expression of the child's face is in itself sufficient to indicate to the practised eye the imbecility which is the real cause of the deficient powers of speech. Even for these children something may be done as they grow older by careful teaching; but of course the education of their speaking powers is in such cases only part of the systematic efforts required for the development and strengthening of their intellectual faculties as a whole.

There is yet another class of children who are backward and awkward in their speech, but whose cerebral development is in all other respects complete. These children are bright and intelligent; but it seems as if the power of that part of the brain concerned with speech was ill-developed or latent. Some speak with an exaggerated lisp; others very much like those with cleft palate, having special difficulties with the letters *s* and *l*; while others, again, simply speak like younger children, a child of four talking in the babyish manner of one of two years. All the children of this class feel their difficulty, and avoid speaking as much as possible, making signs and noises rather than facing the trouble of articulate speech. These children all speak eventually quite well, though some slight peculiarity of speech may remain through life. They all improve greatly, and are much helped, by the method of education by imitation which I have described.

Let me just remind you, in passing, of the necessity in all cases of backwardness of speech to ascertain the condition of the hearing. And remember that a child who has even begun to speak may become dumb in consequence of losing its hearing.

Another kind of defective speech is met with in persons with nasal polypi, and in those with adenoid growths in the naso-pharynx. This is recognised by the characteristic want of resonance and the dull "stuffiness" of the voice, this being especially noticed in words involving the sounding of the letters *m*, *n*, or the terminal *ng*; thus "morning" would be sounded "bordig." In these cases the removal of the growths is the obvious treatment. Somewhat similar to this is the thick articulation of persons with enlarged tonsils.

I now pass on to another sort of difficulty of speech—stammering. You all know what I mean by stammering speech. That peculiar spasmodic affection in which the utterance is suddenly checked by the want of coördination of, and control over, the varied movements concerned; so that either the speaker suddenly becomes voiceless, or his efforts result in the rapid repetition of one sound from which he cannot pass on, or in the production of an inarticulate sound of considerable duration, after which come fresh and still ineffectual efforts, or the attempted word is at last pronounced. After this the speech may run smoothly for a time until another spasm occurs. I need hardly tell you that stammering is extremely variable in kind, degree, and frequency of occurrence. But that which is common to all cases is a want of coördination in the muscles concerned. Let me read to you Sir James Paget's description of stammering in his suggestive lecture "On Stammering with other Organs than those of Speech." It gives in his usual admirable manner the gist of the matter in a few lines:—"Stammering, in whatever organs, appears due to a want of concord between certain muscles that must contract for the expulsion of something, and others that must at the same time relax to permit the thing to be expelled. Ordinary stammerers cannot at the same time regulate the contraction of the muscles of expiration for the proper expulsion of air, and the relaxation of those of the glottis or (in different cases) of the tongue or lips for permitting the expulsion of the air while it is being made vocal and articulate. Numerous as are the varieties and modes of speech-stammering, this discord of muscles is in them all."² This gives you the keynote of the difficulty. In some cases it is the muscles of the glottis which are at fault; in others those of respiration; while in another class, and this is by far the most common, it is the muscles of articulation which are insubordinate. Or all these different sets of muscles may be to some extent concerned; and in some very bad cases the spasm may spread to muscles not concerned in speech at all, so that in the efforts at articulation the person is thrown into all sorts of distressing contortions.

Now in the treatment of stammering, it will be necessary to observe in what manner, and under what conditions, it occurs. Some people stammer chiefly or only when they are

nervous or in a hurry, or under some excitement, or are fatigued. Others halt only at the sound of certain letters; occasionally, but I do not think often, a sore tongue or mouth will give rise to stammering. I have seen a case also in which its occurrence was quite certainly connected with dyspepsia. Children and young persons are the chief sufferers; and you will find in a large proportion of cases that they come of nervous families, and have been overworked or have in some way been subjected to nervous stress. Thus, intelligent boys anxious to satisfy an exacting schoolmaster, or stupid ones nervous at not being able when called upon to formulate their ideas, or even the impatient, in too much of a hurry to express their rapid thoughts, all furnish us with examples of stammering, which often commences on their first going to school. I have said "boys," because, for some reason which I cannot explain, stammering is much more common in boys than in girls. I ought to mention that in a considerable number of cases it seems to be connected with the habit of masturbation.

In the treatment of stammering, therefore, the first necessity is to discover, and if possible remedy, any obvious cause—especially any cause of nervous debility. And remember that many young people are ill-nourished and dyspeptic from being hurried over their meals; that the same hurried mode of life often leads to irregularity and constipation of the bowels; and that these are also just the people who are apt to be over-studious, too much in-doors, and to lack appetite; often, also, they have bad teeth. So it comes that you will notice many stammerers to be thin, pale, and excitable. For these you will do well to diminish their studies, to enforce outdoor recreation and gymnastics, especially such as expand the chest; to attend to their bowels, and to see that they have plenty of nutritious food. And, as in most nervous people, cod-liver oil often does them good. You must also look to the state of the teeth, the tongue, and the digestion, and remedy any defects in these. So, again, any bad habits must be overcome, and the existence of phimosis ascertained and attended to. Iron and other tonics may be useful, and I have certainly seen benefit in cases with other indications of chorea, from the administration of large doses of sulphate of zinc and belladonna. But whatever else you do, you must subject the stammerers to the sort of education which I have described in connexion with some of the other speech defects. That is to say, you must teach them to speak deliberately and with careful enunciation, practising by imitation the difficult words or sounds, and following all the muscular movements of the teacher. Above all, you must teach them to avoid speaking with an empty chest (which, as Charles Kingsley pointed out, is so commonly the habit of stammerers), and to fill their lungs well at every stop. All such treatment will be chiefly useful to those beginning to stammer, and to those whose stammering is variable in degree and frequency of occurrence. But there are some habitual and confirmed stammerers for whom I must confess I know of no cure.

SCHOOL-MADE CHOREA.

A RETROSPECT OF THE PAST YEAR.

By OCTAVIUS STURGES, M.D., F.R.C.P.,

PHYSICIAN TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

FOR the last two years, and at this season, I have been permitted to make use of the columns of THE LANCET for the purpose of signalling certain sources of chorea very common amongst the children of our London poor, which by the exercise of a little care and circumspection, less on the part of the poor themselves than of the class set over them, might be altogether done away. There is little new to be said, yet the circumstances may justify some repetition. *Gutta cavat saxum, non vi sed sæpe cadendo.* The closing year is not without promise that the public mind is becoming impressed by subjects akin to this. The use and abuse of home lessons, penny dinners, and corporal punishment have been much discussed of late in the interest of school children, and in a calmer and more judicial spirit than that which reigned some while ago when the word "over-pressure" was in everybody's mouth and made two camps.

I know full well that in the long run exaggeration of

² Clin. Lect. and Essays, p. 77.

statement does but defeat its object. Let it be admitted at the outset that St. Vitus's dance is neither a dangerous nor a painful affection with school children, and that such nice adjustment as shall prevent over-strain on the one hand and over-indulgence on the other is practically unattainable; still, it must be insisted that chorea, so long as it remains undiscovered, is a source of injury to the child in many ways, while the obtuseness of observation which so often delays this discovery is nothing short of marvellous. I wish to show in few words—first, that a large and fairly constant proportion of chorea is due directly to what may be called injudicious schooling; secondly, that the chorea which owns this exciting cause may be easily classified both as to its precise modes of origin and as to the temperament of its subjects; and, thirdly, that the rules for preventing chorea in school children are simple and obvious.

During the past year twenty-three cases of chorea (sixteen girls and seven boys) have passed through my ward at Great Ormond-street, not reckoning readmissions, the number being very nearly the same as for the preceding two years. Nine at least have a school cause. For example, a boy of eleven, who some weeks before had been much shaken by a fall, was noticed just before his attack to "bother about his lessons," and "got much caned at school." Another boy of eight, lean and delicate, was "caned at school for some trifling offence. He was much frightened at the time and had restless nights, talking in his sleep about school work." He then developed chorea. A third boy was of the age of twelve. (I take boys by preference, owing to their far less liability to the disorder.) There had been family reverses, and he had fallen with the rest into poverty. "Complaints came from school that his handwriting had deteriorated, and that he was inattentive." It presently appeared that these offences had their origin in chorea. A girl of eleven got her first attack (soon followed by a second) "after a blow on the hand." A child of five, described by her mother "as always excitable," got chorea on being removed to a higher form and having more difficult lessons. A girl of eleven, not very quick, "became irritable in temper during preparation for school examination," and then choreic.

It must be understood that these several statements, and others like them, are put down as "causes" of the chorea that followed only in the absence of any other explanation. No example is included of selection from among several possible causes. And for further proof that such descriptions tend to repeat themselves, and that they fall readily into groups, let me quote from another hospital and a different reporter.¹ In the year 1885, nineteen cases of chorea were admitted into the Westminster Hospital (part only into my own wards). Five at least have a school cause described by the medical registrar in the following terms. A boy of ten was "frightened by being struck at school." A girl of twelve was "kept in after hours every day for a week for bad writing." A girl of thirteen, admitted for a second attack, contracted "the first from hard work at school." A boy of nine (a very severe and prolonged attack) was "excited about school examination just before." Another boy of the same age (also a severe attack), described as "always very nervous," had been much distressed and puzzled with his home lessons, and "would lie awake thinking of sums." The attack of chorea which shortly ensued followed a caning. The two series taken together (i.e., Westminster and Great Ormond-street) give an annual yield of forty-two cases, fourteen of them being of school origin.

The example just quoted reminds me of a child in hospital at the present moment who, like the girl described last year, who "could not get the sums right," affords an excellent specimen of the manner in which the factors are combined that produce chorea. The patient comes from a neighbouring Church school; she is eleven years old, thin and pale, and with a London aspect. There are six others at home as well as the mother, who is a widow and does charring. This child used to help to support the family by going out after school hours to nurse a neighbour's baby. She was so employed sometimes until past eleven at night. Lessons had then to be prepared for the morrow's school, so that it was midnight by the time she got to bed. In the morning she had to wash, dress, and despatch to school two younger children, and thus sometimes reached her own school late, to

incur the displeasure of her mistress and occasional punishment. So beset, and being probably ill-fed and by nature weak and delicate, this child contracts chorea in a form which, without being severe, is very intractable.

And even while I write there comes into my ward a small boy, aged fourteen, with very severe chorea, which he has been caned into. He was represented by his parents as "very nervous and unable to sleep without a light." He also suffered much from headache, but had never had rheumatism, nor had his family. At a London School Board school he was charged with speaking to another boy, and for this alleged offence was cut four times across the right hand, one of the strokes catching his thumb and giving acute pain. He came home in a state of high excitement, protesting that the caning was undeserved. The next day chorea seized his right hand and arm, and soon invaded the whole body. The movements are now violent and distressing. He is just able to jerk out a word or two, has wasted much, and is fed with great difficulty.

Speaking from the evidence, not only of the cases I am now quoting, but of very many others precisely similar, it is perfectly certain that for a large proportion of chorea, a proportion that would be under-estimated at one-fourth, school is responsible; and the mode of injury may be classified pretty much as follows:—(1) Over-schooling, where the hours are too long or the lessons (especially *sums*) too hard; (2) excitement in schooling, especially at examination; (3) home lessons where there is no home to speak of or no home leisure; (4) "caning" and other modes of punishment, particularly when unmerited. Such causes will be rendered more or less efficient in individual cases from the feebleness of resistance that comes of insufficient food, natural sensitiveness, previous attacks of the same disorder, tender age or sex. So it goes on from year to year without variety or shadow of change, and but for one reason it would be worse than useless to dwell upon the subject at Christmas time. That reason is, as I have said, that, unlike most of the suffering with which poor London children are over-burdened, it is remediable. There are other sources of chorea besides these: family rows, drunken violence, home cruelty, semi-starvation, the perils of the streets; and we can but total them up at the close of each year and remark upon the wonderful sameness of statistics. But in this school-made chorea it is the friends and would-be helpers of the children, teachers who are responsible for their moral and physical welfare, and anxious to promote both, who are, in fact, active agents in their suffering, and all for want of a little thought.

The evil comes, I am persuaded, from the fact that *teachers do not differentiate their material* in respect of temperament, ability, bodily health, and home circumstances. Their rule of conduct is too rigid and uniform. They might with advantage, and in a literal sense, take a leaf out of the doctor's book, setting down the family and personal history of their pupils just as we do with our patients. Were that done, children would not be put to home lessons which their circumstances make impossible; those that err from disease would not be confounded with those that err from wickedness; and the timid and sensitive would not be struck. Masters tell us that no school can be kept in order without some caning. That may be or not; but it is not the caning that is complained of (although I believe the practice is more common in school and more often injurious than is supposed), it is that they cane the wrong boys, and are not sufficiently alive to the vast difference of temperament, even with near relatives, which makes the very same punishment tolerable, and even salutary, in one case, and detrimental in another. I think it is Marryat who describes two brothers so differently affected by the same incident—parting from home,—that while the one has his handkerchief saturated with tears and is of no further use, the other turns to him with, "Take mine, it's as dry as a bone." Such contrasts are common enough, but there is ample proof that school teachers too often ignore them. What is most to be desired is that those who can speak with authority upon educational questions should concern themselves with this matter of injurious schooling and its nervous consequences. There is at this season, as I have good reason to know, a vast sympathy for poor sick children; it finds expression in many ways, and would be ready to respond to any suggestion for making their lives less miserable. The children I am speaking of should enlist that sympathy to the utmost in their easy forgiveness of the injury that has upset them: cheerfulness under troubles that are apt to make their elders

¹ Report on Choreia, by Dr. Syers, medical registrar, p. 248, vol. ii., Westminster Hospital Reports.

irritable, and persevering, but abortive, efforts to utter words, to handle toys, or to smile their thanks. And if, not a doctor, but some prominent educationist would take up their cause and teach the teachers, the sum total of St. Vitus's dance would soon be sensibly lessened, and no more Christmas jeremiads would be needed on school-made chorea.

Wimpole-street, W.

CASE OF EXTIRPATION OF THE LARYNX WITHOUT PRELIMINARY TRACHEOTOMY.

By JORDAN LLOYD, F.R.C.S., M.B.,
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JAMES B—, aged fifty-one, brass-worker, was admitted into the Queen's Hospital, Birmingham, under my care, on Nov. 13th, 1884, having been sent to me by Mr. R. A. Fitch, of Camp Hill Dispensary.

History.—Difficulty of breathing began twelve months ago; stridor also noticed about the same period. No cause assigned for commencement of illness. Cough and expectoration during great part of the time. For three or four months he has had attacks of difficulty of breathing, sometimes very alarming to himself and his friends. Has lost flesh rapidly during the last two months. Has been under treatment at several hospitals. He has worked amongst brass for forty years, and has become so weak and emaciated that he can work no longer. His habits have always been regular and temperate. Had typhoid fever four years ago; no syphilis. No consumption or cancer in his family. Father and mother both died in their seventy-first year.

Present state.—Inspiratory laryngeal stridor and cough; expectoration varying in quantity, never profuse, and occasionally streaked with blood; harsh voice; inability to lie down; paroxysmal attacks of urgent dyspnoea. External examination shows nothing; no enlarged glands. The laryngoscope reveals a cauliflower-like growth of the size of half a walnut springing from the left side of the larynx and below the false cords. No adjacent oedema. Immediately after admission the house-surgeon was summoned hurriedly to him on account of laryngeal spasm to an alarming extent. The difficulty yielded to ether administration. The chest was examined by a medical colleague, and, with the exception of a few bronchial râles, was pronounced to be quite healthy. The man's condition was so distressing that he was eager to have anything done which would relieve him, and on Nov. 22nd I performed the following operation.

Operation.—Chloroform was given on a towel as he sat upright in bed; he was then carried to the operating theatre, and laid on the table. A three-inch median incision was made, with its centre opposite the middle of the thyroid cartilage, and extending at once down to the walls of the larynx. The exposed thyroid isthmus was tied with two ligatures, and divided between. All structures were now freed from both sides of the larynx with scissors, without opening its cavity. There was no trouble with the bleeding or with the breathing. A loop of stout wire was passed through the top of the thyroid cartilage to enable the operator to have full control over the larynx. The patient was then drawn up the table so as to allow his head to hang pendent over the end. The trachea was next divided just below the cricoid cartilage with Paquelin's cautery, and no bleeding took place. Into the cut trachea the end of a large curved glass tube, very much like an old-fashioned vaginal syringe, about five-eighths of an inch in diameter and eight inches long, was introduced for about two inches, completely filling the air-tube. This arrangement prevented blood from entering the trachea, and enabled the anæsthetiser to administer chloroform without interfering with subsequent manipulations. The thyroid cartilage was next split in the middle line, and the lateral halves rapidly removed with scissors. The cricoid was cut out, also with scissors, in a single piece. Bleeding was not severe. The blood flowed into the dependent part of the wound (pharynx and nares), scarcely a spot being drawn past the glass tube up into the air-passages. The superior laryngeal were the only vessels requiring ligature. The trachea was sutured to the skin at the lower angle of the wound, and a large-sized tracheotomy tube substituted for that of glass. The operation lasted about

forty minutes. The patient was put in a covered bed, and ordered to be fed on nutrient enemata every three hours. When seen at night he had completely recovered from a slight amount of shock, and was breathing quietly, and wrote on a slate that he was quite comfortable.

Nov. 23rd.—Slept several hours during the night. Retains enemata. Was fed with an elastic tube into the stomach this morning.

24th.—Cough, restlessness, coarse râles and rhonchi over both lungs. Broncho-pneumonia set in, and, gradually increasing, he died on the 28th, six days after the operation.

Examination of the larynx showed a large intra-laryngeal outgrowth on the left side, probably of tubercular origin, and the necropsy revealed a condition of purulent bronchitis extending into the smallest bronchioles, infundibula, and pulmonary acini. Both lungs were everywhere studded with small miliary tubercles. There was no cellulitis about the wound.

Remarks.—I am led to publish the above as an additional case to those referred to at the meeting of the Clinical Society, held on Nov. 12th. I think it is interesting from the fact that no preliminary tracheotomy was performed, the course of proceedings above practised rendering it unnecessary. The larynx was freed from all lateral attachments before the air-tube was opened. The trachea was cut across with the cautery and plugged with a large bent glass tube. The patient's head hung over the end of the table, and allowed all blood &c. to escape from the lungs rather than into them. The removal with scissors expedited the operation and reduced the blood loss to a minimum. The broncho-pneumonia would have followed any other method of procedure. The case was originally thought to be one of laryngeal epithelioma; it presented all the signs of this condition, and the report on the state of the lungs supported this diagnosis. The operation of extirpation of the larynx I regard as a serious surgical experiment, and whether it will ultimately establish itself as a surgical desideratum in any case, time and further experience alone will enable us to decide.

Birmingham.

CASE OF GASTROSTOMY WITH TRACHEOTOMY FOR CANCER OF THE OESOPHAGUS AND LARYNX.

By JOHN PENNEFATHER RYAN, L.R.C.S.I., &c.

As a means of prolonging life in impassable stricture of the oesophagus the operation of gastrostomy had up to 1872 been performed (according to "Gross's Surgery," published in that year, only ten times—twice each by Sédillot, Forster, and Sydney Jones, and once by Fenger, Curling, Durham, and Maury. In none of these cases was the result encouraging, as all the patients died within a short time after operation, either from exhaustion or peritonitis. Since 1872 I am aware that there have been several cases in which life has been prolonged for some months occurring in the practice of Mr. Bryant and other surgeons, but of these I possess no record to which I can readily refer. In Gant's work on Surgery (1878), the most recent I possess, the author states, in writing of the operation (vol. ii., p. 368), that "it has hitherto always proved rapidly fatal." Possessing this meagre and not very encouraging information, it was with great reluctance that I recently undertook the operation, and then only at the urgent request of the patient (an elderly lady) and her near relatives.

Mrs. L—, aged sixty-one, a lady in good circumstances, first consulted me at the beginning of 1885 for a difficulty in swallowing, which was gradually increasing, and attributed by her to "spasm of the gullet." It was now impossible to swallow solid food, and liquids slowly and with considerable difficulty. Having made a careful examination and failed in passing even a small-sized catheter, I diagnosed a tumour of, or pressing on, the oesophagus, probably malignant, but possibly fibrous. Some weeks afterwards I again saw the case in consultation with my friend, Dr. Power of Brisbane, who concurred with the view I had taken, and we then discussed the propriety of an operation, but decided against it on the supposition that the disease was of a malignant nature. No hope of ultimate recovery