BOOK REVIEWS

L'Oxyde de Carbone et L'Oxycarbonisme, 2nd. ed. By V. Raymond and A. Vallaud. (Pp. 417; 67 figures + 26 tables. 17,30 NF.) Paris: Institut National de Sécurité pour la Prévention des Accidents du Travail et des Maladies Professionnelles. 1962.

In the early chapters the numerous sources from which carbon monoxide is derived are emphasized; it is considered the most widespread of all poisonous substances.

It is noted that the rate of formation of CO haemoglobin is rapidly increased by the fall in atmospheric pressure. In long railway tunnels steam locomotives may form high concentrations of carbon monoxide from which fatalities have been reported. However, in some cases of death from the supposed effects of carbon monoxide the real cause has been asphyxia from carbon dioxide liberated from fire extinguishers. There is nothing known to suggest that carboxyhaemoglobin can be further oxidized and, though death from its massive formation is often proved, there are cases in which other toxic products of combustion, in minute quantity and not detected chemically, are the real cause of death. If CO is the cause of death, then this occurs by its power to fix haemoglobin, and death is due to anoxaemia. At necropsy many lesions are found in the globus pallidus, a part very susceptible to this poison. In acute poisoning death may be so rapid that the victim seems to have been unaware of his fate and to have made no effort to escape. Cadaveric rigidity sets in rapidly. In less severe cases there is rapidly developing confusion, titubation, euphoria or anger. The coincident effect of other noxious factors must not be overlooked. Some cases of acute poisoning, perhaps with coma, recover but after an interval display signs of permanent cerebral injury. In acute poisoning lumbar puncture sometimes shows evidence of haemorrhage or leucocytic reaction.

In chronic poisoning the findings seem to vary according to whether there is continuous exposure to a moderate concentration or intermittent exposure to higher ones. So in some cases there is an increase in the haemoglobin and erythrocytes whereas in others, presumably from damage to the blood-forming tissues, anaemia is reported. Normal people with no known exposure have traces of CO haemoglobin in the blood. Headaches, asthenia, and vertigo are said to be symptoms of chronic intoxication.

It is claimed that oxygen inhalations benefit victims of chronic poisoning and in acute cases should supplement artificial respiration. The value of carbogen and of mouth-to-mouth and mouth-to-nose respiration is discussed. A very good bibliography is provided, and the arrangement of the book is excellent so that this book further enhances the reputation of the authors. The omission of an index is to be regretted.

G. C. PETHER

Organophosphorus Poisons. Anticholinesterases and Related Compounds. By D. F. Heath. (International Series of Monographs on Pure and Applied Biology. Division: Modern Trends in Physiological Sciences, Volume 13). (Pp. vii + 403; illustrated. 80s.) Oxford: Pergamon Press. 1961.

It says something for the development within this field that the author in the foreword can state that 30 years ago not one organophosphorus compound with anticholinesterase properties had been characterized with certainty, whereas now thousands of compounds are known. Many of these are used as insecticides and some as auxiliary compounds in industry (oil additives, plasticizers), while a few are known as potential weapons in chemical warfare. This enormous development covering chemistry, biochemistry, physiology, pharmacology, entomology, etc. may be difficult to follow even for the scientist working daily with organophosphorus compounds. It must be still more difficult for the beginner or for one who only occasionally meets these compounds in industry, in the laboratory, or during their practical use. In the present monograph the object of the author was to collect as much as possible of the relevant basic knowledge and not to summarize the enormous literature of applied knowledge.

The book is not a toxicological handbook but a comprehensive account of the background knowledge necessary to understand the chemical and biochemical reactions of the organophosphorus compounds. This intention of the author is achieved and the book provides a good introduction to these problems. The author's personal knowledge of the subject from many years of research experience in industry and in an important toxicology research unit gives the account a special value.

At first sight the book is not easy to read, mainly because of an almost pedantic thoroughness in the presentation of the arguments and the many footnotes, but the reader who is prepared to do some work himself will be rewarded.

The introductory chapter is a good summary of the whole subject and at the same time indicates where the different problems are dealt with.

In the first part of the book concerning the chemistry of the organophosphorus compounds the great knowledge of the author is immediately apparent. The account of the nomenclature is of value, but, with the author, it must be regretted that the Scandinavians have shown a separatist tendency here. The orientation in the electronic theory will be of value to many readers. The importance of purification of the compounds is rightly emphasized since the presence of very small amounts of impurities, which can be thousands of times more biologically active than the compound itself, can give very misleading results. On the other hand, it must not be overlooked that