How much better will a sophomore understand the general conditions governing respiration after reading this book, in which the references in index are to animal respiration only, than from selected portions of two books showing that exchange of gases takes place both in plants and in animals?

Or what will a student understand from the statement (p. 226) that "in plants the supporting structure is, as a rule, developed better than in animals." Wherein is the oak "better" than the horse, in respect to its supporting structure?

Again what would a thinking student make of the statement (p. 234), "there are other materials made by the plants, like wood and leaves, which can not serve as food for animals," when he sees boring insects in wood, reads of beavers and their winter supply of tree trunks, and observes animals grazing on the leaves of plants?

And if any members of a domestic science class should notice the definition of yolk, page 249, as "deutoplasm (Gr. *deuteros* = second + *plasma* = substance), deposited in the egg for the nourishment of the young," when in all their cooking experience concerning eggs they are taught that the yolk is at the center, while albumen or "white of the egg" is deposited about this—what conclusions would they draw from "biology"?

No doubt a number of these misstatements are chargeable to the printers, but they should be eliminated in a second edition.

In the review signed M. M. one side of the subject is presented; in the above note, another viewpoint is taken—botany and zoology as constituting biological science.

FREDERICK H. BLODGETT
TEXAS EXPERIMENT STATION

As this work, lately reviewed in SCIENCE, will probably be used in many colleges, it may be well to point out a paragraph on distribution which certainly needs amendment:

> The high mountain ranges are perhaps the most effectual barriers of all. Practically no animal or plant is able to cross over the higher mountain ranges. The Rocky Mountains effectually separate the eastern from the western slope, and the life on the two slopes of these mountains is quite different, though the climate may be much the same (p. 381).

It would be difficult to write anything more misleading. The life on the two slopes of the Rocky Mountains is not "quite different," except when climatic (especially moisture) conditions differ on the two sides. The statement as given is nearly true for freshwater fishes in Colorado, but quite untrue for the great majority of plants and animals.

Several other things in the book should be corrected. It is certainly misleading to write "primrose," instead of evening primrose, for *Œnothera* (p. 357). I do not understand why Onychophora (p. 378) are said to be centipedes. These and other such things are of course small matters in comparison with the large amount of excellent material in the book; but there should be no flies in the biological soup prepared for college students.

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THE REFORM OF THE CALENDAR

TO THE EDITOR OF SCIENCE: With reference to my article on the reform of the calendar published in your number for May 6, 1911, Vol. XXXIII., pp. 690–2, I desire to call the attention of those who took part in the discussion at that time to further developments in the matter.

In the December number of the Esperanto *Scienca Gazeto,* published in Paris by Hachette & Co., Ch. Verax, editor, we are told that the Swiss government actually appointed the commission referred to in my article and since that time have received 30 different projects for the reform of the calendar, 14 of which were written in Esperanto and the other 16 in seven different national languages.

The commission is still open for additional proposals and it is to be hoped that all those who took part in the discussion in SCIENCE will send their proposals without delay to the address "Conseil federal" or "Schweizerischer Bundesrat" (Federal Council), Bern, Switzerland.

It is also to be hoped that all persons who approve of the proposition to reform the calendar will write to the Swiss Federal Council immediately, expressing their approval of and giving their ideas on the subject.

J. M. Clifford, Jr.

SCIENTIFIC BOOKS

Elementary Entomology. By E. Dwight Sanderson and C. F. Jackson. Ginn & Co. 1912. Pp. vii + 372.

"During recent years there has been an increasing demand for short courses in elementary entomology. For several years past the authors have been endeavoring to present such courses to their students, but have encountered the difficulty that no text-book was available which met their needs. This book is, therefore, the author's effort to furnish such a text for beginners. . . ."

In a brief introduction the authors point out the important rôle insects play in the transmission of disease, and emphasize their importance as agricultural pests. Their explanation of why insects are so numerous in individuals and in species is not clear. "The immense number of insects, both of species and of individuals, is undoubtedly due to their varied structure which enables them to live under all possible conditions. . . . Thus the insects possess such diversity of structure and habit that they are able to live under all external conditions, and on account of their immense numbers they have been able to adapt themselves to a changing environment which would have entirely obliterated classes or species few in number." In other words, insects are numerous because they are diverse in structure and are diverse in structure because they are numerous.

The book is divided into three parts: I., The Structure and Growth of Insects, 62 pages; II., The Classes of Insects, 208 pages; III., Laboratory Exercises, 84 pages.

In Part I. a brief chapter is devoted to the near relatives of insects. The figure of the spider illustrating the arachnida is from a photograph taken at such an angle that it does not show the division of the body into cephalothorax and abdomen mentioned in the text, but does show the modified antennæ (cheliceræ) which, according to the text, are not possessed by Arachnida. The treatment of the Myriapoda is inadequate even for an elementary text. No distinction is made between the Diplopods and Chilopods, and while the figure shows a Diplopod with two pairs of legs to each segment, the text says that "each segment bears a pair of legs." The same statement is repeated in the table on page 9.

The twenty-four pages devoted to the anatomy of insects show the same evidence of hasty and careless work. The original figure of a typical maxilla of the grasshopper (Fig. 11) omits the cardo. We are told that the mandibles are always essentially biting organs, though many of the copied illustrations show their piercing form. We would agree with the authors that the mandibulate mouth-parts of the different orders are "apparently homologous," but what reason is there for believing that the types of suctorial mouth-parts are "entirely dissimilar in structure and origin"? However, it is consistent with such a belief that the illustrations of the mouth-parts of the mosquito and horse-fly (18 and 20), "good examples of the piercing type," should be labeled without further discussion, according to radically different interpretations, and that Fig. 15 is referred to on page 18 as of dipterous mouth-parts, though it is correctly labeled as hemipterous.

We are told on page 24 that "the wings are strengthened by numerous thickenings called *veins,* whose number and position form the basis of the classification of families, genera and species." Then, important as the subject would seem to be, a half paragraph, accompanied by an incorrectly labeled figure of the wing of a house fly, is devoted to a summary of the Comstock-Needham system, while in the systematic portion thirteen dipterous wings labeled according to this same system are illustrated and the key to families uses another system which is not even mentioned —not to say *explained*—in the text.