in no way resembled in severity a previous epidemic of neonatal diarrhoea which had occurred in the maternity wards at the beginning of the year, and which had been associated with a high mortality. Moreover, on that occasion no adults had been involved." The second, described by Sakula (1943), is a typical outbreak of diarrhoea and vomiting occurring in newborn babies, with a case mortality of over 80%.

The clinical distinction between these two epidemics, both involving babies, is obvious. Further evidence against the association of the two diseases is supplied by the infant mortality rate for diarrhoea and vomiting in Cornwall. Throughout 1946 a widespread outbreak of diarrhoea and vomiting was prevalent among the adult population. Yet the infant mortality from diarrhoea and vomiting for 1946 is the lowest for some years, being 1.7 per 1,000 live births.

Summary

Two outbreaks of diarrhoea and vomiting occurring at two county institutions in Cornwall during 1946 are described. These outbreaks were part of a widespread epidemic among the surrounding population. With the exception of three deaths, all in aged patients, symptoms were mild and conformed to previous epidemics reported in the literature, a summary of which is included. Evidence obtained from these Cornish outbreaks points to an air-borne disease with an incubation period of 72 hours, the portal of entry being either the upper respiratory or the gastro-intestinal tract; the organism is probably a virus. The relation between epidemic diarrhoea and vomiting in adults and that which occurs in newborn babies is discussed; the evidence points to the two conditions having a separate aetiology.

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FATAL POISONING BY "LETHANE" INSECTICIDE

BY

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The following case is recorded in the belief that it is the first example of fatal poisoning by lethane insecticide.

Case Report

A woman of 35 was found unconscious in a chair, breathing heavily. She had vomited and there was an empty bottle of "semprolia" lethane insecticide near by. It was subsequently discovered that she was a widow and had been ailing with abdominal symptoms for some time and, being too ill to work, was nearly destitute. She was immediately transferred to hospital, but on arrival was found to be dead.

The relevant necropsy findings were as follows. The face was more pink than usual. The right side of the heart was dilated and the internal organs were moderately congested. The mouth and oesophagus were healthy. The stomach contained a little oily fluid with a strong odour of oil of citronella like that of the bottle found by her. There were numerous pin-point petechiae running together into clusters, mainly along the lesser curvature of the stomach but spreading out on to the adjacent walls. There were similar but less severe petechiae in the duodenum. The appendix was the seat of a well-localized abscess containing approximately 5 ml. of pus; this was presumably the cause of the abdominal symptoms. The liver was acutely congested and had the same odour as the stomach contents. There was an excess of frothy mucus in the trachea and

major bronchi and some oedema of the right lung. In addition both lungs showed extensive petechiae running together to form ecchymoses under the pleurae of the lower parts. All other organs appeared healthy.

Microscopically the liver contained a trace of fat and had collections of inflammatory cells in most of the portal tracts. Other organs showed no definite abnormality. The central nervous system was examined particularly for evidence of nerve-cell damage, and some swelling of the cells and loss of Nissl granules was noted, especially just lateral to the fourth ventricle; but as the necropsy was carried out 16 hours after death it was not possible to be certain that these were not autolytic changes.

Comment

The empty bottle found near the patient was of 55-ml. capacity. It had contained an insecticidal hair-oil, the composition of which was given on the label as: lethane 384 special, 49%; light petroleum, 49%; oil of citronella, 2%. Lethane 384 special consists of 12.5% of lethane 384 (N-butyl carbitol thiocyanate), 37.5% of lauryl thiocyanate, and 50% light petroleum. A 55-ml. bottle would therefore contain 3.5 ml. of N-butyl carbitol thiocyanate and 10.3 ml. of lauryl thiocyanate. The patient was judged to be about 8 st. (50 kg.), and, assuming that she took the whole contents of the bottle, the dose would be 0.07 ml./kg. of lethane 384 and 0.206 ml./kg. of lauryl thiocyanate.

Cameron *et al.* (1939), who studied the toxicity of these two drugs in rats, rabbits, and guinea-pigs by subcutaneous and intraperitoneal injection, found that the minimal lethal dose of lethane 384 was between 0.025 and 0.2 ml./kg. and of lauryl thiocyanate between 0.08 and 10 ml./kg. In the case of both drugs, therefore, the maximum dose which could have been taken by the patient lay within the range of lethal doses observed by Cameron. In fact, the effective dose taken was less than that stated above, because some was lost by vomiting, and, further, we were unable to discover whether the bottle was full. Even if the effective dose was as little as one-half of the maximum possible, the lethal dose for each drug still lies within the ranges observed by Cameron.

Cameron failed to observe any characteristic post-mortem lesions in his experimental animals, but concluded from clinical observation that death was due to respiratory failure, probably nervous in origin. We have similarly failed to find any characteristic lesion. The dilated right heart, congested viscera, and pleural petechiae suggest that death was due to respiratory failure. The petechiae in the stomach were presumably due to simple irritation, and the inflammatory changes in the liver were almost certainly secondary to the appendix abscess.

The particular preparation which proved fatal in this case can be bought at any chemist's shop and is not labelled "poison." It is marked with the words "For external use only" in print measuring 20 letters to the inch, followed by the words "Not to be taken" in print measuring 24 letters to the inch.

In view of the toxicity of lethane insecticide as evidenced by the present case it seems highly desirable that such preparations should be clearly labelled "Poison."

REFERENCE

- Cameron, G. R., Doniger, C. R., and Hughes, A. W. McK. (1939). *J. Path. Bact.*, 49, 363.

The Ministry of Food expects to be in a position to distribute small quantities of imported citric acid, and proposes to allocate supplies direct to such importers as can establish their claim to having engaged in this trade in the years immediately preceding the war. Importers who wish to participate in this scheme should apply for full details to the Ministry of Food, Miscellaneous Food Products Division, 39, Portman Square, London, W.1.