

radioactive method of their investigation. About two hundred pages of Part 2 give a summary of the relevant literature, and the rest contains the bibliography and the index.

In the preface the principal editor states that the contributors to this book became interested in the application of radioactivity to chemistry only during the Second World War, that they were then unfamiliar with most of the earlier work, and that the book is the outcome of their effort to correct this situation. It is therefore not astonishing that, in spite of the thoroughness of their search through the literature, they did not always gain the historical perspective which would come naturally to authors who were contemporaries of the earlier radiochemical investigations. Sometimes one would have preferred a different grouping. For example, in the days when no bismuth hydride was known, its discovery by the use of a radioactive isotope was interesting as a contribution by a new method to preparative inorganic chemistry, but scarcely as an example of "evaporation from solution", the heading under which it is here classified. A strange historical slip could not have happened to a veteran in the field; it is stated that neon, krypton, xenon, europium, lutetium, hafnium and rhenium were found in the period 1898-1925 by the method of X-ray spectroscopy; but Moseley's fundamental work on which X-ray spectroscopy is based was done only in 1913, and even after that date its application to the discovery of inert gases can scarcely be imagined. Hafnium and rhenium are the only examples where X-ray spectroscopy was used; for the discovery of the other five elements, the old-fashioned optical spectroscopy was decisive.

This point, however, concerns only the history of chemistry and is entirely unconnected with the main contents of the book, which is outstanding in its reliability. It is easy to predict that the book will become an indispensable standard work in all laboratories interested in radiochemical work.

F. A. PANETH

ORTHOPTEROID INSECTS OF FRANCE

Faune de France

56: Orthoptéroïdes. Par Prof. Lucien Chopard. (Fédération Française des Sociétés de Sciences naturelles: Office central de Faunistique.) Pp. 359. (Paris: Paul Lechevalier, 1951.) n.p.

THIS work by Prof. L. Chopard is more than a mere revision of the third volume ("Orthoptères et Dermaptères" by the same author, published 1922) of this well-known series: it has been expanded to include more detailed information and covers a wider field. Under the heading "Orthoptéroïdes", Prof. Chopard includes Orthoptera (s. str.), Dictyoptera, Isoptera, Cheleutoptera, Dermaptera, Embioptera and Plecoptera. The last of these groups (all of which the author, in accordance with modern views, regards as orders) has been treated separately by R. Despax in Vol. 55 of the series. The present volume is a guide to the identification of the French representatives of the remaining orders, and includes all information, both systematic and biological, which is likely to be useful for this purpose.

The work is arranged on the same plan as the other "Faune de France" volumes, with concise determina-

tion keys leading to brief descriptions. An important improvement on the earlier edition is the inclusion of numerous drawings of whole insects (about one per genus); among these are a number of figures of immature stages. Most of the remaining drawings serve to illustrate many of the finer distinctions used in the determination keys. They are reproduced from Vol. 3 of the series and are rather less accurate than those drawn specially for the present volume. Altogether there are more than five hundred figures.

The text is on the whole up to the usual high standard of this well-known authority; but it is difficult to accept some of the extreme measures taken in the classification of some of the groups. For example, no fewer than sixteen Saltatorian groups generally regarded as subfamilies have been given family status, thus doubling the number of families ascribed to the Saltatoria by other recent workers. Although the formation of new families will be inevitable as the groups become better known, it would perhaps be wiser to adopt a rather more cautious attitude until greater attention has been given to studies on their comparative morphology and anatomy.

The biological notes given with the more common species are largely new and have very much increased the value of the book. In particular, the descriptions of the 'songs' of many of the species will be found very useful in confirming their identity. Ample references are given to the work of other authors on the biology of a number of the species.

It is clear that in recent years much progress has been made in the study of European Orthoptera. Since the earlier volume of 1922 there have been some twenty additions to the French list, and some of these have been newly described species. There have been considerable advances in the study of their biology and distribution, and in many cases the time is ripe for the application of the polytypic species concept. In presenting with the utmost clarity much of this new and varied information in a single volume, Prof. Chopard has met a real need by workers on the European fauna, and his book is likely to stimulate further interest in a group of insects which has hitherto been denied its fair share of attention.

DAVID R. RAGGE

PREVENTION OF TUBERCULOSIS

Causes and Prevention of Tuberculosis

By Dr. Brice R. Clarke; with a Chapter on Mass Miniature Radiography, by Joseph Ritchie. Pp. viii+288. (Edinburgh and London: E. and S. Livingstone, Ltd., 1952.) 32s. 6d. net.

DURING the past quarter of a century, remarkable changes have occurred in the general outlook on nearly every aspect of the tuberculosis problem. Twenty-five years ago views on the pathogenesis of pulmonary tuberculosis were dominated by the theories of European pathologists. Rank's three stages of the tuberculous infection, comparable with the three stages of syphilis, were commonly accepted, at least as a useful way of thinking. Childhood infection was, in most countries, almost universal, and was accepted by many as inevitable. In these circumstances, environmental and nutritional factors assumed an over-riding importance in the development of tuberculosis; and the most profitable