

growth, and various metabolic processes of plants and animals are all considered. Many observations are of the author's own work and all are discussed with reference to the RGT rule. Indeed, one wishes that the effect of temperature on purely physical processes was more fully considered. There is of course no doubt but that the main effect of temperature on life processes is to be explained in terms of its effect on chemical reactions, nevertheless, there are irregularities in the temperature coefficients of biological processes which must be explained as the result of temperature changing two processes at the same time, and not merely the velocity of some chain of chemical reactions. It is the exception rather than the rule which should now claim the attention of physiologists.

It is always a great convenience to have the results of some one subject of investigation collected and tabulated by a competent investigator and this book will serve as an excellent reference work to the physiologist and biochemist interested in temperature and as a guide to future research along that line.

E. NEWTON HARVEY

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Geologia Elementar, preparada com referencia especial aos Estudantes Brasileiros e á Geologia do Brazil. Por JOHN C. BRANNER. Second edition, Francisco Alves et Cia, 166 Rua do Ouvidor, Rio de Janeiro, Brazil.

The second edition of this excellent handbook, not only for Brazilian students as the title states, but of Brazilian geology, brings up to date in 396 pages of text the matter presented in the first edition of the year 1906. Perhaps no one now living in or outside of Brazil is so well prepared to write a regional geology text of this character as President Branner. The present edition is based upon the first, which was written in English and translated into Portuguese with the collaboration of the late Dr. Derby. The additional matter in the new edition was written in Portuguese by the author, and revised by Doctors Barreto and Lisboa. The subject-matter is systematically set forth with illustrations of

local geological peculiarities, among which the magnificent examples of weathered rocks, the coral banks of the coast and sandstone reefs of Pernambuco, the remarkable growths of the mangrove, the geological work of ants, and the striking evidences of a slightly elevated shore-line, form admirable subjects for didactic geology. Where Brazil is now wanting in evidences of important agencies of geological change, the author has very properly, in the interest of the student, introduced striking examples from foreign lands. The North American student of geology, even if he does not read Portuguese, will find the black-line maps illustrating the distribution of the geological formations of Brazil as they are at present known, the most serviceable at his command. The guide fossils representing the chief types in the Brazilian Upper Silurian, Devonian, Jurassic, Cretaceous and Tertiary deposits are set forth in line and stipple drawings which have the merit of distinctness. Numerous cross-sections show the understanding of the geological structure, in particular the coastwise portion of the country. President Branner has embodied the latest discoveries concerning the Permian glaciation in south Brazil, as well as the results of Dr. I. C. White's monographic work upon the "Geology of the Brazilian Coal Field." The footnotes give reference to the more important geological reports on the region, among which must not be forgotten the author's "Bibliography of the Geology of Brazil," in *Bulletin Geol. Soc. Amer.*, Vol. 20, p. 132, 1909.

The geological traveller bound to Brazil will find this work indispensable as a *vademecum*, and an additional incentive to gain command of the Portuguese tongue.

J. B. WOODWORTH

Irrigation in the United States. By RAY PALMER TEELE, M.A. D. Appleton and Company, 1915. Pp. 253.

The conquest by irrigation of the vast area of our country that lies under a low annual rainfall—approximately 20 inches and less—has become a matter of national interest. Our