4. Amaurotic family idiocy is essentially a dementia in which there occurs complete involvement of the nerve cells by a process leading to extensive distortion of cell form through the accumulation of débris. This débris is lipoidal, but varies in its staining reaction to safranin R and does not stain either by this method or with osmium as intensely as do the senile fatty deposits. The process is looked on as a disturbance of intracellular metabolism, but whether of synthesis or catalysis cannot be determined.

5. Defects may be explained as simple failures in production of neuroblasts leading to numerical reduction but with comparatively normal form, as in microcephalia vera, or as deviations from the normal, as in the production of an abnormal brain pattern or cell lamination or as combinations of both processes. An explanation of 'normal-looking' brains in striking defective cases is suggested on the ground of proportionate overgrowth of the supporting tissues with lack of either quantitative or qualitative development of the nerve cells or their interconnections.

R. M. S.

**SENSORIMOTOR NEUROLOGY.**


Pointing out the difficulty of accurate diagnosis of spinal compression by ordinary radiological methods, the author draws attention to the methods of Dandy and Sicard. The former injects sterilized air and the latter "lipiodol" i.e., iodized oil, into the subarachnoid space. The authors describe their own double technique of injecting lipiodol above the compression and air below, and claim that in this way they can obtain in one photograph an accurate location of the area of compression. In their experience no ill effects follow this procedure, and they are satisfied that the technique presents no difficulties.

R. G. Gordon.


This paper is in the nature of a retrospect. Changes in the chemistry and physical characteristics of the fluid lying above and below an obstructive lesion of the cord are discussed and their differences compared. The technique of puncture of the cisterna magna is given, as is also Sicard's localizing method by lipiodol and x-ray. Cisternal puncture alone or combined with lumbar puncture is considered useful in (1) diagnosis or treatment of post-meningitic spinal subarachnoid block; (2) early treatment of meningocoeal meningitis; (3) for diagnosis and treatment of syphilis of the nervous system; (4) for diagnosis of cord compression.

Lewis Yealland.
A series of twenty extradural spinal tumours, six in the cervical and fourteen in the thoracic region, were studied from the point of view of determining the relationship between the mechanical factors and the symptomatology. In summary, the author draws the following conclusions:

1. The non-compressible fluid covering of the spinal cord causes dispersion of pressure in early stages of extradural tumours, and consequently vagueness of symptoms.

2. Wide variation of pathology as found in extradural tumours gives rise to wide variation in the clinical course and signs.

3. The interval between the first symptoms and operation in extradural spinal tumours is shorter than in intradural tumours.

4. Bands of hyperesthesia may be found below the level of the tumour in areas remote from the segment directly involved. Thus they do not necessarily indicate root involvement or the level of the tumour.

5. Burning or cold sensations are associated more often with ventral than with dorsal tumours.

6. Bladder and rectal disturbances appear late in both intradural and extradural tumours, but occur at a later period in the latter.

7. In extradural tumours other than primary vertebral tumours, X-ray changes may be found showing either a localized enlargement of the vertebral canal or a scoliosis in the region of the tumour.

8. Changes in bony structure in primary vertebral tumours may or may not be shown by X-ray.

9. Tenderness of the vertebral spines may correspond to the segment of the cord compressed or to the vertebrae beneath which the tumour lies. Tenderness of the spine is not of value as a point of differential diagnosis between intradural and extradural tumours.

10. Neither xanthochromia nor globulin is found in the cerebrospinal fluid unless marked compression of the cord exists. The depth of colour varies with the level of the block, the darker shades of yellow occurring below approximately the fifth thoracic segment and the lighter shades above this level.

11. In this series of extradural tumours, xanthochromia cannot be considered due to a transudation from the tumour, since the dura and arachnoid are interposed between the tumour and the cerebrospinal fluid.

12. Neither remissions nor acute exacerbations in the clinical course of the symptoms were found. A thorough history usually revealed a steady progression.

13. Acute accentuation of the symptoms with addition of new signs may occur relatively suddenly when finally the tumour is big enough to force out the cerebrospinal fluid and exert direct pressure on the cord instead of indirect pressure through the cerebrospinal fluid.

14. Artificial conversion from indirect to direct pressure may be made by withdrawal of the cerebrospinal fluid by lumbar puncture. When this is done, accentuation of the symptoms and addition of new signs may take
place. In those patients having vague and indefinite signs, withdrawal of fluid may aid in the diagnosis of tumour and in determining the level.

15. Surgical end results on the whole are good, but not as brilliant as in intradural spinal tumours.

R. M. S.


During the last few years a number of small studies in the epidemiology of acute anterior poliomyelitis have been published in German journals. The series is continued by these two papers.

The first deals with a small epidemic in a town where poliomyelitis had not occurred for eleven years. There were only four declared cases and at least three abortive ones, but the interesting point is the occurrence of 'school infection.' A boy (M. H.) who continued to attend school while suffering from the preliminary symptoms was apparently the means of bringing the disease into the families of three of his classmates. He felt unwell from October 21, but was still at school, though limping, on October 24; on the 25th he was brought to hospital with paralysis in one arm and one leg. On October 24 the baby brother (aged eleven months) of the boy who sat next to him in class took ill and showed paralysis. On the 26th the little sister of another boy in the class was noticed to be dragging her right leg, and next day she could not walk without support; on the 28th she was able to run about freely again (hers is regarded as another 'abortive' case). Her brother, M. H.'s schoolfellow, complained of headache and of pains in the limbs and abdomen on October 28 and 29: he had diarrhoea and stayed in bed for a day; no paralysis occurred (his is regarded as another 'abortive' case). On October 31 the brother of a fourth member of the class became ill with headache, fever, diarrhoea, dysuria and pains in both lower limbs; the next day he was unable to walk or stand. On November 3 he was able to move his limbs again freely and on the 4th was up and about (third 'abortive' case).

School infection of acute anterior poliomyelitis is believed to be uncommon, but several instances of it were recorded by Wickman in his study of the Swedish epidemic, and others have been recorded in this country by Batten.

The first case of this epidemic occurred in the street in which the boy M. H. lived, but its onset had been six weeks before and there had been no declared cases in the interval. No direct means of transmission between these two patients was traced. The remaining case was that of a baby, seven months old, who took ill on October 22 and was paralyzed in the right arm and left leg by October 25. Here there was a possibility of infection from the first patient by an intermediary between October 17 and 20, i.e., nearly six weeks after the beginning of the first patient's illness. This raises the question: How long does the period of infectivity last?
The second paper describes a case in which transmission was believed to have taken place eleven weeks after the onset. A young woman, after a visit to a place where a number of cases of poliomyelitis had occurred shortly before, became ill, developed headache and fever, and was left with a partial flaccid palsy of the right leg. After two months she was sent to Munich, and in the hospital there was allowed to go out daily into the garden. The garden was also used by a young man convalescent from severe polyarthritis; after about two weeks this young man was stricken with severe poliomyelitis, which completely paralyzed both lower limbs. In the whole of that year only three other cases of poliomyelitis were reported in Munich, and the previous one occurred six months before the young man became ill, so that infection from that patient was very unlikely. The only possible source of infection that could be discovered was the young woman, whose acute stage had occurred eleven weeks previously. In this connection it should be recalled that Noguchi, in the New York epidemic, cultivated the causal organism from the nasal mucous membrane of a patient whose illness had begun five months previously.

Such cases make it appear that the period of infectivity is a long one, and von Hösslin, in his article, strongly urges the enforcement of a long quarantine.

J. P. Martin.


The authors emphasize the frequency with which positive Wassermann reactions are obtained in cases of muscular atrophy of spinal origin, and incline towards the view that progressive muscular atrophy is almost always of syphilitic origin. Five cases are recorded, in three of which a definite history of syphilis was obtained, and in all of which either the blood or spinal fluid gave a positive Wassermann reaction. In three of the cases the clinical features were those of amyotrophic lateral sclerosis, and of progressive muscular atrophy in the other two.

The existence of a group of cases of syphilitic origin, whether due to a meningomyelitis or to a systemic degeneration, as in Erb's type, has long been established. To suppose, however, that all cases of progressive muscular atrophy are parasyphilitic cannot be warranted, as frequently neither the history nor the Wassermann tests furnish any evidence in favour of this view.

W. G. W.


In the majority of cases, nothing can supersede careful neurological examination in the localizing of brain tumours, but in those in which localizing signs are vague, in the presence of increased intracranial pressure, the use of mechanical aids to diagnosis is recommended. These aids, which are described in detail, are, firstly, x-ray, by means of which changes in the skull and calcification in tumours may be detected. The position of tumours will be
NEUROLOGY

revealed and defects in position, size and shape of the ventricles demonstrated after the intraventricular injection of air, but the mortality (5 to 10 per cent.) resulting from ventriculography is considered too high for the method to be practised, except as a last resort. The next method described is that of tapping both posterior horns and injecting dye solution. By this method the size and shape of the ventricles may be estimated. Finally, the determination of the degree of tissue resistance by the use of the bipolar electrode needle may reveal the pathological process lying beneath an apparently normal cortex. The paper is based largely on the writer's actual experience.

LEWIS YEALLAND.


The paper is based on a clinical study of eighty-two cases of a particular type of myopathy which is described as a hereditary, self-limited muscular dystrophy appearing generally about puberty; affecting muscles of the shoulders and arms; augmented by fatigue, toxæmas and pregnancy, and characterized by slow muscle wasting, producing a distinctive deformity and limited awkward movements. It does not extend to other parts of the body nor decrease longevity. The muscles usually involved are: rhomboidei, trapezius, teres minor and major, suprascapularis, infraspinatus, deltoid, and occasionally, and to a lesser degree, biceps and triceps. The paper is generalized and does not give detailed accounts of individual cases. None of the cases has come to autopsy and no attempt has been made to investigate the histology of the affected tissue.

LEWIS YEALLAND.


A combination of confusional psychosis and cerebellar manifestations attends valerian intoxication, and a case is here recorded of a woman of thirty-five who, after taking one ounce of the tincture daily for about eighteen months, developed this syndrome. Mentally, the patient was at times delirious, at other times stuporous, mute and oblivious of her surroundings. She was unclean in her habits and suffered from visual hallucinations. Particular emphasis is laid on the cerebellar symptoms which the patient presented: nystagmus on excursion of the eyes to the right, hypotonia, dimunition of the deep reflexes and marked generalized ataxia. By gradual diminution and ultimate complete withdrawal of the drug, the symptoms disappeared.

LEWIS YEALLAND.


EPILEPSY is said by the author to be characterized by hypertonia and neuritis of vasmotor fibres, evidenced by the presence of vasoconstrictor spots in the skin. The disease, if unchecked, is accompanied by calcium deficiency, demonstrated by x-ray (sic) investigation and a manifest cortical hyper-irritability. Whether or not the latter observation was determined by the
same method of investigation is not stated. By careful provision of vitamins in the diet the disease is considered to be curable in the incipient stage and also even after the appearance of convulsions.

LEWIS YEALLAND.

PROGNOSIS AND TREATMENT.


The results of treatment by tryparsamide in one hundred and eighty-five cases of neurosyphilis are discussed in this paper. Other forms of antiluetic treatment had previously been employed in the majority of cases, but without much benefit. By means of a combined clinical and full serological examination the cases are divided into the following groups: paresis, atypical paresis, asymptomatic paresis, meningovascular syphilis, tabes and taboparesis. The paretic group contains eighty-four cases, in the majority of which the mental changes were slight.

Tryparsamide was administered intravenously, the quantity used being usually 3 grm. once a week for eight weeks. Two to three courses may be necessary. A similar number of intramuscular injections of mercury salicylate (½ to 1 gr.) were also given. This method of treatment distinctly benefited many of the cases of paresis and meningovascular syphilis, but was less effective in the tabetic and taboparetic cases. Thirty-seven (41 per cent.) of the paretics were stated to be restored mentally, and thirty-eight (42 per cent.) improved. Both in the paretic and meningovascular groups the Wassermann reaction of the blood became negative in just under 50 per cent. The typical Lange curve in the paretics became altered in many instances to a curve similar to that found in meningovascular syphilis.

The occurrence of visual disturbance during treatment by tryparsamide was looked for. Thirteen cases in all developed amblyopia, but of these ten were tabetics and taboparetics. It was found that by withholding the tryparsamide for a month and subsequently recommencing with smaller doses, the amblyopia disappeared, and the full course of treatment could be completed.

The results obtained in the cases of early paresis are certainly encouraging, and the method of treatment is more easy of accomplishment and perhaps less risky than that of malarial inoculation.

W. G. W.


The authors present the results of treatment in 195 patients, of whom 183 were neurosyphilitic.

The favourable effect of tryparsamide in neurosyphilis is in paradoxical contrast to the comparatively poor results obtained in early or late syphilis without nervous system involvement. That the drug is not a powerful