

pressure) a quantity of the dimensions of force divided by area; but, after all, we have had to put up with ambiguities of this kind for so long, that the matter is of no great consequence to the class of readers for whom Prof. Tait's useful little book is intended. G. H. B.

OUR BOOK SHELF.

The People of the Moon. By Tremlett Carter. Pp. 402. (London: The Electrician Printing and Publishing Co., Ltd., 1895.)

THIS remarkable book bears upon every page evidence of scientific knowledge and vivid imagination. It is not simply a story of a journey to our satellite—that idea has been worn to threads since Jules Verne used it for the ground-plan of his novel—but purports to be a translation of a volume written by a lunar inhabitant, and sent to the earth. More than one ingenious individual has sapiently suggested that the side of the moon remote from us is inhabited; and as we are not likely to obtain any information on the matter, every one is free to indulge in that belief. The idea that there are living beings in the moon's interior, is of a similar harmless character, and the author of this book has made the most of it.

Down in the interior of the moon, and near the centre, dwelt a race of people—the Sarāva—who believed that the universe was an illimitable extent of solid rock, honeycombed throughout with endless tunnels and caverns. But a man arose—a lunar Copernicus—who propounded the doctrine that the place which the Sarāva occupied was merely a lump of cavern-hollowed rock suspended in an infinite vacant space. Urged by a vision, a Prince of the Sarāva sets out with two companions in the hope of reaching the surface, and their expedition is successful. With the adventures of the explorers, we have nothing to do, nor is it for us to analyse the sentimental undercurrent. The attractive parts of the story, from the scientific point of view, are those which show the author's acquaintance with electromagnetic waves and the ether. He makes the Sarāva possess machines to etherealise matter, so that by having two powerful electromagnetic foci at any distance apart, it was possible to transmit objects or people from one to the other with the velocity of light; the object being etherealised at one focus, projected to the other, and then by a similar series of electromagnetic waves converted into its material state. Having reached such a high state of knowledge of the ether, it is hardly necessary to say that the Sarāva could see and speak with one another at a distance, without the necessity of connecting wires, and had also managed to tap the ether and use its terrific energies in destructive weapons. How very intelligently, and with what regard to known facts these imaginary machines are constructed, can only be appreciated by a perusal of the book. We congratulate the author on the skilful and original way in which he has handled an old subject.

Frail Children of the Air. Excursions into the World of Butterflies. By Samuel Hubbard Scudder. Pp. 279. Nine plain plates. (Boston and New York: Houghton, Mifflin, and Co. London: Gay and Bird, 1895.)

It might be supposed from the title of this book, that it was wholly popular, and that entomologists would find little to attract their attention in it; but this would be a great error, for it is really a collection of thirty-one philosophical essays on butterfly and caterpillar life, reprinted, with additions and modifications, from Dr. Scudder's great work on the "Butterflies of New

England." Many subjects of great interest and importance are touched upon, relative to the modes of protection of butterflies in all their stages: fossil butterflies; the origin of the present butterfly fauna of North America; the habits of butterflies, caterpillars, &c. One of the most interesting chapters is, perhaps, that relating to the butterfly fauna of the White Mountains of New Hampshire, where butterflies appear to swarm to an extent which the richest localities in Europe could perhaps hardly parallel in number of individuals. Dr. Scudder does not confine his remarks to American species, however, but has also looked up the European literature bearing on his subject very thoroughly, as, indeed, was only to be expected from an entomologist of his industry and energy. Here and there, however, we may detect a casual oversight, as where *Iphiclides podalirius*, L., is spoken of as "confined to the Mediterranean region" (p. 247), when it is really found throughout the greater part of Central Europe as well. Occasionally, too, Dr. Scudder's information can be supplemented, as when in speaking of ants attending the larvæ of *Lycaenida*, he omits the instances which have been recorded of some Australian species (*Hypochrysops delicia*, Hewitson, and *Ialmenus evagoras*, Donovan, &c., see Anderson and Spry's "Victorian Butterflies," pp. 94, 98, 99). Incidentally various subjects of more general interest are remarked upon, as where Dr. Scudder agrees with Desor (p. 250) in attributing the greater intensity, both of butterfly and of human life in America, as compared to Europe, to the much greater vicissitudes of climate in the former country; or when, in more than one passage, he agrees with Wallace and others, among our deeper-thinking naturalists, that the workings of natural selection are incomprehensible unless we regard them as guided by a controlling intelligence. W. F. K.

The Story of the Earth in Past Ages. By Prof. H. G. Seeley, F.R.S. Pp. 196. (London: George Newnes, Ltd., 1895.)

PROF. SEELEY tells the geological story of the earth in an orderly, though not strikingly luminous, manner. Beginning with evidence of the earth's internal heat, he passes to the materials of mountain chains, and then to the consideration of volcanic rocks. With reference to the latter section, it seems to us that his descriptions of the compositions of rhyolites, trachytes, andesites, and basalts are more suitable for a text-book than for a book intended for popular reading. In fact, Prof. Seeley has too exalted an idea of the knowledge of the general public, who, we are afraid, will not be able to understand a large part of his little book. Few of his unscientific readers will have any idea conveyed to them by remarks such as follow: "The bivalve shells are usually species of *Cyclas*, or *Unio*, or *Anodonta*. The univalve shells are either the pond shells *Planorbis*, *Paludina*, and *Limnaea*, or such river shells as *Neritina*, and the freshwater limpet." Similar instances of the use of technical nomenclature without explanation could be quoted from almost every chapter in the book.

The materials of stratified rocks form the subject of the fourth chapter, and then, after short descriptions of the succession of strata, the origin of stratigraphical geology, and fossils, the formations are treated in order, from the Archæan rocks to glacial deposits and gravel beds. Within the compass of less than two hundred small pages, it has only been possible for Prof. Seeley to indicate a few of the features of the different rocks. Thus, the chapter on Archæan rocks consists of three small pages, and would only fill about a column of NATURE, and there are other chapters just as scanty. Most of the figures are very badly reproduced, and there is no index; so that, altogether, we do not regard the book as a very satisfactory one.