pathognomonic was the presence of the acute hallucinations, though even that feature one could find in poisonings by means of other drugs, such as belladonna. He did not agree that most medical men sent patients into an asylum under the influence of hyoscine. In his practice the medical men seemed to have made morphia their stand-by in maniacal conditions. The interesting paper just read would seem to give the impression that hyoscine was a drug of frequent employment in the profession, but, personally, he had not used it much, and he and his medical colleagues never used the drug except in consultation, and only then in cases in which there was obviously great muscular power. In an epileptic with a powerful frame it was a very valuable drug. But even in such instances he did not think it would be safe to use it in the form of a mixture. What he specially wanted to raise was the point as to the pathognomonic symptoms.

Dr. DRAPES said he regretted he had not heard the greater part of Dr. Daniel's paper, but that some of the subsequent speeches seemed to him to be condemnatory of the use of hyoscine generally; and he considered that was a pity, for it was one of the most useful and powerful drugs in cases of acute mania. He took a great interest in it, because he believed he was the first person to introduce treatment by hyoscine into Irish asylums, and that was twenty-five years ago. After reading the results of its use in some American asylums he got a sample of it, and was astounded at its remarkably quieting effect. One came upon a very violent patient, who was shouting, cursing, and abusing everybody, and on giving a fractional dose, about $\frac{1}{100}$th gr., the patient became tranquil in twenty minutes or less, and almost sane. Any drug which would produce such a result must be regarded as a valuable addition to the armamentarium of an asylum physician. He believed it was Dr. Mercier who said, in one of his books, that it was of no use giving this drug in small doses, and that $\frac{1}{80}$ or $\frac{1}{85}$th gr. was about the average dose he was in the habit of giving. He, the speaker, began generally with $\frac{1}{100}$ gr. He had given it in thousands of instances during the last twenty-five years, and in only one case had he seen a fatal result ensue—he did not know whether it was *post hoc* or *propter hoc*, because the same patient had been in the institution before, and had had the same dose and had got well. On coming back, years afterwards, $\frac{1}{60}$th gr. was given him in the morning, and a similar dose in the afternoon, and the patient was found dead four hours after the last dose. A man might be found dead after eating his breakfast, but it did not necessarily follow that eating his breakfast was the cause of death. He did not regard it as such a dangerous drug as several speakers did. Latterly he had been combining it with morphia—$\frac{1}{100}$ gr. of hyoscine and $\frac{1}{8}$th gr. of morphia. The only instances in which he knew hyoscine develop hallucinations were in cases of old people, and in them, if used at all, he would begin with only $\frac{1}{150}$ gr. For younger people he regarded it as a safe drug, if carefully administered, and he hoped it would not go out of practice.

Dr. DANIEL replied that his purpose was to point the dangers attending the continuous use of hyoscine. He was not against its occasional employment. He thanked members for discussing the paper.

Observations on Cases of Encephalitis.[1] By E. F. REEVE, M.B.Lond., Senior Assistant Medical Officer, and GEORGE A. WATSON, M.B.Edin., Pathologist, Rainhill Asylum, Lancashire.

A FULL account of the cases on which this paper is founded cannot now be given, as some of them are still under observation; and in others, which have ended fatally, the histological examination of the tissues is not yet complete. We think, however, that sufficient data have been collected to make a

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preliminary communication desirable. The condition to be considered may be described as "encephalitis," or "encephale myelitis," rather from the want of a better term than from any conviction on our part that it is essentially inflammatory in origin.

A few introductory remarks will, we hope, make clear the manner in which the subject first presented itself to us.

From time to time cases have occurred at the Rainhill Asylum which have been diagnosed as cases of *dementia paralytica*, but at the autopsy the brain did not present any of the characteristic appearances usually associated with this disease. A considerable number of specimens from such cases have now been collected. In a certain proportion of these cerebral softenings were found, in others there was a lesion of the corpus callosum, and in others still, a cerebral tumour was present. All these conditions may, as is well known, give rise to certain symptoms simulating those of *dementia paralytica*. These cases, however, do not concern us at the present time.

It has been the routine practice to examine microscopically, at least to some extent, all the above-mentioned specimens as they were obtained in order to ascertain with greater certainty that the patient had not suffered from *dementia paralytica*, and also to discover, if possible, the reasons for the presumed mistake in diagnosis having been made.

In the series thus examined are three cases which were found to resemble one another very closely, in that, although the brains presented an appearance to the naked eye which was normal or almost so, a curious lesion of the Betz-cells of the cerebral cortex was evident, nearly every Betz-cell examined being profoundly affected. The solitary cells of Meynert in the post-central cortex were also involved, but to a less extent. The other nerve-cells of the central region, as also those of other parts of the cortex examined, were by contrast much less changed, often, indeed, being practically normal.

One of the cases was of several years' duration; the other two were more acute, and although evidence of reactive change in the meninges, the vascular walls, and the neuroglia were not altogether absent, this was not present in anything like the amount that occurs in typical cases of *dementia paralytica*. Unfortunately, in these three cases—as they were not at the time regarded as being of particular interest—the basal

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ganglia and spinal cord were not preserved for microscopic examination.

As the chief lesion found in these cases was in the Betz-cells, a brief description of the appearances they presented may here be given.

They are mostly all swollen, their processes are defective, and they show advanced chromatolysis. Most of the persisting stainable substance is usually at the periphery of the cell, in some instances on one side only, and the remainder appears as a fine dust. The nucleus, when persistent, is in some cells swollen, but oftener it is rather shrunken and distorted. It is usually displaced to one side, either about the middle or nearer the base, though occasionally to or towards the apex. It may be noted, however, that a considerable proportion of the cells do not show a nucleus; a greater proportion it seems to us than can be accounted for by the supposition that the nucleus has been missed in a given section. Most of these cells contain a greater or less amount of pigment. A very few cells have a rather more normal appearance, but none are normal, and the great majority show the changes above described. These, on the whole, are not of the axonal type. The only variability found in the appearance of the cells in the different cases was in the amount of the swelling of the cell, and seeming chronicity of the pathological process.

The specimens obtained from these three cases were obtained some years ago, but as no altogether satisfactory explanation of the lesions found was at the time forthcoming they were laid aside.

More recently two other cases have come under our observation which, during life, presented many of the classical symptoms of cerebral tumour. These also show changes in the cerebral cortex—affecting especially the Betz-cells—of an exactly similar nature to that found in the earlier cases above alluded to. There is, however, in these cases considerable degeneration of the prefrontal cortex. Some of the anterior horn-cells of the spinal cord, and those of some of the cranial nerve nuclei, and also the Purkinje-cells of the cerebellum are involved, but to a less extent than the Betz-cells. Although no definite new growth was found, the basal ganglia were so peculiar in appearance that these were examined microscopically.

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There is much degeneration of the nerve-cells of these structures. In addition, the vessels are intensely congested, and in one case in particular numerous small hæmorrhages are present with recent neuroglial proliferation.

Clinically, all the five cases referred to showed many features in common. All were women, young or comparatively so, their ages varying from twenty-four to forty-one years at the time of death, and, as regards the pathological appearances found in the different cases, all closely resemble one another in many particulars.

Allusion may be made to another case of particular interest.

On reviewing his clinical experience it occurred to one of us that a patient, a male, æt. 35, who died in the year 1913, had had certain symptoms recalling those present in the above-mentioned cases. Some blocks from the cerebral hemispheres had been preserved, and on cutting and staining them lesions were found of a precisely similar character to those seen in the cases previously examined, and involving especially the Betz-cells. Several other cases are still under observation, some of them occurring in males, in which the symptoms, although not entirely alike in all instances, are still sufficiently so, and so nearly resemble those that characterised the cases which have ended fatally, that the presumption is a very strong one that all are of an essentially similar nature, differing from each other only in acuteness and degree.

The chief symptoms may be described as follows: A constant one is rapidly increasing paresis, varying in severity and extent, but affecting chiefly the lower extremities. In the severe cases, the paresis is of such a widespread character, involving not only the limbs but also the facial and lingual muscles, that a diagnosis of general paralysis is at once suggested, and when, as in some instances in the later stages, muscular twitchings or convulsions occur, the resemblance to the classical picture of general paralysis becomes considerable. But it is noteworthy that, in only one instance, was a diagnosis of general paralysis made on admission. In the other cases, it was not until the patient was struck down by an illness, the most prominent feature of which was widespread paresis, that the possible presence of this disease began to be suspected. In two cases, the onset of paresis was very sudden. In one case, the patient went out with a walking party and was overtaken by such

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marked and sudden weakness of the legs that he was unable to get back without assistance. In the other case—and this in one of those that died—the patient suddenly fell down in the airing court, causing an abrasion of the knee, and it was not till then that he was noticed to be weak on his legs. Gastro-intestinal symptoms in the form of abdominal discomfort, vomiting, and ulceration of the buccal mucous membrane have occurred in a large proportion of the cases, and in two the vomiting was of such a nature as to strongly support the diagnosis of cerebral tumour.

In four cases, a dry, eczematous state of the nose, face, and backs of the hands was present, and in one the condition is described as being like sunburn. Some of the cases recovered more or less completely from the paretic and other symptoms, but showed marked mental deterioration. Two of these had subsequent attacks, which ended fatally.

The majority of the cases have been classified as dementia præcox, and the question arises, are we dealing with a condition which produces mental symptoms analogous to dementia præcox, but which may ultimately lead to changes more widespread and destructive in character than those usually seen in such cases? At the same time, it is of interest to note that the lesions of the nervous system, so far as this has been examined in those cases which proved fatal, appears to us to bear some resemblance to those described as occurring in pellagra. Many of the symptoms are also very suggestive of this disease, although, and especially in some of the less recent cases—so far as can be judged from the clinical records—these cannot be said to be altogether pathognomonic, nor does the presence of the disease seem to have been suspected during life, except in one case, and here the clinical picture was so strongly suggestive of cerebral tumour as to overshadow that of pellagra. But, at the time these patients were under observation, little or no attention had been paid to the question of the existence of pellagra in English asylums.

(1) The substance of this communication was incorporated in a report sent to the Commissioners in Lunacy on research work carried out during the year 1913 at the Rainhill Asylum, but the report was inadvertently omitted from the Blue Book published by the Commissioners. [By Authors.]

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