ON
ATROPHY OR DEGENERATION
OF THE
MUSCLES OF THE UPPER AND LOWER
EXTREMITIES,
FROM DISEASE OF THE SPINAL CORD.

BY
GEORGE LEWIS COOPER, F.R.C.S.,
SURGEON TO THE BLOOMSBURY DISPENSARY.

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THE unsettled state of our knowledge with regard to the exact nature and causes of muscular atrophy, and the imperfect manner in which, until recently, the nervous centres have been examined after death, are my reasons for bringing before the Medical and Chirurgical Society my notes of the following case. At the same time I must acknowledge my grateful thanks to Mr. Lockhart Clarke for his kind assistance in the pathological investigation of the diseased structures.

John J—, æt. 41, married, but without any family, was much exposed, in his occupation as coachman, to changes of weather, and was also addicted to habits of intemperance. He had suffered for many years from severe cough, with profuse expectoration of a muco-purulent character, which was increased in winter or after taking ardent spirits. He

was admitted under my care as a patient at the Bloomsbury Dispensary, on February 14th of the present year, just a fortnight before his death. On my first visit he was suffering from total loss of power of the upper and lower extremities, with atrophy of the muscles of these regions. When the arms and legs were raised they would drop if not in some way supported. His countenance was dejected and expressive of great debility, and he complained of a feeling of suffocation or constriction about the throat. The pulse was 60, weak, and labouring; his appetite was bad; he was unable to lie down in bed, and had had but little or no sleep for several nights; the tongue was dry, with sordes about the mouth; the bowels were regular, and the urine was plentiful, but abounding in lithic acid. He died on the 26th of February.

About three years ago he complained to his wife of a weakness in the thumb of his right hand, with frequent twitchings of the muscles, which increased after a few months to such an extent as to disable him from holding his whip to his satisfaction. The muscles of the thumb soon after wasted and became incapable of action. The extensors also of the forearm speedily wasted and became weak and inactive; the flexors, however, remained unaffected for some time after, but eventually followed the course of the extensors and fell into the same powerless condition, ending in complete motor paralysis. The biceps and deltoid now became flabby and weak and were gradually absorbed, especially the deltoid, depriving the shoulder of its roundness, and showing an evident projection of the acromion, with complete loss of power of the elevators of the shoulder.

About a year ago the *left* hand and arm followed precisely the same course as the right, with the exception that it was more rapid, and, perhaps, showed a greater degree of atrophy or wasting, accompanied by a complete loss of power. About six months ago the lower extremities assumed the same condition, commencing at the toes and subsequently extending to the ankles, legs, and thighs, with progressive wasting of the muscles.

Throughout the progress of the disease the bowels and kidneys exercised their due functions with perfect regularity, nor were the muscles of the thorax or abdomen in any way implicated.

Forty-eight hours after death I obtained permission, with the greatest difficulty, to make a post-mortem examination. On opening the vertebral canal, with the assistance of Mr. Ferris (resident Medical Officer of the Bloomsbury Dispensary), I found the membranes of the cord distended with fluid. The cord itself was carefully removed and sent to Mr. Lockhart Clarke.

EXAMINATION OF THE SPINAL CORD.

By Mr. LOCKHART CLARKE.

In the upper part of the cervical enlargement the pia mater of the cord was much congested, and beneath it a variable quantity of granular exudation was found on the surface and in the substance of the white columns, which were softened more or less in different places. In the posterior columns these morbid changes were limited chiefly to the superficial layers; but on the anterior side of the cord they extended through the whole depth of the columns, and even into the central and lateral parts of the grey matter, which in certain places was almost diffuent and broken into separate masses, or mixed up with the white substance in the form of streaks. All these appearances may be observed in some of the accompanying preparations. The lateral columns retained their normal consistence, but in many sections the pia mater was unusually vascular.

The middle and lower parts of the cervical enlargement were much less damaged, although the posterior and anterior white columns, especially the latter, with the grey substance adjoining, were not only congested, but softened to a considerable degree.

The two upper thirds of the dorsal region were apparently healthy; but at the commencement of the lower third, for

about an inch downwards, the central grey substance on each side of the canal contained an enormously dilated blood-vessel, surrounded for some distance by free or extravasated blood-globules. In some sections these enormous vessels were seen to extend through the posterior median fissure as far as the surface where they entered the cord. These remarkable appearances are represented in figs. 1, 2, 3, and 4, which are plain but exact outlines of different sections of the grey substance. The extremities of the posterior cornua were in many places very vascular, and in other parts of the grey substance there were streaks or patches of extravasated blood. The pia mater at the surface of the cord was exceedingly congested, and the superficial layers of both the posterior and anterior columns, but especially of the latter, were more or less softened and infiltrated with granular exudation.

Along the rest of the dorsal region the cord was affected by local congestions, by exudations, and by granular disintegration; while still lower down, the lumbar enlargement and cornu medullaris retained their normal consistence and presented their natural appearance.

DESCRIPTION OF PLATE III.

Figs. 1 to 4.

- a.* Anterior cornu of grey substance.
- b.* Posterior cornu.
- cc.* Enormously dilated blood-vessels, one of them, in fig. 2, extending along the posterior median fissure *c'*.