To recapitulate, sanity is commonly judged by an erroneous standard, the standard of mental health; whereas it ought to be judged by the standard of social capability. On the one hand, many persons not in good mental health are far from being insane; and, on the other hand, there are many persons who are normally so much below the average in mental function, that they cannot be regarded either as able to take care of themselves in a country like this, or as devoid of danger to the public.

FURTHER COMMUNICATION ON THE FUNCTION OF THE RECURRENT LARYNGEAL NERVE WITH REGARD TO THE THYROID BODY.

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IN THE BRITISH MEDICAL JOURNAL for August 22nd of the current year, page 342, I published a paper on Atrophy of the Thyroid Body following pressure on the Recurrent Laryngeal Nerve. In this paper, two cases that had occurred at Guy's Hospital were recorded; in both of them, there was an aneurysm pressing on the left recurrent laryngeal nerve, and in both of them the thyroid body was extremely atrophied. The chief features of this atrophy were the small size and weight of the organ, and its fibrous appearance. The microscope showed that the vesicles were much smaller than natural, their contents were broken up into irregular masses, and the epithelial lining was in many cases destroyed; there was considerable increase in the amount of fibrous tissue, for, in some parts of the section, very little else but fibrous tissue could be seen; there also appeared to be some obstruction to the lymphatics, for the perivesicular lymphatic spaces were much engorged.

Shortly after the above paper was written, there was admitted into Guy's Hospital, under the care of Dr. Goodhart, to whom I am indebted for permission to use the case, a woman suffering from cerebral tumour. It is unnecessary here to detail her symptoms; the first to appear was deafness; after this had existed for some time, it was evident that she had a considerable tumour somewhere on the right side of the base of the brain, and implicating most of the nerves at the base on that side. The affection of the eighth pair was shown most conclusively by the atrophy of the right trapezius and sterno-mastoid muscles. During life, we thought that the right lobe of the thyroid body could be felt to be less in size than the left, but after death this was found not to be the case; the deception had been caused by our not allowing sufficiently for the atrophy of the right sterno-mastoid, which rendered the gland on the right side more easy to define than on the left, and hence gave a deceptive feel of diminution in size. At the *post mortem* examination, the diagnosis was completely verified. There was a large rapidly growing glioma on the right side at the base of the brain, implicating the eighth pair. At first, I thought there was a slight difference in colour between the two lobes of the thyroid gland, but it was not of sufficient importance to be of any moment; the gland was about its natural size. The right recurrent laryngeal nerve was decidedly smaller than the left; the muscles on the right side of the larynx were atrophied. Microscopic examination showed the tumour to be a glioma, evidently of rapid growth. There was no appreciable difference between the two lobes of the thyroid gland; sections from both appeared normal, and the secretion was evidently going on actively at the time of death, because not only the vesicles, but the lymphatics, were full of the special secretion; the secreting epithelium was normal, and there was no increase of fibrous tissue. A section of the right vagus, as compared with one of the left, showed considerable sclerotic change; where it existed, it was extreme, and had completely destroyed the nerve-fibres; it was evidenced by a considerable amount of delicate fibrous tissue, with, in parts, many nuclei. This sclerotic change appeared in no way to differ from any other descending degeneration; the chief point of importance about it being that it was not complete, for several healthy nerve-fibres could be seen.

Sections were made of both recurrent laryngeal nerves. The cross section of the right was much less than that of the left. Staining with logwood made it evident that there was a considerable sclerotic change in the right nerve, whilst there was none in the left; it consisted of a delicate fibrillated tissue springing from the epineurium and endoneurium. This partial degeneration of the recurrent laryngeal nerve is seen in the accompanying figure, which shows to the left a bundle of nerve-fibres, all of which have taken the osmic acid stain well, whilst to the right is another bundle, of which rather less than

half have taken the stain, whilst the remainder is occupied by a delicate fibrillated tissue. All the sections prepared with osmic acid showed this change, and distinguished the two parts of the nerve most

Osmic acid-preparation showing two bundles of nerve-fibres from the right recurrent laryngeal nerve; that on the left shows no degeneration, that on the right shows sclerosis of more than half the bundle. Hartnack, Obj. 3, Oc. 3.

beautifully, whilst all parts of sections prepared in the same manner from the left recurrent laryngeal nerve took the osmic acid equally and perfectly; thus this mode of preparation, demonstrating partial degeneration of the left recurrent laryngeal nerve, is seen to confirm that of logwood.

We have, therefore, traced a descending degeneration from the brain, by means of the right vagus and recurrent laryngeal nerves, to the right laryngeal muscles, which have consequently atrophied; but the two halves of the thyroid body are healthy. Now, were all the fibres of the right recurrent laryngeal diseased, this case would directly contradict those published on August 22nd, for they were cases in which the left recurrent laryngeal was pressed upon, and the thyroid body was atrophied; this of course may have been a coincidence, but seemed to point to the fact that the recurrent laryngeal nerve had some trophic influence on the thyroid body. It is, indeed, just possible that the left recurrent laryngeal nerve has some influence on the thyroid body not possessed by the right, but this is extremely improbable. The fact that so many of the fibres of the right recurrent laryngeal in the case now under consideration were healthy, whilst the rest were completely sclerosed, shows that that nerve contains many fibres which do not proceed from the brain; the right vagus also contained some fibres that were not diseased, but as it was not carefully noted, at the *post mortem* examination, what part of the vagus was put aside for inspection, one cannot say where these are added. If further investigation should show that the recurrent laryngeal nerve is the trophic nerve of the gland, this case will assume great importance, for it will prove that, whilst the motor fibres for the laryngeal muscles proceed from the brain, there are trophic ones in the recurrent laryngeal nerve, namely, those which in this case are undegenerate, which have not a cerebral origin; and must, therefore, be superadded somewhere between the brain and the recurrent nerve.

CONICAL CORNEA.

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THE operation I have always performed for conical cornea was, I believe, introduced by Mr. Bader. It consists in the removal of an elliptical portion from the apex of the cone, and is easily performed as follows.

The eye being cucainised, the lids are fixed open by a speculum, and the eyeball well steadied by fixing forceps. A thin Gräfe's extraction-knife is then passed through the cone from side to side, entering the anterior chamber, and made to cut its way out either upwards or downwards, forming a minute flap. The aqueous humour, of course, escapes. The flap is then seized with iris-forceps and cut off. The result is a sloping sided horizontal notch in the cornea. A drop of solution of eserine is then applied; both eyes are strapped up and covered with small pads of wet lint, secured by a bandage. Neither eye is opened for ten days. At the end of that time, both are examined. If the aqueous humour be retained, the eye which has not been operated on is left uncovered; but if the wound be still open, both eyes are kept bandaged until it has closed. Healing is often tedious. In the result, a small central opacity, with or without anterior synechia, remains; the cone is reduced, and vision is greatly improved. Failures are extremely rare. The following cases the last I have done, will serve as illustrations.