

complained of is as follows: "The student of science may fairly ask whether, when twelve doctorates are conferred in zoology and but three in Latin and Greek combined, this means that there is less demand for teachers of the classics or that a less exacting preparation is required." It seems difficult to interpret this in any other way than to the effect that if fewer doctorates are conferred in the classics than in the sciences then it follows that there are fewer adequately prepared teachers of the classics than of the sciences. We should not like to publish an unsigned note disparaging the classics—least of all the admirable instruction given in the classical languages at the University of Chicago—but it is proper for a scientific journal to call attention to the fact that more well-trained teachers and students have been sent out from the University of Chicago in zoology than in any other subject.—ED. SCIENCE.]

INFORMATION DESIRED.

I shall be greatly indebted to any reader of SCIENCE who will inform me of the whereabouts of a partial cranium of *Bison antiquus*, figured in the *Kansas University Quarterly* for July, 1897, and stated to be 'in a high school in Illinois.'

F. A. LUCAS.

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SCIENTIFIC LITERATURE.

A Text-Book of General Lichenology, with descriptions and figures of the genera occurring in the northeastern United States. By ALBERT SCHNEIDER, M.S., M.D., Fellow in Botany, Columbia University, 1894–1896. Binghamton, N. Y., Willard N. Clute & Company. 1897. 8vo. Pp. xvii+230. Pl. 76.

It is now several months since this important work first appeared, and doubtless many American botanists are already familiar with its contents. The author intended it primarily as a text-book for the use of students in colleges and universities, and it is not too much to say that, with all its faults, it is the only

modern work of its kind in the English language. The first chapter is devoted to the history of lichenology, in which seven periods are recognized, viz.: I. Theophrastus (circa 300 B. C.) to Tournefort (A. D. 1694). II. Tournefort to Micheli (1729). III. Micheli to Weber (1779). IV. Weber to Wallroth and Meyer (1825). V. Wallroth and Meyer to Schwendener (1868). VI. Schwendener to Reinke (1894). VII. Reinke to the close of 1896. This historical summary will be of interest to students, especially those who do not have access to the older works, which are conveniently cited in numerous footnotes. In this historical treatment the author has quite needlessly separated the last three years, a procedure due to his adherence to Reinke's somewhat confusing views as to the nature of lichens.

The second chapter deals with the subject of Symbiosis, including (a) antagonistic and (b) mutualistic symbiosis, the latter only, according to our author, occurring in lichens. This view, again, is inspired by Reinke.

The third, fourth and fifth chapters are devoted to the structure, growth and reproduction of lichens. To our mind this is the best part of the book, and the student who goes over these chapters carefully, while studying the plants themselves in the laboratory, will obtain a very good idea of the subject they treat, especially if, at the same time, he makes use of the text and plates of Part II., dealing with classification and special morphology. Regarding the latter it may be said that the text is far better than the plates for the purpose for which the book was prepared. The figures are almost entirely diagrammatic, in spite of the statement on page 110 that they were 'made from hand sections mounted in water (C. ocular, 1-5 objective, and camera lucida).' The student who is led to suppose that he may obtain sections like these will find himself sadly mistaken after making the attempt. As diagrams these figures will be helpful, but they should not be placed before the student as camera lucida drawings of actual sections. The text of this portion of the book possesses the merit of clear and direct statement, which is more than can be said of lichen litera-