

60 years, particularly when, as has sometimes been the case, it has occurred intensively in particular areas or, as is the more general rule, when its prevalence is made up of small numbers of cases scattered through the whole country. In every year there is a certain amount of cerebro-spinal fever in the country, but in particular years or series of years its occurrence is sometimes considerably above the average. There appears to be no one outstanding cause for these increases, though a variety of different circumstances have appeared at one time or another to have influenced their occurrence.

Cerebro-spinal fever was made generally notifiable in this country in 1912, and some 200 to 300 cases were reported annually until the war years, when mass concentrations of men were frequent, and housing accommodation for both civilian and soldier was strained to the utmost. In 1915-1917 there was an annual incidence on the civil population of from 1,300 to 2,500. From that time the annual figures decreased to a minimum of 301 in 1923, but since that year their tendency, though irregular, has been upward.

The case of mortality from cerebro-spinal fever varies with the epidemic and with the phases of an epidemic, and, naturally, with the extent to which the milder cases are diagnosed and reported. Of the cases at present occurring and reported, approximately half have proved fatal.

The wide diffusion of cases, with its occasional concentration here and there is a characteristic of cerebro-spinal fever not only in this country, but all over the world. This has been the case in practically all European countries and also in the United States, where the disease is, relatively speaking, more common. More severe and concentrated outbreaks from time to time occur in the East, probably associated with conditions parallel to those of the war years in England. The epidemic behaviour of this disease depends largely on the fact that in times of prevalence the responsible micro-organism (the meningococcus) is to be found in the nose and throat passages of a very large number of persons who are, and who remain, quite well. Contact with such persons is unavoidable and little in the way of preventive measures can in the circumstances be taken except those which are usually adopted or enjoyed to prevent the spread of ordinary catarrhs from person to person. Isolation of the individual case of cerebro-spinal fever is important. Infants, children and young persons (especially when newly entrant to a large community, e.g. recruits) are especially liable to the disease. One circumstance has been shown conclusively to favour local outbreaks, namely, overcrowding in barracks, schools and other residential institutions and in club premises for young people. It was found, particularly during the war years, that when the individual was given more room in which to live and sleep the incidence fell greatly. This point is of special importance in the prevention of outbreaks of the disease in these institutions in which no approach to overcrowding should be permitted. This applies particularly to dormitories where insistence on sufficient space between the edges of adjacent beds (which should never be less than three feet clear) and the maintenance of thorough ventilation are of the greatest importance in preventing cerebro-spinal fever.

No vaccine or serum effective for the prevention of an attack of cerebro-spinal fever is known. There is, however, an important specific curative treatment by the administration of anti-meningococcus serum, but its efficacy is by no means constant and depends to a large extent on the particular type or types of meningococcus used in its preparation. Serum therapy thus sometimes yields brilliant results, but at other times they are dis-

appointing, even when the serum has been recently produced and has been derived from the organisms responsible for the current type of disease. The continued identification of types, the appropriate modifications of serums, and the laboratory methods of determining the therapeutic potency of any given batch of serum, are among matters which are receiving close attention from many research workers and bacteriologists in this and other countries, in the hope of enabling serums to be prepared which promise greater success than those at present in use.

#### THE OUTBREAK OF PARATYPHOID IN ESSEX.

The total number of known cases of paratyphoid occurring in Essex between February 1st and 14th has been 172, the districts mainly affected being Epping Urban, Epping Rural, Loughton Urban and the Borough of Walthamstow. The disease in all cases has been enteric (or typhoid) fever of the type known as Paratyphoid B. The illness in many cases has been severe, but the fatality has been relatively low and only four deaths have occurred up to the present time. By arrangement with the London County Council, the majority of the patients have been treated in that Council's infectious diseases hospitals, but others have been admitted to the London Fever Hospital, the Connaught Hospital at Walthamstow and the Ilford Isolation Hospital.

Enquiries made by Dr. W. V. Shaw, a Medical Officer of the Ministry, in consultation with the Medical Officers of Health of the county and of the districts concerned, appear to have shown that the origin of the epidemic was the infection of a particular milk supply at a dairy farm in the Epping Rural District. The infection seems to have been introduced by one of the employees on the farm who, unknown to himself, was suffering from a mild attack of paratyphoid while at work and handling the milk before its distribution. For several days the milk thus infected was consumed by a considerable number of persons in surrounding districts, some of whom have suffered from the disease.

At the farm in question all the employees have been examined and all those suspected of possibly carrying infection, including the man considered to have been the source of infection, have been removed to hospital and their place at the farm taken by other workers kept under close medical supervision. The distribution of milk from the farm was discontinued for the time necessary for the premises, milk utensils, etc., to be thoroughly cleansed and disinfected to the satisfaction of the Medical Officer of Health, and there is now no reason to apprehend further infection of the milk at this farm.

#### WHERE SAFETY LIES.

When there is any suspicion that the milk supply of a district is infected the question of what shall be done to avoid infection is one of extreme urgency. Safety lies in using a dried milk, and such an one is to be found in "Cow and Gate" Milk. Those who visit the "Cow and Gate" factories in the West of England have no doubts as to its absolute purity, and become its keenest propagandists.

Moreover, not only is this milk pure, but it is obtained from cows fed on pastures rich in calcium and phosphorus, both minerals required for bone making.

The firm had an attractive stand at the Professional Nursing, Midwifery and Public Health Exhibition at the New Horticultural Hall, Westminster, last week; and were also showing their products recently at the Ideal Homes Exhibition, in the section "Nurseries for all Purses."

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