

FOOD-POISONING

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Its Nature, History and Causation, Measures for its Prevention and Control. By Elliot B. Dewberry. Pp. viii+187+17 plates. (London: Leonard Hill, Ltd., 1943.) 15s.

TO the Ancients, food-poisoning meant, as the name implies, the intentional adulteration of food with some deadly poison, and official food-tasters were still in vogue up to the Middle Ages. In the nineteenth century it was noticed that acute attacks of diarrhoea and vomiting followed the ingestion of certain foods, and the illness was blamed on ptomaines, the toxic alkaloids which are formed when foods are in an advanced stage of putrefaction. Later it became apparent that outbreaks of gastro-enteritis frequently followed the eating of apparently normal food, and just over half a century ago, when bacteriology was still in its infancy, Salmon, in the United States, and Gaertner, in Austria, showed that these alimentary upsets were due to certain bacteria (since called the *Salmonella*) and their toxins. About the same time van Ermengen, in Belgium, proved that the neuro-paralysis which frequently followed the eating of German sausage was due to the powerful toxin of an anaerobic sporing bacillus which he called *B. botulinus*, and the disease botulism. In the past fifty years much has been added to our knowledge of this type of food-poisoning, perhaps better called food infection or intoxication, and this knowledge has been collected and admirably arranged by Mr. Dewberry, together with sections on food-poisoning with metals, poisonous plants including the fungi, poisonous fish and shellfish, food allergy, and the contamination of food by war gases.

In dealing with the most common form of bacterial food-poisoning, that characterized by an attack of diarrhoea and vomiting within twenty-four hours of eating the peccant food, the author describes first the responsible bacteria—the *Salmonella* family, now more than 120 strong, certain *Staphylococci*, and certain strains of *Proteus*—some of which produce the syndrome early because the toxins are already formed in the infected food, while others, ingested with the food, produce their toxin in the gut, so that the onset of symptoms is delayed for 6–24 hours. The most common vehicles of infection nowadays are milk and milk products, or *prepared* meats (pies, sausage, brawn, boiled ham, etc.) which have been contaminated by human or animal carriers, and which act as culture media for these food-poisoning bacteria. Less often the infection is present before the animal is slaughtered for food and, because calves are particularly liable to *Salmonella* infection, veal is most likely to be infected in this way. The difficulty in sterilizing infected meat, particularly in a pie, is pointed out.

On the other side of the picture, the great improvement in the canning industry has meant that infection of tinned food before the tin is opened is now uncommon. No cases occurred among British or Allied troops during the War of 1914–18 despite the enormous amount of tinned food that was consumed.

In regard to sources and reservoirs of infection, Mr. Dewberry quite rightly stresses the importance of human convalescent carriers and mild 'missed' cases; but chronic *Salmonella* carriers must be extremely rare. Rats, mice and ducks are other sources of infection, and the house-fly, as carrier, must not be forgotten. The machinery for investigating and con-

trolling food infections is fully discussed, with bacteriological technique given in an appendix. Food-poisoning due to the contamination of food with metals is, with the possible exception of lead and arsenic, quite rare, because metals are rendered inert by combination with the protein in the food. Botulism gets forty-eight pages, although it is a very rare infection in Britain—only one small outbreak has been reported since the Loch Maree tragedy in 1922. The organism is found in the soil of most countries, and, in recent years, many cases of botulism in America have been traced to infection from home-canned fruits and vegetables due to the fact that the spores of the organism require several hours' heating at 100° C. to destroy them. They are, however, much less resistant in an acid medium.

This is a book which in its lucidity and simplicity of language should appeal to the interested layman as well as to the medical expert. Its pages are enlivened by photographs of many pioneers in this branch of medicine, including a goodly sprinkling of Englishmen, but not, unfortunately, of Salmon.

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PLASTICS

Plastics in the Radio Industry

By E. G. Couzens and Dr. W. G. Wearmouth. ("Electronic Engineering" Technical Monographs.) Pp. ii+58. (London: Hulton Press, Ltd., 1944.) 2s. 6d. net.

THIS, the second of the technical monographs issued by the publishers of *Electronic Engineering*, does not quite justify its title, for although it contains a full description of the types of plastics, their methods of manufacture and processing, and their general physical properties, their uses in the radio industry are barely mentioned. The authors, Mr. E. G. Couzens and Dr. W. G. Wearmouth, present the subject mainly from the point of view of the industrial chemist; that is, they describe plastics *for* the radio industry, rather than plastics *in* the radio industry. An amazingly gaudy frontispiece shows how dazzling to the eye is a collection of typical plastic products, but there is no discussion of their uses, and a natural desire to suppress some of the cruder decorative effects may blind one to the fact that brightly coloured insulating sleeving may serve useful technical purpose in identifying the elements of a complicated radio network.

There is, of course, much in the booklet to interest workers in the radio field, and perhaps it is legitimate to assume that they are already familiar with the kind of equipment for which such materials can be and are in fact used, and that what they most require is classified information on all the types they are likely to meet. This information is plentifully provided; the means of identifying the various plastics by heating tests, trade names and sources of supply are given, as well as the electrical and general physical properties. Experimentalists will be interested in the cements and solvents listed for the various materials, as well as some of the details of moulding, polishing and machining. A chapter on electrical properties is sufficient to outline the essential practical data, and to show the complexity of the relation between electrical properties and the factors such as temperature, frequency and molecular structure, which control them. Little attempt is made, however, to give a scientific discussion of this side of the subject.