Stammering considered with reference to its cure by the application of those laws which regulate utterance : in a letter addressed to George Birkbeck ... / by Richard Cull.

London Medical Soc

From the Author

STAMMERING

CONSIDERED.

Published by the same Author, 2nd Edition,

OBSERVATIONS ON

IMPEDIMENTS OF SPEECH,

IN A LETTER ADDRESSED TO

T. J. PETTIGREW, Esq., F.R.S. F.A.S. F.L.S.,

&c. &c. &c.

"A clever and a well-written pamphlet. The author takes a masterly view of the subject; and his practical remarks are evidently the result of no very limited experience."—*Medical Gazette.*

"Mr. Cull has paid much attention to the derangements to which the human voice is liable, and to those peculiar circumstances which affect the utterance of language. These are subjects to which sufficient attention has scarcely been paid; and we are therefore pleased that, however concise the observations may be, some attention has been directed, although Mr. Cull has little opportunity, in so short a pamphlet, of expressing the opinions he has formed. He has given some very valuable though brief observations on the nature, causes, and remedies of stammering and other impediments of speech, which he has prefaced by some remarks on the structure of the organs subservient to the voice and to speech."—*Medical and Surgical Journal.*

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A TREATISE ON ELOCUTION;

In which the Vocal Qualities and Properties, in their mind-expressive Functions, will be attempted to be exhibited and explained; and illustrated by appropriate quotations.

It is conceived that this work will render instruction in Elocution exact and definite.

STAMMERING,

CONSIDERED WITH REFERENCE TO

ITS CURE

BY THE APPLICATION OF

THOSE LAWS WHICH REGULATE UTTERANCE.

IN A LETTER ADDRESSED TO

GEORGE BIRKBECK, M.D. F.G.S.

PRESIDENT OF THE LONDON MECHANICS' INSTITUTION,

ETC. ETC. ETC.

BY

RICHARD CULL.

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A LETTER,

ETC.

DEAR DOCTOR,

THE varied and generally unsucessful treatment of impediments of speech has led to the prevailing notion that they are incurable: although that opinion is inaccurate, the weight of evidence is such as to force on us the conclusion that, in the majority of successful cases, the cure is more attributable to chance than to the application of known principles.

The greater number of beneficially treated cases have been by an avoidance of, a sort of dodging with the difficulty, not surmounting it. "The peculiarity of their speech," says Dr. Bostock, "indicates that the difficulty is rather evaded than obviated*."

Different expedients have been resorted to for this purpose. One means of avoidance has been to reject, to throw out of use, all such words as experience ascertained to break the continuity of utterance, and to substitute others of proximate signification. This is the extension of a principle instinctively adopted by those whose speech is liable to interruption, and

* Medico-Chirurgical Transactions, vol. xvi., page 72.

if the impeding elements be not numerous, by careful and long-continued watchfulness and perseverance in this course, besides avoiding hesitation, the tendency to break the flowing stream of utterance may be destroyed. Another means is to manage the mouth. Thus, to speak with clenched teeth, which smooths the utterance, not by breaking down the asperities of the hard elements, not by substituting the softer for the harder, but from the incompleteness to a greater or a less extent of their several mechanisms, imperfectly moulding and defectively producing them.

If the tongue be apt to protrude, to be involuntarily thrust between the teeth, as it occasionally is in some stammerers, the barrier formed by the clenched teeth effectually prevents it. We can speak intelligibly with closed teeth. There are many who ordinarily speak so, but they have the peculiarity of enunciation arising from incompleteness of elemental mechanism, with a dental vibration in addition to the voice, making their speech very disagreeable.

Another means has been to speak in the singing voice; in fact, to sing recitative, or to chaunt their conversation. This mode of avoidance has succeeded to a considerable extent, by evading two causes of impediment, which are found in speech, but exist not in song.

In perfect speech, the voice is furnished to syllables, in proportion to their duration, by the volun-

tary power over the vocal apparatus. The breath is not vocalized and toned before utterance begins. The voice is enunciated into elements consentaneously with its production. The voice yields to the enunciation of the element, being frequently nearly, and often quite, severed during discourse.

In song, the breath is vocalized and fully toned before attempting to give utterance to the words. The enunciation of the element bends to the production of the pure tone of the musical note, so that the voice is seldom checked for the purpose of conveying the language.

The voice of song being less checked by the words than the speech voice is, is one reason of the less tendency to hesitation. By the assumption of the song voice, then, for conversation, interruption is frequently evaded.

Secondly, in song the voice necessarily is rhythmical from the music. In speech it is not so; hence, if impediment be a consequence of the unrhythmical production of speech voice, the assumption of the well-defined rhythm of song evades the impediment.

The philosophy of these modes, then, has been rather to go out of the way of the difficulty, than to overcome it, and that, without knowledge of what was avoided, and how it was avoided. It was empirical. The casual success of *evasion* is attributable to the chance of the impeding obstacle not lying in the direction taken to avoid it; the means

adopted being but an experiment on each individual. The casual success of *cure* is referable to the chance of the directions producing actions quadrating with some of the natural laws of the apparatus.

The latter has been effected two ways; either by the concord of the instruction with those laws producing casually and immediately a cure, or, by the instruction, although not being conformable to the laws, yet being opposed to those particular malactions which disturb them, during which the organs casually and mediately assume a right action.

In the former, the cure may be considered an accident; in the latter, it is an accident of an accident. A person loses an impediment while acquiring a foreign language: the study of a language is now recommended, although without knowing how the impediment was cured. It fails. The cure is thought to be a sequence, a necessary result of the study, in place of which it is only a concomitant circumstance.

"The proximate cause of psellismus," (stammering) says Dr. H. M'Cormac, "in most cases *arises from the patient endeavouring to utter words, or any other manifestation of voice, when the air in the lungs is exhausted, and they are in a state of collapse, or nearly so.*" He as strangely asserts that "the main thing to be attended to, and which in fact is the ground work of the whole system of cure, is to expire the breath strongly each time when attempting to speak, the lungs being previously filled to the

utmost; or, in other words, to reverse the habit of stuttering, which is that of trying to speak without expiring any air*." How this has succeeded we have no information.

A mode of cure for impediments of speech has of late been secretly employed in the metropolis by a Foreigner. It consists of steaming the throat with aromatic herbs—the copious use of cathartics—of speaking with a piece of Indian-rubber under the tongue—and of learning the German language. In a case in which the practitioner had uncontrolled means in his application, he has totally failed.

As his scheme appears to be a modification of that adopted by Mrs. Leigh, who practised in the city of New York, America, in 1826, but who has obtained more fame in Germany within the last three years, I shall proceed to detail her remedy, extracted from the Medical Quarterly Review of April 1835, page 261, *et seq.* which is taken from Gräfe and Walther's Journal, the article being furnished by Dr. Moritz Strahl.

"The whole art consists in the following rules:—the stammerer is to press the tip of his tongue, as hard as he can, against the upper row of teeth, is to draw a deep breath every six minutes, and is to keep perfect silence for three days, during which this pressing of the tongue and the deep inspirations are to be continued without intermission.

* Treatise on the Cause and Cure of Stammering, by Dr. M'Cormac, pages 14 and 83.

"During the night, small rolls of linen are placed under the tongue, in order to give it the required direction even during sleep. When the three days have expired, the patient is to read aloud slowly to his physician for an hour. During this exercise care is to be taken that the stammerer is never in want of breath, and he must, therefore, be made to stop frequently, and inspire deeply. The patient is to be admonished to keep the tip of the tongue floating when he speaks, and never to allow it to sink into the anterior cavity of the lower jaw.

"It would hardly be believed that this most simple method of treatment could have such striking success as experience teaches us that it has, even in the worst cases. Whether it is that speech is made more easy by the mechanical direction of the tongue, which after the three days of pressure remains of itself in the floating position, or whether it is from the moral influence exercised by the three days' silence, and the mystery that hangs about the treatment, certain it is, that the result is immediate, and surprisingly favourable; but unfortunately it is not lasting."

Dr. Strahl then narrates the results of five cases, and concludes that Mrs. Leigh's method having radically cured one case and alleviated the others, is well worthy the attention of the scientific physician. He "thinks that the principal advantage of this plan consists in its arresting the stammerer's attention, by directing him to keep his tongue in a given position,

and thus freeing him from the fear of stammering. But he is also of opinion that the mechanical direction given to the tongue may facilitate speaking, and this supposition is confirmed by Case 4, where the patient, from the uncultivated state of his intellectual faculties, was not likely to be effected by a mere moral impression."

The Doctor does not state whether the return of the tongue to its former position was concomitant with the relapse of his patients, or whether it retained its new direction when the stammer returned with "unweakened violence," as in Case 4.

To the philosophic mind the paper is very unsatisfactory, and certainly quite at variance with the fame of Dr. Strahl.

Dr. Itard, as far as I can ascertain, was the first who thought of remedying stammering by position of the tongue. He invented an instrument for the purpose of permanently holding the tongue in the required direction, for preventing its sinking in the cavity of the jaw. It consisted of a gold or platina fork, about an inch in length, placed in the concave centre of a flat short stalk, of the same metal, and applied by its convex surface to the cavity of the alveolar arch of the lower jaw. This fork, placed horizontally close to the frænum linguæ, receives it in its bifurcation, and supports itself by the extremities of its two branches, each terminated by a small button upon the inferior side of the tongue, in the retiring angle which it forms with the superior parietes of the mouth.

This instrument directed the tongue's tip to the upper teeth, and kept it in that position. The Doctor says that, with gargles in addition, he cured two cases; but he does not state whether he attempted more or not. From the ill success, it deservedly fell into disuse.

But the tongue is not the only enunciative organ which is uncontrollable. There is a want of control in other organs whose collocations produce the necessary mechanisms for elements, with which the tongue is required to be inactive, remaining quiescently imbedded in its cavity: in place of being an active, it is a passive organ,

B, D, G, as heard in *boy*, *dog*, *gay*, and their correlative mute stops, P, T, K, are elements which especially are difficult for stammerers to utter. Some can produce them when terminatives, as in the words *ab*, *ad*, *ag*, *up*, *at*, *ak*, their mechanism then being by appulsion; but when initials, as in the words *boy*, *dog*, *gay*, *poor*, *to*, *kind*, their mechanism then being by divulsion, the organs refuse to separate, and the speech is consequently impeded.

Dr. Arnott's drone sound will enable a person to convert the initial consonants into terminatives, thus changing them into appulsive elements, which are utterable by most stammerers. In this way the whole syllabication will be altered: thus the words

abbot will be changed from ab-bot to abb-ot;
adder ..... ad-der — add-er;
aggress ..... ag-gress — aggr-ess.

This requires great dexterity and practice to acquire; and when acquired, the speech will be very different from ordinary speakers, the hiatus being great between some syllables. There will also be a constant tendency to fall into the speech of those surrounding us, and consequently of the impediment re-occurring; besides which, the labour of attaining an entire change of syllabication—of pronouncing the whole of one's native language in a different manner from that by long habit accustomed to, and that under the disadvantage of continually hearing it spoken by society in that way we have to avoid—is such as to deter from attempting it. But the mode would not suit every case. It would only be a few that could be benefited by it, and that would be at the expense of speaking their own language in a very awkward manner.

This application of the drone sound is not that recommended by Dr. Arnott. Of his method I shall presently speak.

There are about twenty elements of speech productive of an interruption in various degrees of the continuity of the voice, and by their mingling with the remainder in our language, one occurs at about every fifth place. Although a person may stammer on all the twenty, yet from what has just been said, he does not necessarily hesitate at every fifth element, as the interruption depends on several other circumstances—as the mechanism of the element enunciated, and the element on which the articu-

lation takes place; and also on the quality and accident of the voice.

The boundary to the duration of syllabic sound in discourse is not necessarily the limit to a stammerer's utterance, as is generally believed. The laws which regulate syllabication are universal in their operation: they limit the syllables of the most civilized language as well as the barbaric; they are one thing. The laws which limit the stammerer's utterance take in more data to arrive at a conclusion, and are varied in each case; they are another thing. But the laws of syllabication will throw a light on defective utterance. I have not room, nor is it within my present object, to enter upon the demonstration of these laws. As part of the Philosophy of Speech it is an interesting study.

The quackery and mysticism in the cure of impediments of speech arises from the general ignorance of the philosophy of the human voice and speech. Explanations of their phenomena have been demanded, to administer to the necessities of defective utterance, and to satisfy the ear of taste in a just elocution, but in vain. Bread has been asked for, and the stone has been given. The subject called for examination by accurate observation and experiment, not for the transcription of Greek and Roman knowledge, as if it were impossible for us to do more than quote classic authority. The fact appears scarcely credible, that when knowledge is

within reach—when it can be obtained from its very source—from its fountain, with the trouble only of precise perception, we have hitherto been content to take it from its streamlets in its vague generalities, and that mudded and contaminated by the prejudice and musical ignorance with which the ancients have disguised the little knowledge they appear to have possessed on this subject.

We have wrangled for the meaning of classical authors with all the bitterness of partizanship, and that for words, while the thing has been neglected. We have striven for opinions, and in our zeal have forgotten to grasp the knowledge constantly within our reach.

Speech is produced by a series of voluntary muscular actions. When obstructed by the involuntary action of some organ, or misactions of others, it resolves itself into a want of dexterity in the use of those muscles employed in speech; and their use can only be acquired by unremitting exercise, under the guidance of those who understand the circumstances under which they act. This is a work of time, and therefore not likely to be adopted, until every means promising a cure in a few days or weeks shall have been tried, and found unsuccessful. And when as much time has been wasted in observing the empirical oath-bound-secret directions as would probably have effected a cure, he is so disgusted then with even the idea of further trouble, that he is scarcely willing to commence a course of

progressive exercises—to begin *de novo* to learn on principle his own oral language; to acquire it through the drudgery of a strict discipline in a course of vocal and enunciative gymnastics.

The majority learn to speak without stammering—they acquire the voluntary power over the whole apparatus subservient to speech, by instinctive imitation during childhood. While many, although under similar circumstances, do not acquire voluntary control over the apparatus, there is a barrier to the accomplishment of an intended motion. If he wish to move his jaw, lips, or tongue, they remain immoveably fixed—they resist his efforts; and in addition, perhaps, an organ which he wished to keep at rest involuntarily moves. Being unable at will to move the organs necessary to speech, his utterance is impeded; he stammers.

His desires, his aspirations, outgo his powers of performance. The muscles which are subservient to—whose motions are requisite for—speech, and which should be completely voluntary, and thereby controllable, are unsubdued by the will. The question is, How shall the will subdue them, and bring them under control and obedience, for the purposes of speech?

Let us take an analogous case.

An individual wishes to acquire muscular dexterity, say to finger a musical instrument. How is he to accomplish this? By fixing his fingers in a given position for a stated time; or, to make the

analogy more perfect, by fixing one finger? Or, by the practice of lessons under the superintendence of a Professor?

If any one professed to give dexterity in fingering an instrument—execution, as it is termed in the musical school—of the violin for instance, by fixing a hand or a finger, in any given position, in place of practising preludes and exercises, he would be considered insane.

Yet such a proposition has been made, to acquire dexterity of the muscles used in speech. To obtain voluntary power over certain muscular actions—to render the organs of speech, consisting of the

Single Organs.	*Pairs of Organs.*
Tongue,	Lips,
Uvula,	Gums,
Palate,	Teeth.
Jaw, as a whole instrument.	

controllable by the will—take one of them, the tongue; place it in a certain position; fix it there for a given time by a gold fork, or a piece of caoutchouc, or rolls of linen placed for that purpose, with silence and periodic deep breaths, and you will acquire not only dexterity in the use of the organ so confined, but in the use of the nine others, to which nothing is done. This proposition has acquired the sanction of some medical men in the nineteenth century, and has been declared by an eminent

Prussian physician to be "one of the most important discoveries of our age."

"One of the worst stutterers I have known," says Dr. Good, "was one of the best readers of Milton's Paradise Lost. He was a scholar of considerable attainments, and had taken some pains with himself for his natural defect, but without success; yet the moment an interesting poem was opened, his defect completely vanished, from his being led captive by the force of the subject, and the great interest he took in this branch of polite letters."*

You, Sir, are also aware of an individual, who, although not a scholar, could read the Paradise Lost with fluency and elegance, but could not read prose, nor converse, without its recurrence, and whom our friend, the late Mr. Thelwall, was successful in curing, leaving no traces in any peculiarity or manner of speech. In this case the defect did not vanish from his being led captive by the force of the subject, but from the temporary correction of rhythm, which the reading of Milton effected. And when the spoken voice was produced, in accordance with the principles Mr. Thelwall gave, its ordinary want of rhythm was corrected, and the impediment never again recurred.

You also know a young gentleman who could read smooth verse, but stammered on prose and in conversation. Through your kindness he was

* Study of Medicine, 3d Edit. by Cooper, vol. i., p. 566.

placed under my care. His defect arose partly from defect of rhythm, although other causes operated also. You expressed yourself satisfied and pleased at the successful result which was obtained chiefly by correcting his rhythm, and I have great pleasure in informing you, that notwithstanding his avocation, his speech remains entirely free from interruption.

The fact that some with impediments of speech can sing, read poetry, and declamatory composition, without interruption, is well known; it is of common occurrence. But if such cannot read or even sing, while a friend is attentive to their attempts they can accomplish either, if a noise exist during their efforts. If a continued note be produced, as in drawing the bow across a violoncello-string, the power of utterance is augmented. If a piece of slow music of well-defined rhythm be played, the facility is increased. If a person read the same composition simultaneously with them in a rich sonorous voice, the facility is again heightened, which is rendered still more facile by simultaneously reading a third or fifth in the gamut below their tones; but while they are thus glibly reading, if the accompaniment cease, the impediment as instantly recurs.

History informs us that Demosthenes harangued on the sea-shore with pebbles in his mouth, to correct his hesitation. This practice is generally believed to have effected a cure by the force of the magnificence and sublimity of the scene, its poetry carrying

him captive, and his defect consequently vanishing. But he had his pebbles in his mouth. One writer, feeling the weight of this circumstance, which had evidently been over-looked by those admitting the above explanation, speaks of the increased difficulty of utterance when the "buccal cavity is filled with stones, causing an increased energy in attempts to speak;" and he advises as great an effort to be made without stones in the mouth; thus, by an energetic throe, to force out the impeded word. Stammerers know that their success is inversely as the strength of the effort. They cannot succeed by force. They have recourse to stratagem.

It may be observed that besides the continued roar of the sea, its waves isochronously beat upon the beach, producing a rhythmical sound. That crescendos and diminuendos are discoverable in the music of the ocean, observation will verify also.

It is probable that defective rhythm was the cause of Demosthenes' hesitation, and that, like the case quoted, and many others similar, cured by Mr. Thelwall by the correction of their rhythm, which, in the case of Demosthenes, might be effected by his unconscious imitation of the rhythmical sound of the waves, dashing at periodic intervals upon the rocky shore.

This opinion is much strengthened by Plutarch's story of the comedian Satyrus meeting the unsuccessful orator with shame returning from the forum. He desired Demosthenes to repeat some verses from

Euripides. Satyrus then pronounced them. The orator became the elocutionary pupil of the comedian. The success of the pupil in the sequel is well known.

Dr. Arnott, who first made the observation that the sudden stoppage of the voice was produced by involuntary closure of the glottis, proposed to keep it open by the production of a drone sound of the speaking voice on the E of the word berry, or the E of the French word *que**. Speaking in a singing tone evaded impediment from closure of the glottis. But it was empirical, and only an evasion. Dr. Arnott has the merit of bringing the treatment of this class of impediments within the pale of principle. By droning on the E, the glottis is kept open. The remedy is not empirical, as it was proposed for that especial purpose. It is scientific. It is not an evasion of the difficulty, for it boldly meets it, and overcomes it on principle. This remedy, simple as it appears in the estimation of many, is the result of an accurate induction. Through the Doctor's kindness, I witnessed his application of the principle in July 1832, on a youth whose voice was interrupted on every few words. By explaining to him the object of the remedy, he was immediately able to read a page without interruption. He did not continue the application of the remedy; therefore his voice of course continued to falter; but I have seen the remedy completely and permanently successful.

* Elements of Physics, 3d. edit. vol. i. p. 603, *et seq.*

In orally reading Milton, the voice instinctively alters. It is neither the tone of conversation nor that of ordinary reading; it approximates to the richly sonorous voice of declamation, as employed by actors in the higher walks of the Drama. This change of tone, if accurately observed, will be found to consist of the augmentation of some of its qualities and accidents.

The chief qualities augmented are, bulk or volume of voice—depth—strength; the accidents augmented are, the intervals of the inflexions—quantities of the light syllables, and isochronous vocal pulsation, these together imparting a richness —a sonorousness—an equality—a rhythm--a power of tone, rendering the concrete sounds of speech more musical than before, although entirely differing from the discrete sounds of the music of song. When this instinctive alteration takes place, even in persons who are liable to interruption from impediment, they can fall into the rhythm and richness of tone incidental to Milton, and read his poem without hesitation.

This voice does not appear to me to be specifically different from the conversational voice, but merely an enrichment of it by the augmentation of some of its qualities. From the fact that the power of producing it well and continuously can be obtained only by considerable cultivation, I infer that the required volitions are somewhat different from those of the ordinary voice; but in what that difference consists

is not yet ascertained; nor can we wonder; for the precise means of vocalizing the breath—changing the pitch, &c. of the voice—is yet unknown. There is much diversity of opinion on the subject, each of which has its advocates, from the supposition of Galen to that of Blumenbach. To escape from the state of doubt, physiologists have exposed the larynx in living animals, and recorded their observations on the human subject, in those melancholy opportunities afforded them by suicides; from which they have demonstrated that the vibrations of the lips of the glottis are connected with the vocalization of the breath.*

There is as little agreement in the opinions of writers on the subject of vocal modification, its qualities and accidents, as upon the mechanism of its production and pitch. Various hypotheses have been proposed, each to give way to a greater favourite, which in its turn yielded to a still greater. In this way have opinions risen and flourished for a time, and then fallen into contempt; in a few years after again to be revived, and apparently only to fall again into obscurity. Many hypotheses have existed to explain the mechanisms of the ordinary and falsetto voices. The Italians have cut the Gordian knot by their nomenclature, terming them *voce di petto* and *voce di testa* respectively; terms which still obtain, and appear to be great favourites. That these are erroneous, as significant terms, must be allowed

* See Professor Mayo's Physiology, 3d edit. page 349.

from the observations and experiments of physiologists. We had better avow our ignorance of the subject, as that will stimulate inquiry, than assume that we know, when we have only adopted an hypothesis; and which assumption not only blinds our own further perception, but that of others—checking inquiry, and contenting our vain ignorance.

The mechanism of speech is produced by a series of voluntary muscular actions bringing the subservient parts into a certain requisite state and collocation. Stammering and other impediments to utterance arise from some part of the apparatus not being fully controllable by the will. To render it so, a well-digested system of vocal and enunciative gymnastics, to develop the various qualities and properties of the voice and speech, giving flexibility and power to the apparatus, by which the motions already voluntary become more exact and facile; the involuntary are brought fully under control; actions are obtained of the several parts of the apparatus quadrating with their natural laws; and the supremacy of the will is established with the order, and beauty, and uniformity, attendant on its domination.

A gentleman, eighteen years of age, healthy and well-proportioned, could read smooth verse without much interruption; but prose, equally with conversation, affected his speech. Utterance defective; the elements imperfectly formed, stunted, meagre, and compressed together; has never learned dancing; cannot sing.

Voice occasionally suddenly stopped; difficulty of separation of the organs of speech, after producing an element by their appulsion.

Exercises were adopted to obtain a long-drawn note, and to correct his rhythm of pulsation; these were successively adapted to the progressive stages of vocal development.

Vocal gymnastics were now adopted, to obtain an augmentation of the qualities of the voice on elemental sounds, which was shortly effected. Combinations of qualities on combinations of elements were next practised.

He could now read prose and poetry in the sonorous tones appropriate to the sublimities of Milton, and also in the ordinary reading and conversational tones.

In the extemporaneous discourse of life, hesitation still occasionally occurred, particularly in the utterance of those elements the mechanism of which so divides the issuing stream of voice as to give an abruptness to the immediately following element. This did not occur in reading. It was confined to conversation. After the continuance of our exercises the hesitation was limited to the one class of elements whose formation entirely interrupts the continuity of voice, and yet the utterance of the next element being required to be as full in volume as the preceding, the abrupt fulness of the opening causing the hesitation, when the element opened on a crescendo, a gradual increase of fulness.

in place of suddenly opening on the full volume of voice, no hesitation occurred.

The *crescendo* and *mezza di voce* were readily formed on any element; it was only the full stream, abruptly produced after an interruption of its flow, by the formation of any of those elements by appulsion of the organs, accompanied with the stressed or percussed force of the voice, which so completely separates as to cause a hiatus in its stream, that hesitation occurred.

Exercises were now specially directed to the difficulty, and with complete success. Attention was next given to acquire strength, compass, flexibility, and general power of voice and speech; unwearied exertion for that purpose was employed, until from the slowness of grandeur and majesty to the rapidity of impatience; from the long-drawn grave tone of solemnity to the short shrill quantity of petulance; from the wide intervals of dignified anger to the semi-tone interval of plaintiveness, were producible in various parts of the scale, and could be moulded with facility into speech.

This occupied a very considerable period to acquire; but it was acquired: and the strength and control over the organs enabled the individual to speak in the conversational tone with facility and without hesitation. It is now two years since his cure, and he has since suffered from catarrhal affection, but still has perfect control over his voice and speech.

I do not attempt to transcribe any of the exercises employed, as they would require a volume of explanations to make them intelligible. I have in some cases explained, and illustrated *viva voce* for patients, in order for their practice, when they have resided at a distance in the country, but have invariably found they have gone astray, although in some cases they were persons of understanding, and of a musical ear too, so that I cease to furnish written instructions, unless I can personally superintend the case. I have no opinion of any means for the self-removal of an impediment: I think them all nugatory to effect a cure, without *viva voce* instructions from one who has studied the voice, and has had experience in the various obstacles which impede its formation; the dividing it into elements of speech, and the articulation of those elements into combinations—into discourse.

The want of exact and positive knowledge of the natural laws of voice and speech accounts for the absence of remedial measures for impediments, in medical works. Sir Charles Bell, in his lectures at the College of Surgeons, 1827, speaking of stammering, said, "There is a common imperfection of voice which I could wish you to give your attention to, that it may be brought into connexion with the regular attention of medical men."

Dr. Good finds a place for impediments of speech in his Study of Medicine, but appends no remedy. He describes some varieties, and has dignified them

with a classical nomenclature, but offers no means to cure, or even to alleviate them.

The ignorance of the natural laws of voice and speech is also the cause of the inexactness of elocutionary science: the vagueness of instruction, consequent upon this inexactness, has occasioned the remark of an anonymous writer, which although not strictly true, there is some ground for—"That it would be better to have the unstudied manner of every-day-life in public speaking, however ungainly, than this system of caricatured elocution (Walker's), so much in fashion among professional students*."

If, in place of condemning Mr. Walker's system *in toto*, because it is abused, the anonymous author had stated what part of it was based on observation, and although inexact, yet is true as far as it goes, and what part is built on authority, he would at the same time have been advancing science, and rendering justice to the memory of an indefatigable and intelligent man.

The objects for study, then, by medical men and elocutionists are the natural laws of voice and speech. As in vision we see objects only according to the natural laws of light, combined with the natural laws of the apparatus of vision, so in speech we can use oral language only according to the natural laws of the apparatus, combined with the laws of that conventional language we employ; and according as the natural laws of the one quadrate

* Art of Improving the Voice, p. 90, *et seq.*

with the natural laws of the other, so will the speech be unconstrained, easy, and less liable to impediment.

The grand object in the cure of an impediment of speech is the knowledge of the means of vocal and enunciative training; when this is possessed the end is in our grasp—it only requires industry. By the employment of our knowledge the habitual morbid chain of actions is not only severed, but a new link is introduced, which is certain of altering the sequence. Repeatedly breaking the morbid chain weakens its tendency to recurrence, and these successive losses of power, with every interruption, not only progressively relatively is strengthening, but absolutely is augmenting, that power whose gradual accessions of force, although scarcely cognizable, is in their accumulative energy irresistible by the impediment.

If two objects have been perceived in connexion but once, the perception or even the conception of one at another time may introduce the other; but if more than once, a tendency to reciprocal introduction will be very manifest. This aptness increases with the frequency of the perception or conception, it being of no importance which precedes; the other is certain to follow: the power is mutual.

This associating power, or suggestive power, as it has been termed by Professor Stewart and Dr. Thomas Brown respectively, in the essays of the former, and the eloquent lectures of the latter, augments so

rapidly by repetition, as to induce habits difficult to break, being almost involuntary—a sort of second nature.

The increase of certain impediments of speech is to be explained by the philosophy of suggestion.

Suppose an individual to have hesitated, no matter from what cause, upon a certain conventional sound or combination of sounds, there are three terms observable in the process which make him again hesitate on the same sound. First, the sign of that sound on which hesitation occurred introduces the memory of the interruption; a doubt as to the present power of uttering the element arises as the second term; when, if no exact knowledge of obviating means be present to the mind, the hesitation completes the sequence, and, by the laws of suggestion, each time that one of the terms is presented to the mind does the aptness of the others to follow in its train increase, until, by the frequency of their succession, they become part of the identity ever present, when certain combinations of sound are thought of.

Those laws of suggestion which make us, on the first term of any sequence occurring, incline to describe the whole process anew, and that with more certainty and precision on each repetition, are the laws under which our only hope can exist in the application of means to remove an impediment to speech.

For if volition can possibly introduce a new term in any sequence, and cause it to be repeated a few

times, it will afterwards be found in its place, being called up by the other terms by the laws of suggestion.

In impediments of speech, if we can introduce a new term, a knowledge of the means to utter a sound or combination of sounds which hitherto have impeded or stopped the current of utterance, the sequence will be changed, and if diligence only be used in submitting our new term to the influence of the laws of suggestion, to be confirmed into habit, the impediment never need again to appear.

The terms of the sequence will still be three, for in place of the sign of the sound introducing—

1. The memory of the hesitation;
2. The doubt of its present utterance; and
3. The hesitation;

we shall, in our new sequence, have the sign of the sound introducing—

1. The memory of the hesitation;
2. The knowledge of the means of utterance; and
3. Its application.

Our chain will still be tripartite, but there will be no hesitation, because its precursor has vanished—the doubt could not exist with exactness of knowledge; in place of the doubt, the symbol of ignorance, we have the certainty and precision of exact and positive knowledge, to be acted upon by the laws of suggestion.

We can now comprehend the reason of the inveteracy of impediments which have long been confirmed into habit. We can sympathize with

those who in vain have endeavoured to throw off their hesitation, and have subsequently submitted themselves to its growing influence, sinking almost into speechlessness, and pity the want of industry and perseverance in those, who, after obtaining the knowledge, and successfully applying it for a time, have ceased their vocal gymnastics before the sequences, formed by the introduction of the new term, have been sufficiently submitted to the laws of suggestion to be a more powerful habit than the old train of terms, and, in consequence, the original sequence still has the ascendancy.

It is not sufficient for a cure that power exists to introduce at will the new term of exact knowledge, and thus to speak without hesitation by a mental effort—to produce a new sequence by an especial mandate of the will. The effort must have been repeated sufficiently; so often that the new term rise in its place in preference to the old one, by the first solicitation of the terms of the sequence, without requiring a special volition, or even an effort. If a cessation or relaxation of industry take place ere this is accomplished, the previous efforts will be found to be nugatory. There must be a constant watchfulness until the new sequence is apter than the old. The knowledge must incessantly be brought to bear against the difficulty. One achievement is of no ultimate use unless it be followed up by another, but each in succession becomes of greater importance; at the same time, each in succession requires less

effort than the last, according to the laws of suggestion.

The grand object, then, is to have an exact and positive knowledge of the natural laws of speech, and by that knowledge of furnishing instructions quadrating with them. When the mechanism of speech can be effected by the will; when power of enunciation and articulation exists, by submitting those organic actions, whatever they are, necessary to speech, to the influence of the laws of suggestion to confirm them into habit, to cause that which at first cost an arduous exertion to become gradually more facile of performance, until the labour of watchfulness, and effort to direct an exactly-timed volition to effect its object, is changed to its accomplishment without consciousness of special effort, then the volition, being repeatedly directed one way, by this frequency at length almost spontaneously and unconsciously describes the same track. The commands of the will, which at first could scarcely be achieved by the stubborn organs, by a judicious exercise, perseveringly maintained, have become so docile and obedient to its mandates, so ready to grant its desires, as to perform them as instantaneously as the former are issued, and the latter arise, producing copies *ad infinitum* of the correct formation of words (the signs of thought), clothed in their several related qualities of voice (the signs of emotions), in their proper connectedly-expressive functions, producing oral language in its complete and perfect state, without interruption, without hesitation.

A gentleman, 21 years of age, nervous temperament, good education, whose occupation required much speaking, and whose pursuits brought him into much good society, used to stammer more than at present; has been under treatment, and relieved from invariably stopping at certain sounds; now there is more fluctuation of utterance; sometimes a word is spoken with facility, at others it is unutterable: thinks he is getting worse than ever.

The vowel sounds, which formerly were under control, frequently produce hesitation; a continual dread is felt; the division of the current of voice is uncertain: thus, in place of proceeding with the required succession of elements, he involuntarily reiterates: for example, while informing me of the particulars of his case, he said—"S—ometimes I am cl cl cl cl cl clear of the im im im impediment." Again, the stream of voice was not controllable in forming any specific vowel element; thus, in place of uttering E, as in *me*, he would perhaps assume the mechanism A as in *a*ll, or OO as in *too*.

The fluctuations he attempted to connect with the state of the stomach—with the weather—with certain emotions; but from its not uniformly following any of these circumstances, hopeless of discovering the cause he gave up further observation.

I found his voice thin and meagre; unvocalized breath issuing with it, producing a siffling; respiration irregular; the expiration jerked out; no rhythm; no more certainty in producing any specific note of

the gamut than of dividing the current of voice at any part of its passage through the vocal tube.

Exercises, to increase the volume and quality of the voice, were adopted. The breath was taken in equal intervals of time, producing long inspirations, which were gradually expired by uniform chest pressure. The glottis was brought to bear upon the ascending current of breath, vocalizing its whole volume. Rhythmical exercises were then adopted.

Much was now effected: the voice was of easy formation; of facile continuance; augmented in volume; stresses were given, cadences formed, and equally measured off by the pulsation of the primary organ.

Although all this was effected, yet considerable efforts were made in directing the will, which, by a steady continuance of our gymnastics, were becoming less conscious, until, by persevering industry, with one slight effort only at first producing voice, the train of volitions appeared for the exercise of the newly-acquired power.

The enunciative organs, as has been already stated, were not under control while the voice was flowing. They became more so after the acquisition of vocal power. In attempting to cut the column of voice at the posterior part of the mouth, to form G or K, a D or T would be made, and the reverse of this frequently took place. Sometimes, in place of raising the tongue's tip, to mould R, the lips would

close and press together. The following words illustrate the uncertainty of enunciation :—

Accession	was made	Ásheshon.
Accident	.....	Ássedon
Aggravate	.. ..	Állafate.

There was no power to open or close the mouth gradually while voice was issuing, until it had first been rapidly shut; so that a P formed by appulsion was frequently thrust where it was not required nor intended, which increased the obscurity of the speech.

If voice were not formed, if mere unvocalized breath were issuing, the enunciative organs could voluntarily cut it into elements, producing whispering. The will had power over the enunciative organs, when specially directed to them, if no other action requiring an effort were produced. But when voluntary actions were simultaneously required from both sets of organs, vocal and enunciative, the volition could not enforce its mandates on both ; either one or the other faltered, and stoppage of speech ensued.

There are many consentaneous and successive actions of the various parts subservient to the voice and speech necessary before a word can be uttered—actions to be produced at intervals, and to be so

nicely adjusted as to come into play just as another action has arrived at a certain step of its progress. The combination of actions necessary to bring the several parts in a certain state, and in a certain collocation, to effect, by their mechanism, the vocalization of the breath, with its qualities and accidents in their several functions, as signals of the emotions and the superaddition of speech—as the signs of thought is produced by a series of volitions, each of which are requisite to effect an individual voluntary muscular action, each succession of volitions being different for every element of speech, and each again differing according to the quality and accidents of the voice accompanying the element in almost endless permutation; the number and variety being great to call into vocal existence the printed symbols of a chapter or paragraph.

Praxes were now adopted to obtain the voice of theatric declamation, and the elements of speech, by appulsion and divulsion, seriatim; then in combination with the elements of vocal expression, until the organs of speech were made obedient to the will. By the combination of words and their corresponding tones in passages selected from Milton and Shakspeare, power of fluent utterance was acquired. The rebel organs of voice and speech acknowledged the supremacy of the will; no hesitation—no drawling—no peculiarity appeared. An accurate enunciation and full-volumed voice were conferred.

He was convinced at our first interview that the

training I proposed would remove his defect. He determined it should. His energies were concentrated on his object. Every obstacle yielded to his inflexible will. He overcame his impediment. He possessed common sense and considerable mental power, which could be sustained on any object by his unflinching perseverance. He was well educated, and a very temperate man in his habits.

A youth, seventeen years of age; the worst case I had witnessed, as he could scarcely make an audible sound without great distortion of the features, and appearing about to fall into a fit. It signified not what element was required; so soon as he attempted to produce voice, his lips closed, and were pressed with greater force as the effort continued. His attempts were attended with an acute pain in the abdomen, which increased in severity also as the effort continued. Like the dumb, he used gestures and written language to supply the place of oral. He could sing at church, and sometimes could join in a response.

Regularity of respiration was the first object to obtain. The vocalization of the ascending column of breath, and the training of the voice by bringing out its qualities on a long drawn note of speech-voice, followed: these were succeeded by enunciative exercises.

He had now been under my care with daily personal superintendence five months, and was so far improved as to exchange written for oral language.

Although he could now speak, yet he hesitated very much. The use of his speech appeared to give him great pleasure. He now wished to give his whole attention to business, and it was with difficulty he was induced to devote another month to improve his speech, as he found that he could speak tolerably well. He has continued to improve by his own exertions, aided by my occasional instructions.

After an impediment is removed, in order to prevent its return it is necessary to induce the organs to continue to act under the natural laws of speech; these laws comprehend those of voice, those of enunciation, and those of articulation. Of the laws of voice, those of the rhythm, of stress or ictus, and the temporal rhythm, are the most important. Of the laws of enunciation, those of the formation of the termination of the elements of speech are the chief; and of the laws of articulation, those which regard the articulation of the liquid and short vowel quantities to initial abrupt elements, are of primary importance in the conservation of speech from hesitation and impediment.

Impediments of speech are frequently found connected with irregular respiration. At times there will be scarcely sufficient breath to vocalize into an audible voice; at other times there is too much, so that the greater part issues unvocalized, mingling a rushing noise with the voice, which is produced in a rapid diminuendo on a wide downward inflexion. In such cases the chief object is to obtain a uniform respiration and control over the apparatus, so as to

present an equable stream of air to be vocalized. A gentleman, nineteen years of age, had a difficulty arise while speaking of continuing utterance. He could begin without effort, but as he proceeded the effort became distressing, until he was finally stopped. He felt a tenseness in the chest, which increased with his exertion, diminishing his power of inspiration. When he ceased for a short time, he could then resume speaking, again to be stopped. This had increased of late.

His respiration was irregular—the powers of enunciation and articulation were affected—the lips and tongue were not under that control requisite for fluent discourse, while the guttural sounds were thrown out of use, from their increasing the difficulty, and producing a fear of being choked by them.

His anxiety to make himself understood, the efforts for that purpose, and the continual dread of stopping, produced a trembling which affected the voice similar to a person shivering with cold, or more from its being on a downward diminuendo inflexion to the weak and tremulous voice peculiar to the decrepitude of old age.

Simple breathing exercises were adopted, to acquire regular respiration, and thereby equable action of the respiratory organs. The ascending column of breath was now vocalized, while the vocal tube assumed the several mechanisms necessary to mould the issuing voice into the vowel sounds upon which the richness of speech depends, and upon which the

musical qualities of the voice, in their expressive functions, both in song and speech, are so patent to observation.

The voice was now submitted to a series of enunciative exercises, combined with certain vocal qualities. Exercises of articulation with the vocal qualities in their functions were adopted, by which the parts subservient to voice and speech were put in training, and an harmonious and regular action ensued, which has been permanented by the practice of Milton's rhythm.

It was an opinion of the late Mr. Thelwall, that if there existed breath sufficient for the ordinary purposes of life, there was enough for the energies of elocution, provided it was vocalized rhythmically; this case, with many others, illustrates the correctness of that opinion.

In this case the irregular supply of the vocal material, the breath, was the cause of the difficulty; that supply, which, from not being husbanded, was ever too small for a sentence, and yet which, if uniformly presented to the vocalizing organ, would have been ample, as the result has proved, for the powerful efforts of declamatory recitation,

I have a case now under my care in which the voice issues, not in a continuous stream, but in interrupted portions, producing a series of staccato notes, each portion of voice being of so short a duration as to prevent the possibility of dividing it into two elements of speech; it may be cut, but then the parts will be but fragments of elements.

The utterance presents a curious appearance to the ear, for in place of a column of voice being presented to the enunciative organs to be cut into speech, a series of broken parts, fragments as it were of a vocal column, are projected forward, and when these are attempted to be converted into speech, it is so unintelligible that it is next to impossible to recognize a word.

The portions of voice are about minims in duration—staccato on a rapid diminuendo of a wide interval downward inflexion, so that a word of only two elements is imperfectly formed. In an attempt to ask the question "like as they are in the book?" he uttered something of which the following may give a faint representation—LIKER SAERE BOOK. The rapid diminuendo I have endeavoured to exhibit by the difference of type; its rapidity, staccato abruptness of opening, and indistinctness of termination, can be imagined by those possessed of a knowledge of music.

My attention was directed to the word "ale," which he could not utter sufficiently plain to be intelligible to his friends. He did not even produce the first element of the word, the A, which is a diphthong, whose terminal is E, and which it gradually blends into, running from the initial to the terminal sound on a long quantity. The initial abruptly burst into momentary existence, with all the point of the staccato, and as suddenly, not melting, but dropping into a faint flat sound of E, scarcely cognizable, from its proximity to silence. There was

not the slightest difference between the utterance of the word "ale" and the alphabetic A. In both cases the initial of the diphthong only was heard falling into a faint E, except, upon untutored but reiterated attempts to pronounce "ale," the voice appeared rushing more violently into the silence of exhaustion.

We have obtained regularity of action of the respiratory apparatus, and power of uniformly vocalizing an equable column of breath, and are now engaged with a series of exercises to produce a continuous stream of voice, from which advantage is daily derived.

In this case the defect arose from allowing the breath to be forced out, as in sighing. Long inspirations were taken, which were suddenly and rapidly thrown out in a torrent, in place of that gliding stream of breath which can be vocalized into a continuously smooth flow, ready for the purposes of a fluent and harmonious utterance.

There is a common defect in the utterance of the letter R. Many cannot produce it, but make a W instead: thus the word *round* is converted into OO, wound; producing an elongation of the initial part of the consonant W, in place of the vibratory sound of the R.

Dr. Good, in his Study of Medicine, has classed the vicious enunciation of R in his arrangement of the diseases of speech*. There is no remedy stated.

* See his work by Cooper, 3d edit. genus *Psellismus*, species *Psellismus Blæsitas*, variety *α Ringens*, vol i., p. 574.

This defect can be removed in a short time by a little industry in the practice of a well-directed exercise. I have succeeded in correcting every case placed under my care. If I were to exhibit the means to that end in these pages it is questionable if it would enable any person to effect their own cure ; for experience shews that talented individuals, and possessing a good ear too, even after *viva voce* illustration of a series of exercises, if left without superintendence, without that frequent appeal to the ear, have not progressed. It appears that the judgment becomes so corrupted by the continual hearing of the vicious utterance, as to be ignorant of the full extent of the departure from propriety of pronunciation.

When the vicious enunciation of any element has been recently corrected, it is no uncommon thing for it to reappear immediately after dinner, and for a short time to resist the then feeble attempts at correction, but giving way in an hour or two to the proper enunciation. Several months after the cure it will appear on any excess or deviation from the accustomed regularity. I have had very curious observations detailed to me by persons who have been under my care, some of which have been amusing adventures in the hours of conviviality,

Defective enunciation is occasionally a term in the sequence of vocal impediment. It is at all times disagreeable to the hearer, if not to the speaker.

Dr. Good has noticed many varieties of vicious

enunciation, but there are many others not included in his catalogue, the remedy for all of which depends on successive series of exercises, adapted to the peculiarities of each case.

It has been imagined that adults cannot alter their vicious enunciation: I have had several successful cases of adults, and at the present time have three under my care, which are all doing well. It is true that in youth the aptitude to acquire new muscular action is greater than in manhood. The vocal gymnasium, like that of the athletæ of brachial and crural training, is adorned only by the student who commences in youth, yet the adult can acquire considerable facility and advantage from a judicious system of training.

"Children," says the philosophical Dr. Spurzheim, "ought to be accustomed to speak loud, and to *pronounce all possible sounds and articulations*, even those of such foreign languages as they will be obliged to learn; for almost every language has its particular sounds, which we pronounce with difficulty if we have not been early accustomed to them. Accordingly, nations who have the greatest number of sounds in their speech learn the most easily to pronounce foreign languages, since they know their articulations, by having met with similar sounds in their own language. The French and English, having no guttural sounds in their language, find it difficult to imitate them in the German. The Germans, on the contrary, who have not the

sounds of J and V of the French, or of TH in the English, acquire them with difficulty. The inhabitants of Otaheite, when trying to pronounce the name of COOK, always said Toutou*."

The Polish and Russian languages possess sounds, and combinations of sounds, more difficult than others for foreigners to learn. In vocal gymnasia these sounds would form part of the exercise; not merely as simple cut elements of speech, but as divisions of a stream of voice, with its proper qualities and accidents, so conveying to those who understand the sign as the symbol of thought the additional signal also of the emotions. If the principles were fully carried out, under the guidance of an intelligent professor, vocal athletæ would be produced as remarkable for their power, accuracy, beauty, and richness of voice and enunciation, as are the athletæ of a system of Myolgic gymnastics, for their power and accuracy of muscular motion, and the beauty, symmetry, and rich development of trained muscle.

The advantage of a system of training in which the vocal and enunciative powers would be fully developed, would not be confined to the substitution of a graceful for a vicious utterance, in all its varieties of stammering, stuttering, throttling, reiterating, hesitating, &c.; but a facility would be imparted to acquire the power of producing the particular characteristics of the vocal divisions of other languages we

* A View of the Elementary Principles of Education, by G. Spurzheim, M.D. 2d edit. p. 166.

may study, of articulating those divisions in a native manner, and of producing a stream of voice with the qualities observable in the language; thus connecting in our utterance the vocal and enunciative properties which together constitute the peculiarity of the natives. Thus, a power would be conferred of exactly copying the employment of the various functions of voice as connected with enunciation, and in much less time than is now occupied in producing that faint resemblance to what is termed the accent of a native.

There is a vicious enunciation arising from malformed organs. In such cases, much good can be effected by a system of training adapted to the peculiarities of the case.

A youth is now under my care with a palate unusually high and ill-formed, his jaws thrown forward, and pouting lips, which are constantly open. His speech is so chaotic that his parents at times are unable to understand him. He has been on probation for several situations, but the state of his speech has prevented his being engaged. Voice hard and unmusical, jerked out in a full volume; enunciation defective, every vowel sound running into the word "*err*" from his open mouth. The consonant sounds imperfect. He seemed to have no idea of utterance. He has now been under my care four months, is so far improved as to be intelligible, and is about to take a situation, his speech being no longer a barrier to his obtainining employment.

Cleft palates and other deficiencies much affect the utterance; but even in such cases much may be done to improve the intelligibility of speech, although the voice will still necessarily retain much of its peculiar narisonance.

I might multiply cases to a considerable extent, all of which illustrate the position that the acquisition of dexterity of the muscles employed in speech, through the diligent practice of vocal and enunciative exercises, is the only certain mode of permanently removing impediments of speech.

In all cases the application of elocutionary principles to obtain steadiness of voice, and regularity of action of the vocal organ, have alone mitigated the impediment, and when the vocal qualities have been used to simple elements, whether produced by appulsion or divulsion of the organs concerned in their mechanism, the effect has uniformly been the acquisition of power to enunciate every element without hesitation, and proceeding onwards, the varied articulations of these elements in every possible combination, forming speech at the bidding of the will. In this way the difficulty is not merely evaded, it is actually removed; and so far from there remaining any peculiarity of drawling, or mannerism, there is a sharpness in the speech, and command over the whole organs, so as to produce at will a vocal delineation of the several thoughts and their relations constituting the sense of an author.

Enough, Sir, I think has been said to shew that

whatever may have been the benefit derived from empirical, and, therefore, uncertain practice, the facts furnished by the unsuccessful cases of the various schemes employed are of considerable value; and I hesitate not to avow that the study of those cases has supplied me with considerable knowledge, and has tended to render that which I possessed before much more precise and exact.

He who would know the philosophy of the speech-voice, as in other departments of natural knowledge, can satisfy his aspirations only by observation and experiment. The records of this knowledge exist not in books. There being no register of the knowledge, suggests that, as such, it does not exist. He must go to nature; he will find that the labour is not to verify but to discover. There are vast resources of undiscovered knowledge in this rich department, awaiting the investigation of those who have learned to observe, and from what I have obtained, I can promise to the patient inquirer an abundance of new truths for the labour of perceiving them.

It is quite clear that the voice and speech must be analysed, and their elements discovered, before any thing like precision can be arrived at in removing those obstructions which impede discourse. Analysis must precede scientific synthesis.

When those principles of elocutionary science which are based on the natural laws of voice and speech are applied with precision and certainty as

terms in that order of sequences the final term of which is a sanatory action of all the organs subservient to speech, hesitation and impediment will no longer exist. In all those applications which I have conducted, the benefical effects have followed as uniformly as any other generally known cause has been succeeded by its effect.

With the expression of my hope that in this attempt to bring the treatment of defective utterance within the pale of principle, I have done something towards exhibiting the train of causation requisite as a remedy, and thereby to destroy the oath-bound secret procedure of empirics,

I remain,

Dear Doctor,

Your most obliged servant,

RICHARD CULL.

14, *Caroline Street, Bedford Square,*
July 1835.

THE END.

WILSON AND SON, PRINTERS, 57, SKINNER-STREET, LONDON.