study of the Pennsylvanian period the selected sections described by the students were assembled and copied on the blackboard, and in so far as possible these sections were correlated. From these correlated sections, covering an area of about three square miles, a generalized cross section of the rocks of the New Concord region was made. This work was done largely by the students; the instructor, acting as a secretary, did the actual writing on the board.

From the information thus collected the class then reconstructed the geologic history of the region immediately surrounding New Concord. This offered an opportunity for the students to apply the scientific method in their study of the region. With the history of our own area in mind we then turned to the textbook for a more complete picture of the Pennsylvanian as a whole, keeping in mind the idea of tying up the region we had actually studied with the Pennsylvanian system as it is found in North America and tying the geologic history of the New Concord region as we had reconstructed it from our field study of the region with the history of the Pennsylvanian of North America.

This plan of procedure is not without its weaknesses, most serious of which is the fact that before the student starts out on his own to observe the rocks and record his observations he needs more field experience than we have given him. We plan to overcome this difficulty by beginning to observe and describe the rocks during the first semester in addition to the observation of the physical phenomena which heretofore has constituted most of our field work during the first semester. It is quite possible, too, that we will be able to find time for more than one conducted field trip early in the second semester field season before sending the student into the field on his own.

On the other hand, this procedure has several desirable features. The student develops a realistic idea of the Pennsylvanian and, indeed, the whole of the geologic column and of geologic history by actually studying, recording and interpreting his observations of a part of the rocks of the Pennsylvanian system. He arrives at a better appreciation of the work of the geologist through his own experience in working as the geologist works. His interest in geology is increased through active participation. He has had the experience of observing and recording evidence and in drawing inferences from the evidence. Thus he has actually had a concrete experience with the scientific method.

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ENDOGONE AS ANIMAL FOOD

ALTHOUGH the genus Endogone has received comprehensive taxonomic treatment little is recorded of the rôle which species of these hypogeous fungi may play in the economy of nature. It is to be expected that the small, truffle-like fructifications of *Endogone* might be eaten by some animals, but accounts of their use as food seem strangely lacking. It seems in order, therefore, to place on record certain instances where such materials have been found in stomach contents of shrews and mice.

Dr. W. J. Hamilton in August, 1938, sent to the U. S. Biological Survey specimens from Ithaca, N. Y., with the observation that "the small black objects . . . were often, but not invariably associated with earthworms in stomach contents" of *Blorina brevicauda*. The "small black objects" referred to the writer for identification proved to be zygospores with the abundant hyphal network characteristic of *E. macrospora* Tul. It was suggested that the black zygospores which often measured ¼ mm (250 μ) in diameter might have been ingested first by the earthworms and secondarily by the shrew. On consultation with Mr. H. C. Gauss, of Washington, who has had a vast experience in cultivating earthworms, the information was elicited that earthworms would have difficulty in swallowing refractory objects of that diameter and that he doubted the ability of any North American earthworms to ingest such material. It is, of course, likely that the shrew had developed a taste for this fungus as a condiment with the pièce de résistance.

Dr. Hamilton in correspondence, furthermore, reported the finding of these black bodies in stomach contents of two other shrews (*Sorex fumeus* and *S. cinereus*) as well as of three woodland mice (*Peromyscus leucopus novoboracensis, Clethrionomys gaperi* and *Synaptomys cooperi*) and pointed out that these findings in the small rodents which very seldom feed on earthworms supported the assumption that the shrews and mice may well have eaten the *Endogone* directly.

In this connection it is pertinent to note an older record of such fungi in stomach contents of a mouse (*Synaptomys cooperi gossi*) as attested by preserved microscopic preparations on file in the Mycological Collections of the Bureau of Plant Industry. These slides show zygospores of a distinctly different species of *Endogone* as yet undetermined specifically. The specimens studied and recognized as *Endogone* in 1926 by Miss V. K. Charles was collected by T. E. White in Douglas County, Kansas, in October, 1925, and examined first by C. C. Sperry, of the Biological Survey, who found the total stomach contents to be *Endogone* 5 per cent. and finely chewed vegetation, probably grass, 95 per cent. This latter information has been most kindly furnished by Dr. Clarence Cottam, of the Survey. In this case it is also notable that there is no reference to any accompanying earthworms.

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