Saturday morning thirty-six cars, containing over one hundred geologists, drove northward to Pownal, Vermont. There they turned northwestward on Route 112 along the north side of the Hoosac River. Somewhat over six miles from Williamstown they found outcrops of the albitic Rowe schist similar to that seen on the west summit of Hoosac Mountain. Less than a mile beyond there was a limestone quarry in which the structure of the region was sensationally epitomized. The Ordovician limestone (Stockbridge) and the Walloomsac slate were tangled in folds overturned to the west and thrust up through a window in the Rowe schist of the traveled cover which usually lies above them within the Taconic area. But here the normal Eastern Sequence is thrust over the green schist which had previously been thrust over them. Was it any wonder that the uninitiated were unable to follow the complexities of that tangle?

Continuing, the party crossed the border into New York State and turned southward at Hoosick towards Petersburg. This is the region of the Lower Cambrian purple and green slates of Vermont and New York. They include the Bomozeen grit and the Mettawee slate of the New York State Survey, within which Lower Cambrian fossils have been found. Mr. Prindle includes these in his Taconic sequence with the Rowe schist and believes they were the advance guard of the overthrust blocks from the east, which were not so highly metamorphosed as the Rowe and Hoosac schists.

Ascending the beautifully graded road leading eastward from Petersburg (Route 16) an extended stop was made at the summit of Petersburg Gap. The gorgeous autumn colors stood out in their glory as the eye traveled westward toward the Rensselaer Plateau. This view offered a pretext for the discussion of the age of the Rennselaer grit. Dr. Rudolf Ruedemann suggested that it was the continuation of the Upper Devonian rocks of the Catskills across to the eastern side of the Hudson River. Mr. Prindle was inclined to place them in the Cambrian period as a part of his Taconic sequence, since they were tucked in under the Rowe schist apparently above the plane of the Taconic overthrusts, east of Moon Hill, Petersburg, New York. With this opinion Mrs. Knopf was inclined to agree, although she admitted the evidence was not conclusive.

The party then descended to the east to Taconic Park at the foot of the Taconic Trail. Here members of the Williams faculty, ably directed by Mr. and Mrs. Cleland and Mr. and Mrs. Perry, served a delightful steak roast. Strengthened by this meat the automobilists took courage and drove to the top of Mount Greylock (3,508 feet). The clear atmosphere continued into the afternoon and most of New England and New York lay at our feet—Monadnock, Wachusetts and the trap ridges of the Connecticut Valley to the east, the White and the Green Mountains to the northeast and north, the Adirondacks to the northwest and the Catskills to the west and southwest.

Ending with such a climax, the twenty-ninth excursion must be considered one of the most successful of the New England geologic excursions. Guests were present from many parts of New York State and Pennsylvania, and practically all the New England colleges were represented, as well as several high schools and normal schools.

DR. W. G. FOYE,
Secretary

SCIENTIFIC BOOKS

INFECTION OF INSECTS

L'infection chez les insectes. By A. PAILLOT. Imprimerie de Trevoux, G. Patissier, 1933, 535 pp., 279 figures.

LEADING investigators are often too busy advancing our knowledge to describe their chosen field systematically in book form. But there are exceptions, and Paillot is one. In his introduction he mentions the ambition of Pasteur to employ microorganisms in the destruction of harmful insects. The reason why this has not been realized is, in his opinion, that investigators have been inadequately prepared through lack of knowledge of the insects themselves. Success can only be expected when the infections of insects are studied intensively in a broad way, not merely in respect to their immediate influence on man by the production of disease or by economic losses. In other words, host-parasitic relations among the insects must be emphasized, for it is in this way alone that a true conception of the problem involved can be secured. The presentation is divided into seven parts: Protozoan, mycotic, virus and bacterial infections, bacterial immunity, symbiosis and economic considerations. Since the insects are small and the infective agents of microscopic or ultramicroscopic dimensions, methods of cytologic study are stressed. Often the only evidence of infection is the presence of intracellular bodies so tiny that the determination of their organismal nature is no mean task. In other cases the presence of infection must be gauged by some peculiar deviation in the normal behavior of the afflicted cells. Paillot, by his close association with the Lyon school of cytologists, headed by Policard, is especially well able to handle this situation. His description of the virus diseases of insects is particularly good. It

serves to extend our horizon in the biologic significance of viruses at a time when this is sorely needed. His account of symbiotic organisms is also timely. If their presence had always been recognized, some workers might have been spared waste of time and disillusionment in the search for organisms pathogenic for man and domestic animals. There is a very useful bibliography, a brief analysis of subjects and author and subject indices. The illustrations are excellent. The infections of insects are treated more thoroughly and more critically than has ever been done before. The volume should be of great service to biologists, pathologists, entomologists, public health officials and to all those who realize the economical and medical importance of insects in human welfare.

E. V. COWDRY

WASHINGTON UNIVERSITY
SCHOOL OF MEDICINE

FORAMINIFERA

Foraminifera, Their Classification and Economic Use, second edition, and *An Illustrated Key to the Genera of Foraminifera.* By JOSEPH A. CUSHMAN, Cushman Laboratory for Foraminiferal Research, Special Publication Nos. 4 and 5. Sharon, Massachusetts, 1933.

JOSEPH A. CUSHMAN, in 1928, issued, under the title "Foraminifera, Their Classification and Economic Use," the most comprehensive review of the Foraminifera published up to that time. In August of 1933 appeared a second edition of this work, revised and greatly enlarged, and accompanied by "An Illustrated Key to the Genera of the Foraminifera." In this new edition, many additional plates show the evolution of the genera and families, and several introductory plates illustrate the more common structures for the especial use of students beginning work on these forms. Also, many generic diagnoses new to the first edition have been added. The chapters on the two specialized fields of Fusulinidae and Orbitoididae were written by Professor Carl O. Dunbar, Yale University, and Professor T. Wayland Vaughan, respectively, specialists in these two fields.

The author has visited many of the foreign museums and examined their types, with the result that the types or topotypes of at least 95 per cent. of the known genera have come directly under his observation; so that the work is based upon actual material rather than upon the often inadequate original descriptions and figures. It is also apparent that this classification of the Foraminifera is based not alone upon the personal ideas formed during the author's thirty years of intensive study, but cognizance is taken of the best thought developed by the many workers since Brady's classification in 1884.

The extensive bibliography arranged by subjects which brings the volume to a conclusion will be an immense help to all students of these forms, as will also the ten introductory chapters upon the living animal, methods of study, distribution and other general topics.

In appearance these volumes leave nothing to be desired. Of a size convenient for handling, the excellent paper, type and unusually fine illustrations reflect great credit upon the Cushman Laboratory. The plates in the "Key" are particularly attractive and set forth a new feature, namely, the carrying out of the figures nearly to the edge of the plates, thereby permitting the placing of more figures on each plate and thus rendering possible direct reference from plate to description. The black background also brings out the details of the Foraminifera in a way that no other method would accomplish. Lastly, the fact that the plates can be used without constant turning, while one studies the various genera in the larger book, is a convenience that will appeal to every student. Students of the Foraminifera are to be congratulated that such a useful volume is available for their use.

R. S. BASSLER

SCIENTIFIC APPARATUS AND LABORATORY METHODS

RECOVERY OF CARBON TETRACHLORIDE[1]

IN the course of certain investigations in the laboratory of gastro-enterology at the Evans Memorial, extraction of fatty acids from previously treated bile is a part of a routine procedure.

Recovery of the carbon tetrachloride became desirable from the economic standpoint. In the course of the recovery the volatilization of the carbon tetrachloride resulted in distress among the laboratory workers. They developed nausea and dizziness. With the possibility that continued exposure to the fumes might result in chronic poisoning, the recovery of the carbon tetrachloride was studied whereby the fumes would not escape into the room and also be almost if not completely recovered.

The following method has been adopted and the apparatus for same is illustrated in Fig. 1. The carbon tetrachloride extract is placed in the Erlenmeyer flask (A). The flask is warmed by means of an electric heater. As the carbon tetrachloride is

[1] From the Department of Pharmacology, Boston University School of Medicine, the Evans Memorial and the Massachusetts Memorial Hospitals, Boston.