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 spermatric 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.