

For the rest, one notices that Prof. Loeb derives his inspiration from internal sources, and that quotations from other authors and from the *Archiv f. allgemeine Physiologie* occupy but a small place. What, however, is more natural, if an author has sufficient new and interesting material to draw upon, than to confine himself to his own observations? Enough has been said to convey our impression that the two volumes now under review well repay careful consideration, and that the facts recorded therein mark an important advance in our knowledge of general physiology.

OUR BOOK SHELF.

Civil Engineering: A Text-book for a Short Course. By Lieut.-Col. G. J. Fiebeger, U.S. Army. Pp. xiii+573. (New York: Wiley and Sons; London: Chapman and Hall, Ltd.) Price 21s. net.

THIS text-book on civil engineering is especially intended for the use of cadets of the U.S. Military Academy, whose duties later are often those of a civil engineer. A short course on this subject is therefore provided, and this work is evidently based on the author's lectures at West Point. It is natural to expect that in these circumstances the treatment of the theory of structures will be that of the engineer rather than of the pure mathematician, and that it will be of the simplest possible character. It is therefore disappointing to find that this section is treated in an almost purely academic way involving much chasing of x , with little or no appeal to physical ideas. This is well illustrated by chapters iv. and v., mainly on the deflections of beams under various conditions of loading and fixing, a section of forty-nine pages, involving one hundred and ninety-three numbered equations, with little or no indication of their physical meaning. A semi-graphical treatment would have been far preferable for military cadets studying this subject with a view to practical applications, and this remark applies to other parts of the book; thus we should imagine that a student, after reading chapter iii., on the flexure and bending of beams, would have considerable difficulty in calculating the moment of resistance of a section such as a bridge rail, a perfectly easy problem by a semi-graphical method and one likely to require solution by an officer who "in an isolated station finds himself called upon to act as an engineer and constructor of buildings, roads, and bridges," with possibly a miscellaneous collection of materials.

In the purely descriptive part of the book the author is much happier, and a great deal of valuable information is contained in this section. Throughout the book the author is somewhat free with his terms; thus his use of the word molecule leads him to the statement that "the unit shearing stresses on the vertical and horizontal faces of the elementary molecule are equal," while other terms, such as "curve of mean fiber" and "spontaneous axis," might be amended with advantage. E. G. C.

Thunder and Lightning. By Camille Flammarion. Translated by Walter Mostyn. Pp. 281. (London: Chatto and Windus, 1905.) Price 6s. net.

THIS book contains no translator's preface, so one is apt to believe that it is a translation of M. Flammarion's "Les Phénomènes de la Foudre." A comparison of the two volumes shows that the titles of the chapters in each are identical, with the exception of two chapters of the French work which are merged into one in the translation. A closer

examination leads one to conclude that the English edition is a very abridged form of the French, and the illustrations, which number fifty-four in the latter volume, only total nine in the translation. It is clear, therefore, that the two volumes are very different from each other, although one is supposed to be a "translation" of the other, since nothing is said to the contrary.

Apart from the above mentioned differences the English translation is well done, and will be found very interesting reading. The greater portion of the book is devoted to the effects of lightning flashes, and a large number of examples are described. Thus we have the effects on mankind, animals, trees, plants, metals, objects, and houses. Many instances are narrated of the vagaries of fireballs, and two chapters are devoted to atmospheric electricity and storm-clouds, and the flash and the sound.

Photography for the Press. By the editor of *The Photogram*. Second edition. Revised and very largely rewritten. (London: Dawbarn and Ward, Ltd., 1905.) Price 1s. net. Cloth, 2s. net.

THIS very complete and practical book contains hints to the photographer who wishes to make use of his pictures for press purposes. The editors acknowledge that this is a new departure in photographic literature, but the fact that the present edition is the second indicates that a want has been supplied. So large is the number of illustrated journals, books, &c., at the present time, and they are still on the increase and likely to become much more numerous, that time and possibly disappointments will be saved to the photographer if he becomes acquainted with many of the hints included in the present issue. In addition to some general remarks about the relation of the editor and publisher to the photographer, practical field and workshop methods are also discussed. Interesting and valuable information on the copyright union, copyright law, permits to photograph, &c., are next taken up, and lastly there are lists of agents for press photographs, publishers of picture post-cards, and the principal illustrated periodicals with all up-to-date information, such as class of print preferred, size of page, date and time to which originals are usually received for current issue, &c.

From the above it will be gathered that the book is intended to serve a very practical purpose, and the editors have produced a book that will be serviceable to many photographers.

How to Know the Starry Heavens. By Edward Irving. Pp. xvi+313. (London: T. Fisher Unwin, 1905.) Price 8s. 6d. net.

THIS volume is, avowedly, not so much a text-book for astronomical students as "an invitation to read text-books on the subject," but while it contains a large amount of real information, we fear that the matrix is so bulky that the reader to whom the book is intended to appeal will find great difficulty in discovering and assimilating the real facts. After discussing the apparent motions of the heavenly bodies and the rival theories concerning them, the reader is conveyed towards α Centauri in "The Chariot of Imagination" in order to gain some idea of the cosmological insignificance of the earth and to view more closely the sun and his system. Then the author attempts to instil a concrete idea of the dimensions of the visible universe. To this end he gives about twenty different illustrations, each one under a prominent subtitle such as "A Pile of Blood Discs" or "A Spider's Web," the whole occupying about fourteen pages. Succeeding chapters deal with other astronomical subjects in a popular manner and with more or less convincing illustrations.