plus" or greater reaction were inoculated with 0·5, 1, 1·5 and 1·5 c.c. of a full-strength filtrate at four-day intervals. The greatest reactions were of a mild systemic type, and occurred after the third dose. One month after immunization three enrollees with plus-minus reactions, who were not immunized, in three different camps had meningococcic meningitis. After immunization of the remainder of the group no further cases occurred. Twenty-six cases of meningitis have occurred in these camps in the past two years. None have occurred in those immunized persons in the same groups in the seven winter months since inoculation. Prior to inoculation there were nine outbreaks of meningitis of one case each, and eleven outbreaks in which the number of cases varied from two to twelve. Only one case occurred in the period of from one month to one-and-a-half years since the immunizations were completed in those twenty camps. T. E. BURROWS.

5. Pathology and Biochemistry.

Histopathologic Changes in the Brain in Experimental Hyperinsulinism. (*Arch. Neur. and Psychiat., vol. xxxix, p.* 467, *Mar.*, 1938.) *Weil, A., Liebert, E., and Heilbrunn, G.*

The authors found that in rabbits the injection of doses of 200–400 units of insulin was followed by severe damage to the cortical neurones. In those rabbits dying in a seizure there was liquefaction, vacuolation and homogenization of the ganglion cells. In those which survived some months there was marked shrinkage of the cytoplasm and nuclei. In both groups there was diminution in the number of neurones to a marked degree. The changes appear to be the result of intra-cellular anoxæmia.
G. W. T. H. FLEMING.

Lesions of the Brain following Fever Therapy. (*Journ. Amer. Med. Assoc., vol. cix, p.* 2116, *Dec.* 25, 1937.) *Hartman, F. W.*

Decreased oxygen saturation of the blood occurs constantly after fever therapy. Animals having a saturation below 65 volumes per cent. died. Factors producing this anoxæmia are alkalosis, accelerated blood-flow, increased temperature, and increased demand for oxygen by the tissues. The pathological changes resulting from fever therapy are typical of anoxæmia produced in other ways. Anoxæmia may be prevented by the administration of oxygen throughout the fever therapy, and carbon dioxide may be used to counteract the alkalosis and apnoea.
T. E. BURROWS.

Significance of Acetylcholinesterase as well as of Specific Receptors of the Acetylcholine-sensitive Contractile Substrates. (*Skand. Arch. Physiol., vol. lxxviii, pp.* 40–58, 1938.) *Kahlson, G., and Uvnas, B.*

The relation between the acetylcholinesterase and the sensitivity to acetylcholine is very complicated. Even in such perfect objects as the back muscle of the leech or the rectus muscle of the frog, as the experiments with ergotamine and quinine show, the extreme inhibition of the enzymic activity does not necessarily lead to an increased sensitivity to acetylcholine. In the smooth ring muscle of the frog stomach which shows typical acetylcholine contraction none of the powerful enzymic inhibitors augmented the sensitivity, but the weakly inhibiting ergotamine had such an effect. However, the authors do not suggest that there is no relation between the enzymic activity and acetylcholine sensitivity. It is pointed out that acetylcholine is only effective so long as there is a concentration gradient, and as soon as the inside and outside concentrations are equalized it becomes dynamically inactive. The reason that the gastric muscle responds so much more quickly than the rectus muscle or the leech muscle is the more rapid diffusion of the drug into it. In an