PROVINCIAL MEDICAL & SURGICAL JOURNAL.

CASE OF DIMINISHED BRAIN.

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TO THE EDITOR OF THE PROVINCIAL MEDICAL AND
SURGICAL JOURNAL.

SIR,

The following case, which in the absence of more formal communications, was read before the Yorkshire Branch of our Association, held at York yesterday, you may possibly consider of sufficient interest to find for it a place in the Journal. It appears to bear upon, and be illustrative of, some important opinions connected with the physiology of the brain or portions thereof:—1st. As to the connection between the intellectual faculties and the cineritious matter of the cerebral convolutions. 2nd. The shrinking of the entire mass of the brain, either from disease or that change in nutrition which occurs in advancing age, the space being filled up by a corresponding increase in the quantity of serum normally existing within the membranes of the cerebro-spinal axis, so as to preserve a due degree of pressure and support to the nervous masses under the varying forces of the circulation, &c. 3rd. The function of the cerebellum; its being the regulator and controller of the combined action of muscles, over the power and integrity of which it is by some modern physiologists presumed to preside.

I am, Sir,

Faithfully yours,

THOMAS NUNNELEY.

Leeds, June 26th, 1846.

Mr. Joseph S—, aged 64; died April 6th, 1846; body examined two days afterwards.

Mr. S. first came under my care in August, 1839, previously to which he had been for some years under that of the late Mr. Wildsmith. In his earlier days he had been a very active industrious person, and though now in business, and having two sons fully competent to manage it, he took no part whatever in it, and lived at a distance from it. At the period I speak of, he was corpulent and muscular; the countenance florid, with the veins of the cheek much congested; the pulse feeble and somewhat irregular; the breathing short and thick; the appetite good; he lived regularly and well. He complained of weakness, and had a great disinclination to take exercise, though he always gave me the idea of being able to walk much more than he did; it seemed rather a want of command over the limbs, with a great disinclination to move, than an

inability to do so. He seldom would walk out alone for fear of falling. When he did, he always walked very slowly, with a stick, and only for a short distance; generally he had hold of his man servant's arm. He was always assisted up and down stairs, the going up being often very difficult, the man being obliged to go behind to steady and push him up. For a long time he had had wakeful nights, and had taken a mild opiate combined with an aperient. His man always slept in the same room. He was in the possession of all his faculties, though the mind was certainly weak. At times there was some heat in the head, accompanied with a little pain, though he complained more of the chest. The form of the chest was full and round; it yielded on percussion a clear sound, while the respiratory murmur was feeble; there was also some mucous rattle. I concluded that he laboured under emphysema of the lungs, with dilatation of the right side of the heart, and that some slow change was going on in the brain, not probably of any inflammatory character, but connected with its nutrition, and perhaps allied in its nature to softening.

Mr. S. continued in much the same condition until September, 1841, going out at times into the country for two or three weeks, or on fine days riding in a coach for an hour or so, and frequently not getting out of the house for weeks together, when early one morning before getting up he was seized with a fit, and lay for some days in an insensible state. The late Mr. Hey (*secundus*,) then attended him with me for some time. The symptoms more resembled acute softening of the brain than apoplexy. It appeared as though he would die, indeed Mr. Hey thought he could not live many days. He was cupped, leeches, and blistered, and took calomel pretty freely; afterwards hyoscyamus with camphor, at night, with small doses of strychnine in the day. Hence he gradually improved, and became able to sit up and move from his bed to the chair.

From this time up to his death there was no very decided change, though he gradually became in every way more feeble. During this period he had, perhaps, a dozen seizures, in which he continued insensible, and lost all power for ten or fifteen minutes. Frequently he was very dull and lethargic, or cross and noisy, which cupping and a blister to the neck, with mild purgatives, combined with diffusible stimulants, generally in a short time relieved. The head was at times rather hot; this, cold applications relieved; when asked if he had any pain he would often put his hand to his head, but as frequently to his mouth or chest; indeed it was impossible to ascertain if he

had pain or not. He would frequently lie and cry out "Oh, dear! Oh, dear!" pat his breast, and look very uncomfortable, but when asked if anywhere hurt him, he could not tell, say he did not know, or look at his servant and ask her, saying, "Is there Mary," or, "What do you say, Charles." For days he would scarcely speak, at other times he was very noisy, shouting, and using very abusive language, (a thing he was not in the least addicted to when in health.) He always knew me, and appeared pleased to see me, and would, on my first entering the room, answer a short question, but was altogether unable to converse. Many persons he appeared not to know, or only for an instant, even the members of his own family. He would often call loud and continually for his servants, when they were standing close to him; at times he appeared not to see them, or anything which was handed to him,—not from any defect in the eye itself, but from want of power in the brain to receive the impression, as, if his attention were directed to an object, he could then, for a time, perceive it well enough. He could not feed himself, even if the food were put into his hand, and if he attempted, he could hardly ever find his mouth, and he would sit with the food before him without offering to touch it; he could hardly ever tell me if he had dined, often saying he had not when he had just eaten his dinner, or that he had when he had not, though the latter not so generally as the former. For the most part he lay in bed, invariably upon the left side, but he could sit up in an easy chair for an hour or more at a time, to take his meals. He could walk from the bed to the chair, when assisted, but this he did very tottering, and was obliged to be gently pushed or dragged to make him put one foot before the other, and to be well supported; he would stand like a wooden man set upright, as though about to fall, and only required the touch of a straw to be knocked down; he would often roll to the bed-side with his feet out in a half sitting posture, but never attempted more. In the night he has fallen out of bed upon the floor two or three times, so that a board had to be placed upon the bed-side. If left standing, there he would remain; indeed he appeared to have not only lost all command over the combined action of muscles, but even all idea of using them, in perhaps, a still greater degree. That this did not altogether arise from the loss of power, is proved by the fact of his withdrawing his arm or leg powerfully and quickly when taken hold of, and he was not pleased with it; and his biting and pinching his attendants until the parts were black.

For nearly two years before his death, it was a most difficult thing to give him any liquid; it could only be done by teaspoonsfuls. If he attempted to drink, a most violent continued spasmodic cough, as though he would choke, was instantly produced, evidently from some of the liquid getting into the larynx; this was not the case with solids. It arose, I doubt not, from the want of attention to the passage of the fluid through the fauces, so that he inspired at the same moment, and thus the glottis remained open. The cough was so violent that hardly any fluids were given to him; he was fed principally upon bread soaked in milk or beef tea, soft puddings, with jelly, and similar things. He appeared equally satisfied with any kind of food, always saying it was good. The bowels were usually

constipated, and at times required very large doses of purgatives. He would never allow an injection to be given. He frequently passed his motions without being aware of it, and generally his water, though he sometimes gave them to understand by his movements that he wanted. He pulled all the buttons and strings off his clothes, and was continually picking and twisting any small object he could get hold of. It was extremely difficult to feel the pulse, as he would not hold his hand still. At times, when very cross, he would mistake his own hand or arm for those of others, and make them black with pinching or biting. He was extremely susceptible to the cold; nothing made him shrink so, or become so cross, as to be touched with a hand that was in the least chill. On some few occasions he had sudden attacks of excessive difficulty in his breathing, which were soon relieved by æther and ammonia, with sedatives. He slept very badly, and without some opiate not at all. For two or three days before his death he was weak and uncomfortable, as he often had been; and when I saw him, three hours before his death, he appeared no worse than I had often seen him. He died in his chair.

It was evident, that in addition to the disease of the lungs and heart, there was some decided change in the head. The diagnosis which I had given to the friends was, considerable softening or shrinking of the cerebral convolutions, with probably a similar condition of the cerebellum. I should have stated that very often he could not put out the tongue. This evidently did not arise from paralysis of this organ, but from want of central power. He would open his mouth to the full extent, and let it remain open; but by getting him to shut it, and engaging his attention for a moment, then suddenly telling him to put out his tongue, he would commonly do it at once. So his inability to talk, arose more from the want of mental power or ideal perception. At times he would and did talk, and shout with energy and continuance enough, and he would generally begin an answer readily enough, but either run off to something unconnected with the subject, or stop after a few words were said, and appear lost.

Post-mortem examination. Head and chest examined. Though much thinner than when going about in health, still there was no emaciation.

Chest. Old, universal, and completely cellular adhesion of the pleuræ of right side. Posterior portions of both lungs engorged with reddish serum; the anterior portions on both sides quite emphysematous, principally vesicular, but with some patches of interlobular. About an ounce of serum in the pericardium; the heart soft, flabby, and dilated, particularly upon the right side, filled with dark, partially coagulated blood, as also were the great veins; no valvular disease; the coronary arteries were somewhat ossified.

Head. The scalp thick and firm, containing very little blood. A very large quantity, amounting to some ounces, of clear serum flowed from the surface of the brain while sawing the skull. The brain did not nearly fill the skull; the arachnoid membrane was opaque, and thickened on the upper as well as the under surface; the vessels of the pia mater were distended with dark fluid blood, and the meshes of the membrane were filled with serum; the glandulæ Pacchionæ much developed; the whole of the arteries of the brain,

including the cerebral, the basilar, and the circle of Willis, were very much ossified; the basilar in one place dilated;* the convolutions of the cerebrum shrunk and completely attenuated; instead of being round and plump, they were thin and flat. On slicing the hemisphere, the diminished size of the convolutions was most remarkable, and the difference between the medullary and cineritious portions was very evident. The former was white as usual, with a few bloody points; the latter constituted a thin yellowish dry layer upon it, the convolutions not being more than half the size they usually are. This appearance was general throughout both hemispheres. The lateral ventricles were distended with clear serum, and the lining membrane was strong enough to allow of being easily raised and pulled off in strips. The white substance generally was softer than usual, and in the posterior lobe of the right hemisphere there was a portion about the size of a walnut, quite pulpy, and yellowish in colour. The striated appearance, on slicing obliquely the thalami and corpora striata, was not nearly so distinct as usual. The corpora quadrigemina were small. The soft commissure was most distinct, and bore more handling without giving way than I ever saw it; this was solely owing to the thickened covering of the membrane, as this being raised the structure itself was soft enough.

The cerebellum was the smallest I ever saw in a grown man, certainly not more than two-thirds of its usual size; its lamina exhibited the same attenuated condition as the cerebral convolutions, and the cineritious portions the same yellowish dry appearance; the white part showed a general softness, but I could not discover any particular local change. The membranes were thickened in the same manner as those of the cerebrum. The medulla oblongata was small, and the theca filled with clear serum.

Mr. S. was a full-sized man, indeed, when in health, he must have weighed fourteen or fifteen stone; but I never saw such a brain, so small in size, or the convolutions so shrivelled. I was very sorry that I could not take it away to weigh it, but I had not the opportunity so to do.

* The preparation of the arteries was shown.

LIVING ANIMALCULES IN HUMAN URINE.

By E. J. SHEARMAN, M.D., Rotherham.

(For the *Provincial Medical and Surgical Journal*.)

I am induced to relate the following case in its present state, rather than wait for its termination, in order to enquire of my medical brethren, if they have ever met with a similar condition of the urine? I never did myself, nor can I find any notice of *such animalcules* by any author who has written on urinary diseases.

Thomas S—, saddle-tree maker, a pale, scrofulous-looking, tall, unmarried, sober and steady man, aged 28, consulted me on the 12th of June. He is emaciated; exceedingly weak; pulse 90, and feeble; tongue furred, brown in the centre and white at the edges; no appetite; no pain; no cough; often affected with diarrhoea, but the evacuations healthy in colour.

On examining his chest, I found the *right infra-clavicular* region rose much less than the left during

inspiration; the whole of both sides of the chest sounded duller than usual, but the *right infra-clavicular* region was duller than the left, and had a little tubular respiration; no bronchophony, but a slight sibilant rhonchus in the lower lobe of the right lung; no loud expiratory murmur. The liver and stomach afford no signs of disease. He complains of no uneasiness or pain in the region of the kidneys; and has no spinal tenderness. Passes urine in small quantities, but without difficulty or pain.

On examining the urine which he passed from after dinner to bed-time, and that which he passed when he rose in the morning, daily, I found it of the specific gravity of 1.020 to 1.025, of dingy amber colour, faintly acid, with a peculiar deposit of urate of ammonia in very small quantities. But there are *myriads* of *animalcules* swimming about with great vigour in it, principally in three forms. One kind is almost a circle, with a little break in the circumference; another appears like very minute earth worms—some much larger than others, but they twist themselves about into various forms, and are in great abundance; a third form appears as if the body diverged into two tails. They are perfectly *unlike spermatozoa*, and appear to be pretty nearly the same circumference from head to tail. Whether the round ones eventually merge into the long description, I cannot affirm, but I think it very probable. The rough sketch of their appearance as seen under the microscope, is with the power of a quarter of an inch; and in one drop, myriads of these creatures are seen darting about.

I have shewn these living creatures several times to a medical friend accustomed to test the urine, who has been as much surprised at their appearance as myself.

There is no evidence of any disease in the spermatoc organs or kidneys; he has never had syphilis, gonorrhoea, or disease of the bladder or urethra, and never been guilty of onanism. To prevent the possibility of *imposition*, I saw this man pass some urine into a perfectly clear glass jar, which I immediately examined, and found exactly the same kind of company enjoying themselves very briskly. Some of the specimens of the *evening* urine speedily become alkaline, and have killed all the live stock; but the others remain the same as when passed for several days, and the animals are quite active in it.

It will very naturally be conjectured that the animalcules have been generated in the fluid from the effect of the hot weather; but I have daily examined the urine of many other patients, and have kept some specimens for weeks, and I have this day examined the whole of them, and this is the only specimen of the kind I ever saw. Moreover, these animalcules exist in the urine *when it is passed*, which proves that the atmosphere has nothing to do with it.

I will watch this case carefully through, and give in due time the event. Meanwhile, should any of your numerous readers be able to throw any light on this subject, through the pages of this Journal, it will be gratefully received.

Rotherham, June 25, 1846.