

have been improved and amplified and refinements of technique are detailed, which make it easy to obtain sections as thin as 2 or 3 microns, while thinner sections down to a thickness of 0.5 micron can be made. Prof. Chamberlain's hint as to the possible appearance of a microscope of such magnifying power that no section thicker than 1μ is permissible, is rather intriguing and will demand further improvements in histological technique along these lines. The amplifications noted have involved no curtailment of the sections dealing with the collecting and growing of all types of laboratory material and with the application of the principles of fixing and staining in the study of each group of plants—these sections constitute the second part of the book as in the earlier editions.

N. F.

Caratteristiche dei sistemi differenziali e propagazione ondosa. Per Tullio Levi-Civita. Lezioni raccolte dal Dott. G. Lampariello. (Attualità Scientifiche, N. 41.) Pp. vii+110. (Bologna: Nicola Zanichelli, 1931.) 15 lire.

THIS little book is founded on a course of lectures, given by the author at Rome in 1930-31, on the theory of characteristics of partial differential equations and their applications (following the methods originated by L'Hugoniot and developed by Hadamard) to wave motion in acoustics, elasticity, optics, electromagnetism and other branches of physics. It opens by recalling some existence theorems concerning partial differential equations. The characteristics are introduced as the loci of singular points where these theorems break down. We then pass on to the consideration of wave motion, and wave surfaces prove to be closely connected with characteristics. The most interesting part of the book is the concluding section, which deals with the wave-particle dualism of modern physics according to de Broglie. An account is given of the recent dynamical-optical work of Persico, which aims at making Schrödinger's wave equation plausible, and a tantalisingly brief reference is added concerning Racah's use (in 1931) of the principles expounded in this book to obtain a justification of Heisenberg's principle of indeterminacy. Most readers will probably wish for a fuller account of the new developments so briefly mentioned here.

H. T. H. P.

The Grey Squirrel: the Introduction and Spread of the American Grey Squirrel in the British Isles, its Habits, Food and Relations with the Native Fauna of the Country. By A. D. Middleton. Pp. viii + 107 + 8 plates. (London: Sidgwick and Jackson, Ltd., 1931.) 4s. 6d. net.

THE grey squirrel has become almost as valuable as the sea-serpent to correspondents of British newspapers, and genuine inquirers who are distraught between the assertions of the 'pro-squirrelites' and the 'anti-squirrelites' will be glad to have this authoritative work at hand. It touches upon the life of the grey squirrel in its

native home in eastern and central North America, but its real purpose is to describe the invader in the land it has invaded with such success that from one centre (out of about thirty) it has spread over 1,350 square miles, and that, in thirty years. The food and habits, the much discussed relations with the native red squirrel and other animals, and the economic aspects of the pest are dealt with thoroughly, the conclusion being reached that three main counts have been proved against it—damage to forests by peeling bark and destroying shoots, destruction of agricultural and garden produce, including fruit, and destruction of birds' eggs and young. Suggestions are made for the destruction of grey squirrels, but the seriousness of the menace in the British Isles has not yet been realised.

The Background of International Relations: Our World Horizons, National and International. By Prof. C. Hodges. Pp. xvi + 743. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1931.) 21s. net.

AN excellent compendium of world politics viewed from a common-sense angle, this book illustrates the point that international politics should be everybody's business. The basic principles of politics are the refined result of the crowding of the globe and the struggle for elbow-room and racial survival. So business has become the driving force in politics; and economic hunger drives nations to seek commercial supremacy backed by the power of the State. Yet enlightened self-interest forces these nations into world co-operation through political or non-political means. Yesterday's isolation of nations has gone: statesmanship has now to deal with news-minded nations. The author believes that knowledge alone can control the destiny of peoples, and that world-forces do not yield to emotions. There is much to be said for his final statement that peace is a state of mind, and not a political institution. A wealth of references and a good index are features which add to the practical value of this work.

T. G.

The Official Year-Book of the Scientific and Learned Societies of Great Britain and Ireland: with a Record of Publications issued during Session 1931-1932. Compiled from Official Sources. Forty-ninth Annual Issue. Pp. vii+167. (London: Charles Griffin and Co., Ltd., 1932.) 10s. net.

THIS annual, which has now reached its forty-ninth year, supplies valuable information concerning learned societies of Great Britain and Ireland, including officers, conditions of membership, meetings, publications, etc., and also gives particulars of various government scientific institutions. The new form of the publication initiated last year, which involved omitting lists of papers read before societies, has been continued this year. Many societies have been added, thus adding to the value of the volume as a work of reference.