Abstracts

Neurology

NEUROANATOMY AND NEUROPHYSIOLOGY


A survey is given of the methods used and results obtained in the study of this subject.

The material for the present study consisted of a seven-month fetus, three premature infants, two full-time infants, two children and two adult males.

A silhouette area was obtained and it was found that the area of the cerebrum expands very rapidly during the last months of fetal life and the first eight months of post-natal life, and there is very little change in this area after the fifth year.

The superior Rolandic-coronal distance was found to increase with age, but these distances, and their increase with age, were not found to be as great as described by other investigators. The inferior Rolandic-coronal distance was found to increase more than the superior, and the distance found at various ages is approximately the same as those given by other investigators. The inferior end of the central sulcus was found to approach the squamous suture between birth and maturity. The lateral fissure was found also to approach the squamous suture between birth and maturity. These distances were found to be approximately the same as those given by other observers for the various ages. The changed relations of these two structures were demonstrated to be due, not to a rise of the suture or a descent of the fissure, but rather to a rise of both, the change in position of the former being greater than that of the latter.

The silhouette area of the lateral ventricle was found to increase but very little during the period of growth studied. Its posterior and lateral horns appear to extend farther posterior during the growth period studied, but the anterior horn appears to remain approximately stationary in the horizontal plane during the same period.

R. G. G.

The present research shows that in experiments on the sympathetic pupil dilator-fibres transmission is conditioned by the chronaxy of the single neurones. Drugs effect the transmission by altering the relationship of the chronaxies of single neurones. Even nicotine which was supposed to have a selective action on vegetative synapses is proved to act by altering the chronaxial relationships of the neurones concerned. In fact it lowers the chronaxv of the preganglionic fibres. Further researches on the action of drugs along these lines would be interesting.

R. G. G.


The author, after reviewing the researches which have led to the concept that the pineal gland does not exhaust its physiological possibilities after the attainment of sexual maturity, describes his own researches on birds and mammals, by means of which he has demonstrated the great activity of the pineal gland during the maximal activity of the genital organs and vice versà. After having put forward radiological and clinical evidence leading to a similar point of view, and discussed the present state of the controversial question of the behaviour of the pineal gland during pregnancy, he opposes this last argument, showing on the basis of his own researches that the gland, after being progressively involved in the progress of the developing pregnancy, shows, as a very late stage, histological characters denoting a state of marked involution.

These facts lead to the concept of a pineal-genital endocrine system which antagonises the thyroid-suprarenal-pituitary group.

R. G. G.


The author has devised a method of obtaining preparations of the brain in which the contrast between the white and the grey matter is sharp, with the colouring brilliant and the effect lasting. The technique is as follows.

Cut a brain, which has been thoroughly fixed in a dilute solution of formaldehyde U.S.P. (1:10), into slices of the thickness desired with a knife of the type used for work on the brain, which has been smeared with glycerine. The cutting should be done with one draw to avoid leaving marks of the knife.
Wash the specimen for from 12 to 24 hours in running water and place in distilled water for one hour, changing the water three times during the hour.

Then submerge the sections for two minutes, at from 60° to 65° C., in Mulligan’s solution of phenol, covering with at least 2½ inches of solution. The formula for Mulligan’s solution is as follows: 4 per cent. phenol crystals, 0.5 per cent. copper sulphate crystals, and 0.125 per cent. concentrated hydrochloric acid dissolved in distilled water.

Place the sections in a large volume of cold tap water for one minute and then in a 1 per cent. solution of ferric chloride in distilled water for two minutes and wash them in running water for five minutes. Place them in a 1 per cent. solution of potassium ferrocyanide in distilled water until the grey matter is a brilliant blue (this should not take longer than three minutes) and wash them in running water for 24 hours. Finally, preserve them in 70 per cent. alcohol.

R. M. S.

NEUROPATHOLOGY


The results of this investigation dealing with the rhythmic diurnal and nocturnal changes in blood chemistry and water balance indicate that the quality of these changes may be correlated with the clinical observation of increased susceptibility to seizures during sleep, particularly after midnight. There is evidence of a shift of the blood and urinary titre toward the alkaline side during the early morning hours, as well as rising intracranial pressure and brain volume during sleep. In addition, the cholesterol content of the blood has been shown to fall consistently during sleep, reaching minimal values at 3 a.m. Each of these changes has been considered by others to be definitely related to the precipitation of seizures in susceptible individuals. The acid-base, water-shifting, and ionic blood changes in these experiments are qualitatively of the type to encourage the development of seizures during the latter half of the period of sleep. The rhythmic changes are observed to occur in the normal as well as in the epileptic subjects, and may be interpreted as the normal rhythm for blood chemistry.

C. S. R.

[99] Permeability of the meninges in progressive paralysis to different haemolytic amboceptors normal and complementary to blood serum (Permeabilita delle meningi nella paralisi progressiva a vari ambo- cettori emolitici normali ed al complemento del siero di sangue).—M. PIOLTI. Riv. di pat. nerv. e ment., 1935, 44, 296.

The following results of experiments seem to emerge. The concentrations in human blood of haemolytic amboceptors against sheep, horses, guineapigs,