make the two following statements. I never anywhere said or suggested that a force of "four pounds" was required to pass a probe in a healthy woman, nor a force of even half a pound. Dr. Bennet's assertions as to the state of the healthy *os uteri*, *externum* and *internum*, are, I am convinced, erroneous and inconsistent with anatomy, physiology, pathology, and daily experience. It is well-known that some gynaecologists speak and treat as if every woman suffering from dysmenorrhœa or sterility had a strictured cervix; but it is not necessary, in order to account for such proceedings, to resort to Dr. Bennet's dictum that the *os uteri internum* is normally closed during life, except at certain times.

These remarks render it unnecessary for me specially to consider the observations of Dr. Boulton; and those of Dr. Greenhalgh raise no question upon which I am called to make comment.

I thank each of the gentlemen above referred to for their valued criticisms; and I end by saying that I believe the treatment of spasmodic dysmenorrhœa by mechanical means appears to me, at present, to be best effected by the use of a graduated series of metallic bougies, applied as I have elsewhere described—never at any time allowed to remain in the uterus above a few minutes. [See *Edin. Med. Journal*, May 1872.]

ON PALSY OF THE VOCAL CORD FROM INTRACRANIAL SYPHILIS.

By J. HUGHLINGS JACKSON, M.D., F.R.C.P.,

Physician to the Hospital for the Epileptic and Paralysed, and Physician to the London Hospital.

I WISH briefly to draw attention to the occasional nervous origin of syphilitic aphonia, if such an expression may pass. Suppose a patient, who is manifestly the subject of syphilis, becomes aphonic. It would be unsafe—especially if he had any evidently nervous symptoms—to conclude, without looking into his larynx, that he had syphilitic disease of that organ itself. It would be as unjustifiable as concluding, without ophthalmoscopic examination, that his blindness, if he were blind, too, was owing to syphilitic changes in the eye itself. There is another possibility; the fact is that, in some cases of "syphilitic aphonia" there is no other abnormality discoverable in the larynx than paralysis of one vocal cord. In these cases the palsy may safely, in a person presenting outward signs of syphilis, be put down to syphilitic disease affecting the rootlets of the eighth nerve. The recognition of this possibility is obviously of moment. For there is as much practical difference betwixt affection of voice from syphilitic laryngitis and affection of voice from syphilitic disease of the eighth nerve, as there is betwixt affection of sight from syphilitic iritis and affection of sight from paralysis of the third nerve.

I am convinced that, in physicians' practice, aphonia from intracranial syphilis is not exceedingly uncommon; at any rate, it is so far from being very rare, that we can be practically certain that aphonia in a syphilitic patient is owing to syphilitic changes in the larynx itself. And if the patient have paralysis of any cranial motor nerve—for example, the third nerve—the question surely will arise automatically, "Why should not this patient's aphonia also be due to affection of a nerve-trunk as well as his double vision?" "Why should not the eighth nerve suffer from syphilis as well as the third or fifth?" For it is as certain that the eighth nerve supplies the muscles of the vocal cords, as it is that the third supplies the muscles of the eyeball.

I have seen several cases of paralysis of the tongue, palate, and vocal cords from, as I believe, intracranial syphilis; but I will refer only to two cases of palsy of the vocal cords in which *post mortem* examination disclosed syphilitic disease involving, among other parts, the eighth nerve. I would first remark, however, that in these cases, and in all other cases of palsy of the intrinsic muscles of the larynx which I have published, the larynx has been examined for me by my colleague Dr. Morell Mackenzie.

In the *London Hospital Reports*, vol. iv, 1868, p. 314, I have reported the case of a man who had paralysis of the *portio dura*, of the tongue, and palate and vocal cord, all on the left side. Dr. Morell Mackenzie examined the larynx, and established for me two things: (1) that the left vocal cord was paralysed; and (2) that there was no other sort of affection of the larynx. The patient subsequently died hemiplegic from blocking of cerebral arteries. The points of this case which I wish to make prominent are (1), that there was, among other lesions, intracranial syphilitic disease involving all the nerves of the medulla oblongata on the left side, the eighth nerve, of course, among them; (2) that the larynx was found on *post mortem* examination, as Dr. Morell Mackenzie had predicted, free from local syphilitic disease. Mr. Frederick Mackenzie dissected the larynx, and only atrophy of the left crico-arytenoid muscle.

The other case (*op. cit.*, p. 318) is (in so far, I mean, as it illustrates the occurrence of aphonia from intracranial syphilis) so like the one above mentioned, that I will only say of it, that Dr. Morell Mackenzie found, as in the other case, palsy of one vocal cord, and no other affection of the larynx itself; and that Mr. Frederick Mackenzie reported of his dissection of the larynx—"except atrophy of the intrinsic muscles on one side, nothing of any importance was found."

I will not enter into the consideration of purely physiological topics. Bernard's experiments on the spinal accessory and pneumogastric nerves, and on the different sources of the motor fibres which the trunk of the pneumogastric contains for the double set of movements—vocal and respiratory—of the larynx, are well known, and may be read in any work on physiology. I have given a short account of this subject in the *London Hospital Reports*, vol. i, 1864. (The two cases mentioned in this paper are recorded in the fourth volume.) At page 363, vol. i, 1864, I give a brief account of Dr. Lockhart Clarke's researches on the relations of the nuclei of the spinal accessory and lingual nerves.

A CONTRIBUTION TO SCHOOL HYGIENE.*

By R. LIEBREICH, Esq.,

Ophthalmic Surgeon to St. Thomas's Hospital.

THE contributions to school hygiene which I shall put before you do not refer to questions which would come under your consideration as a matter of course. I rather wish to draw your attention to a subject which hitherto has not been considered as belonging to your domain, but the close connection of which with general hygiene it seems to me most important to prove; I allude to the lighting of the class-rooms, and the shape and position of the tables and seats. At first sight, it might appear that this could only refer to the special hygiene of the eye. But this is not the case. Indeed, badly lighted rooms and improper school-furniture spoil the eyes and increase short-sightedness. But this is not the only bad effect. The lungs and viscera become compressed, the spine and shoulder-blades are kept out of their normal position, by the constrained attitude in which the youthful body, at the very time of its growth and development, is kept for hours every day. Thus the way is prepared for the development of chronic diseases; and this must not only considerably impair the health of individuals, but also tend to promote physical degeneracy, and deteriorate the vigour and *physique* of the nation.

If the bad attitude of the children in schools could be only ascribed to want of attention on the part of the masters, and to carelessness on the part of the children (as is generally assumed), then, indeed, you would have nothing to do with the matter. It is, however, easy to prove that, with the present arrangements, it is impossible for the children, from physiological as well as from anatomical reasons, to remain straight for any great length of time, but that they could be enabled to do so by a proper distribution of light, and by well adapted school-furniture.

The proper light is most easily obtained if the class-room be of an oblong shape; the windows being in one of the long sides, and the tables arranged parallel to the short walls, so that the light may fall from the left side. The desk of the master ought to be placed near the short wall towards which the scholars look.

Light coming from the right hand is not so good as that from the left, because the shadow of the hand falls upon that part of the paper at which we are looking. Light from behind is still worse, because the head and upper part of the body throw a shadow on the book; but the light that comes from the front, and falls on the face, is by far the worst of all. In the first place, it does not attain the object desired; and next, it is most hurtful to the eye. The object is to make the fully illuminated faces more visible to the master; but the children, instinctively desirous of avoiding the unpleasantness of the full glare, assume all sorts of positions which turn their faces from the master. In reading, they turn the head round the vertical axis, generally towards the right, in order to let the light fall on the book, which, when held straight before them, is completely in shadow; while in writing, or in reading (the book being on the table), they bend their heads as low as possible, in order to shade their eyes by the projection of the forehead. In this way the faces are much less visible to the master than if they were held upright and illuminated from the left side; and if, according to the regulations of the Committee of Council, the light also fall full upon the face of the master, he will be entirely prevented from seeing them. This method of lighting the room is very injurious to the eye, because,

* Read before the Association of Medical Officers of Health.

firstly, the retina becomes fatigued by the full glare upon it, and the diffused light renders the comparatively dark images of the printing and writing more difficult to be perceived. Secondly, the position assumed by the children, in order to avoid the disturbing influence of the light, places the axis of the eye in a very unfavourable direction, which induces short-sightedness, differences in the sight of the two eyes, and certain weaknesses of the muscles of the eye.

The lighting of the rooms in the evening ought to be as similar as possible to that by day. It is difficult to arrange gas-light well, but easy to arrange it better than has been done in most schools. Almost everywhere I have found naked gas-jets, which give an unsteady bad light. Glass cylinders would make the flame whiter and steadier. Reflectors would improve it still more. They might in most cases be made to perform at the same time the office of ventilators, carry off the bad products of gas-burning, and improve the general ventilation of the room. Ground-glass globes ought not to be used: they are useful for the ordinary lighting up of a room, as they diffuse the light more equally throughout all parts; but, for that very reason, they give an indistinct light for work, and, if they be opposite the eye, are dazzling and injurious. This property of diffusing light renders ground-glass useful for lighting up the darker parts of a room by daylight also, where there is no direct light from the window; but care must be taken that it is only used for skylights or the upper parts of windows. If lower, it is hurtful, and positively injurious if opposite to the eye. It ought, therefore, never to be used for the lower parts of windows to prevent looking out. In such cases it would be preferable to cover the lower part of the window altogether, as the light which comes through is of little importance.

If you have placed the seats in the right position, and taken care to have a suitable light, there will be no optical reason for the children assuming an injurious posture; and we have then to inquire into the mechanical causes for such a posture, viz., the form of the desks and seats. The faults of the furniture commonly used have been carefully analysed, and the following have been found to be the most important:

1. Want of, or unsuitable, backs.
2. Too great a distance between the seat and the desk.
3. Disproportion, generally too great a difference, between the height of the seat and that of the desk.
4. Wrong form and slope of the desk.

If the back be wanting or unsuitable, the strength of the muscles which keep the spine straight is not sufficient to maintain it long in an upright position; the body stoops, the lower part of the spine becomes bent forward, and thus the viscera and lungs are compressed, and the free action of these organs is prevented. If the child have to read a book placed on a table at too great a distance, it sits on the edge of the seat, a very unhealthy and fatiguing position. It rests the body on the two arms; and, if the distance between the desk and seat be too great, the chest is supported by the projecting shoulders, instead of the shoulders resting on the thorax. Soon this position becomes too fatiguing; the head, bent forward, becomes too heavy, and must be supported by one or both hands at the temples, or by the chin resting on both arms. It is still worse when writing; with desks and seats of the ordinary form, only one arm rests on the table—this is generally the right, while the left hangs, so that the elbow approaches the left knee, and only the tips of the fingers hold the book on the table. The edge of the book is no longer parallel with the rim of the table, but slanting, or even perpendicular to it. If we observe the position which the upper part of the body assumes, we find that the lumbar vertebrae bend forward, those of the chest towards the left, and those of the neck forward with an inclination to the right; at the same time, the lower part of the shoulder-blade stands too far off from the ribs, and is elevated too much towards the right, and the shoulder-joint is raised and pushed forward. To be in such a position for several hours of the day, at a time when the body is rapidly developing, must naturally produce permanently bad effects. Statistics prove this to be the case. In Switzerland, for instance, 20 per cent. of all schoolboys, and 40 per cent. of girls, have one shoulder higher than the other. The well-known orthopaedic surgeon, Eulenberg, also states that 90 per cent. of curvatures of the spine, which do not arise from a special disease, are developed during school-life. These statements have particularly struck me, as coinciding exactly with the period of the development of short-sightedness; and I have paid the more attention to this relation between spinal curvature and short-sightedness, as they seem to form a vicious circle, in so far as short-sightedness produces curvature, and curvature favours short-sightedness; while evidently the same bad arrangements are at the foundation of both these anomalies.

How can these great evils be removed?—First of all, the benches must have backs, and these must not be high, and not slanting backwards, as I found them in some schools. These only favour a negligent re-

clining posture; the body slides forward, and the position becomes unsuitable for reading, and impossible for writing. The back ought to be straight, and consist of a piece of wood three inches broad. If this be fixed at the proper height, viz., close above the hips, it supports the loins sufficiently to make it easy and comfortable for even the most delicate children to sit perfectly upright. The seat ought to be broad enough to support almost the whole length of the thigh, and the height of the seat such as to allow the sole of the foot in its natural position to rest on a footboard. The edge of the desk must be perpendicularly above that of the seat, and just high enough to allow the arm to rest on it, without displacing the shoulder. I must add another condition, which is of special importance for the eye; viz., that the desks should have an inclination, for reading, of about 40 deg., for writing, of 20 deg. The need of this arises from a physiological law, which is not so generally known as most of the other laws relating to the eye. It has, therefore, not even been considered by physicians, who have made the improvement of school-arrangements their special study. Of the possible combinations of the eye-muscles, some can be brought into action for a length of time, others only for a few seconds. Thus we can only with an effort look at a near object, if it be higher than the eye. On the contrary, we can look with ease at an object equally near, if it be below the eye. If we want to see distinctly with both eyes, not a point, but a line or a plane, a particular turning of both retinæ is required for each position of the object. Only when this turning can be produced by a combination of muscles which can be effected with ease and for some length of time, can we look at the object long without fatigue. Therefore you must not think that the natural position of the book while reading depends upon chance. It is a physiological necessity; if we strive against it, the eye becomes fatigued, and if the effort be repeated regularly and for a long time, a derangement of the harmonious action of the muscles of the eye is the consequence. This is the reason why it is fatiguing to look at the pictures of a gallery, hung high on a vertical wall, while we could see without fatigue the same number of pictures placed before us one after the other upon easels. For the same reason it is hurtful to read while lying down; and, as we have often occasion to observe, it produces great weakness of sight (asthenopia) in those who are forced to lie down much. Therefore it is necessary, if we want to look long at any plane surface, as, for instance, a book, to place it so that for the central position the axis of vision is set at an angle of about 45 deg. downwards, and we ought therefore to give the book an inclination which will place it nearly perpendicular to our axis of vision, viz., at an angle of about 45 deg. with the horizon. For writing, the same inclination of the book would be advantageous, but mechanical reasons prevent this, and we must be content with an angle of about 20 deg.

In order to answer both requirements, I have had a desk made, which by a very simple contrivance gives the desired position either for writing or reading. There is a flap which moves up and down. By the shape which I have given to this flap, and some small details in the construction, I have succeeded in giving, without mechanical inconvenience, the inclination of 20 deg. for writing, and 40 deg. for reading. For writing, the distance between desk and seat is zero; for reading it is five inches, which has no disadvantage, and enables the children to change their places more easily.

If we now turn to the practical question, In what way suitable furniture could be introduced into our schools? the first difficulty we meet is, the different size of children belonging to the same class. We must begin by distinguishing among the pupils, first, those who keep the same place, and, secondly, those who change places. Of course, perfect adaptation and entire fulfilling of the above mentioned conditions is only possible for those who come under the first head. As for the second category, we must be satisfied with adapting these conditions as much as possible to the average size of the children. In doing so, the imperfect state of all present arrangements will become apparent, when you will presently be able to convince yourselves that even the children who differ most from the average size are much more comfortably seated on the furniture which I am going to show you, than any child at any of the tables and seats hitherto used. These observations induced me to close a lecture delivered before the College of Preceptors last summer by the following proposals.

1. One and the same size and model of desk should be used for children and grown-up persons of both sexes.
2. The adaptation to the height of each child should be effected by varying the height of the seat and the foot-board.
3. The edge of the table is always to be perpendicular to that of the seat.
4. No seat is to be without a back, and the top of this is always to be as high as the edge of the table for boys, and two inches higher than the edge of the table for girls.

5. In all classes where the boys change places, the height of the seat is to be regulated in proportion to the average height of the pupils.

6. In all girls' schools, in all those boys' schools where the children do not change places, in boarding schools, and in private school-rooms, the seat of each child should be accurately regulated in proportion to its height.

To make this important arrangement practicable, I have invented a chair, the seat of which can be raised and lowered by means of a screw, while at the same time the back is brought forward in proportion. Such a chair will be a suitable seat for either a child or a grown-up person at the same desk, will follow the growth of the child, and enable it to be, whether reading or writing, in a comfortable and healthy position, which facilitates instruction and discipline.

REPORT OF FIFTEEN CASES OF ARSENICAL POISONING WITH UNUSUAL SYMPTOMS.*

By JOHN MORLEY, Esq., Barton-on-Humber.

As it seldom occurs for one individual to have suddenly thrown upon his hands so large a number as fifteen persons suffering from acute arsenical poisoning, I thought it would be interesting to you to place on record a few of the observations which I made and recorded at the time.

About two o'clock in the afternoon of February 21st, 1872, I was requested to proceed with all haste to Saxby, five miles distant, to attend two men who had been attacked with sickness whilst at dinner, and were considered to be in great danger. Having provided myself with sulphate of zinc and a stomach-pump, I found, on my arrival, fifteen persons ill, nearly all of whom were vomiting violently and frequently. The dinner-party consisted of seventeen relatives and friends of a deceased woman aged 80, whom I had attended six weeks for chronic inflammation of the lungs. All except two had partaken of pudding as well as meat, and these were the only persons who escaped. Upon testing the baking-powder which had been used in the composition of the pudding by sprinkling some of it on a red-hot poker, the alliaceous odour of arsenic was unmistakably present.

To those who had not already vomited freely, I gave sulphate of zinc, which acted quickly. Most of them had already taken mustard emetics; and I encouraged them all to drink freely of milk, whites of eggs, and gruel.

All complained of faintness, uneasiness about the stomach, with intense pain in the middle of the back. On the occurrence of vomiting, they were much relieved, and comparatively well for a short period, until the above mentioned symptoms returned, and did not finally cease until near midnight.

One girl, aged 14, became blind, lost her speech, and fell down in a state of syncope; but was restored by laying her on the bed and the application of warmth to the extremities.

A child three years old, in a state of collapse, was restored by a lady nursing it before the fire in a blanket; both its parents being among the sufferers, and unable to leave their bed. Several had severe rigors, which were relieved by placing them in bed and applying bottles of hot water. In only one case did I see blood vomited, and then only a few drops. In all, the conjunctivæ were injected.

At 6 P.M., four of the patients felt able to ride to Barton. Two of them went on to Hull. The others were obliged, on their arrival, to call in Mr. Sissons, by whom they were attended.

At 8 P.M., I was joined in consultation by Messrs. Eddie and Bennett; after which I returned home, leaving the patients in charge of the latter, who kindly remained in the village all night, and subsequently analysed the pudding, baking-powder, and the contents of the canister out of which the supposed rice-flour had been taken for the manufacture of the baking-powder. All of these yielded arsenic by the usual tests, which were performed in my presence.

February 22nd. We visited the patients remaining at Saxby on the following morning, and observed in all, except the children, that the congestion of the conjunctivæ had disappeared, and given place to a yellow tinge, in which the skin did not participate. There had been no diarrhoea, except in two women, one of whom had taken aperient medicine on the previous morning. Some of the patients complained of flickering of the muscles and disturbance of vision, preventing them from knitting, sewing, or reading; and, when they closed their eyes, they were troubled with shining particles floating backwards and forwards. One of them also complained of a nauseous taste.

On February 28th, Maria S. informed me that she had been tormented for the last two days and nights with irritation of the skin, which she compared to being in a bagful of fleas. On March 1st, the irritation of the skin had ceased.

Very little treatment was required after the first day. It consisted of bismuth, with soda and magnesia, in peppermint-water. All the patients happily recovered.

REPORTS

OF

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS OF GREAT BRITAIN.

REPORT ON THE ADMINISTRATION OF ETHER.

[Continued from p. 62.]

CHILDREN'S HOSPITAL, BRIGHTON.

Mr. NOURSE, one of the surgeons to this hospital, writes:—I have given ether twice here, once for opening a deep-seated abscess, once for examination of a diseased hip. In the first case it answered well; the child woke up smiling, three minutes after the incision was made, and was quite unconscious of what had been done. In the second case, that of a nervous hysterical girl, opisthotonos came on when the inhalation had continued a short time. It was, therefore, suspended; but, on resuming it, the same effect followed. The ether was consequently withdrawn, and the next day chloroform was given, which acted as well as it usually does in such subjects. The quantity of ether inhaled in the first case was about three drachms; in the second case, about five drachms.

HOSPITAL FOR SICK CHILDREN.

For some time past ether has been given here by Mr. FLETCHER BEACH, the registrar, as an anæsthetic. The apparatus used is simply a cone of felt covered with oil silk or Lister's protective; and in the cone is inserted, after having been wrung out in hot water, a sponge, which can be changed from time to time, if necessary. Sufficient ether is poured on the sponge to saturate it, and the cone is applied as closely as possible to the face of the child. By pushing the ether from the first, struggling is considerably reduced. Two or three minutes suffice for the production of anæsthesia. Air is excluded as much as possible at the commencement, but admitted afterwards, according to the state of the patient and the length of the operation. Ether is added, from time to time, as it is required. There is often excitement on the return of consciousness, and the child is usually sick, but the sickness does not continue. Even in weakly children, at the end of a prolonged operation, the pulse is full and regular, showing the good effect of ether as a stimulant to the heart's action.

MIDDLESEX HOSPITAL.

CASE OF SUICIDAL POISONING BY OXALIC ACID; CYSTITIS; MORBUS RENUM; RECOVERY.

(Under the care of Dr. HENRY THOMPSON.)

It is difficult, in the following case, to estimate the exact relation between the renal and cystic symptoms and the effects of the oxalic acid. The notes are, however, of sufficient clinical value to deserve publication. It appears, from the woman's history, that fourteen years previously she had suffered from symptoms of ulcer of the stomach, during which she brought up a quantity of black blood. She had since suffered from pain in the epigastrium, and a year ago with a return of the vomiting, but without hæmatemesis. Her urine, though at times scanty, gave her no trouble, and no reliable symptom, pointing to disease of the kidney, was obtained from her. She had been much troubled for the past three years with a varicose ulcer of the leg.

A. G., a woman about 30 years of age, was brought to the Hospital, at 7.30 P.M. It was stated that she had taken, at 5.30 P.M., a pennyworth of oxalic acid in tea. This was afterwards ascertained, at the chemist's who had supplied the drug to her, to amount to half an ounce. She stated that, almost immediately after swallowing the mixture, she felt a burning sensation at the pit of the stomach and in her throat. She was violently sick, fainted frequently, and had severe pain in the abdomen. The surface of the body became cold, and purging of very offensive matters ensued; the vomited matters contained no blood. These symptoms increased up to the time of admission.

* Read before the East York and North Lincoln Branch.