

GEOLOGY AND GEOGRAPHY

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WILTON N. MELHORN, Purdue University, was elected chairman for 1969.

ABSTRACTS

Gypsum Resources of the Midwestern United States. JOHN H. CLEVELAND and CAROL F. TIEFEL, Indiana State University.—Gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) as an economic mineral is primarily utilized in the construction industry for prefabricated plasterboard. Although the value of raw gypsum is less than \$5.00 per ton, its production is economically significant because the fabricated products are normally produced at plants adjacent to the mine and constitute a ten-fold increase in value. Commercial gypsum deposits must have large reserves, minable thickness, moderate depth, and a location near major population centers. Present regional production is confined to six districts in four states (Indiana, Iowa, Michigan, and Ohio) and is obtained from rocks of four different geologic periods (Silurian, Devonian, Mississippian, and Permian?). All of the region's known commercial gypsum deposits are sedimentary in origin and genetically related to evaporite basins, but are the final product of recent rehydration of anhydrite at shallow depths. Contrary to prevailing mining industry trends, quarry operations are being replaced by underground mines with future development likely in the form of multipurpose underground mines in close proximity to major populations. Recent published investigations of newly recognized gypsum reserves at LaPorte, Indiana and Albia, Iowa suggest they may fit this pattern.

A Significant Exposure of Pleistocene Drift in South-Central Indiana.¹ ALLAN F. SCHNEIDER, Indiana Geological Survey.—Unconsolidated deposits of the Pleistocene Series are exposed in a railroad cut at the glacial boundary in northwestern Brown County. The section is significant because it exhibits a more complete sequence of Pleistocene sediments than other exposures in the area and because it corroborates W. J. Wayne's conclusion that in northwestern Brown County glacier ice of the Kansan Age advanced somewhat farther than ice of the Illinoian Age.

Siltstone of the Borden Group (Mississippian System) at the base of the cut is overlain unconformably by $3\frac{1}{2}$ feet of unoxidized and oxidized till interpreted as Kansan in age. The till is overlain by about 30 feet of fine gravel and pebbly sand, much of which is strongly oxidized. In its upper part this deposit is altered to a sticky reddish-brown sandy material that clearly represents a significant period of weathering. The gravel and sand is regarded as Illinoian outwash, and the weathering profile is interpreted as having formed during the interglacial Sangamonian Age.

The section is capped by about 6 feet of silt, which is probably of eolian rather than lacustrine origin. In its lower part the loess is

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clayey and similar in color to the underlying weathered outwash but grades upward into more typical noncalcareous loess. The reddish-brown silt is tentatively considered to be Illinoian and Sangamonian and the upper part Wisconsinan in age.

Unconsolidated Deposits on the Mitchell Plain of Indiana.¹ RICHARD L. POWELL, Indiana Geological Survey.—The Mitchell Plain of south-central Indiana is a limestone plateau partly mantled with unconsolidated materials that consist mostly of loess, gravels, and clays that attain 60 feet in thickness. Most of the material is clay in layers of red, brown, or olive and yellow. In places the clay overlies coarser sediments. A persistent bed of cherty gravel, which in places contains a few allochthonous geode fragments and lenses of sandstone pebbles, overlies the clays where they have not been eroded. The cherty gravel bed lies at an altitude similar to that of some Lafayette gravel deposits along entrenched meandering drainage routes. The present entrenched drainage pattern evolved from drainage on a westward-sloping erosion and deposition surface that had developed on the Mitchell Plain and the Norman Upland by the time that the cherty gravel bed was deposited. Entrenchment of the major streams during late Tertiary or early Pleistocene time and during mid-Pleistocene time accelerated cavern and sinkhole development on the Mitchell Plain and was accompanied by erosion of the clays and gravels and partial redeposition in sinkholes and caverns. Loess of late Pleistocene age blanketed the region prior to recent erosion.

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