SPECIAL CORRESPONDENCE

THE TWENTY-NINTH ANNUAL NEW ENGLAND INTERCOLLEGIATE GEOLOGICAL EXCURSION

THE annual field days of the New England geologists for 1933 were on the 13th and 14th of October, and the excursions were made in the vicinity of Williamstown, Massachusetts, under the leadership of Louis M. Prindle and Eleanora F. Knopf, of the U. S. Geological Survey, and Herdman F. Cleland and Elwyn L. Perry, of Williams College. The group assembled at Mohawk Park, two miles west of Charlemont on the Mohawk Trail, at 2:00 P. M. Friday afternoon and proceeded westward toward Williamstown.

The main purpose of the study was to comprehend the difficult structures involved in the Green Mountains and the Taconic Range, as interpreted by Mr. Prindle and Mrs. Knopf in a recent paper on the "Geology of the Taconic Quadrangle."[1] The varved clays and terraces of Glacial Lake Bascom lying in the valleys, west of the Hoosac Range, were also studied, as well as the erosion surfaces truncating the summits of the many surrounding hills.

The valley of Cold River was followed toward Hoosac Mountain and the first outcrops encountered were ledges of the Savoy schist, a sericite-chlorite schist, overlying the Rowe and Hoosac schists. All these schists were placed in the Ordovician period by B. K. Emerson,[2] but the more recent interpretation suggests that they are Cambrian in age.

The weather was particularly favorable during both days of the excursion and distant views of the mountains of New England were exceptionally clear. The first of these views was obtained from the Lower Tower on the eastern slope of Hoosac Mountain. Monadnock Mountain in New Hampshire and Wachusett Mountain in Massachusetts were both visible and at least two Tertiary erosion surfaces could be distinguished. The rock outcropping near the tower was the Rowe schist, a pale-green, chlorite schist which overlies the Hoosac schist and is distinguished from it by a finer grain and the absence of albite metacrysts. Since the beds dip eastward, the older Hoosac schist is exposed on the western summit of the Hoosac Range. At the Upper Tower on this western summit there is a considerable amount of quartz in the Hoosac schist, and the question concerning its origin was not satisfactorily answered. Some believed it was segregated from the surrounding schist, and others believed that it was intruded by later granitic magmas.

[1] *American Journal of Science*, v. 24, pp. 257–302, 1932.

[2] "Geology of Massachusetts and Rhode Island," Bull. 597, U. S. Geological Survey, pp. 40–42, 1916.

Approaching North Adams from the east the party turned northward to Hudson brook and visited an agricultural lime quarry in the Rutland dolomite. Here there was a natural bridge and an overturned fold exposed in the north wall of the quarry. Excessive crumpling of the thin beds forming the limbs of the fold caused them to thicken and to thin within the outcrop in a most astonishing manner.

At this point the party divided and one group visited the unconformity between the Cheshire quartzite and the Stamford granite gneiss of Precambrian age, north of the natural bridge locality. The other group drove to a brick yard on the road toward Williamstown, just west of North Adams, and studied the varved clays of Glacial Lake Bascom.

Friday evening an assembly was held at the Geological Museum of Williams College. Professor Cleland gave a brief résumé of the various stages in the geologic mapping of the Taconic area, beginning with Amos Eaton, a professor at Williams at the beginning of the nineteenth century. The guides each explained their particular localities, which were on the program for the excursion, and a large model of the vicinity of Williamstown was exhibited by Dr. Perry, which showed clearly the recent mapping by Mr. Prindle and Mrs. Knopf. It emphasized the point made by these geologists that the Rowe schist which forms most of the Taconic Range in this area had no homeland here, but was thrust into this region from some district far to the east. The normal Green Mountain series, or Eastern sequence, consists of the Precambrian schists and gneiss forming the core of the range overlain to the west by the basal Cheshire quartzite of Lower Cambrian age, the Rutland dolomite of Cambrian age and the Stockbridge limestone and Walloomsac slate of Ordovician date. A major thrust plane separates these rocks throughout the Taconic area from the entirely different series of Cambrian rocks (the Rowe schist) overlying them.

To the west and north the normal sequence of rocks overlying the Precambrian Adirondack area is well known. It includes the basal Potsdam sandstone of Upper Cambrian age, the Ordovician limestones and shales of the Canadian and Mohawkian series, including such well-known formations as the Chazy, Trenton and Utica. Within these formations there is no possibility of inserting the thick Rowe formation. Hence the evidence is quite clear that the bulk of the sediments forming Greylock Mountain and the many ridges of the Taconic system have been thrust into their present position from some area to the east and have undergone progressive and retrogressive metamorphism in the process, as well as later hydrothermal alteration.

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