Group 4 were followed by dribbling, disturbance of speech or change of consciousness, and two became auræ of the ensuing epilepsy, the " pre-epileptic " phases, lasting ten and fifteen years respectively. Here again the attacks were characterized by suddenness and brevity.

Of the three recurrent attacks in Group 5, one became an aura, another continued along with major convulsions. In one of the 5 cases in Group 6, screaming occurred during sleep and was followed by limpness. The outbursts of temper in 4 cases of this group differed from " ordinary temper " in the suddenness, brevity and apparent lack of cause or motivation ; and also in their combination with other symptoms, such as infantile convulsions, *pavor nocturnus*, vomiting spells, and in 1 case, " transient bewilderment." Of the eleven attacks in Group 7, four became clearly integrated with the epileptic seizures. In every case the attacks were characterized by suddenness and brevity. This group contains various types of sudden change in consciousness and in the emotional state. It appears especially significant. The attacks in Group 8 showed progressive brevity and change of consciousness, demonstrating perhaps a relationship between these two factors. Of the three " attacks " in Group 10, two continued independently after the major convulsions began, and the remaining one became an aura.

In each of the ten groups are cases in which the relation to epilepsy is clearly seen. They may be regarded as partial or pre-epileptic attacks. Their main features are suddenness, brevity and apparent absence of antecedent cause and of relationship to physical conditions. G. W. T. H. FLEMING.

Tryparsamide Treatment of Paresis. A Clinical Report of One Hundred Cases. (*Journ. of Nerv. and Ment. Dis., September*, 1928.) *Jaenike, R. C., and Forman, G. W.*

These authors find that beneficial results occur in indirect ratio to the duration of the symptoms before treatment is instituted. By long-continued treatment, clinical and serological cures were produced in 5% and physical and mental improvement in 38%. Eye complications occur in a small percentage of cases. The manic type of paresis yields the best results. G. W. T. H. FLEMING.

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4. Pathology.

Punctures of the Brain. The Factors concerned in Gliosis and in Cicatricial Contraction. (*Arch. of Neur. and Psychiat., July*, 1928.) *Penfield, W., and Buckley, R. C.*

The author made punctures of the brain with both a hollow needle and a blunt brain needle. When the blunt needle was used, a closed track containing a connective-tissue core firmly attached to the overlying dura remained. The track was surrounded by a moderate gliosis in the cortical grey matter, but in the white matter gliosis did not occur and there was even a decrease in astrocytes. Occasionally the lower end of such a track was found open. When the hollow needle was used, a gaping track resulted, containing

little connective-tissue, and slightly attached to the overlying dura. The track was surrounded by a moderate gliosis in the cortical grey matter, while in the white matter there was an absence of gliosis or even a decrease in astrocytes. Round the closed tracks the astrocytes send in their large expansions concentrically—about the open tracks these expansions are tangential to the canal. Both needles cause the same amount of hæmorrhage. When a hollow needle or cannula is used it causes much less gliosis, less distortion and fewer superficial adhesions. G. W. T. H. FLEMING.

Acute Pathological Changes in Neuroglia and in Microglia. (*Arch. of Neur. and Psychiat., July*, 1928.) *Cone, W.*

The author describes in great detail the pathological reactions of neuroglia and microglia in acute diseases of the central nervous system. Astrocytes and oligodendroglia react by degeneration in the same way as nerve-cells. Microglia responds by forming first rod-cells and later compound granular corpuscles. It is not primarily affected by toxins and diseases which cause the acute degenerative changes in nerve-cells or neuroglia. Astrocytes and oligodendroglia change quickly after death; microglia resists *post-mortem* alterations. G. W. T. H. FLEMING.

Glia Response in Chronic Vascular Disease of the Brain. (*Arch. of Neur. and Psychiat., July*, 1928.) *Globus, J. H.*

The glial changes in cerebral arterio-sclerosis are not specific for this disease, they are simply due to a disturbed blood-supply. An even higher degree of hyperplasia is found in the macroglia in other chronic inflammatory or degenerative lesions of the brain. The transformation of the protoplasmic astrocytes into the fibrous type is not specific for cerebral arterio-sclerosis, but is found in other conditions, and is described by Cajal in general paralysis. The dense glial sclerosis round thrombosed blood-vessels or in scar-forming areas is only an expression of a general healing or reparative process, and is found wherever pronounced vessel changes occur. In partially ischæmic zones the astrocytes undergo atrophy, and in areas of softening they manifest regressive changes terminating in complete disintegration. In the process of disintegration they may assume the morphological features of the so-called amœboid cells of Alzheimer or may simulate gitter-cells. The Hortega cells, which function largely as scavengers, are, of course, increased in numbers throughout the substance of the brain. In certain circumscribed areas these cells aggregate, forming small rosette-like collections resembling senile plaques. Hortega cells mobilized near localized massive destructive processes often take the form of the giant microglia cells of Cajal. Others undergo regressive changes with final formation of compound granular cells, gitter cells. The changes in the oligodendroglia consist of a generalized hyperplasia and mild hypertrophy. Astrocytes of both types are mainly concerned in the process of repair, while the Hortega cells are essential to the metabolic activity of the brain-tissue and are phagocytic in character. G. W. T. H. FLEMING.