physician's orders kindly she did her duty. An asylum nurse must use her own judgment and act upon her discretion; everything she did concerned her patient's welfare. She had a far higher function and more difficult work to do than the hospital trained nurse; but on the other hand he admitted that the hospital training was a great addition, though he contended that in the asylum infirmaries nurses might be admirably trained. The great principle of Dr. Elkins' paper was that they were to be wise, considerate, and kind in their care of patients during the night as well as during the day. It was a great relief to him to find that through all the years he was a superintendent he had been doing what had recently been proclaimed as if it were a new discovery.

Dr. MOULD said he should like to say a word with reference to nurses sleeping in dormitories. It was not done in large dormitories, but only where there were not more than four patients, who were carefully selected, and whose cases were simply of a nervous character. The nurses were an immense relief to the nervous patients with whom they slept. If they did not have those nurses in those small dormitories, then the night nurses must go in, and that was very disturbing to those unfortunate patients who could not sleep. He thought it was a most excellent plan to select nurses to sleep with those simply nervous patients. For more than thirty-five years it had been their custom to have all wet and dirty cases in dormitories.

Dr. STANLEY GILL concurred in Dr. Mould's views as to the desirability of nurses sleeping with patients in dormitories.

The Bearing of Recent Research in the Posterior Root Ganglia upon the New Theories concerning the Ætiology of Tabes dorsalis. By R. G. ROWS, M.D.,
Pathologist to the County Asylum, Whittingham.⁽¹⁾

DR. ORR has shown you the normal cells of the posterior root ganglia and the changes which they undergo in general paralysis of the insane, and we have thought that it would be of some interest briefly to follow the subject a little further, and to see what is the modern view of the degenerative changes in the cells of the posterior root ganglia and in the nerve-fibres of the spinal cord in general paralysis and in tabes dorsalis.

Until the last few years it was held that the initial lesion, which led to the degenerative changes in the fibres of the posterior columns of the cord, was to be found in the cells of the posterior root ganglia, and marked changes, such as destruction of the Nissl bodies, displacement of the nucleus, and shrinkage of the cell-body, were described. Sir William Gowers, in his article on tabes in his *Diseases of the Nervous System*, said the ganglia were generally normal, and he suggested that the degenerative changes in the nervous

system probably depended on some chemical substance, the product of the syphilitic organism.

In 1898 Juliusberger and Meyer published a paper in which they said they found no lesion in the cells of the posterior root ganglia in tabes. In August of last year Marinesco published an article in *La Presse médicale* on the lesions in the cells of the posterior root ganglia in tabes.

He first described the types of cells met with in the normal ganglia, and then went on to mention the changes seen in these cells in tabes, such as destruction of the Nissl bodies, changes in the nucleus, such as diminished volume and diffuse staining, and changes in the volume of the cell-body. These last, however, he mentioned as being more usually a sign of imperfect fixation than a sign of any pathological condition.

Dr. Orr also has referred to the great importance of employing suitable fixatives in order to avoid this shrinkage. You will see that these changes described by Marinesco in the ganglion cells in tabes are very similar to those which we have found in these cells in general paralysis; but it is interesting, from the point of view of their importance as the primary cause of the nerve lesions in the cord, to note that he (Marinesco) says that a breaking down of the Nissl bodies and the above-mentioned lesions of the nucleus are very common in morbid conditions of the spinal ganglia, and also that he found nothing which could be considered as peculiar to tabes. He then went on to discuss the question of the relation between the changes found in these cells and the degeneration of the fibres of the posterior columns of the spinal cord, and he said that, considering the inconstancy of these changes and the differences which exist between the intensity of the degeneration of the fibres in the cord and the relatively slight lesions found in the cells of the posterior root ganglia, it can be definitely affirmed that the degeneration of the fibres of the posterior columns of the cord is not dependent on an initial lesion of these cells.

Nor are the changes in these cells secondary to a lesion of their central processes, because it has been shown experimentally by Lugaro and others that section of the central process of these cells, that is of the posterior root fibres, does not cause a degenerative change in them.

Both these degenerative changes must be considered as

results of the same cause, *viz.* the presence of toxic agents in the blood, which interfere with the nutrition of the cells and of the fibres, and produce the degenerative changes familiar to you all.

Recent research, then, shows that the hypothesis which places the primary lesion in the cells of the posterior root ganglia, and considers the nerve-fibre degeneration as secondary to this, must be laid aside.

Sciuti, of Naples, however, has enunciated another hypothesis in an article on the pathological anatomy of tabes, which was published in the end of last year.

He agreed with the view just mentioned that the changes in the cells of the posterior root ganglia are too slight and too inconstant to be the cause of the nerve-fibre degeneration in the cord. He also gave an analysis of the fibre degenerations which have been met with in the cord in cases of tabes, which showed that other tracts of fibres besides the posterior columns have often been found diseased. This analysis proved that there were cases of simple tabes in which the posterior columns were alone affected, but in "combined tabes," where some other degeneration besides that of the posterior columns existed, every other tract of fibres in the cord had been associated with the posterior columns; it may have been the lateral columns in one case, the antero-lateral tract in another case, and so on. He also mentioned one case in which the tract of fibres called Burdach's column was healthy in the lumbar region, yet the continuation of these same fibres in the cervical region, where they form the column of Goll, was extensively diseased, thus showing that the same bundle of fibres may be healthy in one region of the cord and diseased in another. Moreover, in the affected tracts it is very common to find many healthy fibres scattered through them, although, of course, in prolonged chronic cases the sclerosis may be complete.

The fibres of the posterior and anterior roots have shown the same capricious behaviour, being healthy in some cases and much diseased in others.

These are some of the facts on which he has founded the following hypothesis: that "the degeneration of tabes consists of changes in fibres which have started with some defect, and which degenerate under the influence of some stimulus;"

and the lesions which are found on examination will depend on the situation of the fibres which have been injured by this congenital or acquired lesion, which fibres will, in later life, degenerate if they are attacked by some poison such as syphilis, alcohol, pellagra, etc.

On the other hand, there is the hypothesis that these fibre degenerations are secondary to a morbid change in the vessel walls. This hypothesis has been advocated by Dr. Chalmers Watson, in a paper published in the *British Medical Journal* of June last. In this paper he expressed the opinion that in tabes and other allied diseases of the nervous system the lesion in the vessel wall was primary, and the fibre degeneration secondary to it.

Dr. Buzzard has published some cases in which he considered the vascular lesion was primary, but he does not say that it is so in all.

Sciuti, in his case, described marked changes in the walls of the vessels, but he did not attach so much importance to them as to say they were the cause of the fibre degeneration.

Seeing that both the fibre degeneration and the vascular change are due to the same toxic agent, it must be extremely difficult to decide whether the fibre or the vessel wall is first attacked, or whether both are attacked simultaneously.

In any case there can be no doubt that the morbid changes in the vessels must play an important rôle in the advancement of the disease, if not in its causation.

In general paralysis we find the same fibre degenerations and vascular changes, and, in this disease, Dr. Ford Robertson considers that the vascular changes are primary, and that the degeneration of the capillary walls is the primary cause of the nerve-lesions seen in the cerebral cortex.

There are other conditions however, *viz.* the acute insanities, in which the nerve-lesion is almost certainly primary. We may say, then, that these are the two views about which, at the present time, opinion is divided; but whatever the seat of the primary lesion may be, we must, in any attempt to explain the degenerations met with, also take into account what Sciuti has spoken of as "defect of the nerve-fibre," and what Dr. Ford Robertson has termed "reactivity of the tissues."

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(¹) This paper was read at a general meeting of the Medico-Psychological Association at Cheadle on February 14th, 1902, and was preceded by a lantern demonstration, given by Dr. David Orr, of the normal histological appearances of the nerve-cells in the posterior root ganglia of the dog and of the human subject, and the degenerative phases of the latter in general paralysis of the insane.

A Flaw in the English Lunacy Law. By ERNEST W. WHITE, M.B.Lond., M.R.C.P., Resident Physician and Superintendent, City of London Asylum.

THE following case shows the necessity for reform in the legal procedure connected with the admission of private patients:—E. E. S—, a lady patient, was admitted on October 26th last, upon the order of a justice of the peace who had not seen her, and upon the medical certificate of her regular medical attendant, and the second certificate of a neighbouring practitioner. Within the statutory period after admission she signed a request to be seen and examined by a judicial authority, under 53 and 54 Vict., cap. 5, sec. 8 (2). On November 2nd I made a return to the Commissioners in Lunacy stating—"She was insane, suffering from melancholia; had a dejected appearance and nervous manner, with delusions of unworthiness; said 'God would never forgive her her sins'; was agitated, restless, and dissatisfied," etc. On November 5th she was seen and examined by a local county justice of the peace, who, in the face of these three certificates, and a note in the case book by Dr. Patterson, reported that he did not consider the patient insane. In consequence of this report she was removed by her brother on November 26th, the Commissioners in Lunacy, who apparently, under 53 and 54 Vict., cap. 5, sec. 8 (3), had no option in the matter, having requested him to take this step. I may add we considered her probably suicidal, and when she left I wrote her ordinary medical