

Stammering, practically considered; with the treatment in detail / By T. Bartlett.

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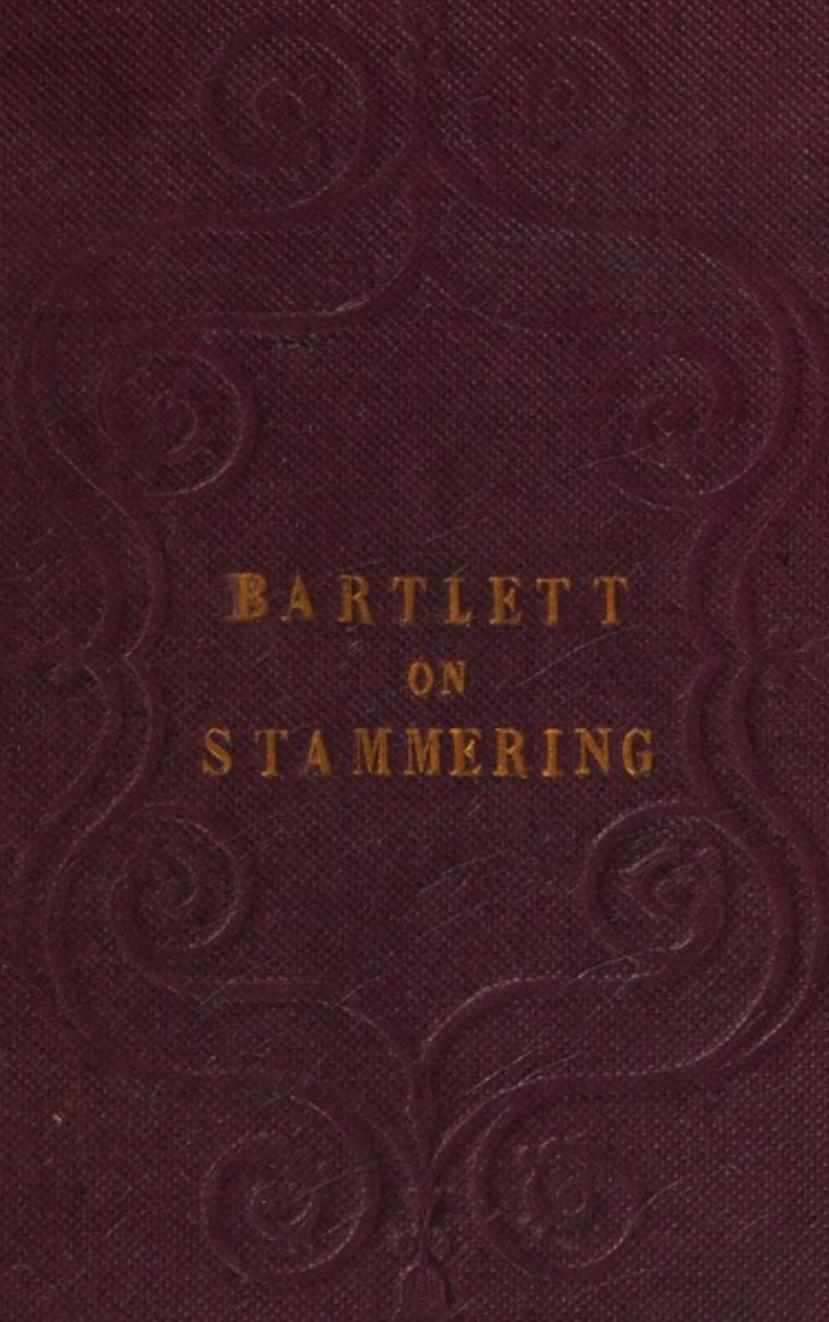
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A decorative border is embossed on the cover, featuring a central oval frame with intricate scrollwork and floral motifs extending to the corners.

BARTLETT
ON
STAMMERING

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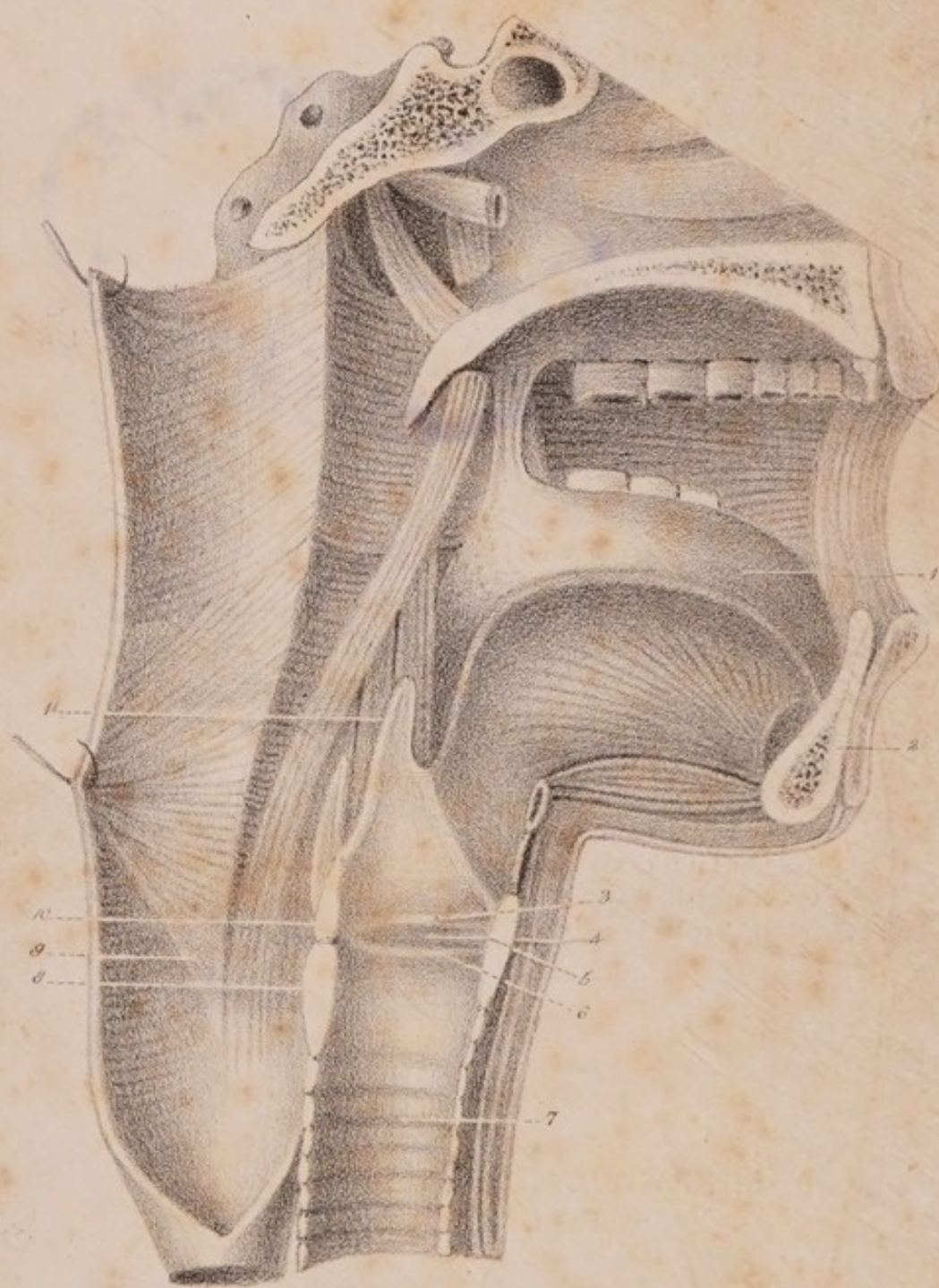




STAMMERING,
AND ITS TREATMENT.

COMPTON & RITCHIE, PRINTERS, CLOTH FAIR, LONDON.





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STAMMERING,

PRACTICALLY CONSIDERED;

WITH

THE TREATMENT IN DETAIL.

BY

T. BARTLETT,

ASSISTANT SURGEON THE KING'S OWN LIGHT INFANTRY.



"Speech is the great instrument by which man becomes beneficial to man : and it is to the intercourse and transmission of thought, by means of speech, that we are chiefly indebted for the improvement of thought itself."

LONDON:
SHERWOOD, GILBERT AND PIPER,
PATERNOSTER ROW.

1839.

A circular ink stamp from the Wellcome Historical Medical Library. The text "WELLCOME" is curved along the top inner edge, "HISTORICAL MEDICAL" is in the center, and "LIBRARY" is curved along the bottom inner edge.

PREFACE.

WHEN a remedy for a disease is recommended, it is usual to relate several successful cases, for the purpose of shewing that the means advised are the best adapted to the cure. This practice has not been followed, for two reasons—the one, that the admission of cases necessarily increases the size of a work, the other, that a relation of cures is not needed, as it must be quite evident to all those stammerers who attentively read over and study the treatment here

prescribed, that it is both simple and efficacious.

It may be considered, on the first view, that matter foreign to the subject, and having no reference whatever to the disease under consideration, has been admitted, and unnecessarily dwelt on: my object, however, so far from being to enlarge, has been to curtail, as much as possible, consistent with a capability of satisfactorily shewing the grounds on which the principles of the treatment are based.

A knowledge of voice and speech,

their relation to one another, and the means employed in the formation of each, was deemed requisite for a thorough perception of the nature of vitiated articulation in all its complicated varieties. And however dry and seemingly unimportant an acquaintance, to a certain extent, with the structures used in the formation of the voice may appear, I hold it indispensably necessary to a complete knowledge of the subject in hand.

After considering the means which must be employed to produce a clear,

distinct, and easy enunciation, attention is directed, with some care, to several points, observable after some study of the disease, which, although incapable of being placed under the distinct heads of rules, are nevertheless necessary to be attended to, in the cure of this most distressing malady.

And should any suffering from vitiated articulation be convinced, on a perusal of these pages, that their hitherto unconquered malady does not arise from an imperfect formation of the organs of speech, and that the complete

cure rests entirely with themselves, the object of this Essay will have been accomplished, and the time occupied in its preparation not uselessly employed.

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REFERENCES TO THE PLATE,

SHEWING A VERTICAL SECTION OF THE LARYNX.

1. The tongue
2. Section of the lower jaw
3. The superior ligament
4. The thyroid cartilage
5. The cavities of the larynx
6. The inferior ligament
7. The trachea
8. The cricoid cartilage
9. The pharynx
10. The arytenoid cartilage
11. The epiglottis.

The plate is copied by Mr. Perry, from Cloquet.

REFERENCE TO THE PLATE

FIGURE 1. A MEDIAL SECTION OF THE LARYNX.

1. The tongue.
2. Section of the hyoid bone.
3. The superior ligament.
4. The thyroid cartilage.
5. The cavity of the larynx.
6. The inferior ligament.
7. The trachea.
8. The cricoid cartilage.
9. The pharynx.
10. The epiglottic cartilage.
11. The epiglottis.

The plate is copied by Mr. Perry, from the original.

ON STAMMERING.

“Speech is the universal gift of God to all mankind. But as in his wise dispensations, in order to excite industry, and make reward the attendant on service, in the most excellent things of this life, he has only furnished the materials, and left it to man to find out, and make a right use of them.”

It is a most unaccountable anomaly, that at the present period, when mental energy is so obviously essential to success in life, and the modes sought to develop it are so multifarious, that the means necessarily employed to embody and apply with effect the power of native talent on the attainments which education supplies, should be in so many cases flagrantly neglected. Many persons who, when young, were susceptible, with proper management, of almost any degree of intellectual refinement, have been suffered to give way to such an imperfect mode of articulation,

as effectually to prevent their making those acquirements which would qualify them for undertaking situations of respectability and emolument. Lesson after lesson is in this manner, and under the same pretence of incapability of utterance, passed over and lost ; while nature is most unjustly accused of thus virtually excluding these unfortunates from their proper privileges, and throwing them into a lower grade in the scale of society, when only indolence and ignorance are the real causes of the perpetuation of the evil. So common, indeed, is this occurrence, that scarcely a public school could be found which would not furnish an example.

It has much prevailed to refer the cause of stammering to a deficient or imperfect formation of the organs of speech. There is no difficulty in accounting for the readiness with which the public have seized this notion, for, ignorant of the manner in which voice and speech are produced, it was natural for them to embrace with avidity an idea which so quietly and decisively settled the matter : but

I am at a loss to conceive how it was possible for medical men, aware that all the organs of speech are capable of the most minute examination, and conscious that the difficulty is not constant, could have countenanced the vulgar error, that stammering proceeds from malformation. It is very clear, that the impediment cannot arise from an imperfect formation of the organs of speech, since the difficulty does not at all times exist; hence it is impossible that the formation can have any reference to the malady. If it were possible for any doubt to exist on this point, it would, I think, be dispelled by the strong opinion recorded by T. Sheridan, who must be acknowledged by all to be no common authority on a question of this nature.—“I dare boldly affirm, that of the multitude of instances which offer, of a vitiated articulation, there is not one in a thousand which proceeds from any natural defect or impediment*.” So far from its being true that stammering is caused by malformation, it

* Lectures on Elocution, by THOS. SHERIDAN, A.M. p. 59.

will be clearly proved that perfect articulation may take place, when the most important organs of speech have met with extensive injuries of a very severe and dangerous description, apparently rendering any articulation perfectly impossible.

Since, then, imperfect formation of the structures on which easy and perfect articulation depends has no reference whatever to the cause of stammering, a remedy may be discovered, and is herein offered for this disease, however inveterate in its character, and of whatever standing, which, if duly applied, and perseveringly followed up, cannot fail of effecting a perfect cure. And surely, if this desideratum be really within reach—if a malady which has not only bid defiance to, but has increased under all the ordinary modes of treatment, such as scolding, threatening, and frequently beating, can be brought under control by a milder and less unpalatable regimen, wisdom, prudence, and humanity, would dictate the desirableness of giving it a fair trial. What stutterer is

there, who, writhing in agony under the mental torture which his disease inflicts, will not gladly avail himself of any simple, rational, and efficacious means for the removal of his malady? And what zealous instructor of youth is there, who, finding his plans for the promotion of his pupil's improvement marred, and his efforts foiled in an exceedingly painful manner, by this most tantalizing obstacle, will not hail, with gladness, a remedy which he can at once apply to his pupil, without distressing his own feelings? But, above all, what fond parent is there, who, conscious of the disadvantages under which his child labours, looks forward, with anxiety, to his future destiny; clearly seeing that stammering, even in a mild form, is a complete and overwhelming disqualification for most, if not all, the learned professions, and nearly every situation of responsibility, will not eagerly adopt any tried remedy which is capable of removing the disease safely, speedily, and completely?

The preceding remarks apply chiefly to youthful stammerers; and in regard to such,

casual observers are apt to account it a disagreeable and inelegant habit certainly, but to consider the future consequences of the matter to a very limited extent; and hence they may be led to suppose that greater weight has been here attributed to that which is, in their opinion, of but slight importance. To exhibit the fact in its proper light, we need only contemplate the career of one who has arrived at adult age, without having conquered this *cacoëthes discendi*, and it will be soon seen, by every one who reflects on the subject, that the difficulty lies rather in the capability of exaggeration than otherwise. Imagine, then, a young man having this defect strongly marked upon him, which all the discipline to which he has been subjected has failed to eradicate:—the bias of his mind is decidedly toward the church; a devotional spirit commends the sacred office to his regard, as the most desirable of earthly occupations; while the power and influence of his family connections, being confined principally to clerical patronage, adds another motive of no small weight, especially with in-

terested friends, to determine the path he should pursue. A consultation is held to discuss the thing fairly ; and while the impediment is admitted on all hands to be a serious inconvenience, the concurrence is equally unanimous with respect to the possibility of removing it, though no one ventures to prescribe the means of cure : thus, invited by predilection and stimulated by favorable circumstances, he commences his training at the University. Passing over his course of study, let us follow him on to his examination :—and who can depict his misery, when, aiming at acquitting himself with credit, and becoming in consequence unusually anxious, his nervous system is thrown into disorder, he loses by each successive effort more and more of that cool collectedness which is especially required in this his hour of need—until some unconquerable word, spasmodically preventing his articulation, causes him to strain, and gasp, and foam in unutterable anguish of soul, amid the most frightful distortion of feature, and

alarming lividness of hue? Meanwhile his judge, if endowed with the sympathies of ordinary men, pretty largely participates in his discomfort ; and, either in pity or impatience, passes him, to get rid of so unpleasant an affair, at least if his written productions are at all satisfactory, so as to give a warrant for such a decision ; or, if the censor be stern, jealous of the honor of his order, and the papers fall short of the expected amount of accuracy, no opportunity being afforded of compensating this deficiency by the *vivâ voce* scrutiny, a stop is unceremoniously put to the whole proceedings by the rejection of the unfortunate candidate. If the latter result be the issue of this fiery trial, the entire hopes of the aspirant are, *in limine*, dashed to the ground ; but if he is so fortunate as to get off in the manner first described, still he will have to realise that he has only passed through the beginning of his troubles. For, let us only accompany him through the ordination into the pulpit to preach his first sermon : here, again, the consciousness of exhibition on

his own part, and of criticism on that of his auditory, haunts his imagination, and excites all the symptoms of the presence of his evil genius: he falters, strives to overcome it, but has no key to the secret power of doing so—loses his presence of mind, and perhaps his temper; and either continues thus to harass himself, and inflict the most acute sensations on his flock, so as to destroy all interest in the subject he may attempt to treat, and render improvement impossible, or else he at once resigns himself to hopeless despair. A thousand instances might be advanced to substantiate the general truth and faithfulness of this delineation, and to prove that the tendency, nay, absolute effect, of uncorrected stammering, when brought out into prominence in the avocations of public life, have not been misrepresented, nor the description unnaturally overcharged.

And what has been just now stated, in relation to the divine who has the misfortune to be infected with the malady in question,

will evidently apply with equal force, under due modifications, and adapted to all the peculiarities of the respective cases, to the senator, the barrister, the medical practitioner, and even to the attorney: in short, wherever ease of manner, combined with readiness and felicity of expression, are eminently conducive to success, there no stammerer dare venture to place himself, unless he would expose his personal peculiarities to mimicry, and his ill-directed ambition to failure and contempt.

One remark more ought neither to be omitted nor disregarded, as it respects that interesting and important section of the community on whose character and manner the general well-being and happiness materially depend: I shall, of course, be immediately understood to allude to that fairest of Nature's works, "lovely woman." For can a bosom exist that would not throb with increased pleasure to promote the chaste and gentle influence of female charms? that would not gladly smooth away any rugged or unseemly blemishes which would weaken their

bland and benign sway over our affections? that would not seek to alleviate the unspeakable pangs produced by a sense of defect and inferiority in a delicate and sensitive mind? Now what, in sober earnest, among the whole catalogue of graces and external blandishments, is comparable in their estimation, or in ours, to that gift, so especially the property of the sex, and which exercises so powerful an influence on man—a free and brilliant conversation?

“*Της γὰρ ἀπο γλῶσσης μελιτος γλυκιωνεῖεν αὐδὴ*”

Few ladies, therefore, as in truth might be expected, can bear with patience the captivity of so important a member as the tongue: it lessens their cheerfulness, impairs their vivacity of spirit, and detracts amazingly from that *suaviter in modo* which renders them so generally engaging. Many, indeed, dreading to expose to ridicule the shocking contortions of feature produced at every effort at enunciation, avoid society altogether, and thus sacrifice their hopes and usefulness to this terrifying foe.

It must then, I think, be readily acknow-

ledged, that all those, who, suffering from the miseries of vitiated enunciation, do not with eagerness avail themselves of a remedy at the same time simple and efficacious, prove themselves totally unworthy of possessing that inestimable gift, which, granted only to man, renders him the first of created beings.

Voice is an appreciable sound, produced by such an alteration in the passage through which the air travels, when expelled from the lungs, as to cause it to vibrate: speech, or articulated voice, which depends on muscular action, and is the result of voluntary motion, is produced from this sound by the motions of the tongue, the lips, and the other parts of the mouth. "Voice is common to both brutes and man, even immediately after birth, nor is it absent in those infants who are born deaf. Man only can articulate sound; for speech follows only the culture and employment of reason, and is consequently, like it, the privilege of man, in distinction to the rest of animal nature."

The instrument of voice is the larynx, a sort of cartilaginous box, situated in the front and most prominent part of the neck, and resting on the upper part of the trachea or windpipe. The thin and elastic cartilages which form its sides are united by membranes, and moved on each other by many little muscles. There are five cartilages of the larynx, the thyroid, the cricoid, the two arytaenoid, and the epiglottis: three only are concerned in the production of voice; these are the two arytaenoid, and the thyroid. The *thyroid*, or shield-like cartilage, which is the largest of the five, is placed at the upper and fore part of the larynx. It consists of two lateral quadrangular portions, united in the middle, at an angle more or less acute, which may be felt beneath the integuments: this is more prominent in men than in women, and is known by the name of Adam's apple, the pomum Adami.

The *cricoid* or annular cartilage forms the inferior and back part of the larynx, and may be readily felt in the fore part of the throat: it

is connected to the upper part of the windpipe. It has four small articular surfaces, two of which are situated above and behind, for the articulation of the arytaenoid cartilages; and the two others, at the under and lateral parts, for the connexion of the thyroid cartilage. The cricoid cartilage serves as a base for the larynx.

The *arytaenoid* cartilages, two in number, are much smaller than the other cartilages of the larynx, and are placed upon the upper, back, and lateral parts of the cricoid cartilage, at a small distance from each other. Their form is pyramidal. The *epiglottis* is situated at the upper part of the larynx, between it and the tongue, and covers the opening of the larynx; it is broad above close to the tongue, but narrows below, and terminates in a point: the only use of the epiglottis is to close the entrance of the windpipe to what we swallow.

The ligaments of the glottis.—There passes from the base of each arytaenoid cartilage a ligamentous cord, horizontally forwards, to be fixed by its other extremity to the inside of

the angle of the thyroid cartilage. The opening formed between these ligaments is the *glottis*, which is of a triangular figure, the ligaments being in contact before, but at a distance from each other behind. The opening of the glottis, a slit, from ten to eleven lines long in an adult, and from two to three wide, where the width is the greatest, is the most essential part of the larynx. Under the two ligaments before described there are two others, larger and more distinct than the former; these are the *proper ligaments of the glottis*, or the *chordæ vocales*: they arise, like the former, from the base of the arytaenoid cartilages, run in the same direction, and are fixed, like them, to the thyroid cartilage. In the space between the superior and inferior ligament on each side, there is a fissure which leads to a small membranous cavity: these cavities are the ventricles of the larynx of Galen. Besides the muscles connecting the larynx to other parts of the body, it has five, some anatomists say seven, proper to itself, and which exert no influence on any structure exter-

nal to the larynx : their use is to alter the shape of the glottis, and hence to modify the voice.

It is proved that every motion in the glottis is performed by the muscles of the larynx, by tying or dividing the nerves which are distributed to them, and thus weakening or destroying the voice*. From the investigations of Dr. Savart, it appears that by constructing a pyramidal tube, of nearly the same length and capacity as the vocal tube, and membranous at its lower part, all the sounds of an ordinary voice can be produced from it, either by varying the tension of the membranes, or by altering the size of its orifice.

Grostête, Bishop of Lincoln, is said to have made a brass head, which could speak. In the tenth chapter and second book *Monachi*

* For an account of this beautiful experiment, anciently made by Galen, consult W. Courten, Phil. Trans.; Morgagni, Ep. Anatom. xii. No. 20; P. P. Molinelli, Comment. Institut. Bonon. t. iii; J. Haighton, Memoirs of the Medical Society of London.

Malmesburiensis, on the actions of the English kings, it is affirmed that Gerbertus, afterwards made Archbishop of Rheims, invented a machine which pronounced yes or no. One of the colossal statues amongst the ruins of Thebes* is named Osymandyas by Diodorus, and, according to Strabo, Ismandes by the Egyptians: many writers have called it Memnon. From the many accounts which we have of sound issuing from this statue on sunrise, we cannot but believe that such was the fact. Cambyses ordered this statue to be broken, when it probably ceased to sound, as Herodotus does not mention this singular circumstance. Manetho (*Syncelli Chronographia*) states that, under the Ptolemies, the statue being placed on its base, continued to be heard, but not in so distinct a manner as formerly. Philostratus, *in vità Apollonii Tyanei*, lib. 6, in speaking of the statue of Memnon, says, that, when first shone on by the rays of the sun, it was said to speak. Dionysius,

• See Savary's Letters on Egypt, vol. ii.

*Perieg** also speaks of the vocal statue of Memnon, which greeted Aurora. Tacitus† says that the statue of Memnon, on the first beams of the sun shining upon it, pronounced vowels. Numerous inscriptions confirm the above account. On the right leg of the statue is the inscription of C. Lælia, wife of Africanus, the Præfect, stating that she heard the voice of Memnon in the first year of the reign of Domitian; and on the left leg is the inscription of Publius Balbinus, who heard the voice of Memnon. Strabo says, that, when in company with Ælius Gallus and others, he heard the sound of the Memnon. Pliny considers the statue of Memnon to be made of basalt.

“*Dimidio magicæ resonant ubi Memnone chordæ†*”

Yepes‖ relates that Henry de Vileina had made a speaking head at Madrid, which was broken to pieces at the command of John II, King of Castile.

* Orbis Descriptio. † Tacit. Annal. lib. 2.

† Juven. Sat. 15. ‖ In Emanuel de Mourra, sect. 2, cap. 15, art. 6.

Passing over the interesting account given by Naude*, of the magic heads of Albert the Great and Roger Bacon†, an instrument was constructed by Kratzenstein which produced the vowels‡; and Dekempelin has published a full account of his celebrated speaking machine, which perfectly imitated the human voice§. The Abbé Mical, the celebrated French mechanician, formed two heads of brass which pronounced very distinctly entire phrases; these heads were colossal, and their voices were powerful and sonorous||.

It has been correctly observed by Aristotle, that those animals only which possess lungs have a true voice; it is, therefore, confined

* Apologie, &c.

† The Historie of Bacon and Bongay.

‡ Observations sur la Physique, par Rosier, Supplement, 1782. p. 758.

§ Ueber den Mechanismus den Menschlichen Sprache. Vienna, 1791.

|| See Dr. Elliotson's edition of Blumenbach's Physiology. London, 1828.

to the first three classes of the animal kingdom, but it has been discovered that many even of these are either entirely dumb, or they lose their voice in certain parts of the earth*. Certain peculiarities are met with in the formation of the larynx in those animals which possess a characteristic voice: the neighing of the horse†, for instance, is produced by a delicate membrane in the larynx: a similar membrane, with two large membranous sacs opening into the larynx, is observed in the ass‡. The cat§ has two delicate membranes lying under the ligamenta glottidis; and the pig|| is furnished

* Pennant's Arctic Zoology, t. ii, p. 320. Muller's Sammlung Russischer Geschichte, vol. ii, p. 123. J. C. Beckmann Historische Beschreibung der Chur und Mark Brandenburg, vol. i, p. 590. Coulson's Edition of Blumenbach's Comparative Anatomy, p. 190.

† Herissant Mem. de l'Acad. des Scien. 1753.

§ Vicq. d'Azyr, Mem. de l'Acad. des Scien. 1779.

|| Casserius De vocis auditusque organis. See also Herissant, Mem. de l'Acad. des Scien.

with two large membranous bags. The lion* is particularly remarkable for the very considerable extent of the larynx, corresponding to the powerful roar of that animal. The most human-like formation of the larynx is found in apes*; but, notwithstanding, the finer and more important modulations of voice are impeded by the presence of sac-shaped dilatations or appendages, which interrupt and obscure the sound; though Vicq d'Azyr and Lordat† have rendered it very improbable that the incapability of speech is to be attributed solely to these sacs. Mr. Hunter, who dissected the larynx of many distinct kinds of singing birds, observes that the loudest songsters have the strongest muscles, and that the skylark—remarkable for its clear and vigorous note—has the strongest of the whole. The windpipe of birds, furnished with a double larynx, pro-

* Gore's Translation of C. G. Carus' *Comp. Anat. of Animals*, vol. ii.

† *Observations sur quelques Points de l'Anatomie du Singe vert*. Paris, 1804.

duces a comparatively strong voice, in consequence of its being almost entirely cartilaginous*. Several animals use their voice only during the season of love; the birds which sing at all times have, during that period, a more powerful and sonorous voice. At the time of puberty a great change takes place in the nature of the sounds produced by the vocal organs.

In less than a year, the opening of the glottis increases in man in the proportion of 5 to 10†, its extent being doubled both in length and breadth: these changes occur in a less remarkable manner in woman, whose glottis increases in the proportion only of about 5 to 7, which accounts very satisfactorily for the greater alteration which occurs at this period in the male voice. As the glottis enlarges with the progress of age, the voice be-

* See the Memoirs of M. Cuvier on the double larynx and on the voice of birds.

† See Dr. de Lys' Edition of Richerand's Elements of Physiology.

comes stronger, fuller, and passes from the acute to the grave: it always remains weaker and sharper in woman, whose glottis, Richerand informs us, is a third smaller than in man.

By opening the windpipe or even the larynx below the situation of the glottis, the voice is destroyed, in consequence of the air being prevented from passing through it: speech only is lost when the opening is made above the glottis, thereby shewing that this is the most essential part of the larynx in the formation of the voice.

Are the modifications of the voice dependent on the width or straightness of the glottis, or on the tension or relaxation of the ligaments forming its sides? Is the larynx a wind-instrument, as Galen and Dodart supposed?—or was Ferrein correct in considering it a stringed instrument?—or must we agree with neither, and look on it as a modification of the two? Kratzenstein viewed the glottis and larynx as a kind of drum, with its head

bisected. *Tentamen de naturâ et caractere sonorum litterarum vocalium*, 1781.—It has been compared by the celebrated Blumenbach to an Æolian harp, particularly to one of the description found by Labillardière in Amboyna. *Voyage à la Recherche de la Perouse*, t. i, p. 326.

It has been objected to the theory of Ferrein, that the chordæ vocales do not possess the three requisites for the production of sound in a stringed instrument;—they are neither dry, nor tense, nor insulated. But although the ligaments of the glottis are not capable of producing sounds without other assistance, they do nevertheless contribute in no inconsiderable degree to the formation of the voice. The fact is, that the alteration of size in the glottis, and the modification of tension in the chordæ vocales, take place at one and the same time: it therefore becomes impossible to decide whether the formation of voice be owing to the contraction of the glottis, or to the tension of the vocal chords. There is a strong probability

that it is produced by the two actions, and that, therefore, we shall be correct in considering the larynx as an instrument which possesses both the powers of a wind and of a stringed instrument. This double power is, without doubt, one of the reasons why the human voice so much surpasses all musical instruments, by the inexhaustible variety of its intonations. In addition to the contraction of the glottis and the tension of its ligaments, the voice is considerably affected by the length of the windpipe, which is very strikingly illustrated in a singer running down the gamut: in going from the highest to the lowest notes, he visibly shortens the windpipe, whilst in ascending, he elongates it.

Articulated sounds* are represented by letters which express their whole force. Letters

* F. Mercur. ab Helmont, *Alphabeti v. natural. Hebraici Delineatio*. 1657.

Joach. Junguis, *Doxoscopiæ Physicæ minores*.

J. Wallis, *Grammatica Linguae Anglicanae*, Ed. 6. Lond. 1765.

Gottl. Conr. Chr. Storr, *de formatione loquelæ*, 1781. 4to.
Darwin, *Temple of Nature*.

are divided into vowels, or voices, or vocal sounds, which are formed almost entirely from the voice, requiring comparatively very slight assistance from the mouth; and consonants, or letters sounding with other letters, which cannot be sounded without a vowel, and whose pronunciation depends on the particular application and use of every part of the mouth, as the teeth, the lips, the palate. A vowel is a simple articulate sound, formed by the impulse of the voice only, by the opening of the mouth in a particular manner. A consonant is an interruption of the effusion of the vocal sound, arising from the application of the organs of speech to each other. The vowels are divided into two kinds, the simple and the compound. The simple are *a, e, o*, which are formed by one conformation of the organs only, that is, the structures which form them remain exactly in the same position at the end as at the beginning of these letters; whereas in the compound vowels, *i, u*, and final *y** and *w*, the po-

* Ammann, *Surdus loquens*. Amst. 1692. Enlarged under the title of *Dissert. de Loquela*.

sition of the mouth, lips, &c., is altered before the letters are completely sounded. When commencing a syllable, these letters do not only require a different position of the mouth, &c., in order to form them perfectly, but demand such an application of the tongue to the roof of the mouth as is inconsistent with the nature of a pure vowel. *A** is formed by a strong and grave expression of the breath through the mouth, which is open, whilst the tongue contracts itself to the root. *E* is formed by elevating the tongue nearly to the palate and lips: the tongue is, in the formation of this letter, as close to the palate as possible, without touching it. To form *O*, the lips are protruded in a circular form, the corners of the mouth being contracted, so as to produce the *os rotundum*, a picture of the letter it sounds. In forming *I*, the mouth is opened as if to pronounce

* Vide Richard Payne Knight, Analytical Essay on the Greek Alphabet. 1791.

See also the works of Lowth, Elphinston, Kenrick, Sheridan, Johnson, Walker, Nares, Crombie, and Holder.

A; and on the first effort of the voice for that purpose, its progress is checked by a sudden motion of the under jaw towards the upper, and by then instantly cutting off all sound. *U* is formed by protruding the lips a little more than for *O*, forming a smaller aperture with them, and, instead of swelling the voice in the middle of the mouth, bringing it as forward as possible to the lips. *Y* final, either in a word or syllable, is a pure vowel, and has the sound of either *e* or *i*. *W* final is equivalent to *oo*.

The consonants are divided into the continuous, sometimes called semi-vowels, or liquids; the explosive, which are produced by a very sudden, quick expiration; and the sibilant, which are formed as if by a mere aspiration. For the two latter, the breath or voice is stopped in its passage through the mouth; for the former it is allowed a free passage, although the apertures are more narrowed than for the vowels. The semi-vowels are *M*, *N*, *R*, *L*. *M* labio-nasal is formed by a compression of

the lips, and letting the voice issue by the nose. *N* is formed by pressing the tip of the tongue to the gums of the upper teeth, and breathing through the nose with the mouth open. For *R* and *L*, the front of the tongue is elevated so as to touch the palate just above the teeth; for the *r*, the point is drawn back, so as to allow the air to escape; and for the *l*, the point is firmly pressed against the palate, and the breath escapes by the sides: this is the most vocal of all the consonants. Ben Jonson says that *l* melteth in the sounding, and is therefore called a liquid. This however cannot be the reason that *r* is called a liquid, for no two letters can, in this respect, be more opposite. The explosive consonants are *K*, *T*, *P*, *G*, *D*, *B*. *K* is formed by pressing the middle of the tongue to the roof of the mouth, and separating them rather quickly. *T* is formed by applying—when the breath is stopped—the fore part of the tongue forcibly to that part of the palate which is contiguous to the fore teeth. *P* is formed by the sudden opening

of the lips, in order to emit the compressed sound of the vowel. *G* is formed like *K*, the tongue and roof of the mouth being separated more gently. By using the guttural sound, when the fore part of the tongue is forcibly applied to the front of the palate, *D* is produced. The guttural sound is that kind of murmur, as Bishop Wilkins expresses it, which is heard in the throat before the breath is emitted with the vocal sound. *B* is formed like *P*, the guttural sound being added. The sibilant consonants are *H*, *Z*, *S*, *V*, *F*. *H* is the note of aspiration, and is formed in various positions, according to the vowel with which it is combined. If the tip of the tongue be turned up towards the upper gum, so as not to touch it, a space is left between the tongue and the palate for the breath to issue, which forms the sibilating sound of *S*: if this operation be accompanied with a guttural sound, the letter *Z* will be pronounced. *F* and *V* are formed by pressing the upper teeth upon the under lip, and sounding the vowel *e* before the former

and after the latter of these letters. *C* is formed either like *k* or like *s*. The English *J* is a double consonant, compounded of *d* and the French *j*. *Q* has always the sound of *k*; it is constantly followed by *u*, pronounced like *w*. *KS* give the sharp and *gz* the flat sound of *X*. When there is a difficulty in pronouncing the lisping consonant *th*, let the person protrude his tongue a little way beyond the teeth, and press it between them as if going to bite the tip of it: while this is doing, if he wishes to pronounce *thin*, let him hiss as if to sound the letter *s*; and after the hiss, let him draw back his tongue within his teeth, and pronounce the preposition *in*, and thus will the word *thin* be perfectly pronounced. It will be proper to make him dwell some time with the tongue beyond the teeth, in order to form a habit, and to pronounce daily many words beginning and ending with these letters.

Those languages are the most harmonious and grateful to the ear which are constituted of the fewest consonants and the largest num-

ber of vowels. In this respect the Greek surpasses all languages, both ancient and modern*. The languages used by the northern nations produce a very disagreeable feeling in the hearer, the articulated sounds appearing to be formed in the nose and throat. The vowels abound in the languages of warm countries, whilst the consonants very much preponderate in the northern tongues.

A knowledge of the correct mode of forming the different letters is of essential service to the stammerer, and to those who imagine they are not capable of pronouncing certain letters. I never yet saw any person, having no deficiency of structure, who, with proper tuition, could not pronounce every letter in the alphabet. When attempting a particular letter, to pronounce which there is an habitual difficulty, the trial should be made with extreme slowness and precision : this holds good, not only with respect to letters, but also to

* ——— Graiis dedit ore rotundo

Musa loqui.—HORAT.

words: in the latter instance, every syllable must be distinctly pronounced. From a difficulty experienced in the first attempts to pronounce a letter, the child—it most generally occurring in children—considers that it cannot be done, and consequently, when it is attempted to be spoken, it is with fear and trepidation: and, now, it frequently happens that the mother is angry with and scolds the child, which in many cases actually produces the very evil which it was intended to prevent. Instead of blaming the child, let the parent study the rules at the latter part of this essay, and the manner in which each letter is formed, and entice her child to follow her directions; this cannot be effected either by blows or by threats: if properly managed, the child will endeavour to please its parent. If this course be pursued, it will be found that the difficulty will very soon disappear; but if, instead of following this plan of treatment, the friends blame and chastise, there exists a very strong probability, that, instead of curing the child of its supposed

incapability of articulating one letter, they will be the means of making it incapable of pronouncing many: and this, I fear, occurs not infrequently. The prevention of an evil is at all times easier than its cure.

Professor Thomson states, in his report of observations made in the British hospitals in Belgium, after the battle of Waterloo, that he found the speech little impaired after the bullets had carried away more or less of the tongue. Richter, Huxham, and Tulpius, mention similar cases. In the article "*Langue*," *Dictionnaire des Sciences Medicales*, it is laid down, that the functions of the tongue may be performed when it is partially or even totally deficient.—"Il est cependant bon de dire que toutes les fonctions, ou plutôt tous les actes dont nous venons de parler, et qui, pour la plupart, semblent exclusivement départis à la langue, peuvent néanmoins être exécutés, quoiqu'elle manque en partie et même en totalité; on en trouve des exemples, dont les observations ont été consignées dans les fastes de l'art."

Thomas Bartholin speaks of a child, Frederick Singer, whose tongue became amazingly large without at all impeding speech.

The African Catholics, the inhabitants of Tipasa, a maritime colony of Mauritania, who had distinguished themselves by their orthodox zeal, and who had resisted both the Donatists and the Arians, felt the severe vengeance of the cruel Hunneric, the son of Genseric. He despatched a military Count from Carthage to Tipasa, who collected the Catholics in the forum, and deprived them of their right hands and tongues. Aneas of Gaza states that he heard them speak, and that he convinced himself that the whole tongue had been completely torn away by the roots. Victor Vitensis, an African Bishop, attests the truth of this, which was considered a miracle, and particularly alludes to the clear language of the sub-deacon. The Emperor Justinian, Count Marcellinus, and Pope Gregory the First, also attest the truth of this occurrence. The words of Victor Vitensis, *de Persec.*

Vandal., are these: "*Spiritu sancto præstante, ita loquiti sunt et loquuntur, quomodo antea loquebantur.*" See also Gibbon, *Decline, &c.* Justinian, *Codex.* Marcell. *in Chron.*

Dr. Maurant, in the 15th volume of the *Journal de Médecin*, 1762, gives the history of a child whose tongue was monstrous, and much enlarged, but who talked and sang without any alteration of the voice. M. Percy, surgeon-major, relates the case of Elizabeth Theis, of Petersbach, department of the Bas-Rhin, whose tongue completely filled the mouth, and yet, he says, "*Cependant cette jeune personne lit, parle assez distinctement & chante bien.*" Morgagni mentions a man in whom the epiglottis was completely deficient, nevertheless this person spoke and swallowed without difficulty.

Dr. Conyers Middleton* mentions two cases of distinct articulation with at least but little tongue. "In his exposure† of the *pious*

* An Enquiry into the Miraculous Powers, &c.

† Elliotson's Blumenbach's Physiology.

deceptions of weak and wicked Christians during the first centuries of the Christian era, he notices a pretty tale of an Arian prince cutting out the tongues of some of the orthodox party, and these being as able to talk as before; nay, one (*O hominum impudentia!*) who had been dumb from his birth, gained the faculty of speech by losing his tongue. Granting the fact, and even that the tongues were completely extirpated, he refers, for the purpose of proving there was no miracle in the case, to two relations of similar instances by medical men." See Jussieu, *on Speech without a Tongue. Mém. de l'Acad. des Sciences*, 1718, p. 6. In the *Philosophical Transactions* for 1742, p. 143, will be seen the account of a woman who spoke fluently without the vestige of a tongue, and who was seen by the Royal Society. See also Dr. Parson's account of Margaret Cutting, who had lost her tongue *Phil. Trans.* 1747. Louis informs us, that Slegel, who was at Paris about the middle of the seventeenth century, saw a patient, one

half of whose tongue was removed by Pimprenelle, an eminent surgeon of that time: after the wound had healed, it is said that the patient could articulate very well. In Mr. Samuel Cooper's great work, the Dictionary of Practical Surgery, article Tongue, will be found "After the loss of very considerable portions, or even what may be called the whole tongue, patients often recover the power of speech, mastication, and deglutition." This, alone, on the authority of Mr. Samuel Cooper, would be sufficient to establish the position, that loss of substance in the tongue is not necessarily followed by a corresponding imperfection in the faculty of speech. See also J. Rowland, *Aglossostomographie, ou description d'une bouche sans langue, laquelle parle, et fait naturellement toutes ses autres fonctions.*

At the first view, it would appear that the power of articulation would be almost entirely destroyed by any considerable injury to the tongue; this is, however, sufficiently disproved

by the above cited authorities. Here, then, it is shewn, that persons who have lost considerable portions of the tongue, that useful organ in articulating, may possess great capability of speech. This must give confidence to the nervous stammerer, by shewing what nature can effect in a state incomparably worse than his own. Every stammerer should make himself acquainted with the works of the authors just now referred to, in order to satisfy himself that the account is correct; and when his mind is made up on this point, he should then consider whether or not there is, in his own case, an injury equal to the loss of structure which is there detailed.

It may, perhaps, be objected by some, that the citation of the authorities on the capability of speech after the loss of the tongue is uselessly minute. Being satisfied that the evil of stammering is much increased by a want of confidence, arising from a fear of its being irremediable from supposed malformation, I should not be doing my duty did I not refer to the numerous

authorities on which my conviction is based of the possibility of speech after the loss of what is generally considered indispensable to correct articulation.

If the stammerer be a thinking person, he cannot fail to be struck by the facts which have been related, both as regards the manner in which voice and speech are formed, and the preservation of speech after severe injuries: they will account for many circumstances in his malady which had previously puzzled him, and the cause of which he was not enabled to discover. The study of anatomy and physiology shews the stammerer the origin of the evil, the cause of his disease; it proves that all difficulty of speaking must arise from a deficient muscular power, resulting from impaired nervous energy, transmitted from the brain by the nerves, to the parts to be acted on. It therefore follows, that any circumstance which affects the brain must, since all muscular power is dependent on nervous influence, materially interfere with the complicated process

of speaking. When the stammerer has well considered those parts of anatomy and physiology at all bearing on the matter in question, he should commence the cure. No time should be delayed. Each day the disease increases,—it becomes fixed in the habit of the individual. The longer the continuance, the greater will be the time occupied in the cure. He who does not ardently strive to conquer a difficulty of articulation, shews by his apathy that he does not deserve that divine gift, the power of speech, which, as it makes manifest the possession of the highest order of reason, stamps man the lord of created animals. Any one treating with indifference the power of expressing his thoughts, assuredly one of the most noble faculties bestowed on man, proves that he is unworthy of his exalted station in the scale of animated nature.

It has been shewn that the human voice is produced in the larynx by muscular effort, and that speech is formed from voice by the muscles which surround the mouth acting on

the organs to which they are attached. It has also been shewn, that the voice is lost by a division of the nerves which are distributed to these muscles, clearly proving that the voice is dependent on the functions of the brain. Now, if a person with an habitual difficulty of speech can satisfy himself that his larynx, throat, tongue, palate, lips, and mouth, are properly formed, it follows that his stammering must proceed from an alteration in the nervous influence which is sent from the brain to these organs. By comparing the mouth, larynx, &c. of an habitual stammerer with the same organs of one who has no difficulty of speaking, it will be seen that the same formation of structure exists as well in the one case as in the other.

It must now, I apprehend, be granted, that stammering does not depend on malformation or deficiency of structure in either the larynx or the mouth, but that it is produced by a modification of the influence transmitted from the brain; and it is on this principle that

the rational and only correct method of curing a difficulty of speech can rest. Every system which has not this for its basis will prove ineffectual. With this for our guidance, we shall be enabled to cure all habitual stammerers, providing the mode of treatment which is prescribed for them is scrupulously adopted. It will not be sufficient for the stammerer to follow the rules here laid down for him at certain times only; he must obey them at all times: and if he be really ardent in his desire to remedy his difficulty of speaking, this will be considered as merely a trifling restraint. Those who, on the contrary, endeavour to cure themselves by attending to these instructions with lukewarmness and indifference, will remain stammerers. I charge all such not to bring any method of treatment into disrepute by their disgraceful apathy, nor to prevent others from availing themselves of those remedies of which they are too indolent and too indifferent to reap the advantages. It is not so much a matter to be lamented, that persons

should exist who do not possess sufficient energy to cure themselves, since it is probable that they would use, but for an unworthy purpose, that faculty to the possession of which they are so indifferent.

Stammering is an incapability of using the muscular effort necessary for articulation. It is produced by imitation, and retained by mental emotion and habit. It has never occurred to me to see a case of stammering which could not, by a strict investigation, be clearly traced to imitation. There is no faculty more familiar to us than that of imitation; it is the first executed by the infant, and it grows with his growth: by reiterated imitation, by slow yet certain steps, we acquire habits which fix the moral character of man, and frequently produce the most pernicious and incorrigible diseases. When once a person hesitates, if not very careful, he will sooner or later become a stammerer.

If human nature be attentively studied, it cannot fail to be observed that habit possesses a vast influence both over the mind and the body: it affects us in every transaction of life; it heightens our happiness, and it increases our sorrow. We are at all times influenced by the force of habit; its power is exercised over us when we are the least aware of it. The influence possessed by habit should not be forgotten when the treatment of a particular case is under consideration. Persons who have not been accustomed to observe narrowly will scarcely credit the great power of habit over all animals.

How happens it that an habitual stammerer, when in his own family circle, and in good spirits, can articulate the most difficult words with the greatest ease? Whilst surrounded by his intimate friends, the stammerer neither fears the judgment which may be formed of his sentiments, nor dreads the exposure of his malady.

It is a commonly received opinion, that stammering is increased by certain winds: it

is so far correct, that stammerers are made chilly by the north and the north-easterly winds, which are supposed to possess this influence, and, from their feeling cold and uncomfortable, articulate with greater difficulty than when the wind blows from a more southerly direction. That the winds possess a peculiar specific power over stammering, is perfectly untenable. Stammering will be found to occur more frequently in the diffident and the sensitive than in the bold and the careless.

A very false opinion has much prevailed, that the shortness of the *frænum linguæ* (the bridle of the tongue), or its being continued too far forward towards the point of the tongue, prevents children from articulating. I grant that the division of the fore part of the *frænum* is sometimes required; but I am convinced that this operation is performed much more frequently than is necessary, in consequence of the surgeon thinking lightly of the operation, and yielding to the importunity of the nurse. When the child is small, and the nurse's nipple

large, it is common for her to suppose the child to be tongue-tied, when, in fact, it is only the smallness of the child's tongue that prevents it from surrounding the nipple. In children who are really tongue-tied, the frænum extends from the back part to the very point, so that the whole length of the tongue is tied down and unnaturally confined. The dangers* to be apprehended from the operation are numerous, besides the fatality resulting from wounding the raninal arteries, situated on the lower surface of the tongue. The records† of surgery furnish us with proofs that the mere bleeding from the raninal veins and the small vessels of the frænum may continue so long, in consequence of the child's incessantly sucking, as to produce death: from the child swallowing the blood as fast as it issues from the vessels,

* A. Burn's Surgical Anatomy of the Head and Neck.—Bell's Anatomy.—Fab. Hildanus.

† Dionis, Cours d'Opérations de Chirurgie, 7e. Démonstration.—Richter, Anfänge der Wundarzn, 1800.—Sabatier, Médecine Opératoire, t. iii, p. 132.—Cooper's Surgical Dictionary.

the cause of death frequently escapes observation. From an extensive division of the frænum, the tongue is sometimes thrown backward into the throat, where it lies fixed, and causes suffocation. See Petit, *Traité des Mal. Chir.*, t. iii, p. 267, edit. 1774.

It appears, then, that the division of the frænum is not so light an operation as it is generally considered, and that the performance of it, without an absolute necessity, is perfectly unjustifiable. Children are not to be subjected to the dangers of this operation merely for the sake of satisfying the whims of foolish nurses. To prevent the division of the raninal vessels in performing this operation, it is advisable that a card, with a slit in it, be applied to the under surface of the tongue, and that the frænum be fixed in the opening. If the operator follows this plan, it will be impossible for him to wound any other structure than the frænum. It is not enough for him to obey that rule generally laid down in the systems of surgery, not to point the scissors upwards and

backwards: I defy any surgeon, however skilful, to cut the frænum exactly where he desires, when a peevish and obstinate child is using vehement action. This, according to the common method, is a very troublesome and unpleasant operation: with the assistance of the card it is rendered much less dangerous, and comparatively easy.

Stammering proceeds by steps so gradual, as to be scarcely perceptible from a slight hesitation at particular times only, and which a person not accustomed to this kind of disease would not notice, to a constant stammering accompanied with violent efforts at pronunciation, and great contortion of the countenance: these two states, apparently so dissimilar, are produced by the same cause, and are essentially the same, the disease being more violent in the one case than in the other. If this slight hesitation, observable only at certain times, be not attended to, it will, if it occur in a sensitive and diffident person, and especially if a quick talker, come on more frequently, becom-

ing worse each time of its attack, until it is gradually formed into complete stammering. I need scarcely remark, that a hesitation admits of an easier and a quicker cure than a case of confirmed stammering. It therefore becomes the *duty* of a person who hesitates, a duty not only to himself but to his family also, not to continue to speak in his usual hesitating, undecided manner, but to endeavour to break through his old habits, and to articulate with a precision equal to that of his friends. On the other hand, if he neglect the rules here prescribed, he will be compelled to look forward to a life of confirmed stammering, to an incapability of expressing his thoughts, to a perfect seclusion from society. Let me prevail on all those who hesitate in the slightest, not to defer the endeavour to throw off this pernicious habit. The stammerer should be urged to cure himself, not solely on account of his own sufferings; he should consider also the pain which his futile attempts at pronunciation must inflict on his friends, who are at all times fearful lest his ar-

ticulation prove defective : if regardless of himself, he surely ought to study the comfort of his family and his friends. In not curing himself, the stammerer does his utmost to perpetuate the disease in his own family. If the imitation of an indifferent person be so likely to occasion this disease, how much the more probable is it for this malady to be produced, when the person imitated is one who is respected and esteemed ! It may be said in extenuation, that the stammerer inculcates the principle to his children that they are to imitate his good points only, and that they are particularly to avoid his manner of speaking :—this may be attempted, but it will not succeed. Imitation is a principle inherent in us ; man will continue to imitate until his nature is changed. How can the stammerer expect his children to accomplish that which was out of his own power ? Could he avoid imitation ? Did he not imitate ? Then why is it that he expects his children to possess that exemption from imitation which he himself did not ?

Ancient medicine is deficient in information on stammering* ; and what Hippocrates, Aristotle, and Galen, have said is scarcely worthy of note. They are especially silent on the treatment: this is the more to be wondered at, since elocution opened the road to honors and the first dignities of the state. From this it resulted that stammerers were compelled to trust rather to their own efforts than to medicine for the cure of their malady, which is exemplified by the manner in which Demosthenes, according to Plutarch, cured his difficulty of speech. Recourse was at times had to the gods. Herodotus mentions that Battus consulted the oracle of Delphos for his stammering.

Itard says that stammering is very seldom met with in females, and that he never saw one afflicted with it. On this point I cannot agree with him : I believe it to be very nearly

* See the articles "Bégaiement" in the Dict. de Méd. & Chir. Prat., by Magendie, and in the Dict. de Médecine, by Rullier. See also a paper by M. Itard, in vol. 7 of the Journal Univers. des Sciences Médicales.

as common in females as in males. When females are afflicted with stammering, it is very frequently of an aggravated description : the worst case I ever saw occurred in a lady. In many individuals, the muscles even of respiration, especially those which cause inspiration, participate in the convulsive spasms. M. Itard lays great stress on the advantages of an instrument, made of platinum or gold, to be applied to the under surface of the tongue. He attributes the cause of its utility to its increasing the power of the muscles which produce articulation. The good effects which he describes to have resulted from the use of this instrument are to be referred, I apprehend, not to any increased power which it gave the muscles of articulation, but to its having constantly kept the tongue in the upper part of the mouth ; the action of it, therefore, being purely mechanical. The same effect may be produced by an effort of the will, and without the very serious inconveniences which M. Itard states to have resulted from the use of his instrument.

In the common state of the organs of speech, and during silence, the tongue is applied by its upper surface to the palatine arch, its base is raised, and the point is placed behind the upper incisor teeth. When a word is to be pronounced, the tongue instantly makes a slight motion of depression, which allows of the production of the vocal sound by the larynx. In stammerers, the tongue during silence is not raised and applied to the palate: separated from the palate, it descends to the level of the lower jaw, and its point is placed behind the incisor teeth. When the stammerer wishes to speak with the tongue in this position, he is unable to produce the motions of the tongue necessary to the formation of the vocal sounds: they are made but with difficulty, and by a series of efforts, and hence the wish to speak and the articulation are not simultaneous. We can remedy this by recommending the patient to contract the habit of keeping the tongue close to the palate. When the lowered position of the tongue exists in stammerers, and they wish to speak, it is, in the first place, ne-

cessary that they should make an effort to apply the tongue to the palate, and they do it so completely, that the vocal canal is shut when it should be opened; hence the impossibility of producing any sound.

It has been recommended, that, at the moment of speaking, the stammerer should move about a finger or toe, on the supposition that articulation would be facilitated by diverting attention from his malady. If the stammerer act up to the rules which I have advised, any thing which distracts the attention at the time of speaking, so far from being of service, will much retard the cure. I hold it to be one of those vices which is most carefully to be avoided. One author, Dr. Serres (*Memorial des Hopitaux du Midi*), who recommends that the arm should be pulled briskly down at the time of pronouncing every syllable, considers that the noise which is made by persons who are compelled to use their arms violently and with a sudden effort, such as cleavers of wood for instance, goes to support his opinion. So

far from agreeing with Dr. Serres in the advantage of pulling a person's arm when about to speak, I consider that it would be highly injurious, and that the articulation would necessarily be rendered indistinct, even in one not suffering from habitual difficulty of speech.

It would appear to be in consequence of the organs passing from a state of perfect rest to one of much muscular exertion, that so great a difficulty is experienced in pronouncing the first syllable of the word at the commencement of a sentence. It may frequently be observed, that persons who at all other times have a complete controul over their enunciation, are annoyed by a temporary incapability of pronouncing the leading syllable. This will speedily yield to the use of the means recommended for the cure of stammering.

All those diseases in which there is a disordered action of the nervous system require that particular attention be given to the state of the stomach and bowels, and that any irregularity of action which may exist in either

be corrected as speedily as possible. When the patient is bilious, or when suffering from any one of the numerous forms of dyspepsia, there is no medicine yet known which produces so beneficial a result as a strict attention to the diet and mode of living. The food should be of the most simple kind. There will frequently be found to exist great difficulty in convincing some persons of the injurious effects of those things which they prefer, and which they consider cannot, by any possibility, disagree with them; so prone are we all to arrive at the conclusion which we desire*.

It becomes a question, whether the use of fermented and spirituous liquors is of service to the animal economy; whether it does not frequently stimulate the system very injuriously. It is not of the abuse of beer and spirits of which I speak, but of their mode-

* Neque credendum utique nostris est, qui, quum in adversâ valetudine vinum aut frigidam aquam concupierunt, deliciarum patrociniū accusationem non merentis stomachi habent.—CELSUS, lib. 1.

rate, and what is most commonly conceived healthy, use. In a fleet of thirty American vessels, which in the year 1833 came under my observation in China, there were only two in which spirits were served out to the ships' company; and I never saw any men look healthier. It is true that the American bread, in consequence of the fineness of the flour of which it is made, and of its being packed in casks, is always, after a long voyage, in a much better condition than the English bread: in every other respect, I believe the diet of the Company's ships was quite equal to that of the Americans. The men of the Company's ships enjoyed two great advantages,—the lower deck was better ventilated, it being impossible, from the peculiarity of the build, to produce a constant current of air in a small vessel: the seamen of a small ship invariably work harder than those of a large one. In bad weather, the Americans were served with hot coffee. I attended, professionally, a great many Americans, and therefore possessed

constant opportunities of observation; and the result in my mind was, that spirits might be gradually dispensed with. If it be proved that sailors, who suffer so many privations and undergo so many hardships, and are so liable to vicissitudes of climate, can advantageously dispense with the use of strong, stimulating drinks, I cannot see how their use can be defended on shore, where stimulus is comparatively not required. I am fully aware that, in certain states of the animal economy, when stimulus is required, beer and spirits rank as the most effectual remedies: I would not, therefore, deprecate their use *in toto*; but I would wish to prevent their being taken from mere habit, or simply from their pleasing the palate. Are those persons who are in the habit of drinking very hot fluids, which are generally either tea or coffee, aware that the stomach is lined by a very delicate mucous membrane? Or do they suppose that this highly sensitive structure is not affected by these scalding applications

From a consideration of the evils attendant on an abuse of animal food, it has been contended that man is not a carnivorous animal, and that, therefore, those persons alone obey the dictates of physiology and of sound sense who altogether refrain from its use. Man, however, holds a middle station between those animals which feed on vegetables and those which exist on animal substances. In granivorous animals, the intestine is long, the stomach capacious and often complex, while in carnivorous animals the intestinal canal is short and strait. The stomach and intestines in man form the connecting link to these two classes: his teeth, and the motions employed in mastication, assist in placing him in this intermediate position: he is, therefore, neither exclusively herbivorous nor carnivorous, but omnivorous, or, more properly, polyphagous. When a sufficiency of nutrient animal and vegetable food is taken, I consider that the system as a general rule, to which I am sensible there are exceptions, does not require

any other stimulant. It must be granted that dyspeptic diseases would be much decreased by well-regulated abstinence. Moderate exercise in the open air is highly beneficial. Change of scene, with its consequent exertion and gentle excitement, will be found very serviceable.

It may be considered that a strict attention to diet is not required for the cure of stammering. I most certainly grant that in some cases it will be found not to be called for, in consequence of the stomach and intestines performing their natural healthy functions; but in all those cases in which there exists either a diseased or a deficient action in these great reservoirs of the system, there will be a much greater difficulty in removing any vice of articulation, than when the actions of these organs, so essential to the health of the body, are properly performed. In the first part of the 16th volume of the "Medico-Chirurgical Transactions," Dr. Bostock relates a case of stammering in a boy of a robust form and florid aspect, of a healthy constitution, and of

a more than ordinary activity, both of mind and body, who was cured by the use of aperients. Now, although it would be wrong to anticipate the same happy result in every case of stammering, still this circumstance clearly shews that, as an adjunct, the use of aperients is highly advantageous. The immense difference made in stammering by the occurrence of indigestion will scarcely be credited by one who has never minutely studied this distressing malady. That plan of treatment, of which an attention to the state of the intestinal canal does not form a prominent part, cannot be relied on as certain of success. It must be pretty clear to every one, that proper diet and exercise are of the greatest possible use in keeping the stomach healthy, and in freeing the system from indigestion, and all diseases of that description. How frequently do we observe a person suffering from a disordered state of the intestines, low, nervous, and excessively debilitated ! Stammering is most assuredly increased by any circumstance which

tends to depress the vigour or elasticity of the mind. Persons who merely hesitate, when weakened by disease can scarcely articulate.

It is not from the supposition that indigestion, and diseases of that class, alone tend to increase the malady, that so much stress has been laid on their prevention, for every complaint which destroys, in the slightest degree, the buoyancy of the spirits, will produce a bad effect on the articulation of the stammerer, but because they are the most commonly met with, and are, with proper precautions, if carefully attended to, very susceptible of cure. I cannot insist too strongly on the absolute necessity of keeping the spirits of the stammerer in as vigorous a state as possible. It is the duty of that individual to whom the care of a stammerer may be entrusted, not only to free as much as can be this or that organ from disease, but to preserve the body from all disordered action: (*Rarò quisquam non aliquam partem corporis imbecillam habet:*) this can only be done by great care and watchfulness

on the part of the medical attendant, the patient using, at the same time, an excess of caution, and strictly observing all the rules here prescribed for him. It will much conduce to a speedy cure for the medical attendant to sympathise with his patient; to prove to him that he is really desirous of his welfare; in fact, to shew himself his friend. This produces very good effects in some timid people: they follow the directions given them by one whom they consider to be really kindly disposed to them. It is the duty of the attendant to free the patient as much as may be from the effects of bashfulness, and over-anxiety as to the opinions of others. He should be made conscious of his own powers, and to a certain degree careless, at any rate perfectly easy, with respect to the opinion which may be formed of him. All those diseases, the maturing of which occupies considerable time, are invariably much longer under cure than those which attack suddenly: *in longis, quos tempus ut facit, sic etiam solvit.*

There is a key-note in speaking and reading, as well as in singing; and it is advantageous to adopt one rather below our capability, so that we can pronounce easily, without elevation of the voice or other exertion of the organs of speech.

The languages of Greece and Rome,—liquid, sonorous, and susceptible of much melody,—are more suitable than the harsh and rugged English, to those who are habitually subject to imperfect articulation. I would, therefore, recommend stammerers, in commencing the cure, to articulate carefully, and with extreme precision, the flowing and harmonious syllables of the Greek and Latin authors. Great good will result from the stammerer frequenting courts of law, and the plays of Shakespear, as represented in our large theatres: it will, in the first place, by keeping constantly before him the advantages of a free and correct articulation, incite him to his cure; and, secondly, he will be enabled to form for himself a high standard of correct

pronunciation. I would more especially recommend his attending a well-cast tragedy or comedy, after having closely studied the characters and learnt some of the most brilliant and exciting speeches. Stammerers are peculiarly easy of excitement, and, when carried away by intense absorption of the subject, are frequently distinguished by their free and emphatic pronunciation. The success of stammerers in recitation is much wondered at by careless observers: from their extreme sensibility, they are enabled to appreciate and embody the finer and more sublime conceptions of the author.

In treating a child badly affected, it would be advantageous to confide it exclusively to a foreign governess, who, only knowing her own language, would force her pupil to learn it slowly, and to renounce for some time the native tongue.

The stammerer, even when far advanced in his cure, should dispute only when well acquainted with his subject in all its bearings,

and only then with one inferior to himself in intellectual capacity. Stammering is not to be removed in a few days; time and great attention are required before a perfect cure can be accomplished.

In this, as in every other disease, whether arising from alteration of structure or from functional derangement, it is impossible to lay down any general or fixed mode of treatment, which will be found applicable to all cases: individual peculiarities require corresponding modifications in the remedial agents. The intelligent reader will, therefore, observe those rules which apply the more particularly to his case, will study them the more closely, and will oblige himself to observe them the more rigorously. There is nothing which tends more to prevent a cure, or to increase the complaint, than jesting at the contortions made by a stammerer: coercion will be found equally pernicious. It may appear useless to mention these things, as they would, most probably, suggest themselves to every one; but still I should not

be fulfilling the duty which I have imposed on myself, did I not expose their mischievous effects. Removing the sufferer entirely away from his accustomed associates, and placing him under the care of some intelligent person, who would make himself acquainted with his habits, and who would insist on the observance of the following rules, would be found to bring on the cure more rapidly. A respectable medical man, who has made a study of nervous diseases, and who feels disposed to watch, with an untiring care, the shades of difference put on by this malady, would be the most proper person to take the entire charge of a stammerer. It is from their peculiar education, and constant opportunities of observing the different changes produced by disease, that surgeons are peculiarly fitted for a duty of this kind. I have found that stammerers, on a change of residence, invariably endeavour to throw off their hesitating mode of speaking: this effort would materially assist the other means which might be employed; and it is

from a conviction of this truth, that I would strenuously advise all stammerers to travel, and to mix in general society as much as possible : this not only removes the bashfulness or shyness incident to them, but also improves the general health. Every one has felt the power which a disease of the body possesses over the actions of the mind. Every child who has the slightest disposition to a hesitation in speaking should be removed from school : children will, at all times, amuse themselves with the difficulties experienced by stammerers. This observation applies to all cases ; there is no exception.

It may be objected by some, that these rules are unnecessarily minute. In a disease of the nervous system, attention to minutiae forms the only chance of recovery ; and it is on this account that I have dwelt, perhaps tediously, but I hope with a sufficient degree of clearness, on certain subjects which may be considered entirely foreign to the matter in hand. The rules which I advise have not been dictated

from mere supposition; they have been tried and approved by the unerring test of practical experience, and, if the spirit of the following directions be rigidly acted up to, the result is certain.

RULE I.

Before you commence speaking, draw a long breath: by so doing, the lungs are filled with air, thereby preventing the occurrence of stammering for want of breath. When this does happen, the affected person actually gasps for breath: this is easily to be avoided, first, by coming to a full stop,—no matter in what part of a sentence, or even word,—and then by drawing a steady full breath, and commencing the sentence anew very slowly. It is clear that, as all articulation occurs during expiration of the air, in its passage from the lungs through the windpipe and mouth, there must exist a great difficulty of speaking when the quantity of air contained in the chest is small.

This is very forcibly exemplified by a person endeavouring to speak after he has been running quickly, or has been using any other violent exercise. It is impossible—he cannot articulate a single syllable; and why?—because he is, in common parlance, *out of breath*; he has no air in his lungs, and therefore none for the purpose of articulation. Let this person take a long inspiration; he will then speak distinctly. In this case Nature is her own physician; the want of breath is felt, and is instinctively relieved. If this occurs in one who does not suffer from habitual difficulty of speaking, how much the more must it happen in a confirmed stammerer!

RULE II.

Great attention should be given that the lips, teeth, and tongue, perform their different functions, when employing the letters requiring the individual use of them. The advantage—in fact absolute necessity—of this rule is self-evi-

dent. How can different sounds be produced by the same structures, if the passage through which they travel be not modified? And yet some persons endeavour to speak with a very slight alteration of the lips. It has been shewn that there are very many letters which can be articulated by no other means than a decided alteration in the form of the mouth.

Demosthenes being asked, three several times, which quality he thought most necessary in an orator, gave no other answer than *pronunciation*;—thereby insinuating that qualification to be the only one of which the want could be least concealed, and which was most capable of concealing other defects*. And Demosthenes made such use of his *pronunciation*, that Philip† of Macedon considered that he received more injury from him than from all the armies and fleets of Athens. Antipater bore a similar testimony.

* Rollin's Ancient History ;—Cicero de Orat.

† See Lucian in Encom. Demosth.

RULE III.

Lay a decided stress or accent on the last syllable of every word: this very much facilitates the commencement of the following word. It is not at all displeasing in common conversation: under many circumstances, addressing an audience, for instance, it is indispensable.

RULE IV.

Look the person addressed steadily in the face. This serves to prevent trepidation, and fixes the mind to the subject. Stammerers are in the habit of looking down, or of turning their faces any where rather than towards the person to whom they may be addressing themselves.

RULE V.

Be careful to draw breath at every stop. Great care should be taken as to the time

when a long inspiration is made : stopping to draw breath in the middle of a sentence not only disconnects one part of the sentence from the other, but also tends, in no inconsiderable degree, to confuse the speaker's mind. I have known persons actually forget, from agitation, what they were about to say. It is, however, much better to stop and to draw breath in the middle of a sentence (vide Rule I), than to run the slightest risk of being unable to proceed. It will be evident that a still greater attention must be paid to the stops or pauses in conversation, than when reading aloud. It would much conduce to his cure, if the stammerer, when reading to himself, were to note the pauses as carefully as when reading aloud. By so doing, a habit would be acquired, which would be of the greatest possible benefit to him. In addition to the pauses which are made at the stops pointed out or marked, there are many others, which must be made, to prevent confusion, and to render the articulation easy and distinct.

RULE VI.

It is always right for a stammerer to begin his sentences slowly and distinctly, in rather a low voice, articulating every syllable with the greatest possible precision. It is at the commencement of a sentence that the greatest difficulty is usually experienced: if the sentence be well begun, there is not much danger of the latter part of it; and this is one reason why attention should be given to Rule III.

RULE VII.

A stammerer should always be certain, in his own mind, of what he is about to say. The not knowing what particular word ought to be used, in any part of a sentence, is a prolific source of the very worst species of the

malady. The stammerer begins a word which, on consideration, he does not think applicable; he tries another; this also he dislikes; and so on, the stammering necessarily increasing, as well from a want of air in the lungs (his desire to speak being so great that he cannot wait to draw breath) as from perturbation of mind. It is from a non-observance of this rule that those persons who are able to read with great fluency cannot enter into conversation without a decided stammering; and this is not an uncommon occurrence.

RULE VIII.

The habit should be contracted of keeping the whole surface of the tongue closely applied, when not speaking, to the roof of the mouth, the point of it being immediately behind the upper front teeth. When the tongue is thus situated, voice is produced by a slight depression, and hence articulation is

much facilitated. The keeping the tongue at the bottom of the mouth, during silence, is one of the most injurious things in stammering. Stammerers, anxious to pronounce a word immediately, endeavour to do so without applying the tongue to the roof of the mouth: this being impossible, they are incapable of the slightest articulation. It is very unusual to perceive much difficulty after the first syllable has been well and carefully pronounced. When not deficient of breath, it is most truly "*le premier pas qui coute.*" It is perfectly impossible that any one can articulate without attending to this rule. I need, therefore, scarcely impress its importance on the minds of those who have an habitual difficulty of speaking. It should become one of the chief cares of the patient to speak but seldom, and, when silent, to keep the tongue completely and closely applied to the roof of the mouth. The tongue whilst in this situation is able to do its duty effectually. This rule, if complied with, will prevent that pitiable sight, the forcible

thrusting of the tongue out of the mouth. It is heart-rending to see the continued spasmodic motion of the tongue whilst hanging over the lower lip, the dreadful contortions of the countenance, the constant gasping for breath, and the abortive attempts at pronunciation. If so distressing to the beholder, what must be the feelings of the sufferer? Stammerers are invariably highly susceptible of every unpleasantness consequent on their malady.

RULE IX.

Studiously avoid all slurring of your words; give every syllable its proper quantity of force, rob it of nothing. Quick speaking is generally bad; it sometimes produces the very worst species of stammering. I know an instance of a person with a slight hesitation who, in endeavouring to speak French with rapidity, became a complete stammerer. This is attributable to two causes; one, that he did

not attend to Rule VII. He began his sentences without precisely knowing what French he was about to make use of; trusting to his ability to convert, as he proceeded, his thoughts from English into French. In this he was frequently disappointed, and therefore hesitated, and at last stuttered. From his uttering what French he did make out as rapidly as he possibly could, he broke through the fundamental principle, Rule V, so that there was a mechanical obstacle to his articulation, he having little or no air in his lungs. He was cured by attention to these rules. This case deserves the full consideration of all persons who hesitate in the slightest; it shews that there is but one step from hesitation to stammering, the same in kind, differing only in degree.

RULE X.

Whilst speaking, attend exclusively to your subject; disengage your mind from any other

occupation whatever. The non-observance of this Rule is a constant source of embarrassment, but it is one which is very frequently neglected.

RULE XI.

Read aloud to a few intimate friends. This should always be done when in particularly good spirits; it gives confidence, by shewing that it can be done without hesitation. The patient should never be compelled to read : this would but increase the evil. Reading aloud, when alone, although advantageous, does not produce the same effect; it is the presence of other persons which confounds. In a bad case, it would be advisable for the patient to read to himself before reading even to a friend. Stammerers very soon lose their self-confidence. The stammerer will find an advantage in publicly addressing an audience for whose opinion he cares but little; so that he can

desist whenever he thinks proper. A stammerer should never speak on any subject of which he is not thoroughly the master: a perplexity of ideas confuses the mind, and produces hesitation.

RULE XII.

Relieve the mind of all fear and trepidation. If the importance of this rule be not manifest after what has been said on this subject, there must be either a great fault in this Essay, or a want of attention in the reader. As long as the stammerer continues to utter his sentiments with fear, so long will he retain his difficult articulation. No person can be cured who is not capable of obeying this rule. This is, in fact, the one thing needful; without this nothing can be effected, but with it we may confidently anticipate a perfect cure. The mind of the patient should never be suffered to wander from a due consideration of the abso-

lute necessity of obeying this injunction. There must be *nihil metūs in vultu*; fear must be banished. Without a dread of contradiction, I assert, that no stammerer can be cured who does not obey this important rule.

The reasons why stammerers can sing with such facility, are, First, in singing, the accent is laid on the vowels only, which I have shewn to be the easier of pronunciation. Languages abounding in vowels are peculiarly fitted for singing. It is supposed by some that the Italians owe their superiority in music to their smooth and sonorous language. Secondly, there is at all times a sufficiency of air for articulation; all persons being aware that a full chest is indispensable to good effect in singing. Thirdly, the modulation materially assists the stammerer. Fourthly, in the vast majority of songs, the words are articulated much slower than in common conversation; and, Fifthly, the stammerer is aware that he can at any time, if desirable, sing the air,

without articulating the words of the song. This circumstance is of great utility to him, from his knowing that he need not use the organs of speech : he possesses confidence, and can very frequently articulate with perfect ease, although if he felt compelled to sing the words as well as the air of the song, he could not accomplish it. How frequently has it occurred to me to hear a stammerer, after singing with perfect distinctness the words of a song, utter the most disagreeable noises in endeavouring to return thanks for the plaudits of his friends.

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 How frequently has it occurred to me to hear
 a musician, after singing with perfect distinct-
 ness the words of a song, utter the most
 disagreeable noise in endeavouring to repeat
 thanks for the phrase of his friend.

