distributid. The Betz cells, and to a less extent the smaller pyramidal cells, showed acute swelling, with chromatolysis and displacement of the nuclei. Similar changes appeared in the spinal cord. The writer compares these findings with cases described by Singer and Pollock, Spiller and Spielmeyer, and does not consider them peculiar to pellagra.

E. B. G. R.

TREATMENT.


TREATMENT of general paresis by the inoculation of patients with tertian malaria has resulted in complete clinical remissions in 30 per cent. of unselected cases. A temperature of 105° maintained over a period of not more than from twelve to eighteen hours produced as favourable results as an equal or greater degree of pyrexia maintained over a longer period. A suggestion is made that the usual routine number of febriles crises is unnecessary, and that equally beneficial results may be obtained by terminating the malaria after the sixth or seventh crisis.

Lewis Yealland.


A survey of the history of treatment in paretic neurosyphilis reveals the fact that, generally speaking, the results have been somewhat disappointing, and up to the present little can be added to the prognostic remarks made by Mickle in 1886, before paresis was known to be a form of syphilis. In this review of a portion of the literature on the subject the authors lay special emphasis on the early methods of treatment, and particularly how some of them, in a way, anticipated recent methods by the production of artificial fevers. The hopeful results secured by the exponents of the acute fever method (Wagner-Jauregg, Delgado, Nonne, etc.) are reviewed rather extensively, and these reports reveal an enthusiasm which, the authors hope, will be justified by further experience of this type of approach.

Some interesting statistics are given concerning paretics, male and female, and both white and coloured, admitted during the past forty years to St. Elizabeth's Hospital, Washington. The figures concern the age on admission, civil status, general results of treatment, and length of residence in hospital, and are illustrated by tables and charts. The fact that 1,198 patients (of 1,558 admissions) had died of the disease while still at the same hospital is cited as testimony to the outcome to be expected, regardless of treatment.

The authors then give the results obtained by treating sixty-eight paretics in St. Elizabeth's Hospital with malarial inoculations. Of these, sixteen cases of complete remission were recorded, nineteen were unchanged, twelve deteriorated, thirteen died, and of the remaining eight no information was forthcoming. These results the authors consider very hopeful, since a critical
attitude towards them was maintained throughout and they did not depend upon the opinions of a single observer.

The detailed history and post-mortem findings of four of these patients, and of one paretic treated with tryparsamide, are given, and illustrated with photographs, macroscopic and microscopic. These cases obviously represent the failures, but serve to emphasize the necessity for early treatment before permanent damage has been done to the brain structures. This permanent change is indicated, among other signs, by the atrophied, sclerotic, disordered cortical architecture, the disintegration of cells and dense neurogliosis, and in adventitial reactions. However, there are indications that some types of treatment, including the malarial, tend to reduce the exudate, since in these brains there was apparent reduction in the plasma cells and lymphocyte infiltration of both meninges and perivascular spaces. Certainly they exhibited far less exudate at termination than is the case with the average paretic. There was a marked tendency to capillary hemorrhage and thromboses through the brains of those who died early in the experiment. This reaction in the newly-formed capillaries of the paretic brains may account for the untoward results and the production of neurological symptoms, which may be transitory, as reported by some of the European workers who have used the malarial treatment. In two of the brains spirochaetes were not found, but in the other two a few apparently damaged ones were demonstrated. A notable improvement in the lymphogenie cell reactions had taken place in the brain structures in the one patient treated with tryparsamide, although there was no regression in the chronic picture of paresis.

The authors refer briefly to the somewhat similar findings of the Wagner-Jauregg clinic and of Bielschowsky, and comment, in concluding, on the possible mode of action of the induced fever method of treatment. Does the acute infection lessen the hemato-encephalic barrier and thus render the central nervous system more accessible to therapeutic agents, or is the spirochaete adversely influenced by shocks of high temperature, or are the favourable results obtained due to a reactivation of the immunity mechanism?

Eveleen B. G. Rivington.


In general paralysis it is a matter of combining the most effective infection treatment with the most effective chemical treatment. Tertian malaria provides an excellent form of infection treatment, but the salvarsan group of drugs do not form a satisfactory chemical treatment, because they probably do not find their way into the brain substance. In 1923 a new drug, "Albert 102," was introduced by Kalberlah; though, like salvarsan, an arsenobenzol, it depends for its action on entirely different chemical groups; it is more stable and less easily oxidized when exposed to the air, but its chief advantage is that its therapeutic index, i.e., the ratio of the Dosis curativa to the Dosis tolerata, is much more favourable than that of even the latest metal-salvarsans. The dose is 0.2 to 0.8 grm., and injections are given about twice a week.
Pfeifer has treated twenty-two cases of general paralysis with this drug alone (without any malaria), but only in twelve of the cases was he able to carry the course to completion. The greatest total dose was 13.7 grm. The drug was well tolerated by all except one patient, in whom transient signs of collapse and fever occurred after the second injection. Of the twelve cases ten had remissions during the treatment, and the other two showed no response. The remissions are grouped as "good" in six cases and "less" in the remaining four, but four of the ten relapsed within a year. The six cases with "good" remissions were three of mania, two of simple dementia and one of grandiose delusions; the psychic disturbances disappeared completely in all of them, and the patients all returned to their work after leaving hospital. The four cases with "less" remissions all showed great mental improvement. The failures were both cases of simple dementia of more than two years' duration. As regards physical changes, pupil disturbances improved in three cases, articulatory difficulties disappeared in four, the knee-jerk returned in one case, Romberg's sign became negative in another, incontinence of urine and fits ceased in a third. Nearly all the patients improved greatly in their general condition. The Wassermann reaction became negative in the blood in two cases, but in none did it become negative in the spinal fluid. As with other methods of treatment, the cell and albumen contents of the fluid diminished, but there was little association between the mental or physical and the serological improvement.

It would appear that while Kalberlah's drug may have advantages over the salvarsan preparations, it gives very similar clinical results.

J. P. Martin.


Seventy-three cases of general paralysis have been treated by malarial inoculation at Claybury Mental Hospital; thirty-one of these have now been under observation for periods varying from two and a half to fourteen months. The author reports that progressive improvement took place both mentally and physically in the majority of the cases. Delusions of grandeur showed a marked tendency to disappear. When grandiose delusions were expressed in numbers, these numbers became progressively smaller after the cessation of the rigors induced by the malarial parasite. Abnormal desire to escape gradually lessened. Amnesic periods tended to disappear spontaneously and the common euphoria of the disease gave place to a real feeling of physical well-being. The patient's personal habits showed a concomitant improvement; he became tidier and developed more consideration for other patients.

On the physical side also marked improvement took place. The skin became healthier, the complexion improved; anaemia disappeared, and the temperature, where it had been irregular before treatment, ran a normal course. In some cases also signs of interference with the paths of conduction in the central nervous system became less marked, e.g., tremor, pupillary changes and the organic reflexes. No change was observed in the other reflexes.
In conclusion, the treatment effected marked amelioration of physical symptoms in all cases, but only the early cases have shown much mental improvement.

D. M.


The author recommends the use of such artificial protein-cleavage products as "phlogetan" in the pyrexial treatment of general paralysis. These should be injected intravenously or intramuscularly in doses sufficiently large to produce pyrexia, but should not cause too sudden reactions. He advises alternating this treatment with courses of antisyphilitic remedies, of which he finds bismuth and mercury the most suitable; five injections of "phlogetan" should thus be followed by five or six of mercurial oil or "trepol," and the cycle repeated. A watch should be kept on the leucocyte and blood-platelet count, as any considerable drop in either of these is an indication for stopping pyrexial treatment.

J. G. Greenfield.

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**Endocrinology.**


This important paper is based on the histological examination of a case of congenital myxœdema or cretinism. The patient, who died of tuberculosis at the age of fifteen years, appears to have had no thyroid treatment by mouth, but two years before death a thyroid graft was attempted without success.

The examination of the brain was very complete, and particular attention was paid to the cyto-architecture of the cortex and its thickness in different areas. This examination showed that the cretin's brain had developed much more slowly than normal, and that the cortex still presented many infantile characteristics. With the Weigert Pal stain all the cortical myelinated fibres showed evidence of atrophy or non-development with the exception of the tangential fibres in the molecular layer, which were fairly well preserved. The other tangential layers of fibres had disappeared and the radial fibres were much more sparse than normal.

There was no lack of oxydase granules in the large ganglion cells of the cortex, brainstem, spinal cord and dorsal root ganglia. Many of these cells also contained granules of glycogen, and this substance was also found in the tissue spaces of the white matter; it was not found in the cerebellar or the cerebral cortex. Marinesco considers that the pathological anatomy of the disease can be explained by a decrease in the activity of the bodily processes, with deficient oxidation of the tissues and consequent hypothermia. He discusses the influence of heat on the growth and development of nervous tissues, and finds evidence that the slight but constant reduction of the body