detected. Owing to the total closure of Westminster Hospital for repairs, I asked my friend Mr. Harmer to take the patient into St. Bartholomew's Hospital and operate.

Mr. Harmer, who had never seen a similar case, performed the same operation as I had done, but had to cut away a good deal more of the superior maxilla, including most of the anterior wall of the maxillary antrum. He also made free use of diathermy. Immediately after completing the operation the cavity was packed with radium, which was retained for forty-eight hours. Very severe reaction followed the use of the radium. Mr. Harmer reports to me (November 20th, 1924): "The radium burn has not entirely healed yet, but most of the dead bone has separated from the cavity. As far as I can tell there is no evidence of a recurrence of the growth; ultimately I hope for a good result."

Remarks.

Melanotic growths, whether classified as sarcomas or carcinomas, are uncommon. I have seen few, and never a case connected with the throat, nose, or ear, and such a case is unknown to most of the rhinologists I know.

The literature on the subject of melanoma of the nose is scanty. Dr. Lack (*Diseases of the Nose*) states: "A few instances of melanotic sarcoma are on record; in one or two the diagnosis seems to have been established without doubt, but in others the pigment was probably the result of old haemorrhages." He refers to a paper by Cozzolino¹ in which a full description is given of an undoubted case of melanoma of the septum nasi. Cozzolino mentioned eight other cases, but in only one of them (Heymann's) does the diagnosis seem to have been beyond doubt; in the others the pigment in all probability was due to old haemorrhages. In Cozzolino's case the growth originated in the right nasal vestibule in a man aged 58; despite removal by snare and cautery it recurred rapidly, and the patient died of sarcoma cachexia and secondary growths in the internal organs. In Heymann's case also the patient lived only a short time, dying with secondary growths.

Melanomas are usually primary growths affecting the skin (pigmented moles, etc.), and containing black pigment—melanin. Spencer, in his Bradshaw Lecture,² classifies them as carcinomas. The amount of pigment varies, and usually the secondary growths contain more pigment than the primary. (In my case the primary growth was rich in pigment.) Secondary growths in the glands and internal organs is the rule, and the duration of life short—two to three years. According to Spencer, once the malignant change has started metastasis follows, whether sooner or later; there are instances of great delay in its appearance, such as twenty-two years with four recurrences at intervals, twenty years with recurrence *in situ* after ten years and another recurrence at the end of twenty years.

I was unaware of the presence of pigment in the nasal cavities, but my colleague Mr. Spencer, who saw my case with me at Westminster Hospital, informed me that melanin pigment is regularly present in the olfactory epithelium.

So far my patient has no discoverable secondary glands or metastatic deposits, and the growth is somewhat slow-growing, but it seems to have a marked tendency to local recurrence. No doubt growths in the anterior part of the nasal chamber, shut in as they are by bony walls, tend to remain localized without involvement of the glands for a long while, but in the end, if sarcomatous, they are almost always fatal.

It will be noted that after each operation radium has been employed, and there is no doubt that radium as an adjunct to removal is of great service if the growth is a sarcoma. I have had a long experience of malignant disease affecting the nasal cavities, nasopharynx, and larynx, and I always advocate the use of radium after operations for sarcoma of these parts and for any small recurrences, but as regards carcinoma my experience of the use of radium is exactly the opposite. I have found such growths generally irritated by radium, and often dissemination is hastened.

REFERENCES.

¹ *Arch. f. Laryngol.*, 1903, xv, p. 77. ² *BRITISH MEDICAL JOURNAL*, November 17th, 1923, p. 907.

THE MENTAL SEQUELAE OF EPIDEMIC ENCEPHALITIS IN CHILDREN.*

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EPIDEMIC ENCEPHALITIS, although often affecting children, is not predominantly a disease of childhood. About 40 per cent. of the four or five hundred cases in the Sheffield area during 1924 occurred in persons under 16. As great a proportion might occur in epidemic pneumonia or typhoid fever without calling for any special consideration from the children's point of view. Even in those epidemic diseases, such as diphtheria, poliomyelitis, or cerebro-spinal meningitis, in which the central nervous system is more particularly attacked, age alone does not lead to any very noteworthy differences in the results. Similar paralyses, running similar courses and showing similar groupings, are seen in young and old alike. In encephalitis, however, this is not so. Its virus, while attacking any part of the central nervous system, seems to have a predilection for those upper and upper middle nervous centres whose functional development only begins some time after birth, and whose organization and adjustment is not completed until well on in adult life.

Clinical pictures thus appear in children which have hitherto been regarded almost as the perquisites of adult or even senile years. Children in whom week after week and month after month sleep cannot be induced at bedtime, even by the most patient mother or the most potent medicine, were almost unknown ten years ago. Paralysis agitans under 40 years of age was formerly so rare that Willige, in 1911, could only find records of less than twenty cases in medical literature, and the youngest of these was 18 years of age. Hooliganism, homicide, and suicide in children of tender years are events to which the community is unaccustomed, and for which it is unprepared. Each and all of these are now recognized sequelae of epidemic encephalitis in childhood, and indeed are its special characteristics.

Although it is impossible to arrange the stages of this disease in orderly sequence, yet in whatever order they come there are acute phases and chronic phases. In the former the mental conditions, whether of positive or negative type, differ but little in children from those seen in adults. In both there may be early exaltation and euphoria. One patient, an athletic public school boy, told me that during the first two days of his attack he never felt so fit in his life. In another case a girl was found by her parents dancing in her bedroom in the dark. Incessant and continuous talking all through the night has been often noted; sometimes it is quite unintelligible.

In some cases the child cannot keep still; it rushes about, sings and shouts, tears and destroys its toys or clothes. If delirious, "sums" or other school work form the basis of these patients' delirium; at other times it is something seen at "the pictures." They have visual hallucinations, pick at imaginary objects on the bed, or wave their arms about in an aimless manner. If they were shy and timid before, they are now bold, cheeky, and outspoken. This phase, whether coming earlier or later, does not usually last long; the accompaniments are too severe, and either death occurs or the phase changes to one of lethargy. In other cases there is no marked excitement; the acute phase is, on the contrary, characterized by drowsiness, lethargy, or stupor.

These early mental effects, of positive or negative character, resemble in many points the different effects of alcohol on different persons. One man becomes garrulous, noisy, and truculent before requiring forcible removal, another has been silent and morose for some time before disappearing under the table. The similarity of many acute cases to delirium tremens is a close one and has often been remarked.

* Contributed to the discussion at the Royal Society of Medicine, January 13th, 1925 (see p. 114.)

Chronic Phases.

In the more chronic phases the mental symptoms may be divided for purpose of discussion into four main groups. Some of these are, and some are not, mutually exclusive.

1. *The Idiot Group.*—These cases are practically limited to infants up to 5 years of age. Paterson and Spence¹ reported seven such cases out of seventeen affected at this age. In one of my cases the attack began in December, 1920, at 6 weeks old. The child would lie quite still, apparently asleep, for twenty-four hours at a time, refusing all food. There was slight fever. A week later there was a right hemiplegia. Nocturnal restlessness followed and has remained troublesome during the last four and a half years. She is now a permanent and hopeless idiot. In this group the virus has damaged the upper and upper middle nerve centres in their primitive and undeveloped state, and there is no possibility of effective repair. The question of how to deal with them is no new problem and calls for no new machinery.

2. *The Parkinsonian Group.*—This is more common in children above than below 10 years of age. One of my cases is below that age, and others have been recorded. Paterson and Spence showed a fully developed case in a child of 8. It is not easy to estimate the amount of mental defect in these cases on account of the coexisting motor disabilities. There appears to be some loss in many of them; but on the other hand one is often surprised to find their minds so clear, in spite of the bodily inertia. Much depends on the extent of the Parkinsonism itself, and perhaps more on whether there is, as so often happens in these cases, some wider involvement of the nervous system as well, such as occurs in the two following groups.

3. *The Apache Group.*—The prototype of this group has for long existed in our larger cities, but he is usually rather older. Moreover, he has developed gradually. It is the curious property of the virus of encephalitis that it can suddenly unmask this type in a child who has previously shown no trace of such tendency. In fact, the number of cases of this and the next group who have been described as being hitherto unusually clever at their books, or particularly docile, is quite surprising. In this type the child becomes completely changed in character. He is aggressive, cheeky, and untruthful. He quarrels and fights with his fellows, wanders abroad, is dirty in his habits, shows sexual tendencies, and may even be homicidal or suicidal. Only rarely have these last features been recorded, but one such case occurred in the North of England in a boy of 15. He nearly strangled a girl who had laughed at him, and afterwards hanged himself. While this group consists chiefly of boys, girls may be similarly affected, the kind of symptoms differing with the sex. I have seen one typical case in a girl of 17 necessitating certification, and another younger girl under my care is almost as bad. How best to deal with these cases presents the greatest difficulty. Before considering their mental condition it will be well to take the next group.

4. *The "Difficult Child" Group.*—It is not easy to draw a line between this and the preceding group; indeed, the difference seems to be one of degree rather than kind. Among the cases which I have seen by far the greater number can as yet be classed under this heading. They, too, are excitable, irritable, and quarrelsome. Most of them have nocturnal restlessness and insomnia—but can sleep soundly and well when it is near "getting-up" time. If they did not they would obviously become physical wrecks. On the contrary, they are as a rule, in their waking hours, surprisingly alert and active. They are difficult to control, the difficulty varying inversely with the skill and efficiency of those around them and with the nature of their environment. Mental efforts soon tire them. That they are mentally inferior to what they were before and to what they ought to be is generally agreed, and this defect is increased by their long illness. Like adult psychasthenics, they cannot concentrate; they have lost the habit of sleeping at night, and their emotions are dulled or even abolished. One little boy of 6, a bright, lively little fellow, tells his parents that they cannot make him cry now, and it is quite true. This loss of emotional affectivity in childhood deprives the parent of the chief means of guidance and control. It

is as though one were astride a colt being broken to harness, and the reins suddenly gave way. The whip is now worse than useless, and it requires good horsemanship and suitable country to regain control and escape trouble. That these children can be controlled is shown in many ways. Most of them improve considerably while in hospital with its orderly régime and moral influences. They sleep better and improve generally. Some of them continue this improvement after going home, others relapse in bad environments. They improve also when sent away to the seaside or country, where they are out of doors all day. Conversely, after improving for a time, they are easily made worse by any excitement, even a visit to "the pictures."

There is a considerable danger of exaggerating the number of cases belonging to the apache group. Such cases by their very nature attract so much attention that there is a tendency to magnify their numbers. Personally I have only seen very few that can properly be classed as such. Others who really belong to Group 4 are made worse than they need be by the folly of those in control of them. The child's threats and doings are talked of so much in its presence that it is encouraged to do even greater things.

Treatment.

The problems of treatment are many and difficult. Two points stand out prominently: (1) How to protect the community against the apache, and at the same time, if possible, reform him; (2) how to prevent the difficult child from developing into an apache or a wastrel. While institutional treatment may be necessary for the former, in the public interest, yet the collecting together of this type of child and the absence of individual control has many drawbacks for him personally: he needs very much the leaven of normal persons around him.

In the case of the difficult child, institutional treatment must, if tried at all, be something very different from that which is usually provided under this name. The requisites seem to be: fresh air (seaside or country), small numbers, close individual supervision, plenty of rest interspersed with regulated physical exercise of a congenial kind, carefully graded mental work under an experienced teacher, plenty of good food. It is an expensive and difficult ideal to carry out, but the numbers in any locality would not be large, and it seems as great a thing to save a damaged mind as to save a diseased limb.

REFERENCE.

¹ *Lancet*, 1921, II, 491.

Memoranda : MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF SPRUE WITH CALCIUM AND PARATHYROID EXTRACT.

I HAVE read with interest Dr. H. H. Scott's account of the successful treatment of sprue by calcium lactate and parathyroid extract in the *JOURNAL* of August 23rd, 1924. I have had some experience of it, and report the following remarkable case, in which symptoms like those of sprue were manifest, together with paresis, loss of tone, or trophic changes in the terminal nerves of the intestines, liver, stomach, ear, and skeletal muscles. The trophic, or, more correctly, the dystrophic, changes provide the pathological basis of the signs and symptoms of the sprue-like condition in this case, and I advance the tentative hypothesis that sprue is not due to any specific organism, but mainly to this exhaustion of the nerve centres of or endings in the viscera in general, particularly of the intestines. Though there are no definite pathognomonic signs in the intestines affected the condition arises solely from the lack of certain principles, supplied by the calcium and parathyroid treatment, and concerned in the causing and curing of sprue. The lack of these principles may affect the nerve terminals in the intestines, as when large, bulky, undigested, foul, fermenting stools occur in sprue, or may involve the nerve centres or the nerves themselves supplying the various organs—such as the auditory nerve when deafness and