case, together with other differences, led him to believe that they could not be *L. mactans* as known in this region. Other additional specimens were taken outside the building, usually on doors or under window sills, and some of these were sent to Dr. W. J. Gertsch, of the American Museum of Natural History, for identification.

They were classified by him as the first records of *Latrodectus geometricus* Koch to be taken in the eastern part of the United States. Dr. Gertsch states that they are tropicolitan in distribution and cites records of their occurrence as the dominant form of *Latrodectus* in Brazil, of their abundance in the West Indies, in Africa, and of their occurrence in California.

Within the past few months Mr. Henry Louis and Mr. John Carroll, students in the botany and zoology departments of the University of Miami, have taken numerous specimens of this species in various localities in the Miami region.

The abundance of the species would indicate that it is perhaps the dominant form of *Latrodectus* in southern Florida. While Dr. Gertsch in a personal communication quotes Drs. Brazil and Vellard as regarding its venom as of almost equal potency with that of *L. mactans,* he also quotes them as believing that, despite the inconclusiveness of their experiments, the venom of *L. geometricus* may be less active.

Our observations so far agree with theirs in that the species appears to be less aggressive than *L. mactans.* Indications point to a far greater activity of this species at night than in the daytime.

The writer can not at this time be certain that some records of persons being bitten by the "black-widow" in this region may not more correctly indicate that they have suffered from the venom of *L. geometricus.*

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SCIENTIFIC BOOKS

The Pioneer Century of American Entomology. By HARRY B. WEISS. Published by the author. New Brunswick, N. J., royal 8vo., pp. 320, $4.25. Edition limited to 150 copies.

DR. GEORGE SARTON and the increasing number of people interested in the history of science will like this book because it is admirably done. It seems rather a pity that some commercial publishing firm did not print it, because then the book would have had fifty or more illustrations. But they all thought that it would not be profitable. The University Presses wanted the book to be subsidized, and the foundations had no funds. This, Mr. Weiss tells us in his "postface"; but obviously he was very sure of the usefulness of the book on which he had put so much time and work that he, with great enterprise and I think with much wisdom, published it himself. He did this by having the book beautifully mimeographed, printed an attractive title page and had it all bound in a solid, very attractive binding of brown cloth with gilt lettering, so that it looks mighty well on one's shelves. But many of us will not put it away on our shelves—we'll keep it on our desks for reference and for very careful reading.

I believe it to be true that the younger men in this and other branches of biology to-day are not especially bookish; at all events they are not precisely "book-minded." Several old professors with whom I have talked recently have told me that this is true. And as for young men who spend hours in the library looking up the things that men of their grandfather's generation did—they do not exist nowadays. Take Weiss in New Jersey, Essig in California, Wade in Washington, S. W. Geiser in Texas and T. S. Palmer in Washington—all of whom occur to you at once, and then try to think of others of the same turn of mind. I can't do it. Perhaps you can.

It is true that these five men have all reached a certain age. I am sure that other men, as they grow older, will measurably take their places. Weiss comments delightfully on this age question. He says in the closing sentence of the preface: "And so this book has been written, if you please, because I have reached a certain age. It was unavoidable."

The author covers his ground in twelve chapters, beginning with "Entomology in the Accounts of early Travellers," and carrying it on by periods ending with 1865; and then he adds chapters on entomology in the agricultural periodicals of the period, on scientific societies and journals, some notes from Canada, and on entomology in Europe during the pioneer century in America. After this last chapter come the acknowledgments, a "postface," a bibliography and a very competent index.

One beauty of the book is that he tells us a lot of things that we wanted to know and that we didn't know how to find. For example, when I was in my very early twenties, I wrote a long chapter in the big report on cotton insects published by the U. S. Department of Agriculture in 1879. This chapter was on the past history of the "cotton worm" and it went way back into the 1700's and quoted many men. Ever since that I have wanted to know about Thomas Affleck and D. B. Gorham and Dr. W. I. Burnett, and a lot of other early men who had published their speculations. Here, wherever possible, Weiss has given us full in-

formation about these men. And there were very many of them. Then, too, it is most interesting to find that several of one's collateral ancestors once wrote something about insects or about some one insect, and most of us need facts of that kind to bolster up a faith in the inheritance of scientific tastes. Dr. Davenport will please note.

But these items to which I refer deal with injurious insects, while the book covers the whole field of entomology. Many of us have failed to realize how very much was done in that "pioneer century." The very good index to this book has over 600 entries, and I estimate that 500 or more of these are the names of persons who had published (prior to 1865) something on insects, and who receive longer or shorter notices in the volume. We can learn all about the Melsheimers, about Thomas Say (on whom Mr. Weiss has written a separate book), and the many writers who followed—most of them taxonomists like Bassett, Blake, Bland, Burgess, Clemens, Cresson, Crotch, W. H. Edwards, Grote, Hagen, J. G. Morris, LeConte and Norton—and nearly all the other amateurs. Several great names, like those of Packard and Scudder, carry us on from that pioneer century into the next, beginning with 1865; but the early careers of such men are described by Weiss.

But there were writers other than taxonomists and those who wrote about remedies. S. S. Haldeman was one of the best of these, and they are all mentioned. And one's curiosity is fully satisfied about such an interesting character as Benedict Jaeger, whose readable, but rather unscientific and useless book called "Life Histories of American Insects" was read and really enjoyed by the boys of my generation. Weiss tells his whole story rather fully. Then, too, he tells all about Frank Cowan, the newspaper man who found himself stranded in Washington during the Civil War, and who went to the Congressional Library and dug out the material for his "Curious Facts in the History of Insects," a book that has been more quoted than any other insect book that was ever written in the United States.

And the way the author has done the work—with what industry and care! One can not praise it too highly. He writes wonderfully well. I suppose that is because he writes as he thinks and talks. It is so much easier to read a well-written book. Isn't it?

L. O. HOWARD

The Invertebrata. A Manual for the Use of Students. By L. A. BORRADAILE and F. A. POTTS, with chapters by L. E. S. EASTHAM and J. T. SAUNDERS. Second edition. New York: The Macmillan Company. Cambridge, England: at the University Press. 1935. THE second, revised edition of this manual, published only three years after the first edition, is of itself sufficient evidence of the need of just such a text. It fills an important gap between short textbooks for beginners and much larger manuals for advanced students. As the note on page vi states, "the book is now eighty pages longer" and "each chapter has been revised by its writer." In other respects the book follows the original plan and deals almost entirely with the morphology and classification of phyla into classes and orders with some references to sub-orders and representative genera. In general, the subject is handled in an excellent manner and the chapters written by Borradaile are almost above criticism. Unfortunately this can not be said about the work of the other collaborators. The chapter on Ctenophora written by Saunders is much too short and quite inadequately treated, considering the interest attached to this group from a comparative and an experimental point of view. The same criticism applies to chapters VII (Nemertea, Rotifera and Gastrotricha), and XV (Arachnida) written by Potts. The space allotted to different classes in the latter is not well apportioned, the text has not been revised and serious errors have not been corrected. Thus on page 530 in the description of the anatomy of spiders no less than seven misstatements are made, which could have been easily avoided. In the section on Tardigrada the correct statement on page 468 of the first edition, "Physiologically they are interesting in their capacity for resisting desiccation," has been "revised" in the second edition on page 541 to read "Physiologically the *Pantopoda* (italics mine) are interesting in their capacity for resisting desiccation." The author, of course, did not mean it and intended to say *Tardigrada* instead of *Pantopoda*, but since the change was not needed, the slip is highly unfortunate. There are some incorrect statements as, for example, in the chapter on Oligochaeta, in which on page 287 the author lists among the characters found in "the primitive forms in all families" the presence of a gizzard and a typhlosole, whereas, as a matter of fact, some worms do not possess them. In some cases the description of an organ is misleading, if not strictly speaking incorrect. Thus on page 195, referring to the aboral sense organ of Ctenophores the author states that it is "formed of small round calcareous bodies" . . . etc. Now these bodies are merely supported by the processes of the sense cells and are necessary for the proper function of the organ, but do not *form* the organ. In other places there are discrepancies in the text. For example, on page 517, concerning the distribution of respiratory organs in Arachnida the author makes the following statement: "(2) 'Lung books' in the terrestrial scorpions and Pedipalpi. (3) A combination of lung books and tracheae in the spiders. (4)