

The temperature begins to rise at the commencement of the process of suppuration. It rises rapidly until the process is mature, when it begins to fall.

For example, a man, aged 39, was admitted for a severe bruise of his thigh. On the evening of the third day after the accident, his temperature was 103 deg. Hardness and intumescence of the soft parts was to be felt near the seat of the injury, but no fluctuation. A poultice was applied. The next evening, his temperature was 105 deg. The abscess became matured during the night. The temperature fell gradually next day.

In some cases of severe concussion of the brain, it is of extreme importance to establish with certainty the existence or non-existence of any inflammatory symptoms. Mere nervous shock will in not a few such cases cause the pulse and respirations to be very rapid. The following is a case in point. A boy, aged 14, admitted with severe cerebral concussion, had a pulse of 120 and respirations 36. The temperature, however, did not rise above 101 deg., which proved the absence of any severe inflammatory mischief.

In cases of intestinal hæmorrhage in typhoid fever, the temperature falls for some hours before the blood appears in the stools, the pulse continuing as rapid, or even more rapid, than before the hæmorrhage took place. The thermometer enables the physician to determine the occurrence of the hæmorrhage, and to adopt preventive treatment at once; whereas if, neglecting the use of that instrument, he wait until the blood appears in the motions, much valuable time will have been lost.

[To be continued.]

ON THE TREATMENT OF STRABISMUS WITHOUT OPERATION.

By C. HOLTHOUSE, Esq., Surgeon to the Westminster Hospital, and to the Surrey Ophthalmic Hospital, etc.

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CASE II. *Double Convergent Strabismus from Paralysis of the External Rectus Muscle of the Left Eye, probably due to slight Capillary Apoplexy.* Eliz. W., aged 54, chairwoman, applied to me at the Surrey Ophthalmic Hospital on February 6th, 1860, for a slight convergent strabismus affecting both eyes, diplopia, and much confusion of vision. The movements of the right eye were perfect in every direction, the pupil acted normally, and the vision was good; but the left eye could not be moved outwards beyond a central position between the two canthi; and the upward and outward and downward and outward movements were likewise very limited. In other directions, this eye moved freely, and its pupil and vision were unaffected. On shading each eye alternately, the right or good eye was always more inverted than the left. The diplopia was lateral and homonymous; and the distance between the double images increased as the object gazed at was moved further to the patient's left side.

History. Three weeks previously, while the patient was in church, and during the sermon, her nose began to bleed. She succeeded, however, in stopping the hæmorrhage, but shortly afterwards became affected with a sudden "dizziness", and felt as if she "was going to fall off the seat". On leaving church, she had much pain in the head, which she endeavoured to relieve by tying a handkerchief tightly round her forehead and going to bed. She arose the following morning at her usual hour, and went to work, notwithstanding she felt very unwell, and suffered from much confusion of vision. The above symptoms continued to the time of application. She was or-

dered one grain of calomel and one of quinine three times a day.

Feb. 9th. The powders, having griped and purged her freely, were discontinued, and a mixture of three grains of iodide of potassium in an ounce of camphor mixture, to be taken three times a day, was substituted.

Feb. 13th. The paralysis remained without any appreciable diminution, but the patient's health had improved. The medicine was continued.

Feb. 20th. The strabismus and confusion of vision had diminished, and the cornea could be everted to within two and a half lines of the outer canthus. The treatment was continued.

Feb. 24th. The improvement continued; the cornea could be everted to within one line of the outer canthus; and scarcely any perceptible strabismus or confusion of vision remained. The medicine was continued.

The patient ceased to attend after the last note was taken, having considered herself well.

There may be some doubt as to the exact locality of the mischief in the above case; but less, probably, as to its cause. The preceding epistaxis pointed to congestion and rupture of the capillaries of the nose; and, had the hæmorrhage been encouraged, it might possibly have warded off the paralytic attack; but, being suppressed before the vessels had sufficiently relieved themselves, the preexisting congestion gave rise to rupture elsewhere; and this extravasation implicated, either at its origin or in some part of its course, the left abducens nerve. The dizziness, of which the patient complained on her first seizure, would not necessarily denote a cerebral lesion, inasmuch as any sudden distortion of one eye will give rise to much confusion of vision and giddiness; but, coupling the latter symptom with the pain in the head and with the absence of paralysis of any of the other ocular muscles, it seems more probable that the extravasation was intracranial than intraorbital.

As regards the influence of the treatment on the favourable result, I am unwilling to speculate. Suffice it that the patient recovered within three weeks of its commencement.

CASE III. *Double Convergent Strabismus of the Left Eye to one Line, and of the Right to one Line and a half, from Paralysis of the Left External Rectus Muscle, probably of cerebral Origin.* Robert B., aged 35, bricklayer, and healthy looking, applied to me on January 9th, 1866, for a double convergent strabismus affecting the left eye to one line, and the right to one line and a half, when the head was straight; but, left to himself, he kept his head rotated on its axis to the left shoulder, thus making his eyes parallel, and so avoiding diplopia.

The attack came on without obvious cause, and unaccompanied with pain in the head or vertigo. He confessed, however, to having suffered from occasional giddiness and confusion, on stooping down, for the last two or three years.

On testing the movements of each eye separately, those of the right were found to be normal; but the cornea of the left could not be moved beyond the centre of the palpebral aperture. In all other directions, not influenced by the external rectus, the movements of the eye were perfect. The vision of each eye was good, but the accommodation of the left rather less perfect than the right, being in the right eye $\frac{1}{2}$, and in the left $\frac{1}{4}$. After some trials and shifting of the head, he was able to see stereoscopically through the ordinary refracting stereoscope; proving, as will be shown hereafter, that he had the power of keeping the eyes parallel. When first seized with the paralysis, and for some time afterwards, he was much annoyed with the diplopia; but

he had now learnt to correct it by the position of his head. It is worthy of remark, in connexion with this symptom, that the double images were invariably parallel and of the same height, in whatever direction the object (a paper-knife) was held. Now, theoretically, the left hand image ought to have been slanting; because the left eye not being everted, owing to the paralysis of its abductor, its vertical meridian would remain nearly vertical, while that of its fellow would be inclined to the left; and thus the parallelism of the two meridians would be destroyed. I shall have occasion to revert to this anomaly in another case. As regards the range of the diplopia, it occupied not only the centre and left of the visual field, but extended more than two feet into the right half.

Feb. 19th. He had had counterirritation kept up by means of sinapisms in the cervical and upper dorsal regions of the spine, and had been taking a tonic mixture. To-day it was found that he could evert the cornea to three lines beyond the point at which it rested five weeks ago. Notwithstanding this gain, the diplopia still extended into the right field of vision. This phenomenon was due to the action of the adductor of the paralysed eye not being sufficiently controlled by its weakened antagonist. Thus the visual axis of that eye, instead of being in a line with the object, passed beyond it, as was proved by shading the sound eye, when the paralysed one immediately made a slight movement outwards.

This patient is now being treated by galvanism twice a week, according to the method recommended by Benedikt of Vienna; and, although not yet perfectly well, he is steadily advancing towards complete recovery.

[To be continued.]

ON THE DISCOVERY OF TRICHINÆ IN THE HUMAN SUBJECT.

By THOMAS NUNNELEY, F.R.C.S.E., Leeds.

FROM the repeated references which from time to time have appeared in the BRITISH MEDICAL JOURNAL and other publications, as to who first discovered trichinæ in the human body, and the date of the discovery, it would appear that much interest attaches to the questions.

Some time ago, I observed that it was stated, in this JOURNAL and also in others, that Owen first noticed the parasite in 1835. Then it was asserted that it had been discovered by a German anatomist; and now I find in the JOURNAL of February 24th, a statement, made on the authority of the present curator of Guy's Museum, to the effect that Mr. Hilton was entitled to the honour of having first called attention to the subject in 1832. As the last date so nearly corresponds with the time when I dissected a subject in which I found trichinæ in enormous numbers, and it is hardly likely that two subjects affected with so uncommon a disease should have been seen so nearly together in the same dissecting-room, I cannot but suspect this latter statement refers to the subject in which I first noticed the existence of these entozoa, and that it may help to settle the question of priority of discovery if I relate what then took place; and put in such claim as may fairly attach to the person who first noticed the presence of the trichinæ. It is by no means improbable, that some who were then students at Guy's may, on reading this communication, have their memory recalled to an occurrence which, at the time, excited considerable interest. I made a full memorandum of the facts in my note-book; and have a firm conviction of the correctness of what I now state.

Towards the close of my student-life at Guy's Hospital, I think at the end of April or in May 1832, when subjects were not greatly in demand, I had the major part of a male subject to dissect and use for operations. On exposing the muscles of the neck, I at once observed that they were unusually pale, and presented a most peculiar spotted greyish appearance, which, on close inspection, was seen to be caused by innumerable minute semi-opaque, white ovoid-shaped cysts, deposited in rows in the cellular membrane connecting the muscular fasciculi. These cysts were so numerous as nearly to touch each other. They all lay in single rows with the long axis parallel with the muscular fibre. Though so plentiful in the connecting tissue, not one could be seen entering into the substance of the smaller fasciculi; and all lay, so far as could be noticed, with the long axis as stated—not a single one could be found lying in a transverse direction.

The whole body was carefully dissected, to ascertain the extent to which the muscles and various organs were pervaded by these cysts. There was not a single voluntary muscle but was thickly and apparently uniformly studded with them. They pervaded equally the small muscles of the glottis and orbit, as the large pectoral and abdominal muscles, the thin platysma myoides, and the entire substance of the thick deltoid; but I could not find a single cyst in any of the non-striated involuntary muscles. The muscles of respiration were full of them; but not a solitary individual could be detected in the heart, nor in the muscular walls of any of the hollow viscera. None were discovered in any of the solid viscera; and, if any existed, they must have been few in number, and were not observed.

So remarkable a morbid condition could not but excite much attention; and, doubtless, the matter would be brought under the notice of Mr. Cock and Mr. Hilton, who were the demonstrators of anatomy. Mr. Key, whose dresser I had for some time been, and others of the medical staff, amongst whom were Mr. Cooper, the anatomical lecturer, Dr. Bright, and Dr. Addison, I know, visited the dissecting-room and saw the muscles. I well remember that the attention of Dr. Hodgkin, who was then Teacher of Pathology and Curator of the Museum, was especially called to the matter. He had never seen anything of the kind, and was at a loss to account for it. The microscope was only just beginning to be used in pathological investigations, and very few persons knew much of its management; Dr. Hodgkin suggested the name of his friend, the late Mr. Lister, who was then perhaps the most expert microscopist in London, as a proper person to be referred to; and I removed a portion of muscle for his examination. For a similar reason, the name of Dr. Marshall Hall, who had lately come from Nottingham to reside in London, and who was known to have used the microscope, was mentioned. He had portions of muscles sent to him; and he afterwards came to the dissecting-room, where I shewed him the subject. After various speculations, as to the nature of these cysts—whether they should be regarded as ova, larvæ, or perfectly developed parasites—in the end, by one or other of the three gentlemen last named—I believe by Mr. Lister, though of this I am not certain (possibly Dr. Hodgkin may recollect)—these bodies were determined to be the *cysticercus cellulose*, by which name for many years they were called. How they entered the body, or why they were located in the striated muscles of voluntary motion alone, no reasonable explanation was attempted. Indeed, in the then imperfect state of knowledge of the natural history of these entozoa, such would have been impossible.