

forms." This makes us truly wish for a teacher at our elbow. The difference between young and old twins is new to us; the Carlsbad twins, by the above statement, were clearly never young.

Altogether, this book must be compared with our smaller treatises on mineralogy, and must be judged accordingly. As a reference-book for British localities of minerals and rocks it will undoubtedly be useful.

G. A. J. C.

#### OUR BOOK SHELF.

*A Ride through Western Asia.* By Clive Bigham. With illustrations. Pp. 276. (London: Macmillan and Co., Ltd., 1897.)

MR. BIGHAM gives a simple, straightforward and modest account of a journey of the "record-breaking" order. In a year and a month he travelled, mainly on horseback, from Constantinople through Asia Minor, Persia and Central Asia, reaching as far as Kashgar, thence returning *viâ* Siberia and Russia. The small size of the book is welcome, and indeed remarkable, as it shows that the author cherishes no undue opinion of his somewhat remarkable journey. It is to be regretted, however, that his duties as a correspondent at the seat of war deprived the proof-sheets of his personal revision, and that many slips, chiefly in place-names, have thus eluded observation. Mr. Bigham was possessed of the best qualities of an explorer determined to go through a given programme; but he does not mention the special object for his expedition, nor does he tell much which had not previously been placed on record. The object presumably was merely pleasure, and the points of original importance refer to matters of undoubted interest, but so intimately involving political questions as to be unsuited for special reference here.

Numerous quotations are given from Mandeville, Marco Polo, the Vulgate and other authorities, and the author assumes as matters of common acceptance several theories, anthropological and otherwise, which are either exploded, or are now looked upon with great suspicion by competent authorities. Perhaps the most interesting part of the journey was the trip from Teheran through Kashan, Ispahan, Shiraz, and across the Bakhtiari country to Dizful, down the Karun River, up the Tigris, and back to Teheran by Kermanshah and Hamadan. It is a pity that fuller details of the Bakhtiari country were not given. The same may also be said of the journey from Kashgar to Semipalatinsk, across the Tian-shan, so early in the year as the month of May. There was too much travelling compressed into the thirteen months to allow of the careful collection of local information, which might be of scientific value; but the book is attractively written with plenty of action, maps well suited to bring out the routes, and good illustrations.

*Elements of Theoretical Physics.* By Dr. C. Christianesen, Professor of Physics in the University of Copenhagen. Translated by W. F. Magie, Ph.D., Professor of Physics in Princeton University. Pp. xii + 339. (London: Macmillan and Co., Ltd., 1897.)

WHILE the small edition of Thomson and Tait's "Natural Philosophy" professed to supply the essential details of this reasoning, devoid of mathematical notation, the present treatise appears to perform the converse operation, of providing the student of Physics with the mathematical argument and equations he is likely to encounter, devoid of any appeals to experiment or numerical illustration. The book is therefore a very handy manual of reference for formulas, and the mathematical treatment is

very elegant and condensed, not running to unnecessary luxuriance. As it is stated at the outset that the C.G.S. system alone is employed, there is no need for any specification of the units employed; although we think it would tend to clearness to mention them occasionally; and this can be done, on the Hospitalier System, in a very condensed form, thereby training the student not to shirk this most important detail of his practical work; thus, for instance, the number  $1.695 \times 10^{12}$ , representing the modulus of elasticity on p. 81, is given in dynes/cm<sup>2</sup>.

The subjects treated in the chapters are—General Theory of Motion, Theory of Elasticity, Equilibrium of Fluids, Motion of Fluids, Internal Friction, Capillarity, Electrostatics, Magnetism, Electro-Magnetism, Induction, Electrical Oscillations, Light, Thermodynamics, and Conduction of Heat. These subjects are all polished off in 333 pages; and as most of them are discussed ordinarily in separate treatises, each of, say, 300 pages to itself, the treatment in this work is necessarily very condensed, and the author cannot permit himself any following out of details, or Calculus dodging.

This will make the book a difficult one for a beginner to use, except as a handbook of reference, to be used in conjunction with a series of Lectures; and it was probably in that way that the treatise assumed its present shape. G.

*In Garden, Orchard and Spinney.* By Phil Robinson. Pp. iv + 287. (London: Isbister and Co., Ltd., 1897.)

*The Woodland Life.* By Edward Thomas. Pp. viii + 234. (Edinburgh and London: Blackwood and Sons, 1897.)

THE critic to whom these volumes were entrusted read a good part of them with a growing sense of perplexity not unminged with enjoyment. When he attempted to write down what he had found in them, he could for a long time do nothing but gnaw his pen. At last it occurred to him that almost any reader of NATURE would have found himself in a like difficulty, and that the best plan would be to speak of the books from his and their point of view. We, the readers of NATURE, are accustomed to read for information, and we judge of books mainly by the quantity and quality of the matter which they contain. Now the two books before us may be shortly said to contain no information at all; to give information is no part of their plan. They are akin to the sonnet, the symphony, and the landscape painting, and make their appeal to sympathies of which the mere naturalist is quite devoid. Even the dull soul of the mere naturalist is, however, faintly stirred now and then, as he reads these pages, wondering all the time what he can find to say about them. Mr. Phil Robinson throws in many a pleasant phrase, many an apt quotation, and there is plenty of movement in his descriptions. Mr. Thomas' touch is not so light, but among his abundant epithets are not a few which show real familiarity with the natural objects, especially the birds, which catch his eye. Though these books make no pretence of being founded on inquiry, nor of adding to knowledge in any way, it is quite possible that a competent judge of literary form would give them a good place as prose poems.

L. C. M.

*Social Transformations of the Victorian Age.* By T. H. S. Escott. Pp. viii + 450. (London: Seeley and Co., Ltd., 1897.)

THIS book calls for but a brief reference in these columns. It consists of a series of sketches of social and legislative changes which have taken place during the Victorian era, and points to some of the causes of these transformations. Education receives a fair share of attention, but the transforming influences of science occupy only a single chapter of sixteen pages.