REVIEWS

Principles of Physical Geology. By Arthur Holmes. (Thomas Nelson and Sons Ltd., London), 1944. Pp. 532, with 95 plates and 262 text illustrations. Price 30 shillings.

Britain, to whose scientists so much of the pioneer work on physical geology is due, has not in recent years been responsible for the publication of outstanding books on this subject. It was almost as if the fullness of the stratigraphical and igneous record, and the consequent diversity of scenery, notwithstanding the smallness of scale, had led to a complacent acceptance of the wealth of material within, and a neglect of the wonders outside. The book under review has come opportunely to counteract this apparent tendency. It has the catholicity of outlook which is to be expected of an author whose research has for years been connected with the age of the earth. Many will long have had in their possession a small booklet by Professor Holmes, published by Benn for the price of six pence, pennies which were never better spent. The new book is sixty times that price and will be beyond the means of most Indian students, but it is one which every University and Library in the country should have.

It is impossible within a short notice to discuss all the subjects encompassed within the 21 chapters. Part I, of seven chapters, is entitled a preliminary survey, and deals mostly with the materials of the crust. Part II, nine chapters, discusses the external processes responsible for the various types of landscape. Part III, five chapters, is an account of internal processes:—earthquakes, mountain building, plateux and rift valleys, volcanic activity and continental drift. It is not, indeed, the titles which are new, but the manner of presentation, based on the latest work such as gravity determinations in the Caribbean and Dutch East Indies, the coral reef problem, alpine geology, volcanic observations in the island of Hawaii and Professor Holmes' own researches. The impact of original thought is manifest throughout the work.

One of the most striking features of the book is the superb collection of plates and illustrations, taken largely from Europe, North America and South Africa. Many of the photographs are aerial views, from the oblique perspective of which a better impression can be obtained of certain phenomena than from any ground angle. Each chapter contains a recent bibliography.

References to India are relatively few, probably because so much of the work in India is published in official memoirs and records, and photography, particularly from the air, has been neglected. Two problems may be selected for comment. It is possible that the K'un Lun mountains represent the northward overthrust zone separated from the southern Himalaya by the presumed median mass of Tibet (Fig. 199, p. 382), but the recent work of Heim and Gansser indicates that counterthrusts, dipping south, occur south of Kailas and the greater part of the Tibetan plateau. Further, while the idea of isostatic uplift arising from erosion in the Himalaya is not in dispute, the questions of the origin of the river system and the clusters of high peaks in the Karakoram, eastern Kumaon and eastern Nepal is still perhaps unsettled. The recent work of S. L. Hora on the fish faunas of rivers in India and Tibet, and some observations of Griesbach many years ago in the Kumaon, do not support the view of the antecedent drainage of some, at least, of the Himalayan rivers (p. 200), but suggests that it was consequent. Cross warps along an old peninsular N.E.-S.W. grain may possibly, moreover, be involved in the origin of the Kumaon and Nepal clusters of high peaks. These are minor points in a book dealing with the earth as a whole, in which lack of space necessarily prevents a detailed discussion of all the facts.

The type, paper, and reproduction of the plates are a special credit to the publishers after five years of war conditions.

J. B. A.

Inorganic Chemistry. By P. K. Dutt. (H. Chatterjee & Co., Ltd., 19, Shyama Charan De St., Calcutta), 1944. Pp. 245. Price Rs. 2.

In writing this book, the main object of the author has been to present a concise account of elementary principles of inorganic chemistry to meet the needs of students appearing for the Intermediate Examinations of the Indian Universities. It is highly gratifying to note that the author has fully realised his ambition. The first ten chapters deal with the general and theoretical chemistry, the next twelve with non-metals and the last eight chapters are devoted towards a brief description of metals and their compounds. Invariably, at the end of each chapter, a number of questions pertaining to the topics of the chapter are given. A good number of typical chemical problems are also worked out in the text. One special feature of the book is the grouping up of the metallic compounds like nitrates, chlorides, sulphates, etc., instead of the classical method of describing them under the respective metals. The new system evidently removes a good deal of unnecessary taxation on the memory of the student. At the same time it facilitates the remembrance of the more fundamental general characteristics of the metallic compounds. Although the student may find it difficult to follow certain portions of the book at the very first reading, yet this difficulty vanishes after he attends the class lectures. The author should be particularly congratulated on reducing the cost of the book to such a low value as Rs. 2. It is hoped that the students will be greatly benefited by the low cost of this valuable book.

A few suggestions have to be made to improve the book further. Certain topics like arsenic, arsenic compounds, Morley's method of composition of water, have to be dealt with in this book since they are included in the Intermediate syllabus. It is desirable to

include figures for certain important portions like the preparation of ozone, manufacture of iodine, Dumas method for the composition of water, etc. The author has devoted too much of space to describe some obsolete methods of manufactures like the Weldon's and Deacon's processes for the manufacture of chlorine. Actually the modern practice is to manufacture hydrochloric acid from the electrolytic chlorine and not the *vice versa*. The proof-reading must be done more carefully in the next issue and the mistakes that have appeared on the pages 31, 95, 105, 111, 115, 116, 130, 136, 155, 159, 160, 174, 198, 207 and 221 should be avoided. M. R. A.

Thomas Jefferson and the Scientific Trends of His Time. By Charles A. Brownie. (*Chronica Botanica*, Waltham, Mass., U.S.A; and Macmillan & Co., Calcutta), 1943. Pp. 63. Price 1.25 dollars.

Thomas Jefferson, patron-saint of American democracy, author of the Declaration of American Independence drafted by him in 1776, father and founder of the University of Virginia, and philosopher, was the third (and twice) President of the United States. That he was also a man of science and naturalist is perhaps not so well known outside the U.S. This scholarly essay by the Dean of American Agricultural Chemists deals with his relationships to the scientific trends, especially those pertaining to Natural History, of his times. As an agriculturist, astronomer, architect, botanist, meteorologist, etc., he considerably influenced subsequent developments in American science and that influence will continue to be felt for a long time. His familiarity with many phases of scientific knowledge which was largely utilitarian is well illustrated by his "Notes on the State of Virginia".

The author of the present contribution has successfully tried to follow the scientific ideas of Jefferson back to their sources and in so doing he has illustrated them by extensive quotations from Jefferson's own writings. As a history of the development of American science, the book is very interesting. M.

The Genera of Uredinales with Citations. By Bisby, G. R. (Imperial Mycological Institute, Kew, England), 1944. Pp. 22. One shilling.

This is a list of all the genera of rusts published since 1801 and up to the end of 1943. Rusts are the most important and interesting among fungi and to a mycologist working in a country whose rust flora is not well known, taxonomy presents many difficulties because of the very large number of genera and species involved. Of the former, the author states that 234 names have so far been proposed.

The genera are arranged in alphabetic order with full citations, dates and the type species whenever possible. No other book has brought together under one cover all the rust genera that have so far been proposed. About 63 names not found in Clements and Shear's *Genera of Fungi*, published in 1931, are cited here although the number of new genera published since that date is only 20.

It is a pity that the author decided not to include comments concerning synonymy and life-cycles. At least those genera which by a majority consent are synonymous, should have been placed in italics (underlined in a mimeographed publication). The author cites *Maseeella* as a monotypic genus. This is an error for Sydow proposed a second species in 1928 and two more have been established by Thirumalachar in 1943. With the exception of Saccardo (Vol. VIII, p. 600), all other mycologists, including the present author, have ignored Rabenhorst's genus *Sarcorhopalum* in *Bot. Zeitung*, 1851, p. 627, the species *S. tubiforme* being found on *Aspidium curvifolium* in the Nilgiris. The reasons for its neglect are not clear.

It is hoped that a new edition in a printed form will soon be published. M.

SCIENCE NOTES AND NEWS

Lady Tata Memorial Trust Scientific Research Scholarships, 1945-46

The Trustees of the Lady Tata Memorial Trust are offering eight scientific Research Scholarships of Rs. 150 each per month for the year 1945-46 commencing from 1st July 1945. *Applicants must be of Indian Nationality and Graduates in Medicine or Science of a recognised University.* The subject of scientific investigation must have a bearing either directly or indirectly on the alleviation of human suffering from disease. Applications must reach by March 15, 1945. Further particulars can be had from the Secretary of the Trust, "Bombay House," Bruce Street, Fort, Bombay.

At a recent auction in the Argentine, Argentine-grown jute fetched on an average about Rs. 261 per maund, reports the December issue of the *Indian Central Jute Committee Bulletin*. It was the first lot of its kind to be placed on the market, consisting of six bales of 25 kilos each—a kilo equivalent to about a seer. It was regarded rather as a demonstration than as a commercial transaction. The total procedes amounted to Rs. 1,043-4-0, and they were donated to a charitable fund. The jute offered in the sale was obtained from fields which have been planted with it in the islands of Ibicuy in the delta of the Parana River where it empties into the Rio de La Plata Estuary above Buenos Aires. The sale aroused a certain amount of interest as illustrating the possibilities of jute production in the Republic. Not only in this district of Ibicuy, but in others farther north in Missiones and Corrientes