## GEOLOGY AND GEOGRAPHY

Chairman: CHARLES F. DEISS, Indiana University

Dr. Floy Hurlbut, Ball State Teachers College was elected chairman of the section for 1948.

### ABSTRACTS

**An unusual occurrence of barite.** S. M. MCCLURE, Eureka College, Eureka, Illinois.—Barite, as a compact crystalline filling in cracks and cavities of a septarium-like nodule or concretion, has been noted in the weathered Pennsylvanian shales near Peoria, Illinois. None of the nodules containing barite has been found in place but appear to have originated from nearby outcrops.

**Indiana thunderstorms.** STEPHEN S. VISHER, Indiana University.—The importance of thunderstorms in the overall picture of Indiana weather was discussed. Despite the excessively large losses from hail, lightening, and wind, the benefits which accrue from the acompanying rain far exceed the losses. Without the rainfall from summer thunderstorms Indiana would necessarily become a third rate agricultural state.

**Standby power for line-operated recording equipment.** RONALD L. IVES, Indiana University.—Simple and relatively inexpensive equipment for operating drive clocks and similar devices during failures of line power, and for switching this equipment in and out of operation automatically, is here outlined.

**The lumbering industry of Morgan County, Indiana.** JAMES R. ANDERSON, University of Maryland.—The location of Morgan County on the margin of the more heavily forested part of Indiana and near good transportation facilities and markets is relatively favorable to the continuance of a profitable lumbering industry. A report on the decline of the lumbering industry over most of the state was presented. The presence in parts of Morgan County of sizable areas ill adapted to farming but suitable to forest growth, makes it likely that lumbering will continue to be relatively important.

**Soil conservation in Indiana.** G. DAVID KOCH, Indiana State Teachers College.—The first soil conservation district in Indiana was organized in Vanderburgh County in February, 1940. On July 1, 1947 there was a total of 36 soil conservation districts in the state. These districts include a total of 7,793,985 acres or about one-third of the state. The author presented tables showing the increase of the number of districts by years, the location of districts, the rank of Indiana in relation to soil conservation in the neighboring states, and the types of soil conservation practices. Data were secured from the U. S. Soil Conservation Service.

**Industrial limestones of northern Indiana.** GEORGE E. ERICKSON, Indiana University.—The examination of the industrial limestones of northern Indiana was undertaken by the author in the summer of 1947 for the Division of Geology of the Indiana Department of Conservation. The purpose was to obtain complete information as to distribution, availability, chemical composition, and reserves. Rock is mined from nine geologic formations. The locations of the quarries and the uses of stone from various formations were discussed.

**The changing relations of rivers to cities.** OTIS P. STARKEY, Indiana University.—Most cities were founded along rivers which contributed to their early prosperity. Later canals were constructed to facilitate traffic. Many streams were used to float logs and to furnish power for numerous small mills. Forest exhaustion, floods, water pollution, and the rise of competing facilities have turned these once valuable rivers into traffic obstacles and potential dangers.

**Imbricate structures in the Northern Rocky Mountains.** CHARLES DEISS, Indiana University.—The sawtooth Range in northwestern Montana consists of a series of blocks of Middle Cambrian to Cretaceous rocks bounded longitudinally by closely spaced high angle thrust faults. In the eastern part of the Sawtooth Range the strata were broken into imbricated slices which rode eastward on a low angle thrust sole. In the central part of the range deformation was more intense and resulted in closer spaced, high-angle thrusts and narrower slices composed largely of Devonian and Mississippian limestones which locally were dragged into recumbent folds on the upturned sides of the thrust slices. Deformation was greatest in the western part of the range where folded low-angle overthrusts, open and closed folds, and a few high-angle thrusts were developed.

The great amount of movement and the shallowness of the affected zone may indicate that the east foreland of the geosyncline moved west and was the source of the stress. If this conclusion is correct, the faults are underthrusts instead of overthrusts as they have been described by all workers in the northern Rocky Mountains.

**Advent of the lower Puerco fauna, San Juan Basin, New Mexico.** THOMAS E. REYNOLDS, Valparaiso University.—The lower Puerco sediments contain the earliest record of fossil mammals to appear in such an advanced stage of differentiation on the North American continent. The possibility that they were migrants from some upland fauna was discussed. Their origin being some Central Asiatic focal point, arriving by land bridge from the North. Further evidence for such an origin was deduced from several type specimens (*Puercolestes simpsoni* and *Escatepos campi*) collected by the author in the bad-lands of New Mexico.