matter right.

The possibility, especially in dealing with child-sufferers from functional speech-disorder, that the trouble may be due to, or associated with, interference with natural right or left handedness, should be considered. Should an affirmative conclusion be reached, the procedures that led to the speech-disorder should be discontinued, and culture of a counteracting character should be encouraged, or even insisted upon. Such culture should extend to the purposive training of attention and can well include methodical suggestion.

The way to cure

The secrets of the successful treatment of functional speech disorders are careful and thorough diagnosis, and then, the nature of the genesis of the complaint having been ascertained, reversal of the processes that led to the trouble, and a firm fixing of the conditions favourable to fluent and forceful speech.

CHAPTER IV

PHYSICAL CURATIVE PROCEDURES

One of my clients, a world-famous inventor whose cure was almost immediate, when we first met informed me that he not only had excellent health, he hardly knew what fear was apart from his speech defect. His case was a simple psychological one, though the resulting stammer was pronounced. His case was typical of a not very large class. The majority of persons cured instantly are children,—and some children require considerable time. If, as is assuredly the case, the predisposing cause of functional speech-disorder is debility, the only obstacle to cure in some "difficult" cases is the state of the general health. With good health, an optimistic outlook is likely to appear, and expectation of cure may be actualised.

Drugs and diet

The employment of a drug, such as strychnine, to stimulate the sufferer, is followed, in some instances, by temporary improvement of speech; but, as the reaction following the stimulation is accompanied by a tendency to despondency, the drug does not prove to be a good suggestive agent. Moreover, if the temporary advantage lead the sufferer to fly again and again to the drug for the sake of stimulation, serious constitutional damage is likely to ensue.

Quinine, aspirin, and other drugs given with the intention of improving the general health, are liable to cause instant relapses, mainly because, through their deleterious effects on the nervous system, they lessen the rapidity and vigour of thought, and the capacity of physical response to volition.

A wise arrangement of diet, inasmuch as it is conducive to health and mental poise, favours recovery.

The service of voice-culture

Although voice-culture, apart from expectation (and, it may be, deft suggestion also), cannot cure stammering or stuttering, it may be a most serviceable auxiliary. I always aim at procuring a condition more removed from the disorder than is the speech of ordinary persons—and, I beg to repeat, the majority of stammerers are, potentially, fluent and persuasive talkers. With the stated aim in view, I *fix* the voice on a firm basis, a procedure which necessitates the acquisition of various powers of great physical and mental advantage apart from freedom from the stammer or stutter.

A physiological law asserts that parts used aright, grow; parts unused, wane; and parts abused, resent their ill-treatment. The highest medical authorities recognise that wrong vocal tuition is responsible for much weakness and disease of the throat, chest, stomach, and other parts, —that it can cause even hernias. They as confidently regard the proper cultivation of the voice as a health-giving agent of the greatest possible value. The most pronounced of its physiological effects are the marked increase in vital (i.e., breathing) capacity, and the tone imparted to the throat and lungs. Thus it is an excellent prophylactic against consumption, bronchitis, and other chest complaints. In cases of asthma its effects are sometimes marvellous. It also affects favourably the stomach, liver, and other abdominal organs,—massages and gives them tone. Since, however, the primary work of the lungs is the purification of the blood, every part of the body is usually benefited by what is in effect the best method of respiratory culture.

Comprehensiveness essential

In dealing with classes in war-hospitals, I foresaw that (1) increase of vigour, (2) economisation of energy, (3) right location of energy, (4) the fixing of correct habits of voice and speech, and (5) the establishment of self-reliance, would be essential to procuring "the greatest good for the greatest number." The procedures I adopted to attain my ends were in some cases borrowed, in other cases were improvements (or attempts at improvement), and the remainder were (for aught I know to the contrary) original. In a book of this size it is impracticable to give a detailed description of all the procedures, but an indication of the characteristics of some of them will, I have good reason to believe, prove useful. For cases that arose from debility, diffidence, or mainly from involuntary imitation, they are especially suitable; but when used in conjunction with deft suggestion and, occasionally, other and methodical psychological help, they have enabled me to get results that would otherwise have been impracticable.

Energy-economisation

A secret of success, physical or mental, is economisation of energy. No undertaking can be performed to the best advantage unless the person concerned has at his back a store of energy. Any energy wrongly directed—that is to say, directed into unfavourable channels, or in excess of what is required—not merely infers a waste of energy; it actually hinders or prevents the attainment of what is especially aimed at. Many persons are so constantly, and so seriously, draining away from their reserves of energy that they are, or tend to become, "nervous wrecks." Few persons use their energy economically.

Exercises specially designed to produce show-muscles waste energy and tend to detract from agility. Similarly, strained attention detracts from mental mobility. Muscular tension is incompatible with mental mobility; and, conversely, muscular relaxation favours mental power, for the most effective kind of thought is clear, active and prompt.

Most persons have no accurate conception of what is implied by muscular relaxation. Take hold of a book at one end, and then support the opposite end by means of a table, thus forming a kind of bridge. Remove the hand, and the book falls. Similarly, if you relax the muscles by which you have raised an arm until it was in a horizontal position, the arm falls of its own weight; and, to achieve such relaxation, imagine the support to be taken away from the part (figuratively) propped up. Experiments conducted by Abramowsky, head of the laboratory in the Warsaw Psychological Institute, mechanically demonstrated that the ability to induce such a condition readily in oneself, stands in direct ratio to the energy manifested throughout life.

One way of attempting economisation of energy is by aiming at *gradually* dispensing with hindering and opposing movements. That way is long and clumsy, as well as uncertain. A far better way is to refrain, as far as possible, from physical action first, and then, on the basis of the physical relaxation and corresponding mental ease, to build up the correct, and it may be complex, actions by degrees, repeating each step in the acquisition until it can be performed automatically whilst attention is focussed on other matters. Expressed physiologically:—One has to establish new (and correct) neuro-muscular mechanisms.

In dealing with classes of speech-defectives, my custom has been to teach individually the arts of relaxation and muscle-action isolation, continually drawing attention to the value of the former as a preparation for the latter. The muscles of the legs, neck, jaw, and, indeed, practically all parts of the organism, are thus made, by degrees, controllable.

As far as practicable the play spirit should be encouraged, and I have often caused some amusement by demonstrating how prone (even in spite of the patient's desire to the contrary) a man would be to raise an arm, for instance, if he imagined—though erroneously—that I was lifting it.

Body balance

Few persons know how to poise their bodies aright. The body is not favourably poised for voice-use unless, without bending at hips or knees, one can begin to rise on the toes without bringing the body forward (by bending at the ankles) as a preparation. In other words, the body should be so poised that if a plumbline could be dropped perpendicularly from the top of the head it would touch the ground midway between the balls of the feet. To ensure that poise, raise the body on to the toes, then lower it, and directly the heels touch the floor remain motionless. Under that condition the chest is elevated and the abdomen slightly retracted in the lower part,—a poise which favours easy and full inhalation of breath, and exercises a favourable influence on the digestive and other organs within the abdomen. It also does away with the nervous jar many persons experience at the heels when walking on a hard surface. A poise I condemn is accompanied by a bulging abdomen and a proportionately drooped chest.

Comprehensive breathing

There is a most important point rarely taken into account regarding breathing, *viz.*, that it is the expansion of the chest that allows the breath to enter, and not the entrance of breath that causes the chest to expand. The moral is: *Never sniff breath unless you wish to test a smell—or the like.* The noise made by sniffing is due to partial closure of the nasal passages. To breathe easily, though it may be fully, keep the mouth closed, *without tightness*, and either allow the breathing to proceed automatically or, if you wish to inhale fully, purposely, expand the chest.

For maintaining the lungs in a healthy state one needs to use every part of them. The lungs extend about an inch and a half into the root of the neck; and, as the air-tubes leading to those parts are spiral in formation, the uppermost portion of each lung, being rarely well-developed, needs definite attention. The best way of ensuring expansion there is by means of the method of breath-compression I shall describe later in this chapter. The not-yet-obsolete custom of many to protrude the abdomen in attempting to take a full breath has been proved by X-ray investigation, as well as by practice, to be unphysiological and self-defeating. It is disadvantageous from the health standpoint (for it encourages neglect of the apices of the lungs), does not lead to marked increase of the breath-capacity (and may do the reverse), and causes dilatation of the stomach, and other abdominal disorders. Clavicular or scapular breathing, which is characterised by a pulling-up of the shoulders, can do something towards utilising the tops of the lungs, but it is very fatiguing, leads, through constriction, to throat trouble, and when habitual is indica-

tive of either waist-compression or disease. Ideal breathing is characterised by great horizontal expansion during inhalation, which expansion cannot possibly occur unless the lower part of the abdomen is drawn inward. During the taking of such a breath the spine tends to become straight (it slightly resembles in shape the inside curves of a printed "S") and causes the person to appear half an inch or so taller.

Stammerers and stutterers should study separately the various processes of breath inhalation and exhalation —technically called "inspiration" and "expiration."

Breath-compression

In my first chapter I spoke of the true vocal cords. These are usually called "the vocal cords"; but "true" differentiates them from another pair of cords situated just above them and called the "*false*" vocal cords because they are not the point of origin of ordinary voice,—though they can cause voice of a kind if the breath which produces it is being inspired instead of expired. The true cords turn slightly upward at their edges, the false cords, downward. Now, if you take a breath and then bring the false cords closely into contact, no air can pass outward; and if, after taking a breath, you hold it in the way mentioned, whilst a movement of the chest or abdomen be made as if to expel it, the imprisoned and compressed air presses equally in all directions. If the circumference of the upper part of the chest be purposely lessened, the compressed air forces outward the lower part of the chest and all of the abdomen. If, on the other hand, the abdomen be retracted, the diaphragm is pushed upward and the chest expanded thoroughly, —a kind of respiratory exercise which is of unequalled efficacy for increasing the chest-capacity. However,

if there be disease of the lungs or heart, the exercise should not be performed unless under expert advice.

The false vocal cords are requisitioned in conjunction with adjacent cavities ("the ventricles of Morgagni," with their pouches) of which they form borders, and enable (1) control, (2) compression, and (3) economisation of breath either with or without voice. The air compressed above the true cords serves as an elastic cushion, which cushion is not dispensed with during properly-produced voice, but, on the contrary, prevents unnecessary escape of air. If water be pressed through a rubber tube and the point of exit be nearly closed, a little water can be made to "go a long way." Similarly with the air which sets the true vocal cords in vibration, little air passes them, but what does pass is under great pressure.

The statement is often made that in voice the breath should be controlled by the muscles of expiration. Control, however, assumes two things, *viz.*, a pressure brought to bear, and something to regulate the effect of that pressure. The non-recognition of the essential part played by the false cords in right production of voice is one of the reasons that fine voices are looked upon as freaks of nature, and bad voices as results of bodily deformity. Few persons among the many who pose as voice-culturists know how to re-set a voice. That is why the voices of professional singers rarely last more than a few years at the outside.

If a vowel sound be whispered instead of voiced, the practice is then described as "unvoiced." If properly performed, it can be of great service and convenience; but in itself is not enough to train a voice thoroughly. Further, if misunderstood, it can do harm.

Re-direction of energy

In some stammerers the trouble is excessive contraction at the false cords. In such instances good results are likely to follow the assiduous practice of "Ha-ha-ha-ha-ah," followed by sentences composed of words beginning with aspirates and sentences in which initial letters alternate between aspirates and vowel sounds. "He holds his head high," and, "He, only he, eats hard eggs," answer the purpose.

You know there are some persons who nearly strangle themselves in the attempt to sing, especially when afraid they are appearing ridiculous. It is much the same with some speech-defectives. Stammerers in general find difficulty in singing, stutterers are not so troubled; and it is mainly with stammerers that this particular difficulty occurs in speech. The diffidence to which I have referred leads to misdirection of energy. Sometimes, attention is focussed on the back of the mouth, and the tongue and soft palate, jointly, almost block the passage. In other cases, the lips are pursed very tightly, the pressure is increased, and, through distraction of attention, forgetfulness occurs of what was intended to be said.

Coincidently with the contraction at the back of the mouth occurs wrong action at the larynx; indeed, in many cases of incorrect production of voice the initial trouble is at the larynx, and the contraction at the back of the mouth is primarily substituted for the correct resistance at the false vocal cords. Whatever the cause, the remedy is relaxation of all the parts concerned, then localisation of attention on the right action at the larynx. Throatiness, breathiness, and "the tone that

trembles away"—alas! not always "into silence," like the "Grand Amen" that consisted of a single "Lost Chord," are infallible symptoms of wrong thought as to voice-control,—symptoms of the true point of resistance being neglected because, in general, unknown.

The reader unacquainted with what voice culture (in the true sense) can accomplish may question the truth of Caruso's statement that in his youth his voice resembled nothing more closely than wind whining through a door. Why, however, was Santley refused as a pupil by Lamperti, though Sims Reeves had scented the gift of the later great baritone? And why did Sir Arthur Sullivan fail to find room in the Savoy chorus, and Randegger to see his way to accept as a pupil, the soprano whose capabilities were at once recognised by Madame Mathilde Marchesi, and who, after training by that lady, became known as Madame "Melba"—later Dame Nellie Melba? Why? Because it is possible to be a great musician or eminent "singing master," and nevertheless be far from expert on voice matters.

Poise, relaxation, respiration, breath-compression, vocal touch, tone-placing, the differentiation and assimilation of the vocal registers, enunciation, technique, and style, all enter into voice-culture. They do not all demand the attention of speech-defectives, however. There are a few points remaining, nevertheless, upon which I should touch here, and above all else the sufferer should be told how to combat the misdirections of energy mentioned above.

Mode of practice

As the larynx participates in the upward and downward movements of the base of the tongue, and as the

larynx occupies in the throat the same position for all vowel sounds of the same pitch and tone-colour, a finger placed lightly on Adam's Apple can serve as a useful check on the position of the larynx, and, therefore, of the base of the tongue. Never forget that voice is always made *in the larynx*. If the constriction be at the front of the mouth, a little piece of cork, sufficient to keep the upper and lower front teeth enough apart to admit the first finger on edge, is useful as regards all vowel sounds and the consonantal sounds associated with k, hard g, l, n, r, t, and d.

Throughout the various procedures use should constantly be made of relaxation as a step to isolation. In early practice the whispered consonants (e.g., p, s, f) are best pronounced energetically, the voiced consonants (e.g., b, z, v) mildly and leisurely.

With stutterers from the commencement, and with stammerers eventually, properly produced notes, of equal and full power throughout, are of great value.

Special hints for speech-defectives

To persons who stammer or stutter and wish to attempt alone to overcome their defect, I would say:—Observe carefully the rule of easy taking and unpanicky holding of breath for each sentence or phrase. Aim at ease throughout. Never speak *hurriedly;* rather, hold back, speaking deliberately—*but entirely without strain.* An artist does not put his brush against his canvas before, but after, he has decided the nature of the required stroke: similarly, have a clear idea of what you should say—then, but not until then, say it. Should you trip, don't struggle to get over the obstacle, pause until your trepidation has vanished.

It may be well to bear in mind that when someone said to Erasmus Darwin: "Don't you find it very inconvenient stammering, Dr. Darwin?" he met with this merited retort: "No, Sir, because I have time to think before I speak, and don't ask impertinent questions."

The following passage may act as a warning, a guide, and an encouragement. It is taken from Wilson's *Arte of Rhetorique*, a work published over three and a half centuries ago.

"Some there be," runs the passage, "that either naturally, or through folly, have such evil voyces, and suche lacke of utterance, and such evil gesture, that it muche defaceth all their doynges. One pipes out his wordes so small, through defaulte of his winde pipe, that ye would thinke he whistled. An other is hoarse in his throat. An other speakes as though he had plummes in his mouth. An other speakes in his throte, as though a good ale crumme stucke faste. An other rattles his words. An other choppes his words. An other speakes, as though his words had need to be heaved out with leavers. An other speaks, as though his words should be weighed in a ballance. An other gapes to fetch winde at every thirde woorde. This manne barkes out his Englishe Northern like, with I saie and thou lad. An other speaks so finely as though he were brought up in a ladies chamber. . . . Some blow at their nostrilles. Some sighes out their woordes. Some singes their sentences. Some laughes altogether, when they speake to any bodie. Some gruntes like a hogge. Some cackles like a henne, or a jackedawe. Some speaks out as though they should tell in their sleeve. Some cries out so loud, that they would make man's ears ake to heare them. Some coughes at every worde. Some hemmes it out. Some spittes fire, they talke so hottely.

Some make a wrie mouth, and so they wrest out their wordes. Some whines like a pigge. Some suppes their wordes up, as a poor man doth his porage. Some noddes their hed at every sentence. An other winkes with one eye, and some with both. This man frouneth alwaies when he speakes. An other looks ever as though he were madde. Some cannot speake, but they must goe up and doune, or at the least be styrryng their feete, as though they stood in a cokerying boate. An other will plaie with his cappe in his hand, and so tell his tale. Some, when they speake in a great companie, will look all one waie. Some pores upon the ground as though they sought for pinnes. Some swelles in the face, and filles their cheekes full of winde, as though they would blow out their wordes. Some settes forthe their lippes two inches good beyonde their teethe. Some talkes as though their tongue went of pattines. Some shows all their teeth. Some speakes in their teeth altogether. Some let their wordes fall in their lippes, scant opening them when they speake. There are a thousand such faultes among men, bothe for their speeche, and also for their gesture."

CHAPTER V

MENTAL CURATIVE PROCEDURES

Whatever the means adopted to cope with functional speech-disorders the mental element is of importance throughout. For that reason Sir Frederick Mott stated regarding the adoption of vocal therapy in military hospitals: "The personality of the individual who undertakes this work is all-important. If he has established an atmosphere of cure, it is continually act-

ing by strong suggestion, and one man seeing another cured, himself has faith."

Indirect suggestion

At the clinic of Dr. Forbes Winslow I saw a considerable number of cases of functional speech-disorder cured by what some persons would call "bluff." The patients, mainly children, imagined their symptoms were transferred to a hypnotised person, whose hands they usually clasped and who mimicked their peculiarities of speech and facial expression. The emotional state engendered in credulous patients by this procedure, obviously had much to do with the cures effected. In some instances no good was done, and, as it is equally true that nothing fails like failure as that "nothing succeeds like success," the sufferers would be more difficult to deal with effectively by other means.

In general, I believe in explaining to patients the rationale of whatever treatment I employ; but there are some exceptions-persons so constituted mentally that to take that course would be to invite failure. A well-known medical man remarked to me that he found cases of functional aphonia either curable immediately or very difficult to deal with. "On one occasion," he said, "I had found that, contrary to the patient's conviction, the vocal cords and so on were quite right, so I said to the medical students: 'Here we have a cause that cannot be cured without cauterisation of the vocal cords. Nurss, please to put the poker into the fire.' . . . Before the poker was red-hot the patient's voice had come back!"

In a few cases I have remarked (in an apparently casual manner) to an aphonic who had witnessed what I had accomplished with other persons in class: "Sometimes it happens that after a quiet sleep the voice is re-

gained suddenly;" and the patient has lain down on his bed, relaxed as taught, gone to sleep, and awakened cured.

The statement was made by Dr. Armand Semple that functional aphonia is sometimes cured by intoxication. In such instances the aphonic is made to forget his supposed inability and therefore speaks. The perpetuation occurs when taken for granted.

The most usual medical treatment of functional mutism and aphonia is the application of an electric current to the larynx, ostensibly as a genuine, but really as a suggestive, agent, any advantage that may arise being due to expectation.

Methodical suggestion and hypnotism

This may be self-administered or by someone else. If self-administered it is called "*auto*-suggestion" (*i.e.*, "self-suggestion"); if by someone else it is called "*hetero-suggestion*" (*i.e.*, "different suggestion"). In either instance a "brown-study," or contemplative mood, may advantageously be utilised; and, especially with the aid of an expert operator who "knows the ropes," this desirable basis may be of a very intense character, so intense, indeed, as normally may be experienced by only an extremely small minority of persons, commonly called "genii." When the intense contemplative mood is procured by deft contrivance it is known as "hypnosis," and the art and science concerned with the induction, development and utilisation of hypnosis is called "hypnotism."

The word "hypnotism" is, nevertheless, an abbreviation of "neurohypnotism," which means "nervous sleep." (Nowadays the word "hypnotism" is applied to the art and science only.) The term was first applied

by James Braid, a Manchester ophthalmic surgeon, who read a paper on the matter before the British Association in 1841. Later, he realised he had erred in looking upon the state induced as sleep, and attempted to suppress the word "hypnotism" and substitute for it the word "mono-ideism," as meaning a condition when the mind of the subject is concentrated on single ideas. As Dr. Milne Bramwell has pointed out, "poly-ideism" would have been a more appropriate name, the consciousness of the subject being cramped in no way, and the range of ideas capable of being simultaneously held being above the normal.

Braid attempted to put on a basis consistent with well-known physiological and psychological facts what had been wrapped in mystery and deformed by exaggeration. When he first took up the study, the terms most employed in connection with it were "animal magnetism" and (after the Viennese Dr. Anthony Mesmer, who caused a great sensation, in France especially, towards the close of the eighteenth century) "mesmerism." The theory associated with those two names was that the effects were due to the transference of an invisible fluid from operator to subject. That and similar theories have long since been all but abandoned.

What service (or disservice) I have performed to hypnotic science lies in the novel uses to which I have put hypnotism (I seem to have been the first professor of vocal culture to form a specialism in connection with the art as an aid to his work), and the conclusions which, after nine years' investigation, I published regarding the rationale of hypnotic procedures and the nature of the condition utilised. In my book on *Rational Hypnotism* I give details of my investigations and show how, as a result of imperfect knowledge, bad observation, and

demonstrations of, in part, purposely fictitious character, theories have been formed to account for what does not actually occur, though assumed to do so. Since the publication of that book a pronounced change has taken place, in the minds of scientists and of the general public, regarding the nature and applicability of hypnotism. Coué, after perusing the work and profoundly modifying his views in consequence, proposed collaboration. The facts are not generally known that previous to that collaboration Coué had written: "Auto-suggestion is nothing but hypnotism as I see it," and that his "mass-suggestion"procedure induced in many persons a light hypnosis, and in a few a deep.

I should mention that, when analysed closely, the contrivances whereby hypnosis is induced prove to work on the principle whereby isolation of muscular action is best tackled. It may interest readers to learn that Sandow once said to me: "I don't believe in hypnotism," and was much surprised when I immediately returned: "Neither do I." But I added: "That is to say, I don't believe in it *as ordinarily represented*." Knowing how nearly he had approached, in his conclusions regarding the value of mind-power in relation to muscle building, the secret of hypnotism, I put this question to him: "If you desired to train attention, how would you proceed?" He was silent and reflective for a moment, then such a look of intelligence came into his eyes as was sufficient to show he was not the "figure-head" he was represented by some as being, and he replied: "Just as I would train anything else." He perceived at once !

For persons desiring to learn, from a book of almost non-technical character, exactly what hypnotism is capable of accomplishing as regards the treatment of disease, the maintenance of health, and the cultivation

of intellectual, moral and executive capacities, I beg to refer to my book *Hypnotism Made Practical.*

The famous Swedish psychotherapist Dr. Wetterstrand, in his book on "Hypnotism and its Application to Practical Medicine," related that of forty-eight patients whom he treated for stammering, or stuttering, or both (the translater wrote "stuttering" only, a confusion resulting from the fact that although in Swedish there is a word "stamma," it includes "stuttering," for which however there is no equivalent word in Swedish or Danish), fifteen were completely cured. "I am convinced," he stated, "that the result would have been far more successful if the treatment had been prolonged, but I lacked the opportunity, as many other cases demanded my time and my interest.

"The following," he continued, "is a natural question: 'Is the result of such cures lasting?' Many of the persons mentioned in the foregoing list as cured, have informed me since that the stammering had entirely ceased, but there are others concerning whom I have had no further information. The younger a child is—five to ten years is the best age—the greater is the chance of being cured, as this trouble is often combined with a nervous, restless, even violent and malicious temper, which treatment generally changes to the very opposite."

Wetterstrand's statement is particularly worthy of attention because, without introducing "psycho-analytic" procedures, he got his effects by psychological means alone. That Wetterstrand's hypnotic theory was at fault should also be taken into account. As a suggestionist, however, he acted with method and tact above the ordinary. "The patients cannot, and should not, be treated in the same way" (he wrote), "and, therefore,

the physician's psychological experience has here a very wide range. Some are to be approached sternly, others mildly, this one must be reasoned with, and that one, more susceptible, submits, perhaps, to the therapeutic suggestion."

Nevertheless, Wetterstrand's successes were mainly with the young. I must again repeat that, to effect anything approaching uniformly good results, treatment must be in part physical. Sometimes the trouble is largely mental and only occurs when there is emotional stress or expectancy; in other cases the trouble is mainly physical, has become automatic, and the emotional element is almost absent.

A young hero

He was the fifteen-years-old son of a Hebrew money-lender, and his mother anxiously inquired of me whether I could cure his speeh-disorder, for he stammered and stuttered badly—or, rather, very efficiently. He was "such a nervous boy," she said.

I told the mother that I could observe nothing that precluded cure, and that, theoretically, all functional cases of speech-disorder were intrinsically curable.

"How long will the cure take?" she asked.

I replied that it was impossible to state definitely how long, but that I did not anticipate the need of lengthy treatment.

"How long do cases usually take?" she asked.

I informed her that causes of stammering and stuttering were so varied in character, and sometimes so complicated and difficult to deal with, that any answer to her question might be misleading. I added that, whilst some cases admitted of instantaneous, or almost instantaneous, cure, others required much more treat-

ment—that sometimes a slight stammer or stutter was difficult to cure, and a pronounced stammer or stutter was equally easy.

In the opinion of the lady, that was not a sufficiently explicit statement, and she pressed me as to whether I felt that one visit would be enough in her son's case. I could only say that it might possibly, but that I did not know—not having tested the matter. "Would two visits be enough?" "I don't know." "Would three?" "I don't know." "Would four?"—and so on, until "six" was reached. I still persisted that I could not guarantee, but added that I *suspected* that six visits would be enough—and, not improbably, would suffice to make a *good* speaker of the boy. I remarked, however, that the mother's surest course would be to pay me by the visit. She replied that she would prefer a series and hoped that the boy would become an eloquent speaker. If, however, she arranged for six treatments, would I accept a reduced fee. I named a fee for the proposed series, but added that I should require payment in advance. She complied, and treatment was commenced.

A few special tests convinced me that the case was not of a complicated character and that it was of psychological origin. I acted accordingly, and within forty-five minutes the boy spoke fluently. I was delighted, and planned to make him a really good elocutionist.

In due course the boy appeared again. Not a vestige of the speech-disorder remained. I expressed my approval of his ready speech, to which remark he returned: "I have been thinking, Mr. Orton, that, as I shall not stammer or stutter any more, you might give me the remainder of my lessons in French instead of English, so that I shall be able to 'kill two birds with one stone.'"

"My dear boy," I could not help saying, "when your

mother brought you along, she said that you were nervous. You might be good enough to tell her, from me, that now you have enough for at least two !"

The sometimes-indispensable

Many thousands of persons have heard Coué say to a speech-defective: "Do you know why you stammer? It is because you think you will stammer." And usually he inspired such persons to say: "I thought I could not speak without stammering, but I can." In some of these instances the suggestion, and the emotion in which it was actualised temporarily, were followed by the subject being "bucked up" for a time, and perhaps permanently. But one should bear in mind that stammering and stuttering are seldom continuous; further, that there are some persons who stammer or stutter on rare occasions only, and, in some instances, much to their own surprise, and others who are capable of illustrating (as did the youth referred to in my second chapter) that expectation of not stammering or stuttering is not an infallible preventive. The statement, made by Coué, that, although stammering and stuttering might occur in the first place from nervous excitement, suggestion was the sole cause of its continuance, led to my asking him: "If nervous excitement is able to make a person stammer or stutter once, why not twice? what in your suggestion can prevent what may occur through nervous excitement? "With the intellectual candour that distinguished Coué, he at once admitted the justice of my inference, and later stated, jointly with me: "There are cases in which other agents in addition to it" (auto-suggestion") "are not merely advisable blt indispensable."

A war-hospital patient, a frightful stammerer and stutterer to whom vocal therapy combined with deft

suggestion afforded only temporary and partial relief, was invited to accompany me on a country walk. We went. No mention was made, directly or indirectly of the special purpose of my invitation. During the walk, I led the patient to speak of his war experiences.

"Were you ever blown up by a mine?" I inquired.

The patient replied "No," but added, after a pause: "but I was once buried by earth from a parapet struck by a shell."

I noticed signs of great emotion, partially suppressed, and I asked: "What did you do?"

"I took off my boots."

"And then?"

The patient, as if getting the secret "off his chest" at last, blurted out very clearly: "I didn't say anything to my pals as I thought they would think me a coward."

The patient changed instantly and spoke readily.

"Why aren't you stammering and stuttering?" I asked.

"I don't know," was the answer; "but *I'm not,*" with evident astonishment. The speech defects were completely cured.

Dangers of mental suppression

Attempted suppression of painful memories is a frequent cause of speech-disorder. Corresponding to emotion felt, changes occur in the convolutions of the brain, which changes generate a force which must be expended in some way. Under certain circumstances, active exercise may "work off" that energy and divert attention from a trouble; whereas *strained* attempts to stifle

the emotion are nerve-racking in themselves, and never succeed in doing more than alter the direction in which the generated force operates. Nerve centres are thus deranged, and serious nerve, or even lung, disease may result. A considerable percentage of the cases of war-neurosis, both of soldiers and civilians, many of which evinced severe speech-disorder, were brought about in the way indicated. The way to cure permanently is to lead the patient to look in the face that which he or she has been trying to ignore, the speech defect being only a symptom. Inexpert treatment may only lead to one symptom supplanting another.

Sometimes, however it is not so easy as in the case described above to get at the root-cause. In such instances hypnotism may advantageously be used to recover a memory the persistent attempts to smother which have become a deeply-rooted habit. In *Hypnotism—the Friend of Man* I mention a patient who had his tonsils removed when a child. The doctors appears to have been of a callous nature, and the stammering and stuttering that followed the operation were not cured until the cause of the defects was recalled during hypnosis, and the reason of the deeply-rooted fear was revealed.

In the case just mentioned there was at first an irrational association of ideas; the child supposed that he had been made incapable of speaking properly. On that basis a long course of involuntary auto-suggestion was founded, and from these suggestions other irrational associations of ideas were made. In the web thus formed the sufferer became entangled, not realising at any time that thousands of wrong assumptions were outcomes of a single one. In this case the origin was forgotten, though the brain-record remained. But in some instance the cause of the trouble may be revealed without

difficulty and yet not be recognised at first as such, the sufferer having persuaded himself, from wrong premises, that the speech defect (or other symptom) sprang from a totally different cause. In such instances one may need to show the fallacy of the patient's conclusion. It is not necessary to do so always, however, as I shall proceed to show.

I induced light hypnosis in a young-man patient, and, whilst closely observing him, asked for the approximate date of the commencement of the stuttering. He gave "nine years." I "probed" him for relevant facts, and he told me that not long before the commencement of the trouble he upset the perambulator in which his little sister was sitting, and that when, shortly after, she died from cerebral meningitis, he supposed at the time that it was recognised as due to the fall. No one inferred to him that it was, but he concluded that many persons knew the truth of the matter and carefully refrained from saying anything of an accusative nature. He felt ashamed, kept his secret to himself, and gradually acquired a stutter. Later he learned that his sister's death was not ascribed to the fall, but to other causes. Before then, however, he had been told that stuttering "ran in his family;" that notion perpetuated the disorder, and he doubted what I concluded on the matter. I meant to make a point at his next visit of showing him that his explanation was incorrect, but had no opportunity, for he was sent by his employers to a distant part of the country for a month or so. On his return the truth had gradually taken root in his mind, and he had recovered normal speech.

A complicated case

A physician brought to me his son, a youth of six-

teen years, for treatment. The father had hitherto supposed that the stammer from which his son suffered was due to having been chased, during early childhood, by a bull. The notion seemed, in the father's eyes, to be supported by the child's early difficulty with the sound of the letter B. I tested the potential aptitude of the youth for co-ordination between the speech-organs and each hand in turn, and thereby procured such evidences that the father realised that interference with left handedness stood at the root of the speech-disorder. In accordance with my instruction, the youth wrote frequently with his left hand, but not at all with his right. He made rapid headway in the writing and in ordinary speech, but little in reading. Hypnotism supplied the clue: a close review of temporarily-forgotton events revealed that a tutor had made a custom of making the boy "Try, try, try again" over "difficult" words, and had thereby formed an association of ideas that was harmful inasmuch as the child was more and more discouraged by the repeated failures, and reading became a source of terror to him.

Hypnotism did something more: it completely vindicated the bull in respect to the speech-disorder. Nevertheless, as the story had often been related and referred to before the sufferer, it had had upon him a bad effect that grew.

Please to observe that change of hand for writing would not have removed the stammer. There was needed a combination of processes to which I have drawn attention in this book. However, by that combination all hindrances to effective and fluent speech were swept away, and, alongside that desideratum, there was effected an all-round improvement, physical as well as mental.

"Vis-a-vis" drill

In many cases stammerers and stutterers are disconcerted by the facial expression of certain persons. This trouble closely resembles stage-fright. In both cases the sufferer's attention needs to be drawn away from his audience, thus allowing the mind to reflect calmly. An artifice I employed in military hospitals I have found of great value, especially with classes. Two persons would face each other whilst repeating a different multiplication table, or rhyme; or, as the procedure became of more ready application, one person would make an extempore speech whilst his companions would interrupt in any way they chose except by touch. This exercise rapidly develops the capacity of independent thought, and makes an amusing as well as useful game for children and the majority of adults. The only thing I can find to say against it is that I learned it had been the means of getting past medical boards more than one man who, in my judgement, should have remained for treatment a few days longer. Perhaps what I deemed a mistake had no lasting ill-effect; in reality, I have known cures to occur so rapidly that the men have returned to tell me that the doctor who sent them into class for treatment had remarked that there had evidently been a mistake in diagnosis!

CHAPTER VI

SOME PENALTIES OF VOICE ABUSE

I had previously had a wide experience in dealing, publicly and privately, with the vocal difficulties and requirements of clergymen of various denominations, but not until after the Great War did I have any

considerable experience with priests and others of the Roman Catholic Church. One outcome of that experience was a professional engagement to give a vocal demonstration to the professors and students at the important seminary (St. Cuthbert's) at Ushaw, Durham. The occasion was a revelation to me, for never before had I witnessed, in this connection, a like degree of yearning for efficiency. Contrary to the previously expressed conviction of Monsignor Brown, the Principal, no shyness stood in the way of getting volunteers for demonstrative purposes, and the crowd that ascended the platform would have been doubled had I so desired. The enthusiasm was intense, and reminded me of Professor T. H. Huxley's remark that he could respect the Church of Rome in that it endeavoured to find how best to overcome its obstacles; and also of the illustrative way in which the Jesuits especially seized upon the vocal teachings of one to whom I myself was much indebted —Charles Lunn, "the Philosopher of Voice."

Groping in the dark

It has been said that the duties of a public speaker are: (1) to have something to say; (2) to say it; and (3) to sit down. How many speakers lack the skill to make themselves heard and understood without inflicting pain upon themselves, and discomfort upon their audience! To public speakers (and public singers) power of voice is of paramount importance. Attempts to obtain it by physiologically illegitimate means are, not infrequently, disastrous.

As long ago as 1892, Dr. Sandford, of Cork, concluded his opening address at a discussion among laryngologists by saying:

"A special course in scientific vocalisation, apart from elocutionary and other rhetorical embellishments, would be invaluable to most men preparing for public life, and a recommendation to that effect from this Association would at least bear the stamp of sincerity and unselfishness, for I have no doubt that such a course of instruction would deprive us of many patients." A resolution was passed accordingly; but, unfortunately, I venture to repeat, harm instead of good is very prone to result should the teacher be chosen haphazardly or ignorantly. However well intentioned a physician may happen to be, his competence to advise as to the choice of a teacher is seriously restricted unless he has himself learned the principles of genuine voice culture. Attempts by medical men to correct or dogmatise upon vocal art have, not infrequently, been productive of much evil; a notable example was Dr. Louis Mandl's theory that the abdomen as a whole should be made to project during inspiration.

Until the valvular action of the larynx in respect to voice was discovered, there existed no means of determining exactly wherein right production of voice differs from wrong; and even yet the facts of the matter are rarely supposed to be concerned with medical practice. At the close of one of my demonstrations of voice-production at the Sunderland Orthopædic Clinic, a famous surgeon (Major Morrison) came to me and enthusiastically said: "At last I know why my throat has ached so much when I have been speaking publicly." That outspoken admission, whilst it did him who uttered it credit in one respect, evidenced a serious deficiency in orthodox medical education, and how readily that deficiency might be remedied.

Use versus abuse

Statistics suffice to show that seventy-five per cent. of school teachers suffer from chronic laryngitis—inflammation resulting from what is commonly known as "shouting." Certainly an equally large, and I believe larger, number of habitual public speakers suffer from what is usually called "clergymen's sore throat," or *disphonia clericorum*. As more has become known regarding the complaint, the names "glandular sore throat," "granular sore throat," and "follicular pharyngitis," have been substituted. The name "hawkers' sore throat" has not been applied to it ; but it might, with suitability equal to that of the title which seems to infer that the complaint is a monopoly of gentlemen of the cloth.

The properly-trained singer or speaker is capable, under normal conditions, of continuously using the voice for a very long time, often amounting to four or five hours, without experiencing any more uncomfortable feeling than a healthy hunger. Instead of disease resulting from the exertion, the muscles employed grow stronger and bigger by reason of the increase in the quantity and quality of the blood supplied to them. Though, as from all other action, physical or mental, a corresponding expenditure of body-tissue occurs, the waste material is removed by the venous blood and is expelled from the body through the various channels of excretion.

The case is far different when the vocal organs are abused. Very soon there may be experienced a sensation of dryness and an inclination to expectorate. Hoarseness, an increasing susceptibility to fatigue of the vocal organs from even little exercise, and, in many instances, difficulty in swallowing, are other early symp-

toms. Singers usually complain of the loss of some upper notes. Nevertheless, there may be no ocular evidence as yet of disease, the mucous membrane covering the affected parts remaining intact.

But what has actually occurred? Instead of the ventricular bands and pouches being brought into action to restrain and control the outgoing breath, and to allow of free action of the vocal cords below them, parts above the ventricular bands have had an unphysiological duty thrust upon them—a duty which they cannot fulfil aright. Vicarious constriction leads to congestion and inflammation of the substituted parts. The overtaxed muscles, being burdened by more waste materials than they can get rid of, become distended. The minute blood vessels traversing them are so far obstructed that the blood sent to the parts is unable to flow through measuredly, but collects, and so increases the congestions. The hoarseness proceeds from lack of proper lubricating fluid being supplied to the larynx and pharynx, and from the congestion rendering impracticable the delicate movements imperative for even approximately accurate voice.

From bad to worse

Repeated congestions tend to implicate more definitely the mucous membrane, and then there may be observed what appear somewhat like grains of shot—varying, however, in size from that of a pin-head to that of a small pea—studding its surface. These elevations are certain minute glands, described as "racemose," from their supposed similarity to clusters (*racemes*) of grapes or berries. The surface of the larynx and pharynx is normally dotted by racemose glands, whose office is to discharge the lubricating fluid,

essential to the inside of the vocal tube remaining moist and pliable. Their enlargement is due to collection of their fluid, their outlets having become choked.

As the disease advances, the glands described become so distended that they burst, and their contents, pathologically altered to a thick, white substance, exude and may be seen as small patches or hanging threads. Simultaneously, the victim experiences hot, pricking sensations in the throat. Should the upper part of the pharynx be involved, headache is likely to occur. Frequently the uvula becomes much elongated, and not only is there a permanent sensation as of a foreign body in the throat, but a troublesome cough and considerable interference with respiration occur. Sleep may be disturbed by dreams of being choked, and the victim may awaken in a fright—a symptom especially associated with elongation of the uvula. Often the sufferer not unnaturally entertains fears that pulmonary consumption or other serious disease is present; indeed, the throat trouble may, and not infrequently does, pave the way for a variety of other complaints.

Nature as taskmaster

Professor T. H. Huxley remarked that Nature has a habit of rapping your knuckles and leaving you to find out why. "Clergymen's sore throat" was formerly ascribed to draughts, wine bibbing, and other agents; and there can be no reasonable doubt that habits that are constitutionally hurtful increase susceptibility to the complaint and accentuate its symptoms. They are not, however, root causes. The conspicuous immunity enjoyed by such persons as use their voices aright points to the fact that some form of vocal abuse is the culprit. Primarily, the fault has lain in non-observance

of practice in accordance with the principles laid down in my fourth chapter and dealt with at greater length in my book on *Personality*, and in full detail in *Voice Culture made Easy*. The habit some clergymen have of stopping and meanwhile bending the head during the reading of prayers or sermons, and also habitual pulling up of the shoulders during breath-taking, leading almost inevitably to neck-rigidity, are concerned in a measure; but the fact must be taken into account that persons accustomed to the committal of those wrong actions are not relying upon adherence to the principles underlying correct production of voice.

Alleviation

As regards cure, constitutional treatment is sometimes indispensable, but part of this constitutional treatment can and should lie in measures calculated to develop the lungs and the muscles of the abdomen. Medical and surgical treatment is at best of only partial value. The local treatment usually consists of such applications to the diseased follicles as will lead to their absorption or, if that be impracticable, destruction. Spraying, or douching, and the application of cold compresses, are often effective aids towards cure. Should the case be severe, the voice should be rested for a time; the difficulty of fulfilling that requirement is often the chief obstacle in the path towards recovery. None of these local aids, nor even constitutional treatment, can be of more than temporary benefit unless attention be given to the root cause—voice abuse. On the other hand genuine voice-culture can prove everything needful except in very severe cases, whereas attention directed solely to other measures delays and may prevent cure. The relation of one case will make my point clear.

Nature's reward

Many years ago a sufferer from "clergy-men's sore throat," who had been accustomed to have the affected parts treated by electrolysis every six months, consulted me in reference to voice production and singing. He was an inveterate smoker, and asked whether, in undertaking the study of voice production, he would necessarily have to abandon his hugged habit. I told him that I could not speak definitely on that matter, though I did not look upon smoking as favourable to voice. He stuck to the habit, his throat got well, and its girth was increased by two inches within a few months.

With the exception of the operation of snipping the uvula—and never that unless imperative—there is little of a medical or surgical nature that I deem ultimately advantageous. Nevertheless, hygienic measures always facilitate cure. As regards diet, sugary things, whether "artificial" or "natural," should, I consider, be avoided entirely until the complaint has been overcome, and always should be treated with caution, for they are the source of most colds and increasers of irritation.

An unusual penalty

In my first chapter I referred to the growth of polypi or warts on or near the vocal cords. What is their origin ?

Persons who continually ride horseback are liable to give rise, from long and frequent gripping with their thighs, to a hardening, through deposits, of the muscles that press against the sides of their steeds. Similarly, the true vocal cords (they are partly muscle) are liable to become altered in structure through being wrongly

requisitioned and thereby kept in a state of congestion. Here again vicarious resistance is primarily responsible for the mischief.

Thickening of the vocal cords, as described, causes hoarseness; laryngeal warts may gradually lead to entire loss of voice, and in this connection the services of a competent surgeon can be sought with advantage. Imagination often increases such incapacity as exists through physical causes. A lady so affected complained quaintly to me regarding the means whereby she had been enabled to reap such benefit as to fulfil, unexpectedly, engagements made as a public singer. "This auto-suggestion," said she, "gets me into a muddle: Dr. D—— says I really ought to be *hoarse !*"

How significant was that remark as to the wide extent of the mental factor in voice-culture as well as in medicine and surgery! It is one thing to be told what the conditions of ideal voice are, and it is another thing to be able to comply with those conditions. Applied psychology should be united to physiological-sound procedure.

Nevertheless, the first step in sound tuition consists, not infrequently, in thoroughly understanding just that of which the pupil has felt most sure.

Since I wrote this book, my book on *Voice Culture made Easy* was published, and now is in its second edition. The vocal method therein described is analytical and explanatory, contains a sheet of comprehensive Vocalism, tells the self-training student how and what to think, and how to act; and, being psycho-physical in character and plan, shows how to test the correctness or otherwise of the endeavours made.