

caused suspicion at first to fall on articles of diet. Thus some observers were struck by a similarity to cases of botulism, a disease due to the poisons of a bacillus which can flourish in foodstuffs kept out of contact with air, as when meat or vegetables are immersed in a weak pickle. Others suggested that some essential accessory factor had been lacking in the diet, so leading to a "deficiency" disease, perhaps analogous to beri-beri, in which nervous symptoms are prominent from affection of the peripheral nerves. But the wide area over which cases were distributed, and the rarity with which more than a single member was attacked in any one family, almost excluded such theories of causation.

Further clinical investigation, and especially pathological examination, established the close resemblance between the new disease and the well-known condition, acute poliomyelitis or infantile paralysis. In both diseases the essential pathological feature consists in microscopic areas of inflammation, with cellular infiltration, consisting largely of round cells, in the perivascular lymphatic sheaths and in the grey matter. In *Encephalitis lethargica* these changes were most noticeable in the upper part of the pons and in the basal nuclei. In the affected areas the nerve-cells showed the usual changes indicative of degeneration. In addition, Marinesco found degeneration of the Purkinje cells of the cerebellum in the two cases examined by him; such changes are similar to those observed by Mott in shell-shock, and previously studied by Crile, who considered them an expression of cellular exhaustion.

Thus the nervous lesions did not at all resemble those originally investigated by Marinesco in botulism. On the other hand, there are certain well-marked differences from infantile paralysis as regards the localisation of paralysis, which in the new disease mainly affects the cranial centres, while the spinal cord is commonly the site of lesions in infantile paralysis; also there is a practically equal incidence of the disease at all ages, whereas infantile paralysis affects mainly children and young adults. But such differences are possibly within the limit of variations which may occur in a clinical "entity" or "syndrome," since modern investigation of infective diseases in general has taught that the number of "typical" cases of any condition may constitute a variable, and sometimes relatively small, proportion of the total number.

The experimental results are of greatest importance, however, as tending to show that the two diseases are distinct in their causation. It has been well established by various observers in different parts of the world that in cases of infantile paralysis the central nervous system especially harbours the virus, and that the disease can be transmitted to monkeys by intracerebral inoculation with glycerinated emulsions of brain or spinal cord. On the other hand, McIntosh consistently failed to transmit the new disease to monkeys by injecting emulsions of nervous tissue from cases under similar conditions to those which are successful in poliomyelitis.

The disease, after obtruding itself in the spring and early summer of 1918, has again relapsed into obscurity for the time being. The valuable work in this report has outlined the natural history of the manifestations, but the failure to reproduce the disease experimentally or to identify any micro-organism as constantly associated with it has prevented the elaboration of a basis for dealing with a future outbreak. It may be presumed that, like infantile paralysis, it is a disease to which the majority of individuals are relatively resistant, and that healthy carriers, who harbour the virus in the nose and pharynx without themselves suffering from

ill-effects, probably play a large part in dissemination. The practically simultaneous occurrence of *Encephalitis lethargica* in this country, France, and Austria is another of the unaccountable manifestations of the disease.

C. H. B.

#### EXPLORATION OF NORTHERN GREENLAND.

THE second Thule Expedition to northern Greenland in 1916 to 1918, under the leadership of Mr. Knud Rasmussen, is the subject of articles in the *Geographical Review* for August and September (vol. viii., Nos. 2 and 3). With Thule on Melville Bay as a base, the main party of the expedition left on a long sledge journey to explore the northern coast of Greenland between Robson Channel and Peary Land. This coast had been only roughly sketched by Peary on one of his northern journeys. Mr. Rasmussen's party charted it in detail between St. George's Fjord and De Long Fjord. It was found that Nordenskjöld Inlet, at one time supposed to be the end of the so-called Peary Channel, but disproved in 1907 by Mylius-Erichsen, is a short fjord ending in a glacier. The distribution of ice-free land was found to be the opposite of what was before believed to be the case, the land round St. George's Fjord being ice-free, and that round Nordenskjöld Inlet ice-covered. Mr. Rasmussen failed to find any ruins of Eskimo houses in that district, or any signs that Eskimo had ever migrated round the north coast of Greenland. This was previously supposed to be the route by which Eskimo at one time reached the east coast, where traces of camps and villages are numerous. Musk-oxen may have migrated in small herds round the north, but the general conditions of hunting are so poor that Eskimo are unlikely to have been attracted to the route. The ice-free areas are not large enough to furnish sufficient game for a wandering tribe, and the conditions of the pack-ice along the north-west coast make hunting on the sea impossible. Mr. Rasmussen believes that the east coast natives travelled from the west by Cape Farewell, and that reconnoitring parties of hunters went so far north as Independence Fjord. The botanical work of Dr. Thorild Wulff, who died from starvation, was important, and Mr. Lauge Koch obtained valuable geological results. The new map of the coast, of which a sketch is added to the article, was carefully prepared, forty observations of latitude and forty determinations of longitude being taken.

#### AQUATIC FAUNA OF SEISTAN.

UNDER the auspices of the Indian Medical Research Fund, Dr. N. Annandale and Mr. S. W. Kemp undertook in November, December, and January, 1918-19, an expedition to Seistan and Baluchistan with the object of discovering whether the disease Bilharziasis (or Schistosomiasis) occurred in Seistan, and, in particular, whether any of the known molluscan hosts of the parasite were to be found in that region. So far as the medical part of the inquiry was concerned the results were negative, but the opportunity was taken to make a collection of the limited aquatic fauna of the country. The zoological results of the expedition are now in course of publication as a special volume of the "Records of the Indian Museum" under the title of "Report on the Aquatic Fauna of Seistan." In an introductory essay Dr. Annandale describes the physiographical conditions of the Hamun-i-Helmand, the basin into which the