

GUIDE TO
TWENTY-THIRD ANNUAL FIELD CONFERENCE
OF THE
SECTION OF GEOLOGY
OF THE
OHIO ACADEMY OF SCIENCE
MAY 8 and 9, 1948

A STUDY OF
THE GEOLOGY OF LUCAS COUNTY
AND
THE LIME-DOLOMITE BELT

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CONFERENCE GUIDE

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Holland Quarry

From Silica the route will be southward along the line of the monocline to the Holland quarry (see figure 1). Figure 3 on page 8 is a geologic map of the area around the Holland quarry. Here the Tymochtee, Put-in-Bay, Raisin River, Sylvania, and Amherstburg-Lucas formations will be studied. The rock section exposed at the Holland quarry is recorded on page 10. The general features of the Lucas County monocline will be observed at both Silica and Holland.

Lunch. The party will probably lunch at Maumee.

Waterville Quarry

During the afternoon the party will visit the Waterville quarry (see figure 1) and the nearby Maumee River valley where the best exposures of the Tymochtee formation will be seen. The rock section exposed at the Waterville quarry is recorded on page 11. Here also is the only exposure of the Wood County fault or fault zone. The characteristics of this fault zone and its relations to the Lucas County monocline will be considered. Also several exposures showing interesting sedimentation and structural features in the Tymochtee formations along the Maumee River rapids will be visited.

Saturday night. The party will return to Toledo.

SUNDAY, MAY 9

Lime-dolomite belt

The trip planned for Sunday, May 9, will lead southward along the great Niagaran lime-dolomite belt through western Ottawa, Sandusky and Seneca counties. This is one of the most important areas in the United States for the manufacture of lime and dolomite products.

Along this route are a number of large quarries exposing the Guelph unit of the Niagaran and the Greenfield unit of the Bass Island. Stops will be made at quarries at Clay Center, Woodville, and Maplegrove to study the stratigraphy, faunas, minerals, and the stratigraphical relations of the two rock units.

At Clay Center good crystals of celestite, calcite, and fluorite will be found. The Guelph fauna is well developed at Clay Center and at Woodville where the large pelecypod Megalomus canadensis is abundant.

The end. The trip will end in the early afternoon at Maplegrove.

Tymochtee shaly dolomite

The Tymochtee is drab, thin-bedded, laminated, argillaceous or shaly dolomite with much carbonaceous material as partings. No complete exposure is known but the thickness is more than 150 feet. It probably grades into the Greenfield without definite contact. The fauna includes only 3 species, and the specimens are few in number. They are small, depauperate Greenfield forms of Hindella and Leperditia.

Put-in Bay dolomite

The Put-in Bay is commonly a dark-drab, brecciated, rough-textured, massive dolomite but where not brecciated it is a bedded stone in layers 2 to 6 inches thick. The fauna includes about 10 species but fossils are rarely found. Eurypterus eriensis, Goniophora dubia, Leperditia alta, and Spirifer ohioensis are most characteristic.

Raisin River dolomite

The Raisin River is commonly blue-gray to drab, banded, argillaceous dolomite in beds 2 to 8 inches thick. Certain layers have a mottled, speckled or streaked color pattern. There are also, at places, thicker beds or massive, brecciated ledges. The fauna includes about 15 species but fossils are rare. Whitfieldella prosseri is diagnostic and Pterinea lanii and Spirorbis laxus are characteristic.

Sylvania sandstone

The Sylvania is the lowest unit of Devonian age and rests disconformably on the Raisin River. It is an even-grained quartz sandstone of well rounded grains, loosely connected. It grades upward through dolomitic sandstone and arenaceous dolomite into the overlying Amherstburg or Lucas dolomite. Fossils commonly exist in the transition beds in the upper part and have been found to the base of the sandstone. The fossils are of the age of the overlying dolomite. The Sylvania is interpreted as an eolian sand reworked by the oncoming Devonian sea and is not of the same age at all places.

The Amherstburg dolomite

The typical Amherstburg dolomite is not present in Lucas County but the fossils in the transition beds at the top of the Sylvania are of Amherstburg age. By the time the transition to dolomite was completed the Lucas fauna had arrived. In fact the fauna in the Sylvania at the south border of Lucas County is of Lucas age. The Devonian sea reached Lucas County in late Amherstburg and early Lucas time. The Amherstburg fauna in the transition beds includes about 30 species with such characteristic Devonian genera as Stropheodonta, Heliophrentis, Cylindroheliu, Ceratopora, Conocardium, Phacops, Proctus.

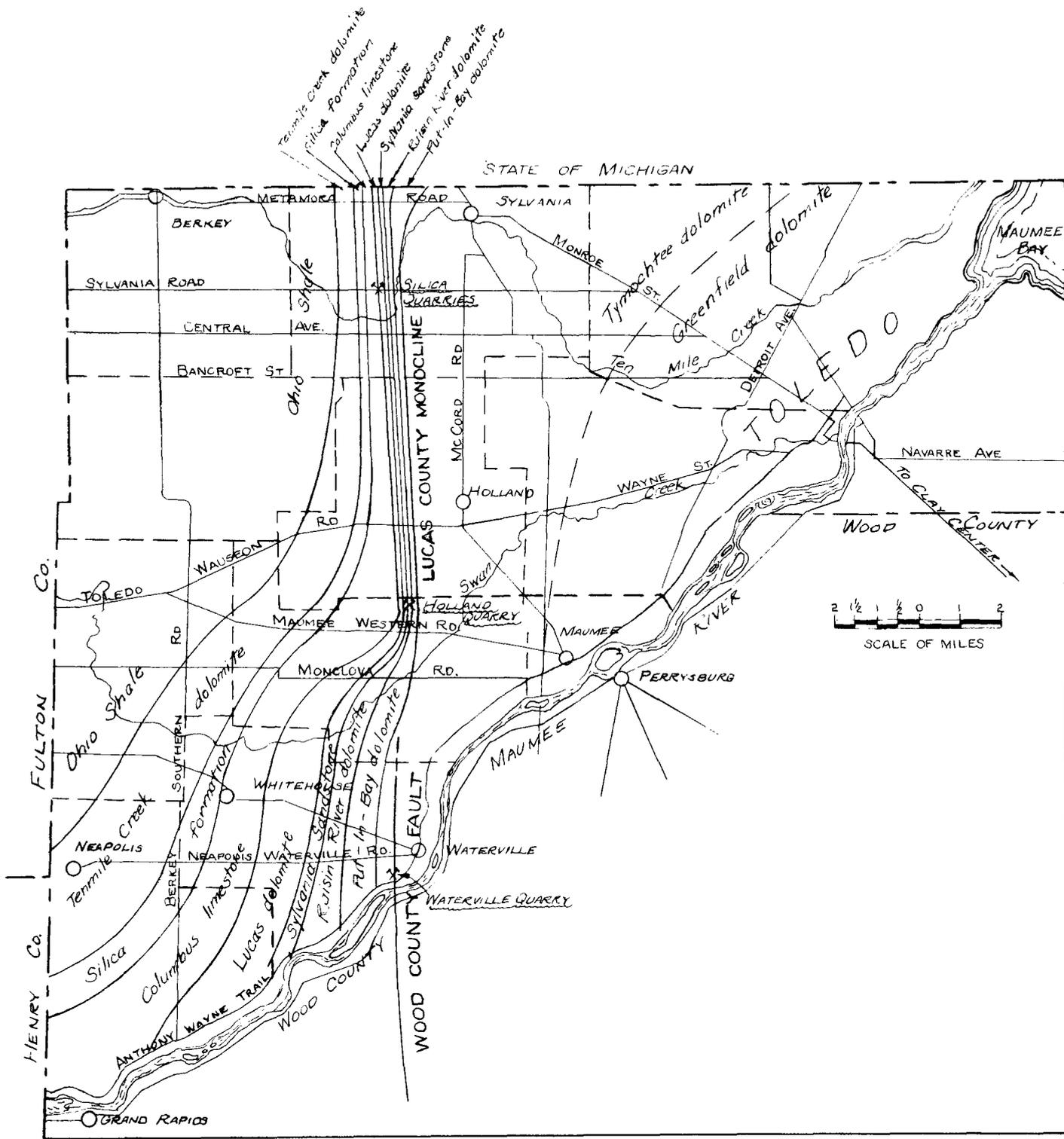


FIG. 1. MAP OF LUCAS COUNTY SHOWING THE AREAL EXTENT OF THE SEVERAL ROCK UNITS, THE LUCAS COUNTY MONOCLINE, THE WOOD COUNTY FAULT AND THE LOCATION OF THE THREE QUARRIES TO BE VISITED.

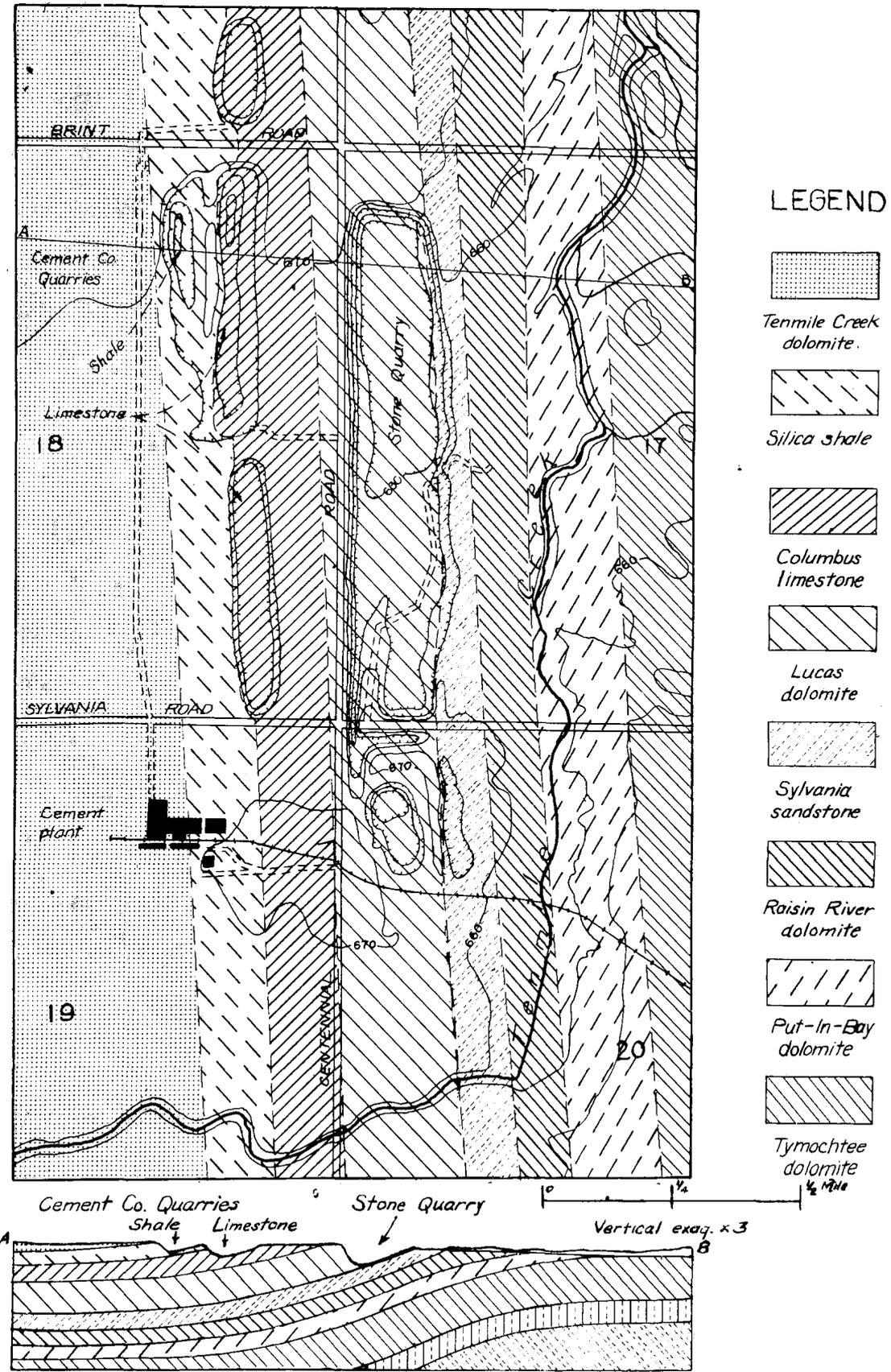


FIG. 2. GEOLOGIC MAP OF THE REGION AROUND SILICA AND A WEST-EAST CROSS-SECTION ALONG THE LINE A-B.

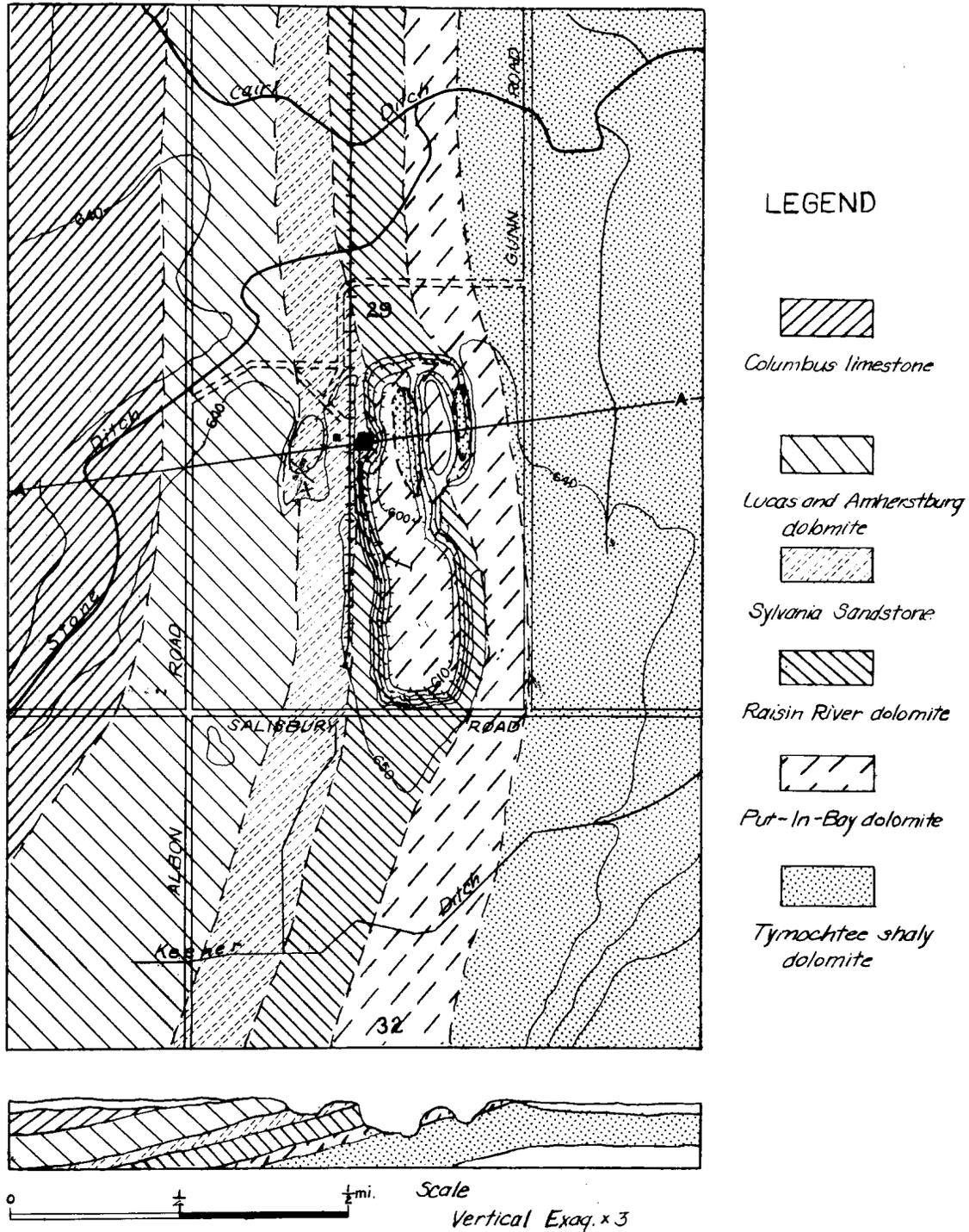


FIG. 3. GEOLOGIC MAP OF THE REGION AROUND THE HOLLAND QUARRY OF THE FRANCE STONE COMPANY AND A WEST-EAST CROSS-SECTION THROUGH THE QUARRY ALONG THE LINE A-A.

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