by the radiant heat of the sun. For their best development there must be a prolonged period with the temperature below freezing, low humidity and strong sunshine, together with an abundance of clear snow with surface irregularities. As these conditions are found as a rule only at high altitudes, the nieves penitentes are rare at or near sea level. The direction and angle of inclination of the pinnacles is a function of latitude. North of the equator they point south, south of the equator they point north, while on the equator they are vertical.

Their unusual size was due in part to the fact that they were formed in March. On March 21 Boston receives 1.3 times as much heat from the sun as it does on December 21. Assuming the necessary temperature conditions, low humidity and sunshine, it would take approximately 1.3 times as long to form nieves of any given size in December as in March. Although insolation would be still stronger in April, it is almost impossible to have snow and freezing conditions for more than a few days at this time. Hence large nieves are not to be expected in Boston in April.

It was estimated from the number and size of the pinnacles that as much as ¼ of this snow-fall wasted away by evaporation. If this condition was general over Massachusetts and New England, the loss of melt water due to this evaporation must have been considerable.

ROBERT L. NICHOLS

TUFTS COLLEGE

LANGUAGE DIFFICULTY

AMERICAN scientists, linguistically provincial, often have an apprehension about going to Europe to confer or conduct research in the scientific laboratories because of the "language difficulty." During the past year I had the occasion to converse with the directors (or persons in charge) of 66 biological field stations in 16 European countries (including Russia). In my experience, two thirds of the scientists interviewed spoke understandable English (universally, in Denmark, Sweden and the Netherlands), and of those who did not speak English, 80 per cent. spoke French, and the others German. There are good assurances, therefore, that if an American scientist does go to Europe on business, he can make himself understood scientifically, although there is no evidence that the percentage of political understanding is that high.

HOMER A. JACK

CORNELL UNIVERSITY

BOOKS AND LITERATURE

BIOLOGY

General Biology. A Textbook for College Students. By PERRY D. STRAUSBAUGH and BERNAL R. WEIMER. xi + 555 pp. 284 figs., including 13 colored plates. John Wiley and Sons, Inc., New York. 1938. $3.75.

To the writing of text-books on general biology there seems to be no end. The urge undoubtedly reflects the growing trend of formal instruction away from general botany and zoology toward general biology. This trend has been marked during the past two decades in America. It is noted in the high schools as well as in the colleges and universities. In fact, it probably began in the secondary schools. Such a trend is a phase of the larger movement toward general science courses. And the latter is a phase of the still larger movement toward the orientation course, the general college and what have you. Many teachers of science feel that all these movements tend to debase science. They tend to force higher educational interests to bow to more and more secondary and even elementary objectives. Maybe so, maybe not. At any rate the general biology course is with us. It will be with us for a long time. We must accept the challenge and set out to solve the associated problems. These are about the first major problems related to biological teaching that we have faced for a third of a century. Will the older generation of botanists and zoologists in our universities forget their prejudices and background, dig into a new batch of meristem and do this important job that society demands of the schools? That is the real challenge.

Literally dozens of authors have given us new books in the hope that they would supply an important aid in the above evolutionary movement. The most of such books are poor. Some are downright bad, or almost silly. Some are so extremely dilute as to challenge only the "man on the street." Others are so complex and technical as to stump a Nobel prize winner in biology. Some are so broad and general as to embrace the universe. Others are so restricted and specialized as to be worthless for this job. Many such books are of value merely to throw light upon the narrow point of view and limited experience of the authors. Others only emphasize the author's specialties.

It seems to us that the new book by Strausbaugh and Weimer more nearly represents the proper point of view and more nearly furnishes the material for a good course in introductory biology for colleges and universities than any book we have seen. The book is fairly well balanced. That alone is a real accomplishment. The pedagogy and style are fitted to the undergraduate student. Fundamental phenomena and conceptions are not completely buried in technicalities.