GEOLOGICAL SURVEY CIRCULAR 160

# DESCRIBED SECTIONS AND CORRELATION OF PALEOZOIC ROCKS AT GILBERT, CARVER, AND MARSHALL, ARKANSAS

By John C. Maher and Robert J. Lantz

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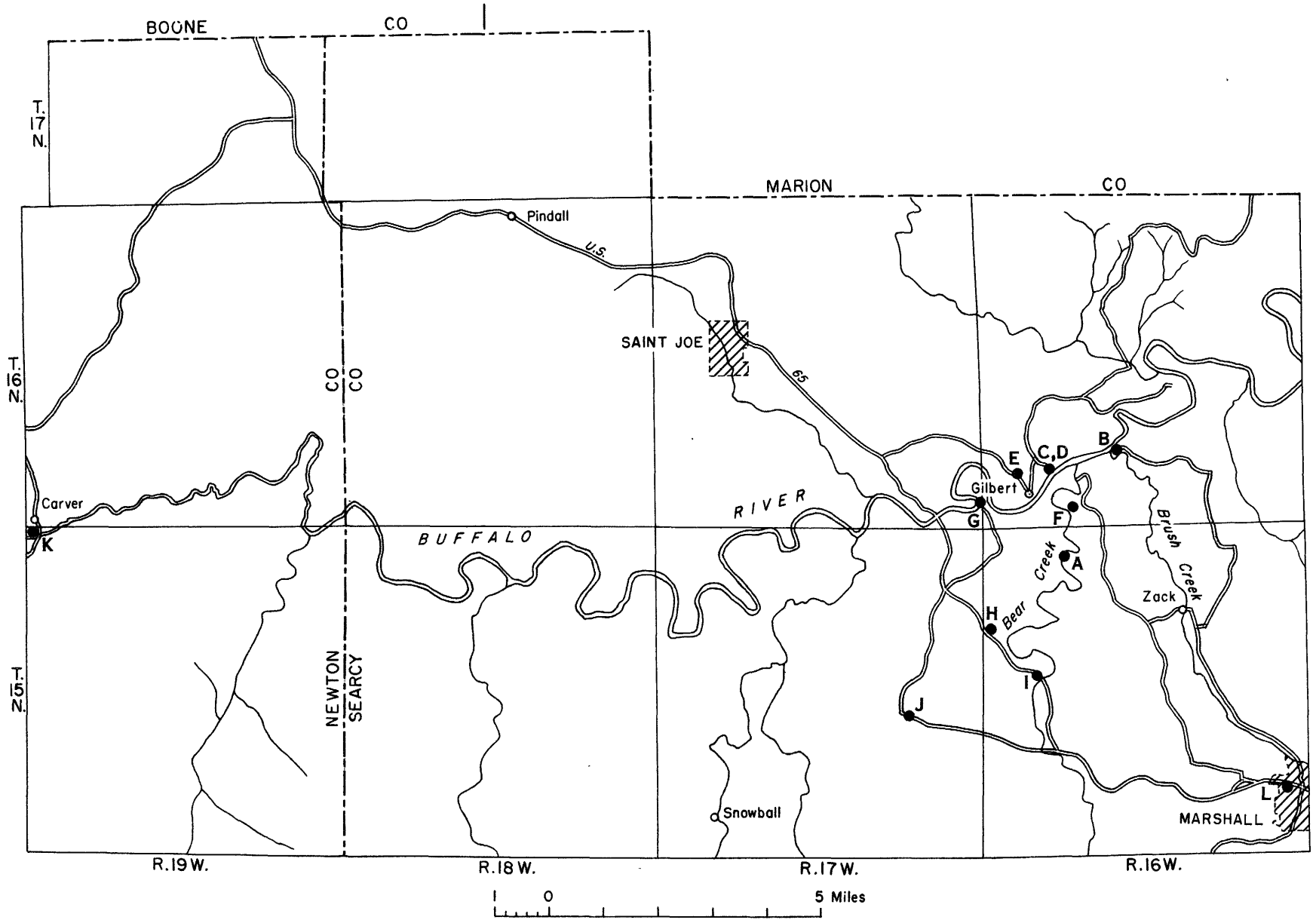


Figure 1.--Location of Paleozoic sections and Marshall water well, Newton and Searcy Counties, Ark.

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CONTENTS



## INTRODUCTION

In 1949 the U. S. Geological Survey, with the cooperation of the Division of Geology, Arkansas Resources and Development Commission, began stratigraphic investigations in northern Arkansas to aid in the search for oil and gas in the Arkansas valley. Surface mapping of the Paleozoic rocks on the north side of the Boston Mountains in Newton and Searcy Counties has been carried on concurrently with subsurface studies in the Arkansas valley since that time. The lower Paleozoic rocks have been mapped in detail, while the upper Paleozoic rocks have received only incidental study. The first report resulting from these investigations was Bulletin 18 of the Arkansas Division of Geology entitled, Geological formations penetrated by the Arkansas-Louisiana Gas Co. no. 1 Barton well on the Cecil anticline, Franklin County, Ark., by R. J. Lantz. A second report, a map of the Oil and Gas Investigations Series of the U. S. Geological Survey entitled, Geology of the Gilbert area, Searcy County, Ark., by J. C. Maher and R. J. Lantz, is now in press. This report presents a detailed surface map of lower Paleozoic rocks of a small area north of the Boston Mountains where numerous small structural features are present. Detailed descriptions of measured sections and the well cuttings of the Marshall water well presented in this circular may be useful in establishing subsurface correlations in the Arkansas valley.

Detailed descriptions of the surface sections in this report are based on samples taken where each formation is best exposed and, if possible, where each formation is best developed. Location of these sections is shown on figure 1. In some places, satisfactory samples could not be obtained where the formations are thickest, and, as a result, some sections do not represent the maximum thickness of the beds within the area. Vertical intervals were measured by hand level and tape, marked, and numbered on the outcrops. Correspondingly numbered channel samples were then taken of the interval. The outcrops were examined and described fully in the field with special emphasis on bedding and weathering. The samples were then crushed, washed, and examined in the office with the aid of a binocular microscope. The sections included in this report combine the microscopic and field descriptions.

In addition, the sample descriptions were plotted on a log strip on a scale of 1 in. equals 100 ft. Colors were used to indicate the general lithology; symbols to indicate details of the lithology; and detailed descriptions of the samples were lettered along the side of the log opposite the position of the corresponding sample. This permitted easy comparison with the sample log of the Marshall water well, which was drilled with cable tools.

The terminology used in the description of the samples is essentially that used by most midcontinent geologists making microscopic examinations of well samples. The terms given below are used in accordance with the Wentworth Grade Scale:

Silt, 0.0038 mm to 0.062 mm in diameter.
Very fine grained sandstone, 0.062 mm to 0.125 mm in diameter.
Fine-grained sandstone, 0.125 mm to 0.25 mm in diameter.
Medium-grained sandstone, 0.25 mm to 0.50 mm in diameter.
Coarse-grained sandstone, 0.50 mm to 1.00 mm in diameter.
Very coarse grained sandstone, 1.00 mm to 2.00 mm in diameter.

A limestone or dolomite which has rough texture is considered "crystalline" if crystal faces may be seen; if crystal faces are absent, it is termed "granular." A limestone or dolomite which has smooth texture is called "dense."

The bedding was described as follows:

Fissile, less than 1/16 in. thick.
Platy, 1/16 in. to 1/2 in. thick.
Very thin bedded, 1/2 in. to 2 in. thick.
Thin-bedded, 2 in. to 4 in. thick.
Medium-bedded, 4 in. to 12 in. thick.
Thick-bedded, 12 in. to 36 in. thick.
Massive, more than 36 in. thick.

The National Research Council rock-color chart was not used in the descriptions.

The investigations in northern Arkansas have been aided immensely by H. D. Miser of the U. S. Geological Survey, who has given generously of his time and experience in checking correlations and mapping. N. F. Williams, director, H. B. Foxhall, former director, and C. A. Renfroe of the Division of Geology, Arkansas Resources and Development Commission, extended many courtesies including the loan of the Marshall water-well samples and the use of a rock crusher Josiah Bridge, Mackenzie Gordon, Jr., Helen Duncan, W. H. Hass, and Jean M. Berdan of the U. S. Geological Survey identified the fossils collected during the field work. Mackenzie Gordon, Jr., spent several days examining Mississippian rocks in the area and suggested the correlations at Pate Mountain (section J in this report). Jackson King aided the writers in sampling the outcrops.

The classification and thickness of the Paleozoic rocks at Gilbert, Carver, and Marshall are given in the table below.

Classification and thickness of Paleozoic rocks at Gilbert, Carver, and Marshall, Ark.

| System | Formation | Thickness | | | | |
|---|---|---|---|---|---|---|
| | | Gilbert | | Carver | | Marshall |
| | | Ft | in. | Ft | in. | Ft |
| Carboniferous (Mississippian) | Batesville sandstone | 32 | 11 | --- | | ? |
| | Ruddell shale | 17 | 7 | --- | | ? |
| | Moorefield formation | 1 | 2 | --- | | ? |
| | Boone formation | 355± | 0 | ? | | 375 |
| | Chert-bearing units | 343± | 0 | ? | | 347 |
| | St. Joe limestone member | 9 | 3 | 13 | 2 | 26 |
| | Basal sandstone member | 2 | 6 | 1 | 7 | 2 |
| Silurian | Lafferty limestone | 30 | 1 | --- | | 56 |
| | St. Clair limestone | 34 | 5 | --- | | |
| | Brassfield limestone | 25 | 11 | --- | | --- |
| Ordovician | Cason shale | 13 | 0 | --- | | 14 |
| | Fernvale limestone | 25 | 1 | 6 | 11 | 12 |
| | Plattin limestone | 75 | 4 | 32 | 7 | 66 |
| | St. Peter sandstone | 32 | 4 | 75 | 7 | 44 |
| | Everton formation | --- | | --- | | 595(?) |
| | Powell(?) limestone | --- | | --- | | 215(?) |
| | Cotter(?) dolomite | --- | | --- | | 350(?) |
| | Jefferson City(?) dolomite | --- | | --- | | 350(?) |
| | Roubidoux(?) formation | --- | | --- | | 266(?) |
| | Gasconade(?) dolomite | --- | | --- | | ? |

## REPRESENTATIVE MEASURED SECTIONS OF PALEOZOIC ROCKS

### A. Everton formation

[Section measured at small dome on Bear Creek near center sec. 5, T. 15 N., R. 16 W., Searcy County, Ark.]

Plattin limestone.

Everton formation:

| | Ft | in. |
|---|---|---|
| Dolomite, massive, buff to gray-buff, finely granular, with pinpoint porosity; contains scattered rounded and frosted medium-sized sand grains | 5 | 6 |
| Covered interval | 4 | 10 |
| Dolomite, massive, buff to dark gray-buff, finely granular, with a few pockets of medium-crystalline calcite and scattered rounded and frosted medium-sized sand grains | 4 | 9 |
| Dolomite, massive, buff to dark gray-buff, finely granular to finely crystalline, with little intercrystal porosity; contains scattered rounded and frosted medium-sized sand grains | 9 | 10 |
| Covered interval | 10 | 8 |
| Dolomite, massive, buff, finely granular; contains scattered rounded and frosted medium-sized sand grains | 4 | 3 |
| Covered interval | 5 | 8 |
| Dolomite, thick-bedded, buff to gray-buff, finely granular, with veins of very coarsely crystalline calcite; contains scattered rounded and frosted medium-sized sand grains | 3 | 2 |
| Dolomite, massive, dark gray-buff, very finely granular, which contains scattered rounded and frosted medium-sized sand grains; and buff sandy dolomite in which the sand grains are medium to coarse, rounded, and frosted | 5 | 6 |
| Dolomite, massive, buff, sandy, in which the sand grains are medium to coarse, rounded, and frosted; and dark gray-buff finely granular dolomite, which contains veins of very coarsely crystalline calcite and scattered medium-sized rounded and frosted sand grains | 5 | 3 |
| | 59 | 5 |

Covered.

### B. St. Peter sandstone

[Section measured on north bank of Brush Creek near south end of railroad bridge across Buffalo River near center S½ sec. 28, T. 16 N., R. 16 W., Searcy County, Ark.]

Plattin limestone.

St. Peter sandstone:

| | Ft | in. |
|---|---|---|
| Sandstone, very thin to thin-bedded, gray to buff, dolomitic, with medium-sized rounded and frosted grains, and some scattered very coarse rounded and frosted grains | 1 | 0 |
| Covered interval | 4 | 9 |
| Sandstone, thick-bedded, gray, dolomitic, fine- to medium-grained; dark-gray, finely granular dolomite containing scattered fine rounded and frosted sand grains; and a few coarsely crystalline calcite veins | 1 | 11 |
| Sandstone, thick-bedded, dark-buff, dolomitic, with fine- to medium-sized rounded and frosted grains, grading downward into white (weathering brown) sandstone with medium-sized rounded and frosted grains | 2 | 3 |
| Covered interval | 3 | 1 |
| Sandstone, medium-bedded, white (weathering brown), with fine- to medium-sized grains; most grains show crystal faces of secondary quartz | 13 | 10 |
| Sandstone, thin- to medium-bedded, white (weathering brown), with medium-sized grains and some scattered very coarse grains; most grains show crystal faces of secondary quartz | 5 | 6 |
| | 32 | 4 |

Everton formation.

### C. Plattin limestone

[Section measured along railroad cut along north bank of the Buffalo River in SE¼SW¼ sec. 29, T. 16 N., R. 16 W., Searcy County, Ark.]

Fernvale limestone.

Plattin limestone:

| | Ft | in. |
|---|---|---|
| Limestone, massive, light-buff, very finely crystalline to dense; contains a few scattered small calcite crystals | 5 | 3 |

Plattin limestone --Continued

| | Ft | in. |
|---|---|---|
| Siltstone, deeply weathered, massive, brown, limy, and very fine grained sandstone. Some khaki-colored, silty limestone at top | 5 | 1 |
| Limestone, thin- to medium-bedded, pink-mottled light-buff, very finely crystalline to dense; contains stylolites and scattered small calcite crystals | 3 | 6 |
| Limestone, thin-bedded, gray to gray-buff, dense; contains scattered small calcite crystals | 4 | 9 |
| Limestone, thin- to medium-bedded, light gray-buff, dense; contains a few scattered small calcite crystals | 4 | 0 |
| Limestone, thick-bedded, gray to light gray-buff, dense; contains very few scattered small calcite crystals | 2 | 3 |
| Limestone, massive, light-buff, dense; contains a few scattered small calcite crystals and very small calcite veins | 5 | 4 |
| Limestone, medium-bedded, gray-buff, dense; contains a few scattered small calcite crystals and pyrite crystals | 1 | 0 |
| Shale, fissile, gray to gray-green, and platy gray dense limestone, in alternating beds; limestone contains a few scattered small calcite crystals | 1 | 3 |
| Limestone, thick-bedded, light gray-buff, dense; contains scattered small calcite crystals, stylolites, and pyrite | 1 | 2 |
| Limestone, thick-bedded, light gray-buff to light-buff, dense; contains a few scattered small calcite crystals | 2 | 7 |
| Shale, platy, gray, limy | | 3 |
| Limestone, thick-bedded, light-buff, dense; contains a few scattered small calcite crystals | 1 | 7 |
| Limestone, very thin bedded, light-buff, dense; contains a few scattered small calcite crystals | | 6 |
| Shale, platy, gray-green, limy | | 2 |
| Limestone, massive, light gray-buff, dense; contains scattered small calcite crystals | 3 | 6 |
| Limestone, platy to thin-bedded, buff, very finely crystalline to dense; contains scattered small calcite and pyrite crystals | 4 | 6 |
| Limestone, massive, buff, very finely crystalline to dense; contains a few scattered small calcite and pyrite crystals | 4 | 0 |
| Limestone, platy to medium-bedded, buff to gray, dense; contains scattered small calcite and pyrite crystals | 1 | 10 |

Plattin limestone --Continued

| | Ft | in. |
|---|---|---|
| Limestone, platy to thin-bedded, gray to gray-buff, very finely crystalline to dense; contains scattered small calcite and pyrite crystals | 3 | 3 |
| Limestone, thin- to medium-bedded, gray to gray-buff, figured, finely granular to dense; appears as rounded fragments of dense limestone in dense limestone matrix | 2 | 1 |
| Limestone, very thin bedded to thin-bedded, light-gray to light gray-buff, dense; contains scattered small calcite and pyrite crystals | 2 | 6 |
| Shale, platy, yellowish-gray to tan, limy, and shaly limestone | | 8 |
| Limestone, very thin to medium-bedded, light-gray to gray-buff, dense; contains scattered small calcite crystals | 5 | 6 |
| Limestone, thick-bedded, light gray-buff, dense; contains scattered small calcite and pyrite crystals | 1 | 5 |
| Limestone, rubbly, gray, figured, dense; appears to be composed of rounded pebbles and angular blocks of gray, dense limestone in gray dense limestone matrix | 1 | 6 |
| Limestone, thick-bedded, light gray-buff, dense; contains scattered small calcite crystals | 1 | 4 |
| Limestone, very thin bedded to thin-bedded, light gray-buff, dense; contains scattered small calcite crystals | 2 | 1 |
| Limestone, medium-bedded, gray, very finely crystalline to dense; contains scattered medium-sized rounded and frosted sand grains | | 7 |
| Dolomite, medium-bedded, gray-buff, finely granular | 1 | 1 |
| Dolomite, medium-bedded, gray-green, finely granular; contains scattered fine- to medium-sized rounded and frosted sand grains; a few coarse rounded and frosted sand grains at the base | | 10 |
| | 75 | 4 |

St. Peter sandstone.

D. Fernvale limestone

[Section measured along railroad cut along north bank of the Buffalo River in SE¼SW¼ sec. 29, T. 16 N., R. 16 W., Searcy County, Ark.]

Cason shale.

Fernvale limestone:

| | Ft | in. |
|---|---|---|
| Limestone, thick-bedded, light-gray, very coarsely crystalline; contains limonite and pyrite blebs and scattered pale-pink calcite fragments | 1 | 6 |

Fernvale limestone --Continued

| | Ft | in. |
|---|---|---|
| Limestone, massive, pinkish-buff to cream-colored, very coarsely crystalline; contains pale-pink calcite fragments | 6 | 5 |
| Limestone, massive, weathering rubbly, pinkish-buff, very coarsely crystalline | 4 | 10 |
| Limestone, thick-bedded, weathering rubbly, pinkish-buff to light-gray, very coarsely crystalline; contains a few limonite and pyrite blebs | 3 | 0 |
| Limestone, thick-bedded, weathering rubbly, pink, coarsely crystalline to very coarsely crystalline; contains limonite and pyrite blebs, and many pale-pink calcite fragments | 3 | 10 |
| Limestone, massive, pinkish-gray, coarsely crystalline to very coarsely crystalline; contains many pale-pink calcite fragments | 5 | 6 |
| | 25 | 1 |

Plattin limestone.

E. Cason shale

[Section measured near railroad crossing in NE¼ sec. 31, T. 16 N., R. 16 W., Searcy County, Ark. Fossil determinations by Josiah Bridge]

Basal sandstone member of Boone formation.

Cason shale:

| | Ft | in. |
|---|---|---|
| Clay shale, platy, green to khaki-colored | 2 | 0 |
| Shale, platy, khaki-colored, slightly limy; contains scattered large phosphate nodules as much as 2 in. in diameter. Unidentifiable fragments of large sponge, Raphistoma sp., Cyclonema daytonensis Foerste?, Cycloceras? sp., and some nodular material that may be fragments of algae. | 7 | 6 |
| Clay shale, platy, black and tan mottled to green | 2 | 3 |
| Shale, platy, khaki-colored; contains abundant phosphate nodules | 1 | 3 |
| | 13 | 0 |

Fernvale limestone.

F. Brassfield limestone

[Section measured on north bank of Bear Creek about 1 mile from mouth. NW¼SE¼ sec. 32, T. 16 N., R. 16 W., Searcy County, Ark. Fossil determinations by Jean M. Berdan]

St. Clair limestone.

Brassfield limestone:

| | Ft | in. |
|---|---|---|
| Calcite, orange and white, very coarsely crystalline, and crinoid fragments poorly cemented by red to red-buff very finely crystalline limestone; contains limonite and pyrite blebs, irregular veins and vugs lined with white to clear coarsely crystalline calcite, and some very thin irregular stringers of red very finely crystalline limestone. Rhinopora verrucosa Hall, Triplecia cf. T. ortoni (Meek), Plectodonta? sp., large strophomenoid impression, brachiopod fragments, annulated cephalopod, lichad trilobite pygidium, trilobite fragments, Bythocypris sp., thlipsurid ostracode, and Tubulibairdia? sp. | 7 | 10 |
| Calcite, orange-red, orange, and white, very coarsely crystalline, and crinoid fragments poorly cemented by red very finely crystalline to dense limestone; contains limonite and pyrite blebs, irregular veins and vugs lined with white to clear coarsely crystalline calcite, and some irregular stringers and pockets of red very finely crystalline to dense limestone. Unidentifiable cup coral, Rhinopora verrucosa Hall, Dolerorthis cf. D. interstriata (Foerste), Leptaena rhomboidalis (Wilckens), Platystrophia sp., Rhipidomella cf. R. hybrida (Sowerby), small orthoid, fragment of punctate orthoid, other brachiopod fragments, unidentifiable cephalopod fragment, Encrinurus? pygidium, Illaenus pygidium, fragments of a large illaenid trilobite, other trilobite fragments, and Bythocypris sp. | 10 | 0 |

Brassfield limestone --Continued

| | Ft | in. |
|---|---|---|
| Calcite, orange-red, orange, and white, very coarsely crystalline, and crinoid fragments poorly cemented by red very finely crystalline to dense limestone; contains glauconite, limonite, and pyrite blebs, irregular veins and vugs lined with white to clear coarsely crystalline calcite, and some thin irregular stringers of red very finely crystalline to dense limestone. Unidentifiable horn coral, Rhinopora verrucosa Hall, Leptaena rhomboidalis (Wilckens), and illaenid trilobite fragments | 5 | 0 |
| Covered interval | 3 | 1 |
| | 25 | 11 |

Cason shale.

NOTE.--Bedding of Brassfield limestone masked by secondary deposition on face of bluff--the whole interval appears as one massive bed.

G. Lafferty and St. Clair limestones

[Section measured on north bank of the Buffalo River in approximate center E½ sec. 36, T. 16 N., R. 17 W., Searcy County, Ark.]

Basal sandstone member of Boone formation.

Lafferty limestone:

| | Ft | in. |
|---|---|---|
| Limestone, medium- to thick-bedded, gray, pyritic and limonitic, very finely crystalline to dense, with scattered orange medium-sized calcite crystals | 6 | 2 |
| Limestone, thick-bedded, gray, pyritic and limonitic, very finely crystalline to dense, which contains scattered orange medium-sized calcite crystals; and a few vugs lined with white coarsely crystalline calcite | 6 | 1 |
| Limestone, massive, orange-mottled gray to gray-buff, pyritic and limonitic, very finely crystalline to dense, with scattered orange medium-sized calcite crystals | 5 | 5 |
| Limestone, massive, orange-mottled gray-buff, pyritic, medium-crystalline to dense | 5 | 0 |
| Limestone, massive, gray-buff to orange-buff, pyritic, very finely crystalline to dense, with pinkish-orange coarse calcite crystals and crinoid fragments | 7 | 5 |
| | 30 | 1 |

St. Clair limestone:

| | Ft | in. |
|---|---|---|
| Covered interval 1/ | 10 | 0 |
| Calcite, pink, orange, and white, coarsely crystalline, and crinoid fragments cemented by tan-buff to orange-buff very finely crystalline limestone; contains irregular veins and vugs lined with white coarsely crystalline calcite. Some thin irregular layers show a predominance of the very finely crystalline cementing material | 24 | 5 |
| | 34 | 5 |

Brassfield limestone.

H. Upper part of Boone formation

[Section measured along U. S. Highway 65 at Silver Hill, SW¼ sec. 7 and NW¼ sec. 18, T. 15 N., R. 16 W., and SE¼ sec. 12, T. 15 N., R. 17 W., Searcy County, Ark. Fossil determinations by Mackenzie Gordon, Jr. Corals and bryozoans by Helen Duncan]

Batesville sandstone and Ruddell shale, undifferentiated.

Boone formation:

| | Ft | in. |
|---|---|---|
| Covered interval | 21 | 11 |
| Chert, thin- to medium-bedded, white to light-gray (weathering red), porous, spicular, finely figured; very small drusy quartz crystals lining some cavities | 11 | 5 |
| Chert, thin- to medium-bedded, white (weathering tan to red), porous, spicular, finely figured, tripolitic | 15 | 1 |
| Covered interval | 36 | 2 |
| Limestone, medium- to thick-bedded, cream-colored (weathering gray), coarsely to very coarsely crystalline, crinoidal; contains irregular lenses and layers of white (weathering tan) siliceous limestone or limy chert. The coarsely crystalline limestone weathers to a very rough surface, which shows cross-bedding | 24 | 3½ |
| Covered interval | 8 | 4½ |
| Limestone, thick-bedded, light-gray, coarsely crystalline, crinoidal; weathers to rough surface, which shows cross-bedding | 8 | 11 |

[1] All bedding below this covered interval is masked by secondary deposition on face of bluff.

Boone formation --Continued

| | Ft | in. |
|---|---|---|
| Limestone, massive, light-gray, slightly glauconitic, coarsely crystalline, crinoidal; weathers to rough surface, which shows cross-bedding. Fenestella sp., Orthotetes sp., Rhipidomella (Perditocardinia) sp. A?, Spirifer cf. S. grimesi Hall, and Spirifer cf. S. logani Hall | 5 | 6 |
| Limestone, massive, light-gray, coarsely crystalline, crinoidal; weathers to rough surface, which shows cross-bedding; contains irregular lenses of white (weathering tan) siliceous limestone or limy chert, averaging about 2 ft long and 4 in. thick | 11 | 0 |
| Limestone, massive, light-gray, slightly glauconitic, coarsely crystalline, crinoidal; weathers to rough surface, which shows cross-bedding; contains irregular lenses of white (weathering tan) siliceous limestone or limy chert | 5 | 6 |
| Limestone, massive, light-gray to buff, glauconitic, coarsely crystalline; weathers to rough surface, which shows cross-bedding; contains thin irregular lenses of white (weathering tan) siliceous limestone or limy chert Fenestella sp., rhomboporoid bryozoan platycrinitid columnal, Productus sp., Rhipidomella (Perditocardinia) sp. A., Rhynchopora sp. A?, Dielasma sp., and Spirifer logani Hall | 11 | 0 |
| Limestone, massive, light-gray, coarsely crystalline, crinoidal, with scattered pink calcite crystals to buff medium-crystalline limestone; weathers to rough surface, which shows cross-bedding; contains irregular lenses of white (weathering tan) siliceous limestone or limy chert. Rhipidomella (Perditocardinia) sp. A, Rhynchopora sp. A, Rhynchopora sp. A?, and Spirifer logani Hall? | 5 | 6 |
| Limestone, thick-bedded, light-gray, glauconitic, coarsely crystalline; weathers to rough surface, which shows cross-bedding Fistuliporoid bryozoan fragment, Rhipidomella (Perditocardinia) sp. A?, and Spirifer logani Hall | 3 | 1 |
| Limestone, thin-bedded, white (weathering tan), siliceous; or limy chert | 1 | 6 |

Boone formation --Continued

| | Ft | in. |
|---|---|---|
| Limestone, thick-bedded, light-gray, glauconitic, coarsely crystalline, crinoidal; weathers to a rough surface, which shows cross-bedding | 6 | 5 |
| Limestone, thick-bedded, light-gray, slightly glauconitic, coarsely to medium-crystalline, crinoidal; weathers to rough surface, which shows cross-bedding. Rhombopora sp., Rhipidomella (Perditocardinia) sp. A, Rhynchopora sp. A?, and Spirifer logani Hall | 5 | 6 |
| Covered interval | 5 | 6 |
| Limestone, siliceous, massive light gray-buff, slightly glauconitic, coarsely to medium-crystalline, grading to limy chert | 5 | 6 |
| Chert, massive, white (weathering tan), glauconitic, spicular, limy | 5 | 6 |
| Limestone, gray-buff (weathering dark-gray), glauconitic, medium-crystalline in irregular lenses and thin irregular beds, which are in buff-spotted white glauconitic spicular figured limy chert | 11 | 0 |
| Chert, thin- to medium-bedded, buff-spotted white (weathering tan), slightly glauconitic, limy, with irregular lenses and bands of gray (weathering dark-gray) glauconitic medium-crystalline limestone | 27 | 6 |
| Limestone, very irregularly bedded and banded, gray-buff, glauconitic, medium-crystalline and buff-spotted white (weathering tan) glauconitic limy chert. Zaphrentoid coral, Fenestella sp., Orthotetes sp., Chonetes sp., Productus sp., Avonia williamsiana Girty, Schizophoria sp., Rhynchopora? sp., Spirifer logani Hall?, Cranaena? sp., Tylothyris? sp., Brachythyris suborbicularis (Hall), and Griffithides? sp. | 10 | 0 |
| Limestone, thin-bedded, buff, medium-crystalline | 1 | 0 |
| Covered interval | 9 | 2 |
| Limestone, very irregularly bedded, buff to gray-buff, medium-crystalline, dolomitic; contains irregular lenses of buff-spotted white (weathering tan) spicular limy chert containing rhomb molds | 27 | 6 |
| Chert, irregularly bedded, buff-spotted white (weathering tan), limy; contains irregular lenses of gray-buff slightly glauconitic medium-crystalline limestone. Fenestella sp., Productus (Dictyoclostus) crawfordsvillensis Weller | 3 | 8 |

Boone formation --Continued

| | Ft | in. |
|---|---|---|
| Covered interval | 1 | 10 |
| Chert, irregularly bedded, buff-spotted white, limy; contains thin lenses of gray-buff medium-crystalline to finely crystalline limestone | 11 | 0 |
| Chert, irregularly bedded, white to light-gray, spicular, dense; contains irregular lenses of light gray-buff medium-crystalline to finely crystalline limestone | 11 | 0 |
| Chert, irregularly bedded, gray-white, spicular, dense. Productus (Dictyoclostus) crawfordsvillensis Weller? | 5 | 6 |
| Total thickness exposed | 316 | 10 |

I. Lower part of Boone formation

[Section measured near U. S. Highway 65 bridge across Bear Creek in SW¼ sec. 17, T. 15 N., R. 16 W., Searcy County, Ark.]

Boone formation (approximately a continuation of Silver Hill section (H) as shown by tracing beds about ½ mile along U. S. Highway 65.):

Chert-bearing units:

| | Ft | in. |
|---|---|---|
| Chert, irregularly bedded, white to pale-pink, spicular; few very thin irregular beds of cream-colored finely crystalline limestone | 11 | 0 |
| Chert, thin- to medium-bedded, white to pale-pink, spicular; very thin beds of cream-colored finely crystalline limestone | 5 | 6 |
| Chert, irregularly bedded, white to pale-pink, spicular; contains irregular lenses of cream-colored finely crystalline limestone | 5 | 6 |
| Limestone, irregularly bedded, pinkish-gray to buff, slabby to rubbly, finely crystalline; contains some white to pale-pink spicular chert | 4 | 0 |
| | 26 | 0 |

St. Joe limestone member:

| | Ft | in. |
|---|---|---|
| Limestone, thin- to medium-bedded, orange-buff, finely crystalline; contains red to pink coarsely crystalline fragments of crinoids | 3 | 9 |

Boone formation.--Continued

St. Joe limestone member --Continued

| | Ft | in. |
|---|---|---|
| Limestone, thin- to medium-bedded, light-gray to orange-buff, pyritic, finely crystalline; contains red to pink coarsely crystalline fragments of crinoids | 5 | 6 |
| | 9 | 3 |

Basal sandstone member:

| | Ft | in. |
|---|---|---|
| Sandstone, thin-bedded, brown, slightly limy, medium- to coarse-grained, with Taonurus-like markings on top surface. W. H. Hass regards this part of the sandstone as Mississippian (Kinderhook) in age on basis of his conodont identifications. | | 6 |
| Sandstone, medium-bedded, brown, medium-grained. W. H. Hass regards this lower part of the sandstone as Late Devonian (pre-Grassy Creek) in age on the basis of his conodont identifications. | 2 | 0 |
| | 2 | 6 |

J. Batesville sandstone, Ruddell shale, and Moorefield formation

[Section measured at Pate Mountain, NW¼ sec. 23, T. 15 N., R. 17 W., Searcy County, Ark. Fossil determinations by Mackenzie Gordon, Jr.]

Fayetteville shale.

Batesville sandstone:

| | Ft | in. |
|---|---|---|
| Limestone, thin-bedded, dark-gray, very fine to fine, sandy; few medium-sized oolites. Bryozoan indet., Fenestella sp., crinoid columnals, Composita? sp. indet., and gastropod? indet. | 1 | 7 |
| Sandstone, thin-bedded, gray (weathering grayish-tan), limy, very fine to fine-grained | 4 | 10 |
| Limestone, thin-bedded, dark-gray, finely granular. Bryozoan? indet., Productus (Diaphragmus) cestriensis Worthen, Dielasma illinoisensis Weller?, brachiopods indet., and ostracodes | | 8 |
| Clay shale, platy, khaki-colored to tan, slightly limy | 1 | 9 |
| Limestone, thick-bedded, gray (weathering grayish-tan), dense, silty; breaks with conchoidal fracture | 2 | 0 |

Batesville sandstone --Continued

| | Ft | in. |
|---|---|---|
| Clay shale, platy, khaki-colored; very fine, sandy, with black stain on bedding planes | | 10 |
| Limestone, medium-bedded, gray, dense, slightly silty; contains scattered fine calcite crystals; breaks with conchoidal fracture | | 7 |
| Clay shale, platy and crumbly, khaki-colored to tan; contains a few limy nodules | 2 | 11 |
| Limestone, thin-bedded, light pinkish-tan, dense, silty; weathers rubbly | | 8 |
| Sandstone, platy, gray, limy, very fine to fine-grained | 1 | 9 |
| Sandstone, platy, tan, shaly, very fine grained | 1 | 0 |
| Sandstone, thick-bedded, light grayish tan, very fine to fine-grained, limy | 2 | 0 |
| Shale, platy, tan, slightly limy, silty; thin layers of tan very fine grained limy sandstone | | 9 |
| Limestone, medium-bedded, dark-gray, medium-crystalline, very fine, sandy, with medium-sized oolites, some of which are elongate | 1 | 0 |
| Siltstone, medium-bedded, tan to brown, limy, and very fine grained sandstone | | 7 |
| Shale, platy, tan, slightly limy, silty; thin layers of tan very fine grained limy sandstone. Crinoid columnals, Agassizocrinus plates, Orthotetes subglobosus Girty, Leiorhynchus carboniferum Girty and brachiopods indet. | 1 | 0 |
| Sandstone, medium-bedded, gray (weathering tan), very fine to fine-grained, very limy | 1 | 2 |
| Shale, platy, tan, micaceous, silty, and thin-bedded, tan very fine grained shaly sandstone in alternating beds | 4 | 4 |
| Limestone, medium-bedded, gray, medium-crystalline, with a few medium-sized oolites; very fine, sandy at base. Crinoid columnals, Agassizocrinus plates, ?Productus (Diaphragmus) cestriensis Worthen, Productus (Echinoconchus) cf. E. genevievensis Weller, Dielasma sp., brachiopods indet., and small gastropods indet. | 1 | 6 |
| Shale, platy, tan, micaceous, slightly limy, silty. Aviculopecten sp. and Laevidentalium venustum Meek and Worthen? | 1 | 0 |

Batesville sandstone --Continued

| | Ft | in. |
|---|---|---|
| Sandstone, medium-bedded, gray (weathering brown), very limy, fine-grained | 1 | 0 |
| | 32 | 11 |

Ruddell shale:

| | | |
|---|---|---|
| Shale, platy to fissile, gray-black and tan, micaceous, slightly silty | 4 | 3 |
| Shale, platy to fissile, gray-black, micaceous Caneyella nasuta Girty?, Goniatites kentuckiensis Miller and Gurley, and Girtyoceras sp. | 5 | 6 |
| Shale, platy, tan to interlaminated black and tan, limy, very fine, sandy. Chonetes cf. C. tumescens Easton, Camarotoechia purduei Girty, and Composita subquadrata (Hall)? | 2 | 4 |
| Shale, platy, gray-black (weathering brown), slightly micaceous, limy | 1 | 0 |
| Sandstone, platy, tan grading downward into gray, very fine grained, limy and shaly | 1 | 0 |
| Limestone, medium-bedded, gray, finely crystalline, very fine, sandy. Mackenzie Gordon, Jr., regards this bed as Ruddell in age on basis of the following fossil identifications by him: Fenestella sp., Lingula sp. indet., Orbiculoidea marshallensis (Girty), Chonetes cf. C. tumescens Easton, Productus sp. indet., Camarotoechia purduei Girty, Leiorhynchus carboniferum Girty, Leiorhynchus carboniferum polypleurum Girty, Eumetria vera (Hall), Composita cf. C. acinus Girty, Conularia sp. indet., and ostracodes | | 6 |
| Shale, platy, tan, very fine, sandy and limy; limy nodules | 3 | 0 |
| | 17 | 7 |

Moorefield formation:

| | | |
|---|---|---|
| Limestone, very thin bedded, dark-gray, finely granular to finely crystalline, silty. Mackenzie Gordon, Jr., reports that this bed apparently represents the Moorefield formation as restricted by him in A. A. P. G. Bull., vol. 28, no. 11, pp. 1626-1634, 1944. He identified the following fossils: Leiorhynchus carboniferum Girty, Aviculopecten cf. A. batesvillensis (Girty), Sphenotus, and ostracodes | 1 | 2 |
| | 1 | 2 |

## K. Carboniferous (Mississippian) and Ordovician rocks

[Section measured at Carver near the north end of the Buffalo River bridge on State Route 123, NW¼ sec. 6, T. 15 N., R. 19 W., Newton County, Ark.]

| | Ft | in. |
|---|---|---|
| Carboniferous (Mississippian) rocks: | | |
| Boone formation (lower part only; estimated 150 to 200 ft present in cliff): | | |
| Chert-bearing units (from top of St. Joe limestone to top of measured section): | | |
| Chert, irregular, thin to medium thick, gray, finely pyritic, dense, in layers separated by very thin bedded buff finely crystalline limestone | 4 | 2 |
| Shale, platy, greenish-buff, limy; contains small pebbles of gray dense chert | | 5 |
| Chert, thin-bedded, light-gray to buff, finely figured, dense; contains buff finely crystalline limestone pebbles | 1 | 0 |
| Shale, platy, very limy, greenish-buff; contains ostracodes | | 2 |
| Chert, thin-bedded, gray-buff, finely figured, dense, and buff finely crystalline limestone | 1 | 0 |
| Chert, thin beds of dark-gray to black, dense; maroon-tinged brown dense chert; and buff finely crystalline limestone | 1 | 4 |
| Limestone, very thin bedded, buff, finely crystalline to dense; contains some small white calcite crystals | 1 | 5 |
| | 9 | 6 |
| St. Joe limestone member of the Boone formation: | | |
| Limestone, thin-bedded, reddish-buff, finely crystalline; contains abundant fossil fragments and calcite crystals | 1 | 5 |
| Limestone, thin-bedded, pinkish-buff, crinoidal, coarsely crystalline; thin bed of buff-brown very finely crystalline limestone at base | 3 | 9 |
| Carboniferous (Mississippian) rocks --Continued | | |
| Boone formation --Continued | | |
| St. Joe limestone member --Continued | | |
| Limestone, thin- and irregular-bedded, reddish-buff, finely to coarsely crystalline; contains abundant small crinoids and white calcite crystals | 4 | 2 |
| Limestone, thin- and irregular-bedded, buff, finely crystalline; contains abundant red calcite crystals and a few very thin seams of greenish-buff shale | 3 | 9 |
| Shale, platy, green, sandy; contains black phosphate pellets and red calcite crystals | | 1 |
| | 13 | 2 |
| Basal sandstone member of Boone formation: | | |
| Sandstone, thin-bedded, white, limy, composed of medium-sized round to subround slightly frosted quartz grains. Black phosphate pellets are scattered throughout the sandstone | | 5 |
| W. H. Hass regards this bed and overlying bed as Mississippian (Kinderhook) in age on basis of his conodont identifications. Specimens from underlying beds were inconclusive. | | |
| Shale, fissile, grayish-green | | 5 |
| Sandstone, greenish-white, composed of white medium-sized subround quartz grains and green limy silt; abundant black phosphate nodules | | 9 |
| | 1 | 7 |
| Ordovician rocks: | | |
| Fernvale limestone: | | |
| Limestone, thin- and irregular-bedded, gray, medium to coarsely crystalline; contains pyrite cubes | 1 | 10 |

Ordovician rocks--Continued
Fernvale limestone--Continued

| | Ft | in. |
|---|---|---|
| Limestone, thin- and irregular-bedded, gray, pyritic, crinoidal, coarsely crystalline; weathers rubbly | 2 | 10 |
| Limestone, thin- to medium-bedded, gray-buff, crinoidal, coarsely crystalline; crinoids are barrel-shaped | 2 | 3 |
| | 6 | 11 |

Plattin limestone:

| | | |
|---|---|---|
| Dolomite, medium-bedded, yellowish-buff, slightly black-mottled, finely granular | 2 | 10 |
| Dolomite, thin- to medium-bedded, dark-gray to yellowish-buff, finely granular | 2 | 4 |
| Dolomite, thin-bedded, buff to gray, finely granular, and dolomitic limestone | 1 | 10 |
| Dolomite, thin- and irregular-bedded, gray-buff, finely granular, with a resinous luster; gray-buff finely crystalline to dense limestone; very thin seam of tan very fine grained sandstone, in lower part | 2 | 11 |
| Covered interval | 1 | 1 |
| Limestone, thin- to thick-bedded, gray-buff, slightly pink-mottled, dense; contains gray-buff dense chert | 4 | 1 |
| Limestone, thin- to medium-bedded, gray-buff, dense; contains scattered small calcite crystals | 3 | 10 |
| Limestone, thin- to medium-bedded, gray-buff, dense; contains scattered small calcite crystals | 3 | 10 |
| Limestone, thin-bedded, tan to gray, shaly | | 11 |
| Limestone, thin-bedded, gray-buff, dense; contains scattered small calcite crystals | 2 | 7 |
| Limestone, very thin bedded, gray-buff, dense | | 4 |
| Limestone, thin-bedded, gray-buff, dense; contains pink to orange spots and scattered calcite crystals | 2 | 9 |
| Limestone, very thin bedded, gray-buff, dense, with fine calcite veinlets | 1 | 7 |
| Limestone, thin-bedded, light-gray, sandy, dense, grading upward into nonsandy limestone | 1 | 8 |
| | 32 | 7 |

Ordovician rocks--Continued
St. Peter sandstone:

| | Ft | in. |
|---|---|---|
| Sandstone, soft, greenish-white, very limy; composed of subround to round frosted fine- to medium-sized quartz grains | 2 | 6 |
| Covered interval | 3 | 3 |
| Sandstone, thin-bedded, white, limy; similar in composition to that above | | 4 |
| Covered interval | 2 | 4 |
| Sandstone, thin-bedded, greenish-gray, slightly argillaceous, limy; similar in composition to that above | | 5 |
| Dolomite, dull-gray, very finely granular, silty; contains very thin laminae of very fine grained sandstone | 4 | 3 |
| Sandstone, greenish-white, limy; similar in composition to the sandstones above | 4 | 6 |
| Dolomite, gray-buff, very finely granular | | 7 |
| Covered interval | 2 | 7 |
| Sandstone, white, limy, fine- to medium-grained | | 4 |
| Sandstone, thin-bedded, brown, dolomitic, fine-grained | 4 | 9 |
| Covered interval | 3 | 0 |
| Sandstone, thin-bedded, white to brown, dolomitic, fine-grained | 2 | 5 |
| Dolomite, very thin bedded, gray-buff, fine-grained; contains abundant round frosted fine sand grains | | 4 |
| Sandstone, medium-bedded, buff-brown, dolomitic, fine-grained, and white fine- to medium-grained sandstone | 2 | 6 |
| Covered interval | 8 | 1 |
| Sandstone, soft, very thin bedded, pinkish- to greenish-white, fine- to medium-grained; grains exhibit secondary enlargement | 2 | 5 |
| Covered interval | 4 | 9 |
| Sandstone, medium-bedded, white, limy, medium-grained; grains exhibit secondary enlargement | 5 | 6 |
| (Note:[1] beds below this sandstone are doubtfully included in the St. Peter sandstone pending completion of detailed mapping) | | |
| Dolomite, massive, dark-gray to brown, medium-crystalline to coarsely crystalline | 8 | 7 |

[1] This note was omitted from the first printing.

Ordovician rocks --Continued

St. Peter sandstone --Continued

| | Ft | in. |
|---|---|---|
| Sandstone, thin-bedded, white, fine- to medium-grained; grains are rounded and frosted | 1 | 9 |
| Covered interval | 6 | 0 |
| Sandstone, medium-bedded, white, with fine- to medium-sized rounded and frosted grains | 2 | 5 |
| Covered interval | 2 | 0 |
| | 75 | 7 |

Everton formation:

| | | |
|---|---|---|
| Limestone, medium-bedded, light-buff, slightly sandy, finely crystalline | 1 | 3 |
| Limestone, medium-bedded, buff, finely crystalline | | 11 |
| Limestone, medium-bedded, buff, sandy | | 8 |
| Limestone, light-buff, oolitic, or microfossiliferous, finely crystalline; grades downward into buff sandy limestone | 1 | 1 |
| Sandstone, medium-bedded, white, very limy; composed of medium-sized rounded and frosted grains | 2 | 3 |
| Limestone, medium- to thick-bedded, buff, medium-crystalline; contains scattered round sand grains grading downward into white limy fine-grained sandstone | 1 | 11 |
| Limestone, medium-bedded, buff, finely crystalline to dense | | 5 |
| Sandstone, greenish-white, limy, fine-grained | | 2 |
| Dolomite, thin-bedded, brown, medium-crystalline | | 9 |
| Covered interval | 2 | 9 |
| Limestone, medium-bedded, buff, microfossiliferous, finely crystalline; abundant ostracodes | 1 | 11 |
| Limestone, medium-bedded, light-buff, sandy, finely crystalline | 1 | 9 |
| Limestone, thin-bedded, light-buff, sandy, finely crystalline | 1 | 3 |
| Limestone, thin-bedded, light-buff, oolitic or microfossiliferous, dense; calcite; round frosted sand grains in upper part | 1 | 4 |
| Limestone, thin-bedded, light-buff, oolitic or microfossiliferous, sandy; round frosted sand grains increase upward | 1 | 0 |
| Like overlying bed, but very thin bedded | 1 | 2 |

Ordovician rocks --Continued

Everton formation --Continued

| | Ft | in. |
|---|---|---|
| Limestone, thin-bedded, light-buff, finely figured, finely crystalline | 1 | 10 |
| Covered interval | | 7 |
| Limestone, thin-bedded, light-buff, finely figured, finely crystalline | 2 | 0 |
| Sandstone, white, slightly limy, medium-grained; grains exhibit secondary enlargement | | 6 |
| Sandstone, massive, white, medium-grained; composed of rounded and frosted grains | 2 | 6 |
| Limestone, gray-buff, microfossiliferous, finely crystalline; abundant ostracodes | | 6 |
| Sandstone, thin- to medium-bedded, tan to white, fine- to medium-grained; below water level usually | 3 | 0 |
| | 31 | 6 |

## LOG OF MARSHALL WATER WELL 3, MARSHALL, ARK.

[Sample log, SW¼SE¼ sec. 25, T. 15 N., R. 16 W., Searcy County, Ark. Altitude of well about 1,000 ft. Cable tool samples]

Carboniferous (Mississippian) rocks:

| | Depth (feet) |
|---|---|
| Batesville sandstone and Ruddell shale shale, undifferentiated; no samples, but black shale cavings are present in first sample and above formations crop out nearby | 0-23 |

Boone formation:

| | |
|---|---|
| Limestone, gray-mottled buff, slightly glauconitic, medium-crystalline; buff dense chert | 23-27 |
| Dolomite, pinkish-buff to buff, finely crystalline | 27-30 |
| Dolomite, pinkish-buff to buff, finely crystalline; buff spicular chert | 30-35 |
| Dolomite, cream-colored, finely crystalline; tan-mottled white dense chert | 35-40 |
| Limestone, white, finely crystalline; brachiopods | 40-45 |
| Limestone, white, finely crystalline | 45-50 |
| Dolomite, gray-white, finely granular; some thin beds of buff finely crystalline dolomite | 50-51 |
| Limestone, buff, finely crystalline | 51-53 |
| Dolomite, white, finely granular; small crinoids | 53-60 |

Carboniferous (Mississippian) rocks --Continued
Boone formation --Continued

| | Depth (feet) |
|---|---|
| Dolomite, white, finely granular | 60-70 |
| Limestone, light-buff, crinoidal, finely to medium-crystalline | 70-75 |
| Limestone, light-buff, crinoidal, finely to medium-crystalline; trace of glauconite | 75-85 |
| Limestone, light-buff, crinoidal, finely to medium-crystalline | 85-120 |
| Dolomite, white, finely granular, limy | 120-130 |
| Limestone, light-buff, finely crystalline; trace of white milky chert | 130-133 |
| Limestone, white, very crinoidal, finely crystalline | 133-140 |
| Limestone, white, very crinoidal, finely crystalline; brachiopods | 140-145 |
| Limestone, cream-colored, crinoidal | 145-150 |
| Limestone, buff, finely to medium-crystalline; dull-white semi-granular finely spicular chert | 150-155 |
| Limestone, buff, finely crystalline | 155-160 |
| Dolomite, cream-colored, limy; dull-white semi-granular chert | 160-165 |
| Dolomite, cream-colored, finely granular; white dense chert | 165-170 |
| Dolomite, cream-colored, finely granular | 170-175 |
| Dolomite, cream-colored, very finely glauconitic, finely granular to finely crystalline; pyrite; spines | 175-180 |
| Dolomite, cream-colored, very finely glauconitic, finely granular to finely crystalline; spines | 180-185 |
| Dolomite, white, finely granular; white dense chert; spines | 185-190 |
| Dolomite, white, finely granular; white semi-granular chert | 190-200 |
| Dolomite, bone-white, very siliceous finely glauconitic, finely granular to finely crystalline | 200-204 |
| Dolomite, bone-white, very siliceous, finely granular to finely crystalline | 204-240 |
| Limestone, bone-white, siliceous; white dense chert | 240-250 |
| Limestone, bone-white, siliceous | 250-265 |

Carboniferous (Mississippian) rocks --Continued
Boone formation --Continued

| | Depth (feet) |
|---|---|
| Limestone, bone-white, siliceous; some white dense chert; pyrite | 265-275 |
| Limestone, bone-white, siliceous; white spicular chert | 275-290 |
| Limestone, bone-white, siliceous; white spicular chert; slightly gray-white dense chert | 290-300 |
| Limestone, bone-white, siliceous; white dense chert | 300-310 |
| Limestone, cream-colored, finely crystalline; white dense chert | 310-326 |
| Dolomite, white, finely granular; white dense chert | 326-335 |
| Dolomite, cream-colored, finely granular; gray-white dense chert | 335-350 |
| Limestone, brown, finely granular to finely crystalline; gray-white to smoky dense chert with black inclusions | 350-365 |
| Limestone, cream-colored, finely granular to finely crystalline; some cream-colored dense chert | 365-370 |
| St. Joe limestone member: | |
| Limestone, white, chalky; little white dense chert | 370-375 |
| Limestone, white, chalky; trace of very fine glauconite | 375-380 |
| Limestone, white, chalky, with few fine round sand grains | 380-384 |
| Limestone, brown, pyritic, finely crystalline, with thin layers of dark-green finely glauconitic shale | 384-390 |
| Limestone, gray-buff, pyritic, with abundant pink calcite crystals and crinoids | 390-396 |
| Basal sandstone member: Gray subangular to subround pyritic sandstone | 396-398 |
| Silurian rocks: | |
| Lafferty and St. Clair limestones, undifferentiated: | |
| Limestone, brown, finely crystalline; brown dense chert; brachiopods | 398-400 |

Silurian rocks --Continued

Lafferty and St. Clair limestones, undifferentiated --Continued

| | Depth (feet) |
|---|---|
| Limestone, brown, finely crystalline | 400-410 |
| Limestone, brown, finely crystalline, with pink calcite crystals; pyrite | 410-420 |
| Limestone, buff, finely crystalline, with pink calcite crystals | 420-425 |
| Limestone, cream-colored to buff, finely crystalline, with pink calcite crystals; pyrite | 425-430 |
| Limestone, buff, crinoidal, with pink calcite crystals; pyrite | 430-446 |
| Limestone, white, finely crystalline, with pink calcite crystals; oolitoid objects | 446-450 |
| Limestone, white, finely crystalline | 450-454 |

Brassfield limestone member absent.

Ordovician rocks:

Cason shale:

| | |
|---|---|
| Sandstone, gray-green, pyritic, glauconitic, slightly limy, very fine | 454-455 |
| Shale, black | 455-466 |
| Shale, pale-green, pyritic, with black phosphate pellets | 466-468 |

Fernvale limestone:

| | |
|---|---|
| Limestone, white, coarsely crystalline; trace of pink calcite | 468-480 |

Plattin limestone:

| | |
|---|---|
| Limestone, buff, finely crystalline | 480-490 |
| Dolomite, buff-brown, finely granular | 490-508 |
| Dolomite, buff-brown, finely crystalline | 508-510 |
| Limestone, brown, finely crystalline to dense | 510-533 |
| Shale, gray, hard, limy | 533-535 |
| Limestone, brown, finely crystalline to dense | 535-546 |

St. Peter sandstone:

| | |
|---|---|
| Sandstone, white, subround, slightly frosted, slightly limy, fine-grained; pyrite | 546-550 |

Ordovician rocks --Continued

St. Peter sandstone --Continued

| | Depth (feet) |
|---|---|
| Sandstone, white, limy, pyritic, fine- to medium-grained; grains are subround and frosted | 550-590 |

Everton formation:

| | |
|---|---|
| Limestone, white, finely crystalline | 590-592 |
| Dolomite, brown, sandy, finely granular. Dolomite has white subround medium-sized sand grains scattered in it | 592-606 |
| Sandstone, white, fine- to medium-grained, with subround and frosted grains | 606-607 |
| Dolomite, buff, medium-crystalline | 607-616 |
| Sandstone, white, fine-grained | 616-617 |
| Dolomite, brown, very finely granular, in part sandy; blue-green shale fragments; brown coarsely crystalline dolomite | 617-620 |
| Dolomite, brown, finely granular to finely crystalline | 620-628 |
| Dolomite, gray, slightly silty, very finely granular | 628-630 |
| Dolomite, buff to brown, very sandy, medium-crystalline; contains white subround medium-sized sand grains | 630-635 |
| Dolomite, buff, very sandy (40-50 percent sand) | 635-644 |
| Dolomite, dark-brown, almost resinous, finely granular; trace of white mineral dolomite | 644-650 |
| Dolomite, brown, finely to medium-crystalline; white calcite crystals | 650-657 |
| Dolomite, brown, finely granular | 657-665 |
| Dolomite, brown, medium-crystalline | 665-670 |
| Dolomite, brown, fine, sandy | 670-674 |
| Sandstone, white, limy, fine-grained | 674-676 |
| Dolomite, brown, fine, sandy | 676-682 |
| Sandstone, white, fine- to medium-grained | 682-684 |
| Dolomite, dark-brown, finely granular | 684-695 |
| Sandstone, white, fine-grained | 695-696 |
| Dolomite, drab, shaly, and dolomitic mudstone | 696-700 |

Ordovician rocks --Continued
Everton formation --Continued

| | Depth (feet) |
|---|---|
| Dolomite, brown, sandy; contains white subround medium-sized sand grains | 700-705 |
| Dolomite, dark-brown, finely crystalline | 705-712 |
| Dolomite, brown, sandy | 712-717 |
| Sandstone, white, medium-grained | 717-718 |
| Dolomite, brown, finely crystalline | 718-720 |
| Dolomite, brown, shaly, or dolomitic mudstone | 720-732 |
| Sandstone, tan, dolomitic, fine-grained, and white fine-grained sandstone with white silica cement | 732-736 |
| Dolomite, brown, silty | 736-740 |
| Dolomite, buff-brown, very sandy | 740-744 |
| Sandstone, white, fine-grained | 744-746 |
| Dolomite, buff-brown, very sandy | 746-750 |
| Dolomite, buff, finely granular | 750-758 |
| Dolomite, buff, finely granular; some buff sandy dolomite | 758-760 |
| Dolomite, buff, sandy, finely granular | 760-764 |
| Dolomite, buff, very finely granular | 764-770 |
| Dolomite, buff, very finely granular, with some white calcite crystals | 770-776 |
| Dolomite, very dark brown, finely granular | 776-786 |
| Dolomite, very dark brown, finely granular; thin layers of black dolomitic shale | 786-792 |
| Dolomite, brown, finely granular; calcite | 792-802 |
| Dolomite, buff, sandy | 802-806 |
| Dolomite, dark brown, finely granular | 806-818 |
| Dolomite, tan, very finely granular | 818-820 |
| Dolomite, tan to buff, sandy | 820-824 |
| Dolomite, brown, finely crystalline | 824-830 |
| Dolomite, buff, finely crystalline | 830-837 |
| Dolomite, brown, finely granular | 837-842 |
| Sandstone, white fine- to medium-grained, with subround grains showing some secondary growth | 842-844 |
| Dolomite, brown, finely crystalline | 844-850 |
| Dolomite, brown, sandy | 850-855 |
| Dolomite, brown, finely granular | 855-860 |

Ordovician rocks --Continued
Everton formation --Continued

| | Depth (feet) |
|---|---|
| Dolomite, brown, finely granular, with pinpoint porosity | 860-866 |
| Dolomite, very dark brown, resinous, very finely granular | 866-870 |
| Dolomite, brown, sandy | 870-875 |
| Dolomite, brown, resinous, very finely granular | 875-880 |
| Dolomite, brown, very fine, sandy, very finely granular | 880-885 |
| Dolomite, brown, finely crystalline | 885-890 |
| Dolomite, buff, medium-crystalline | 890-895 |
| Dolomite, buff, medium-crystalline, with thin layers of white fine-grained sandstone | 895-900 |
| Sandstone, white, fine-grained | 900-901 |
| Dolomite, buff, sandy | 901-907 |
| Sandstone, white, fine-grained | 907-908 |
| Dolomite, buff to brown, finely to medium-crystalline | 908-918 |
| Sandstone, white, fine-grained | 918-920 |
| Dolomite, buff, finely crystalline | 920-927 |
| Dolomite, buff, with medium-sized subround sand grains included | 927-930 |
| Dolomite, buff, sandy | 930-945 |
| Dolomite, buff, finely granular to finely crystalline | 945-950 |
| Dolomite, buff, finely crystalline | 950-960 |
| Dolomite, buff, sandy | 960-970 |
| Dolomite, buff, medium-crystalline, sandy | 970-977 |
| Dolomite, buff, fine, sandy | 977-980 |
| Sandstone, white, fine-grained | 980-981 |
| Dolomite, buff, very finely granular | 981-993 |
| Sandstone, white, fine- to medium-grained | 993-995 |
| Sandstone, white, dolomitic, fine- to medium-grained | 995-1,001 |
| Limestone, buff, finely crystalline | 1,001-1,016 |
| Limestone, white, sandy | 1,016-1,020 |
| Sandstone, white, slightly limy, fine- to medium-grained | 1,020-1,026 |
| Limestone, buff, finely crystalline; contains tan oolites | 1,026-1,030 |
| Dolomite, buff, medium-crystalline | 1,030-1,033 |
| Sandstone, white, fine- to medium-grained | 1,033-1,036 |

Ordovician rocks --Continued
Everton formation --Continued

| | Depth (feet) |
|---|---|
| Dolomite, buff, finely granular, slightly sandy | 1,036-1,041 |
| Sandstone, white, dolomitic, fine- to medium-grained | 1,041-1,045 |
| Dolomite, buff, medium-crystalline, with a thin seam of green shale | 1,045-1,050 |
| Dolomite, buff, medium-crystalline to coarsely crystalline | 1,050-1,055 |
| Dolomite, buff, finely granular | 1,055-1,060 |
| Dolomite, buff, finely crystalline to finely granular | 1,060-1,067 |
| Sandstone, white, fine- to medium-grained | 1,067-1,076 |
| Dolomite, buff-brown, very sandy | 1,076-1,080 |
| Dolomite, brown, very finely granular | 1,080-1,085 |
| Dolomite, brown, very finely granular, with white siliceous oolites and sandstone grains cemented in white silica | 1,085-1,090 |
| Sandstone, white, siliceous | 1,090-1,094 |
| Dolomite, buff, sandy | 1,094-1,099 |
| Shale, dark-green | 1,099-1,100 |
| Dolomite, buff-brown, very finely granular | 1,100-1,103 |
| Shale, gray, dolomitic | 1,103-1,104 |
| Dolomite, buff-brown, very finely granular; calcite crystals | 1,104-1,115 |
| Dolomite, very dark brown to black, silty | 1,115-1,120 |
| Dolomite, buff to brown, very finely granular | 1,120-1,125 |
| Dolomite, buff, very finely granular | 1,125-1,130 |
| Dolomite, buff, medium-crystalline to coarsely crystalline, with included subround sand grains | 1,130-1,135 |
| Dolomite, buff, finely crystalline, with included sand grains | 1,135-1,140 |
| Dolomite, buff, finely crystalline | 1,140-1,145 |
| Dolomite, buff, finely crystalline; gray-white chert | 1,145-1,150 |
| Dolomite, buff, medium-crystalline, sandy | 1,150-1,155 |
| Dolomite, buff, finely crystalline; some sandy dolomite | 1,155-1,163 |
| Dolomite, cream-colored, very finely granular | 1,163-1,165 |

Ordovician rocks --Continued
Everton formation --Continued

| | Depth (feet) |
|---|---|
| Dolomite, cream-colored, very finely granular, with scattered fine sand grains | 1,165-1,185 |
| Powell(?) limestone: | |
| Shale, gray-black | 1,185-1,187 |
| Dolomite, cream-colored, very finely granular | 1,187-1,192 |
| Shale, gray-black | 1,192-1,194 |
| Dolomite, cream-colored, very finely granular | 1,194-1,197 |
| Like overlying beds but with gray-black shale partings and green shale partings | 1,197-1,199 |
| Dolomite, cream-colored, very finely granular | 1,199-1,219 |
| Shale, green, waxy | 1,219-1,220 |
| Dolomite, buff, finely granular; some black shale seams | 1,220-1,224 |
| Shale, black | 1,224-1,226 |
| Dolomite, gray, finely granular; some included sand grains | 1,226-1,229 |
| Shale, black | 1,229-1,230 |
| Dolomite, gray, finely granular; some included sand grains | 1,230-1,243 |
| Shale, gray-black, slightly dolomitic | 1,243-1,250 |
| Dolomite, buff to brown, finely granular | 1,250-1,256 |
| Shale, gray-black | 1,256-1,257 |
| Dolomite, buff, medium-crystalline; cream-colored very finely granular dolomite | 1,257-1,262 |
| Shale, dark-brown to black | 1,262-1,264 |
| Dolomite, gray to buff, finely granular | 1,264-1,275 |
| Shale, dark-brown to black | 1,275-1,277 |
| Dolomite, buff, very finely granular | 1,277-1,280 |
| Dolomite, buff, medium- to coarsely crystalline | 1,280-1,284 |
| Dolomite, cream-colored, granular | 1,284-1,296 |
| Shale, dark-brown to black | 1,296-1,298 |
| Dolomite, cream-colored, granular | 1,298-1,306 |
| Shale, dark-brown to black | 1,306-1,308 |
| Dolomite, cream-colored, granular | 1,308-1,313 |
| Shale, dark-brown to black | 1,313-1,315 |

Ordovician rocks --Continued
Powell(?) limestone --Continued

| | Depth (feet) |
|---|---|
| Dolomite, cream-colored, finely crystalline | 1,315-1,320 |
| Dolomite, cream-colored, finely granular | 1,320-1,325 |
| Dolomite, cream-colored, finely granular; gray-buff dense chert | 1,325-1,330 |
| Dolomite, buff, finely crystalline | 1,330-1,335 |
| Dolomite, buff, finely crystalline; gray dense chert; white dense chert | 1,335-1,340 |
| Dolomite, gray-buff, finely crystalline | 1,340-1,342 |
| Shale, blue-green | 1,342-1,344 |
| Dolomite, brown, finely crystalline | 1,344-1,350 |
| Dolomite, buff, finely crystalline; thin seams of light-green shale | 1,350-1,360 |
| Dolomite, buff, finely granular | 1,360-1,365 |
| Dolomite, buff, granular | 1,365-1,370 |
| Dolomite, buff, medium-crystalline; pyrite | 1,370-1,374 |
| Dolomite, buff, finely to medium-crystalline; tan and brown banded dense chert | 1,374-1,380 |
| Dolomite, cream-colored, very finely granular | 1,380-1,390 |
| Dolomite, gray, silty | 1,390-1,400 |

Cotter(?) dolomite:

| | |
|---|---|
| Dolomite, dark-buff, finely crystalline | 1,400-1,405 |
| Dolomite, dark-buff, finely crystalline; brown dolomite rhombs in white silica; much white dense chert; gray and white banded chert | 1,405-1,410 |
| Dolomite, buff, finely crystalline; dolomite rhombs in silica; calcite crystals | 1,410-1,420 |
| Dolomite, buff, finely crystalline; tan-gray dense chert | 1,420-1,426 |
| Dolomite, gray-buff, finely crystalline | 1,426-1,430 |
| Dolomite, buff to brown, finely crystalline to dense; white dense chert | 1,430-1,440 |
| Dolomite, gray-buff, very finely granular | 1,440-1,450 |

Ordovician rocks --Continued
Cotter(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Dolomite, gray-buff, very finely granular; white dense chert | 1,450-1,455 |
| Dolomite, buff, finely crystalline | 1,455-1,460 |
| Dolomite, buff, medium-crystalline to coarsely crystalline; dolomite rhombs in white silica | 1,460-1,465 |
| Dolomite, buff, medium-crystalline to coarsely crystalline; much white silica with dolomite rhombs; green shale fragments; white to tan dense chert | 1,465-1,470 |
| Dolomite, buff, finely crystalline; dull-white chert | 1,470-1,475 |
| Dolomite, brown, finely crystalline; white to milky dense chert | 1,475-1,480 |
| Dolomite, buff, finely crystalline | 1,480-1,490 |
| Dolomite, cream-colored, finely granular | 1,490-1,495 |
| Dolomite, buff, finely crystalline | 1,495-1,510 |
| Dolomite, buff, finely crystalline; gray chert | 1,510-1,518 |
| Dolomite, buff, finely crystalline; buff coarsely crystalline dolomite; dolomite rhombs in white silica; banded white and gray chert; white finely oolitic chert | 1,518-1,525 |
| Dolomite, buff, finely crystalline | 1,525-1,530 |
| Dolomite, buff, finely crystalline; trace of white dense chert | 1,530-1,535 |
| Dolomite, buff, finely crystalline; smoky-gray chert | 1,535-1,540 |
| Dolomite, cream-colored, medium- to coarsely crystalline | 1,540-1,544 |
| Dolomite, gray-buff, finely crystalline | 1,544-1,550 |
| Dolomite, cream-colored, finely to medium-crystalline | 1,550-1,560 |
| Dolomite, cream-colored, finely granular | 1,560-1,565 |
| Dolomite, buff, finely granular | 1,565-1,570 |
| Dolomite, buff, finely crystalline; white dense chert; black-speckled gray chert | 1,570-1,575 |

Ordovician rocks --Continued
Cotter(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Dolomite, buff, finely to medium-crystalline; white dense chert | 1,575-1,580 |
| Dolomite, buff, medium-crystalline to coarsely crystalline | 1,580-1,585 |
| Dolomite, buff, finely crystalline; white dense chert with included dolomite rhombs | 1,585-1,590 |
| Dolomite, buff, finely crystalline; white dense chert; calcite crystals | 1,590-1,595 |
| Dolomite, buff, medium-crystalline to coarsely crystalline; white dense chert | 1,595-1,600 |
| Dolomite, buff, finely crystalline | 1,600-1,610 |
| Dolomite, buff, very finely granular | 1,610-1,615 |
| Dolomite, cream-colored, finely granular; trace of white dense chert | 1,615-1,620 |
| Dolomite, buff, finely crystalline; white dense chert; pyrite; milky chert | 1,620-1,627 |
| Dolomite, buff, finely granular to finely crystalline | 1,627-1,635 |
| Dolomite, buff, finely granular to finely crystalline; black-speckled, light-gray dense chert | 1,635-1,640 |
| Dolomite, cream-colored, very finely granular; trace of sandy chert | 1,640-1,645 |
| Dolomite, cream-colored, very finely granular | 1,645-1,650 |
| Dolomite, brown, finely crystalline; much white porcelainlike chert with brown dolomite rhombs included; gray dense chert with white speckles | 1,650-1,660 |
| Dolomite, buff, finely crystalline, with few scattered subround sand grains | 1,660-1,670 |
| Dolomite, buff, medium-crystalline to coarsely crystalline; much white porcelainlike chert with included dolomite rhombs | 1,670-1,675 |
| Dolomite, buff, finely crystalline, white pyritic chert | 1,675-1,680 |
| Dolomite, brown, finely crystalline; white dense chert | 1,680-1,685 |

Ordovician rocks --Continued
Cotter(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Dolomite, cream-colored, very finely granular | 1,685-1,697 |
| Dolomite, brown, finely crystalline | 1,697-1,700 |
| Dolomite, gray-buff, finely granular | 1,700-1,705 |
| Dolomite, buff, coarsely crystalline | 1,705-1,710 |
| Dolomite, buff, finely to medium-crystalline | 1,710-1,720 |
| Dolomite, cream-colored, finely granular; white dense chert; pyrite | 1,720-1,730 |
| Dolomite, cream-colored, finely granular | 1,730-1,734 |
| Dolomite, dark-buff, finely crystalline; white- and cream-banded pyritic chert | 1,734-1,740 |
| Dolomite, buff, finely crystalline; pyrite | 1,740-1,744 |
| Dolomite, buff, finely crystalline; brown dense chert | 1,744-1,750 |

Jefferson City(?) dolomite:

| | |
|---|---|
| Dolomite, gray-buff, finely granular; brown dense chert | 1,750-1,756 |
| Dolomite, dark-buff, finely crystalline; brown chert with white spots | 1,756-1,760 |
| Dolomite, buff, sandy, finely granular | 1,760-1,770 |
| Dolomite, brown, medium-crystalline, with calcite and dolomite rhombs in white silica; trace of tan oolitic chert | 1,770-1,780 |
| Dolomite, buff, finely granular; white dense chert; tan translucent chert containing Archeosoyphia? | 1,780-1,785 |
| Dolomite, buff, finely granular; white dense chert with fine black specks | 1,785-1,790 |
| Dolomite, cream-colored, very finely granular | 1,790-1,795 |
| Dolomite, cream-colored, medium-crystalline to coarsely crystalline; white interstitial silica; white figured chert | 1,795-1,800 |

Ordovician rocks --Continued
Jefferson City(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Dolomite, buff, finely granular; white subtranslucent figured chert; white subtranslucent oolitic chert | 1,800-1,805 |
| Dolomite, buff, finely granular; white dense chert | 1,805-1,810 |
| Dolomite, buff, medium-crystalline; dolomite rhombs in white silica; white dense chert | 1,810-1,815 |
| Dolomite, gray-buff, finely to medium-crystalline; glauconite | 1,815-1,820 |
| Dolomite, gray-buff, finely crystalline; white subtranslucent oolitic and sandy chert | 1,820-1,825 |
| Dolomite, cream-colored, medium-crystalline to coarsely crystalline; white subtranslucent oolitic and sandy chert | 1,825-1,830 |
| Dolomite, gray-buff, finely granular; white dense chert | 1,830-1,835 |
| Dolomite, white, coarsely crystalline | 1,835-1,840 |
| Dolomite, buff, finely crystalline | 1,840-1,845 |
| Dolomite, buff, finely crystalline; white dense chert; white subtranslucent chert | 1,845-1,850 |
| Dolomite, dark-buff, finely crystalline | 1,850-1,860 |
| Dolomite, gray-white, finely granular; slightly sandy, in part | 1,860-1,865 |
| Dolomite, dark-buff, finely crystalline | 1,865-1,870 |
| Dolomite, cream-colored, finely granular | 1,870-1,885 |
| Dolomite, brown, finely crystalline | 1,885-1,890 |
| Dolomite, brown, finely crystalline; brown dense chert containing scattered sand grains | 1,890-1,895 |
| Dolomite, cream-colored, very finely granular | 1,895-1,900 |
| Dolomite, dark-brown, resinous, finely granular | 1,900-1,910 |
| Dolomite, gray-green, with included sand grains | 1,910-1,915 |
| Dolomite, buff, granular | 1,915-1,920 |

Ordovician rocks --Continued
Jefferson City(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Dolomite, gray, very finely granular | 1,920-1,925 |
| Dolomite, brown, finely crystalline | 1,925-1,930 |
| Dolomite, buff, finely granular | 1,930-1,945 |
| Dolomite, gray, slightly silty | 1,945-1,950 |
| Dolomite, cream-colored, finely granular; gray-white slightly figured chert | 1,950-1,960 |
| Dolomite, cream-colored, finely granular, with included sand grains | 1,960-1,965 |
| Dolomite, brown, finely crystalline | 1,965-1,970 |
| Dolomite, brown, finely granular | 1,970-1,974 |
| Dolomite, cream-colored, sandy, very finely granular; white very sandy chert | 1,974-1,980 |
| Dolomite, cream-colored, very finely granular | 1,980-1,987 |
| Dolomite, gray-white, finely to medium-crystalline | 1,987-2,000 |
| Dolomite, cream-colored, finely granular | 2,000-2,005 |
| Dolomite, gray-buff, finely crystalline | 2,005-2,010 |
| Dolomite, gray-buff, finely crystalline; white dense chert | 2,010-2,020 |
| Dolomite, buff, coarsely crystalline, trace of tan translucent chert | 2,020-2,030 |
| Limestone, dark-buff, finely crystalline, dolomitic | 2,030-2,033 |
| Limestone, dark-buff | 2,033-2,040 |
| Limestone, light-buff, finely crystalline; tan subtranslucent chert; smoky chert | 2,040-2,060 |
| Limestone, light-buff, finely crystalline | 2,060-2,075 |
| Limestone, cream-colored, finely crystalline; white dense chert; tan slightly figured subtranslucent chert | 2,075-2,080 |
| Limestone, cream-colored, finely crystalline; chert not so abundant | 2,080-2,086 |
| Dolomite, cream-colored, finely granular | 2,086-2,090 |
| Dolomite, cream-colored, fine, sandy | 2,090-2,096 |

Ordovician rocks --Continued
Jefferson City(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Limestone, buff, finely crystalline to dense; white subtranslucent chert | 2,096-2,100 |

Roubidoux(?) formation:

| | |
|---|---|
| Limestone, buff, finely crystalline, faintly oolitic | 2,100-2,105 |
| Limestone, buff, finely crystalline; gray subtranslucent chert | 2,105-2,110 |
| Limestone, dark-buff, finely crystalline to dense | 2,110-2,130 |
| Limestone, buff, sandy, with some white dolomitic and siliceous oolites | 2,130-2,134 |
| Sandstone, white, limy, fine-grained | 2,134-2,137 |
| Dolomite, gray, sandy; white subtranslucent sandy chert | 2,137-2,142 |
| Limestone, cream-colored, finely crystalline to dense | 2,142-2,150 |
| Limestone, cream-colored, finely crystalline to dense; tan to smoky-gray dense chert | 2,150-2,170 |
| Dolomite, gray-buff, finely granular; tan to smoky-gray dense chert | 2,170-2,172 |
| Sandstone, gray, quartzitic | 2,172-2,178 |
| Sandstone, white, dolomitic, fine-grained | 2,178-2,180 |
| Limestone, cream-colored, finely crystalline to dense; tan to gray subtranslucent chert | 2,180-2,187 |
| Sandstone, white, dolomitic, fine- to medium-grained | 2,187-2,190 |
| Sandstone, white, limy, fine- to medium-grained | 2,190-2,192 |
| Limestone, cream-colored, fine, sandy | 2,192-2,200 |
| Limestone, cream-colored, fine, sandy; tan translucent chert | 2,200-2,204 |
| Limestone, buff, finely crystalline to dense | 2,204-2,210 |
| Dolomite, white, finely crystalline, with included round sand grains | 2,210-2,215 |
| Dolomite, white, finely crystalline | 2,215-2,220 |
| Dolomite, buff, coarsely crystalline | 2,220-2,230 |

Ordovician rocks --Continued
Roubidoux(?) formation --Continued

| | Depth (feet) |
|---|---|
| Dolomite, buff, coarsely crystalline; light-buff oolitic chert | 2,230-2,240 |
| Limestone, buff, finely crystalline to dense | 2,240-2,255 |
| Limestone, buff, finely crystalline to dense; gray-black dense chert | 2,255-2,260 |
| Limestone, buff, finely crystalline to dense | 2,260-2,267 |
| Dolomite, white, sandy, or limestone | 2,267-2,270 |
| Limestone, buff, finely crystalline to dense; light-buff sandy chert; gray translucent chert | 2,270-2,275 |
| Limestone, buff, finely crystalline to dense; gray-black dense chert | 2,275-2,290 |
| Limestone, cream-colored, finely crystalline to dense | 2,290-2,300 |
| Limestone, cream-colored, finely crystalline to dense; tan figured chert | 2,300-2,306 |
| Dolomite, gray-buff, coarsely crystalline; white dense chert; tan subtranslucent chert | 2,306-2,310 |
| Dolomite, cream-colored, very finely granular; white to light-buff subtranslucent chert | 2,310-2,320 |
| Dolomite, buff, finely granular; quartz crystals | 2,320-2,325 |
| Dolomite, gray-buff, finely granular to finely crystalline; blue chert with gray speckles | 2,325-2,330 |
| Dolomite, buff, finely crystalline to finely granular; white dense chert containing dolomite rhombs | 2,330-2,336 |
| Dolomite, buff, sandy | 2,336-2,340 |
| Dolomite, cream-colored, finely crystalline; white sandy chert | 2,340-2,345 |
| Dolomite, cream-colored, finely crystalline | 2,345-2,350 |
| Dolomite, white, sandy, granular; trace of white and gray chert | 2,350-2,355 |
| Dolomite, white, sandy | 2,355-2,360 |
| Sandstone, white, dolomitic, fine- to medium-grained, with subround to subangular grains | 2,360-2,366 |

Ordovician rocks --Continued

| | Depth (feet) |
|---|---|
| Gasconade(?) dolomite: | |
| Dolomite, cream-colored, medium-crystalline | 2,366-2,375 |
| Dolomite, cream-colored, finely granular; dull-white pyritic chert | 2,375-2,380 |
| Dolomite, gray, finely granular | 2,380-2,385 |
| Dolomite, cream-colored, finely crystalline | 2,385-2,390 |
| Dolomite, cream-colored, medium-crystalline | 2,390-2,395 |

Ordovician rocks --Continued

Gasconade(?) dolomite --Continued

| | Depth (feet) |
|---|---|
| Dolomite, cream-colored, medium-crystalline; blue-gray chert; translucent sandy chert | 2,395-2,400 |
| Dolomite, cream-colored, coarsely crystalline | 2,400-2,405 |
| Dolomite, cream-colored, coarsely crystalline; white dolomite rhombs | 2,405-2,410 |
| Dolomite, cream-colored, coarsely crystalline | 2,410-2,415 |
| Total depth | 2,415 |



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