CRUSHED STONE IN INDIANA

BY

JOHN B. PATTON

PRINTED BY AUTHORITY OF THE STATE OF INDIANA

BLOOMINGTON, INDIANA

APRIL 1949
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Bloomington, Indiana

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CRUSHED STONE IN INDIANA
by John B. Patton

INTRODUCTION

During the field seasons of 1947 and 1948, two field parties of the Division of Geology, Indiana Department of Conservation, examined, sampled, and mapped the quarries that are producing crushed stone in Indiana. In 1947 the parties were led by George E. Erickson and the writer and in 1948 by Carroll W. Roberts and the writer. Field assistants for the first year were Robert Stewart and Dallas Plante. For 1948 field assistants were W. E. Taylor and Richard Erd.

Although the purpose of the survey was to study only active quarries, some inactive ones which seemed likely to resume operations were studied. Of the 92 quarries shown on the map (Plate 1), 89 were in operation during the time of the field examination, and 3 have since become active. These 3 quarries have not been sampled or mapped, but they have been located, and the geological formations from which they produce have been ascertained.

The samples are being analyzed by the chemical and spectrographic laboratories of the Division of Geology. A report containing comprehensive information on the limestone and dolomite resources of Indiana will be published when sufficient analyses are available to show regional chemical characteristics and variations of the formations. The report will include analyses of several other formations which have commercial potentialities but are not being exploited at this time. Active quarries are not properly distributed for a determination of the regional characteristics of some of the formations. In such cases, field parties will sample and examine the limestones in areas selected to fill out a well-spaced grid of control. These supplementary samples will be taken from natural outcrops, cuts, and abandoned quarries.
during the field season of 1950.

In the driftless area of south central Indiana and in most of the portions of southeastern and southwestern Indiana which are covered by Illinoian glacial drift, bedrock is close enough to the surface to permit economical stripping and quarrying. Between the outer border of the Wisconsin drift sheet and the lower portion of the area covered by the Champaign morainic system, major streams and some tributaries cut through the glacial drift to bedrock and permit quarrying without excessive stripping. The quarries in Wayne, Grant, Shelby, Bartholomew, Pulaski, Montgomery, and northwestern Decatur Counties (Plate 1) are within and near the margin of Wisconsin drift.

In northern Indiana overburden is thin only in the valleys of major streams and at a few places in the till plains. The operator therefore quarries limestone and dolomite where they are available and has little opportunity to select his quarry site from a wide range of possible locations. In the limestone areas of southern Indiana, however, potential quarry sites are numerous, and the quarry operator may select a location upon the basis of convenience, geographic advantage, stripping conditions, and character of the limestone.

The Silurian and Devonian formations in northern Indiana have not been precisely correlated with those in southern Indiana. The two areas have been treated separately in most geologic reports and are so treated here.

**LIMESTONE QUARRIED IN SOUTHERN INDIANA**

Salina Limestone

The lowest stratigraphic unit from which crushed stone is produced in southern Indiana is the Salina limestone. The only area in which it is
quarried in Dearborn County, where the Salina is dark-gray, impure, dolomitic, thin-bedded limestone that contains thin shale beds. The formation is only 6 feet thick near Richmond and thickens southward to 50 feet near Madison (Cumings, 1922, p. 440), where it is massive limestone.

**Whitewater Formation**

The Whitewater formation, which overlies the Salina throughout Indiana, is rubbly, blue-gray, abundantly fossiliferous limestone that contains thin shale beds. Although most of the limestone is argillaceous, some beds are crystalline and fairly pure. The Whitewater is only a few feet thick near Madison but thickens northward to 80 feet near Richmond (Cumings, 1922, p. 438).

**Elkhorn Formation**

The uppermost Ordovician formation in Indiana is the Elkhorn, which overlies the Whitewater formation north of Ripley County and thickens northward. Silurian rocks rest upon the Whitewater from northern Ripley County south to the Ohio River. The middle portion of the formation is gray, crystalline, thin-bedded limestone, which is quarried southeast of Richmond. The upper and lower parts of the formation consist of shale (Cumings, 1922, p. 438).

**Brassfield Limestone**

The lowest Silurian formation in most of southeastern Indiana is the Brassfield limestone, but the formation is absent in a small area south and west of Vevayville. The Brassfield is typically salmon-colored, crystalline, unbedded limestone, desirable for crushed stone and agricultural lime but usually too thin to be quarried economically alone.
Osgood Formation

The Osgood formation, which overlies the Brownfield limestone, consists mostly of tan, dense limestone. Two beds of light-gray calcareous shale, 1 to 3 feet in thickness, are rather persistent and under economic quarrying. At present no quarries are operating entirely in the Osgood. Several quarries, mainly in the overlying Laurel limestone, apparently take some of the upper beds of the Osgood. The contact between the Laurel and Osgood is not easily established in a quarry, as both formations are sparsely fossiliferous and appear similar on fresh surfaces. The Osgood is more argillaceous than the Laurel and weathers to a yellow soft rock which is easily distinguished from the Laurel on old exposures.

Laurel Limestone

The principal source of crushed stone within the Silurian rocks of southern Indiana is the Laurel limestone. It is pale-tan to gray, dense, moderately dolomitic, thin-bedded, and in most places extremely cherty in the upper 5 to 20 feet. Throughout the formation thin bands of lenticular and nodular chert are common. The Laurel was once a noted source of dimension stone but is no longer quarried for this purpose. The Waldron shale normally overlies the Laurel, but in places all Silurian rocks younger than Laurel are missing, and Geneva dolomite (Devonian) rests directly upon the Laurel.

Louisville Limestone

The Louisville in Clark County is gray to buff, finely crystalline to dense, very dolomitic limestone, which contains many chain corals and is overlain south of Charlestown by the Jeffersonville limestone and north of Charlestown by the Geneva dolomite. Throughout its outcrop area the Louisville is underlain by the Waldron shale. The Louisville thins to the
north from 60 feet near Jeffersonville to about 10 feet in central Jennings County and farther north is absent in many places. In northern Decatur County the Louisville is represented by a few feet of light-gray, crystalline, thin-bedded fossiliferous limestone, which weathers pale-lavender or blue.

**Geneva Dolomite**

The basal Devonian formation in most of southern Indiana is the Geneva dolomite (Geneva limestone of Wilmarth, 1938, p. 810), which ranges in color from light-gray through tan and buff to chocolate-brown and contains white crystalline calcite masses. In the valley of the Flat Rock River in southern Rush and Shelby Counties, the formation is thin-bedded, but in central Jennings County and southward it is massive. The Geneva thins to the south and is absent nearly everywhere south of Charlestown in Clark County.

**Jeffersonville Limestone**

The Jeffersonville limestone rests on the Geneva dolomite from eastern Bartholomew County to southeastern Clark County. In extreme southern Clark County the Jeffersonville is the oldest Devonian formation and rests on the Louisville limestone. The Jeffersonville in its type section may be divided into a basal brown, coralline, dolomitic limestone; a middle gray to brown, dense to crystalline, fossiliferous limestone (Spirifer gregarius of Kindle, 1901, p. 539); and an upper tan, crystalline, massive limestone (Spirifer arctineatus of Kindle, 1901, p. 539). The basal coralline limestone is present wherever the basal Jeffersonville is exposed and occurs in Bartholomew County at the northernmost Jeffersonville quarry examined.

The middle limestone unit, characterized by Spirifer gregarius, becomes unfossiliferous northward from the type section. In Jennings and Bartholomew Counties the unit is replaced by beds of light-gray and tan, conspicuously and thinly laminated, dolomitic limestone that contains numerous
small calcite crystals and have an ashy or chalky appearance. In places the laminated beds are crumpled and brecciated and are cemented with calcite and pyrite. The upper or **Calcifer associated** limestone contains abundant fenestellid bryozoa in its upper bed and is present wherever the upper Jeffersonville crops out.

**Speed Limestone**

The Jeffersonville limestone is overlain from central Clark to central Jennings County by the speed limestone, which is blue-gray, crystalline, fossiliferous and argillaceous. The speed is absent in southern Clark County and in Bartholomew and northern Jennings Counties.

**Silver Creek limestone**

The Silver Creek limestone, the natural cement rock of Clark County, is a drab-gray, argillaceous, massive, fossiliferous limestone, which breaks with a conchoidal fracture and is cherty in the upper part. The Silver Creek thins northward and is absent north of central Scott County.

**Beechwood limestone**

Throughout southern Indiana the uppermost Devonian limestone is the Beechwood, which is gray, hard, coarsely crystalline, fossiliferous, and contains abundant crinoid rings. The Beechwood rests unconformably upon the Silver Creek, Speed, and Jeffersonville and underlies the New Albany shale throughout the area.

**Borden Reef Material**

The two upper units of the Borden group (Lower Mississippian) are the Floyd's Knob formation and the Edwardsville formation. Stockdale, 1931,
(Stockdale, 1931, p. 251) referred to crinoid biogenic that began to grow during the deposition of the Floyd's Knob and continued during the Edwardsville. The "biogenic" have been described (Stockdale, 1931, p. 251) as "irregular calcareous masses of variable size and distribution, built in considerable part by crinoids and in lesser degree by bryozoans, and completely surrounded by rock of different lithology . . . ." Several of the reefs have been quarried, but only one, in Montgomery County, is now being worked. This exposure is isolated and is insufficiently exposed to reveal its position within the Parden group. It probably is in both the Floyd's Knob and lower Edwardsville.

Harrodsburg Limestone

The upper portion of the Harrodsburg limestone (Warraw limestone of Wilmarth, 1938, p. 2276) is gray, crystalline, massive, fossiliferous, and styloitic. The lower part of the Harrodsburg consists of thin-bedded argillaceous limestone, bands of shale, thin layers of crystalline crinoidal limestone, and contains numerous fossils. The Harrodsburg is underlain by the Edwardsville formation and overlain by the Salem limestone.

Salem Limestone

The famous Indiana building stone, a facies of the Salem limestone (Spergen limestone of Wilmarth, 1938, p. 309), is soft, granular, fossiliferous, massive, cross-bedded limestone. The Salem in places is separated from the underlying Harrodsburg limestone by a few feet of platy shale or impure limestone. The lowermost beds of the Indiana building stone and the uppermost beds of the Harrodsburg are composed largely of fenestralloid bryozoans. The contact is difficult to identify if shale is absent. Above the building stone the Salem consists of brown, fine-grained, silty, argillaceous, dolomitic limestone, which emits a sulphurous odor from freshly
broken surfaces and is termed the "Dundee stone." The building stone in the Salem consists of small fossils and fragments of fossils cemented together. Although termed "oolite," the Salem is not a strongly oolitic stone in most localities. The granular bodies are predominantly rounded fossil fragments and foraminifers. The building stone is one of Indiana's principal reserves of high-calcium lime stone.

St. Louis Limestone

The Salem is overlain by the St. Louis limestone, which is blue-gray, argillaceous, and thin-bedded in the lower part. The upper part is tan to brown, dense, dolomitic limestone. Quartz nodules and lenses are common, and at places the formation contains vugs lined with dolomite crystals. Local shale beds are present in the formation, particularly in the lower part.

Ste. Genesive Limestone

The Ste. Genevieve limestone overlies the St. Louis limestone and has been divided into three members, named, in ascending order, the Fredonia, Botticelle, and Lyons. The Fredonia consists mostly of tan or gray, crystalline to dense, oolitic limestone but contains massive beds of extremely pure white oolite. The Botticelle consists mainly of gray, thin-bedded, oolitic limestone but contains shale beds and some sandstone. In many places the limestone contains scattered sand grains difficult to see without a lens. The Lyons is predominantly light-colored, thin-bedded, dense to crystalline, oolitic limestone and beds of massive white oolite of high purity. The oolite beds of the Lyons and Fredonia are a major reserve of high-calcium limestone in Indiana. The uppermost bed of the Lyons is a brown, rubbly, brecciated, dense limestone termed the "Bryantsville bed" by C. A. Malott (manuscript to be published, 1950) and marks the Heronance-Chester
contact, where the Aux Vases is absent. The relative thickness of the three members of the Ste. Genevieve ranges greatly within exposures in Indiana.

Aux Vases Sandstone

The lowermost formation of the Chester series of Mississippian rocks in Indiana is the Aux Vases sandstone, which consists of gray or green shale, sandy shale, sandy limestone, or sandstone. In some areas the Aux Vases has not been found, and the overlying Paoli limestone rests directly on the Ste. Genevieve. The Aux Vases, where it is sufficiently calcareous, is produced with the underlying or overlying beds but it is never quarried alone.

Paoli Limestone

The Paoli is tan, gray, or nearly white, dense to granular, oolitic limestone. At many exposures a bed of light-gray shale is present near the middle of the formation, and shale partings are common at bedding planes. The Paoli rests upon the Aux Vases or Ste. Genevieve and is overlain by the Mooretown sandstone.

Beaver Bend Limestone

The Beaver Bend limestone rests on the Mooretown sandstone and is overlain by the Sample sandstone. The Beaver Bend is gray, oolitic, and crystalline. In most places it is not thick enough to be quarried alone but is quarried for crested stone when encountered in stripping above the Paoli.

Beach Creek Limestone

The Beach Creek is brown or blue-gray, dense to crystalline, fossiliferous limestone that overlies the Klenen sandstone and underlies the
Cypress sandstones. Large crinoid stems with calcilith clearings stand out on weathered surfaces and distinguish the Beech Creek from other Chester limestones.

Glen Dean Limestone

The Glen Dean limestone rests on the Fardinsburg sandstone and is overlain by the Tar Springs sandstone. The lower half of the formation is hard, brown or gray, crystalline, massive limestone. The upper half generally is shale. Locally, erosion has removed part or all of the shale. These beds of limestone are usually present within the upper shale. Such beds are not of commercial thickness and are discarded as part of the overburden.

Minshall Limestone

The "Minshall limestone" (Moore et al., 1944, pl. 1) is dark blue-gray, hard, fine-grained, siliceous limestone that commonly contains lenticular bands of blue chert several inches in thickness. The limestone is above the Minshall coal, from which it is separated by a bed of black shale. The Minshall limestone is the top of the Pottsville series of the Pennsylvanian.

Waris Creek Limestone

The "Waris Creek limestone" (Malott, 1948, p. 125) is gray to tan, dense to crystalline, hard, fossiliferous limestone that is approximately 75 feet above Coal VII. The limestone lies between beds of shale and is within the Conemaugh series of the Pennsylvanian.

No proper type section has been set up and described for the "Minshall limestone," and the name has never been formally proposed.

No proper type section has been set up for the "Waris Creek limestone," and the name has never been formally proposed.
LIMESTONES QUARRIED IN NORTHERN INDIANA

Middle Ordovician Rocks

A deep seated disturbance in the earth's crust folded, broke, and elevated Middle Ordovician rocks to the surface in a small area in southern Newton County (Quarry No. 52, pl. 1). Shrock and Malott (1933, fig. 9) identified the limestone formations as the Stones River, Black River, and Trenton. The formations quarried near Remillard are limestone and dolomite of variable color and texture. A typical section or description cannot be given because the beds stand at high angles and are broken and faulted.

Mississinewa Shale

The lowest Silurian formation recognized at the surface in northern Indiana is the Mississinewa shale (Cumings and Shrock, 1927, p. 583). The formation is less homogeneous than most descriptions indicate. At most exposures the rock is blue-gray, argillaceous, dolomitic, silty, massive limestone which has conchoidal fracture and weathers to small rectangular blocks. In places the Mississinewa is gray calcareous shale. Interbedding of shale and limestone is not common. Cumings and Shrock (1928a, p. 62) state that all of the known Niagara reefs "have their roots in the upper 100 feet of this formation." Well samples show (Esarey and Bieberman, 1946, fig. 4) that a thick sequence of dolomite and limestone underlies the Mississinewa and overlies the Brasfield limestone. Exposure of the base of the Mississinewa have not been found. The formation is normally overlain by the Liston Creek limestone (also Niagara) but at Kokomo and near Peru it overlain by Kokomo limestone (Cayugan).
Liston Creek Formation

The Liston Creek is a gray, thin-bedded, dolomitic, cherty limestone and interbedded lenticular beds of chert. Chert is less abundant in the lower than in the upper part and in places is absent. Reefs, which apparently began in the Mississinewa, continued their growth into the Liston Creek.

Huntington Dolomite

The Huntington dolomite has been described (Cumings and Shrock, 1928a, p. 95) as "massive to slaty, evenly-bedded, yellowish, gray or pinkish, granular dolomite of saccoroid texture." The existence of the Huntington as a formation has been questioned. Although dolomite identified as Huntington is exposed at numerous places throughout an area of more than 1500 square miles, the contact of the base of the Huntington on an older formation has not been observed. Many exposures termed Huntington are reefs or beds associated with reefs. Some reefs formerly called "Huntington" are now considered to be Liston Creek or even Mississinewa in age. Further investigation may save other "Huntington" reefs down into lower formations.

Identification of a Guelph fauna has furnished much of the basis for the existence of the Huntington as a formation younger than Liston Creek. The term New Corydon limestone was proposed (Cumings and Shrock, 1928b, p. 588) for "12 to 15 feet of brown, exceedingly nodular, cherty, slightly fossiliferous limestone (which) rest on Huntington dolomite with a sharp line of contact." The New Corydon was determined to have a Lockport fauna, although it overlay marine sediments of Guelph age. Both fauna and lithology suggest that the New Corydon is in a more dolomitic eastern facies of the cherty upper Liston Creek and that the even-bedded dolomite beneath it represents the lower non-cherty Liston Creek, more dolomitized than in Wabash.
and Grant Counties.

In Adams, Jay, and Randolph Counties, thick massive dolomite and overlying thin slaty dolomite beds have been termed Huntington. Absence of Mississippian in well samples (D. F. Bieberman, personal communication) from the area suggests that the beds may be surface exposures of the unnamed subsurface beds overlying the Freshwater and underlaying the Mississippian (Barrey and Bieberman, 1968, fig. 4).

Thus it seems possible that the described exposures of the Huntington include unfamiliar aspects of beds distributed through several hundred feet and several formations within the Niagaran of northern Indiana.

Kokomo Limestone

The Kokomo limestone is gray to brown, banded dolomitic limestone, much of which is finely-laminated. Although the Kokomo usually is described as argillaceous, analyses show little alumina. At Kokomo and near Peru the upper beds are contorted, faulted, and recemented, probably as a result of disturbance of the sediment before it was consolidated. Such disturbance could be caused by wave action or by slumping of beds deposited on a slope. The Kokomo rests unconformably on Linton Creek, Mississippian, and Niagaran reefs and has been considered to be Carugan, but the upper part of the formation may be Devonian. The Kokomo is overlain by the Kenneth limestone or by Middle Devonian limestones.

Kenneth Limestone

The Kenneth limestone is tan to brown, dense, extremely cherty, fossiliferous limestone. Some authors have placed the formation in the Cayugan and others in the Lower Devonian. The Kenneth rests upon the Kokomo and is overlain by Middle Devonian limestones.
Devonian Limestone (uncalibrated)

The Devonian limestone overlying the Niagara and Cayuga rocks in northern Indiana is, in most places, gray, hard, coarsely crystalline, crinoidal limestone which resembles the Hangston (Beaumont) of southern Indiana. East of Logansport the lowest exposed Devonian consists of a blue-gray nodularstromatolitoid biostromes. The next higher beds are tan, flaggy, crystalline pure limestone which contains many corals and fenestraloid bryozoa and has an appearance similar to the Sperifer associated some of the upper Jeffersonville (Beechwood) of southern Indiana.

INDIANA OCEANIC STONE QUARRIES

The quarries listed below are operating or have been at some time during the course of the field examination. The information in this report was obtained when each quarry was examined and will not reflect changes since that time. For example, a quarry may have been deepened into lower geologic formations than those listed. Changes in the plant facilities or operating methods may have added special products not listed here.

A thickness in feet, without other qualifications, is given for formations whose top and base are exposed in the quarries listed. The highest formation in a quarry is rarely present in its full thickness, since erosion commonly has removed the upper part. In such cases a thickness in feet is given, followed by the statement "Upper part eroded" or similar qualification. In neglected areas the formation might be expected to have greater thickness at higher topographic levels. When quarrying has not reached the base of a formation, the word "exposed" follows the thickness given, indicating that deeper quarrying will expose a greater thickness of that formation. Underground quarries commonly make their entries in old surface quarries.
In hillside. In such cases formations higher than those now being produced are exposed above the entries. Only the formations and thicknesses which are being mined are indicated.

**ADAMS COUNTY**

1 **Barst Quarry**
   - Location: SW¼ sec. 31, T. 25 N., R. 15 E.
   - 4.5 miles southeast of Geneva
   - Date of field examination: July 25, 1947
   - Geologic formation: Huntingdon - 22 feet exposed, upper part eroded
   - Products: agricultural lime and crushed stone

2 **Heshberer Brothers Stone Company**
   - Location: SE¼ sec. 33, T. 26 N., R. 15 E.
   - 1.5 miles northwest of Limgrose
   - Date of field examination: July 19, 1947
   - Geologic formation: Huntingdon - 38.1 feet exposed, upper part eroded
   - Products: agricultural lime and crushed stone

3 **Heshberer Brothers Stone Company**
   - Location: center sec. 8, T. 26 N., R. 15 E.
   - 3 miles southeast of Pleasant Hills
   - Date of field examination: July 21, 1947
   - Geologic formation: Huntingdon - 25 feet exposed, upper part eroded
   - Products: crushed stone and agricultural lime

**BARTHOLOMOW COUNTY**

4 **Heshberer Stone Company**
BARTHOLOMEW COUNTY, cont'd.

Location: NW sq. 6, T. 8 N., R. 7 E.
2 miles northeast of Elizabethtown
Date of field examination: October 10, 27, 31, 1947
Geologic formation: Beechwood - 3.5 feet thick
Jeffersonville - 35 feet exposed
Products: agricultural lime, road stone, and flux stone

BLACKFORD COUNTY

5 Montpelier Stone Company
Location: SW sec. 3, T. 24 N., R. 11 E.
North edge of Montpelier
Date of field examination: July 11, 1947
Geologic formation: Huntington - 34.7 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

CARRILO COUNTY

6 Stears-Drexel Company
Location: SE sec. 19, T. 23 N., R. 2 W.
Near northwest edge of Delphi
Date of field examination: July 16, 1947
Geologic formation: Huntington - 25.2 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

CASS COUNTY

7 French Stone Company
Location: NE sq. 27, T. 27 N., R. 2 E.
2.5 miles east of Logansport
Date of field examination: July 25, 27, 1947
CLARK COUNTY, cont'd.

Geologic formations: Devonian (Jeffersonville) - 26.4 feet, upper part eroded

Holocene - 22.5 feet exposed

Products: crushed stone and agricultural lime

CLARK COUNTY

8 P. J. Atkins Company
Location: N 4 sec. 10, Clark Military Grant
1 mile northeast of Clayburg
Date of field examination: October 21, 1947
Geologic formations: Silver Creek - 10.1 feet thick, upper part eroded

Jeffersonville - 28.5 feet exposed

Products: agricultural lime and crushed road stone

9 Louisville Cement Company
Location: Grant 132 (and part of 131), Clark Military Survey
1 mile northeast of Speed
Date of field examination: October 1, 16, 1947
Geologic formations: Silver Creek - 13.9 feet thick, upper part eroded

Speed - 4.5 feet thick

Jeffersonville - 35.9 feet thick

Products: crushed stone, agricultural lime, small amount of asphalt filler, raw limestone for portland cement and brimstone

10 Sellersburg Stone Company
Location: SE 1/4 Grant 90, Clark Military Survey
East edge of Sellersburg
Date of field examination: September 29, 30, 1947
Geologic formations: Silver Creek - 10.1 feet thick, upper part eroded
CLARK COUNTY, cont'd.

Speed - 1.7 feet thick
Jeffersonville - 30.3 feet thick
Louisville - 22.3 feet exposed

Products: crushed stone and agricultural lime

CRAWFORD COUNTY

11 Ivy Rock Products Company
Location: SW Sec. 7, T. 2 S., R. 2 E.

 merage

Dates of field examination: July 25, 1967
Geologic formation: Ste. Genevieve - 32 feet being mined
Note: underground operation

Products: crushed stone and agricultural lime

12 McLean Brothers Quarry
Location: NE Sec. 10, T. 2 S., R. 2 W.

3 miles north of McLean

Date of field examination: June 30, 1966
Geologic formation: Glen Dean - 34 feet exposed

Products: crushed stone and agricultural lime

DAVIS COUNTY

13 Arch Quarry
Location: SE Sec. 16, T. 1 N., R. 5 W.

1.5 miles north of Porterville

Date of field examination: July 14, 15, 1968
Geologic formation: Kirkwall - 4.8 feet thick

Products: road stone
DEKALB COUNTY

14 Bennett Construction Company
Location: SE 1/4, sec. 14, T. 7 N., R. 3 W.
3.5 miles northwest of Manchester
Date of field examination: August 8, 1947
Geologic formation: Whitewater - 7.5 feet thick, upper part eroded
Saluda - 4.8 feet exposed
Products: road rock and agricultural lime

15 Dearborn Lime Company
Location: NW 1/4, sec. 30, T. 8 N., R. 2 W.
1.5 miles northeast of Weinsburg
Date of field examination: August 11, 1947
Geologic formation: Saluda - 10.1 feet exposed, upper part eroded
Products: agricultural lime

DEKALB COUNTY

16 Harris City Stone Company
Location: NE 1/4, sec. 28, T. 10 N., R. 9 E.
.5 mile north of Harris City
Date of field examination: July 26, 1948
Geologic formation: Laurel - 27.9 feet exposed, upper part eroded
Products: agricultural lime and road stone

17 Huber-Gaty Quarry
Location: NW 1/4, sec. 12, T. 10 N., R. 9 E.
South edge of Greensburg
Date of field examination: August 23, 1947
Geologic formation: Laurel - 51.3 feet thick, thin section eroded from top
DECATUR COUNTY, cont’d.

Products: crushed stone and agricultural lime

18 Lacon Quarry
Location: SE1/4 SE1/4 sec. 20, T. 9 N., R. 9 E.
3.25 miles northwest of Westport
Date of field examination: August 25, 1947
Geologic formation: Laurel - 14.2 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

19 New Point Stone Company
Location: SE1/4 SE1/4 sec. 8 and NE1/4 NE1/4 sec. 7, T. 10 N., R. 11 E.
1 mile north of New Point
Date of field examination: August 21, 1947
Geologic formation: Laurel - 16.1 feet thick, upper part eroded
Osgood - 12.9 feet thick
Brasfield - 4.5 feet thick
Whitewater - 3.5 feet exposed
Products: agricultural lime and crushed stone

20 Vail Stone Company
Location: NW1/4 NE1/4 sec. 12, T. 3 N., R. 9 E.
.35 mile east of Sandusky
Date of field examination: September 3, 1947
Geologic formation: Laurel - 18.5 feet exposed
Products: agricultural lime and road rock

DELAWARE COUNTY

21 J. & L. Stone Company
Location: NE1/4 sec. 27, T. 22 N., R. 10 E.
DELAWARE COUNTY, cont'd.

West edge of Eaton

Date of field examination: August 23, 1947

Geologic formation: Huntington - 18.7 feet exposed, upper part eroded

Products: crushed stone and agricultural lime

22 J. & J. Stone Company
Location: SW1/4 sec. 20, T. 20 N., R. 10 E.

Southwest edge of Muncie

Geologic formation: Lietzen Creek

Note: not sampled or examined

Products: crushed stone and agricultural lime

23 Muncie Stone and Lime Company
Location: SW1/4 sec. 20, T. 20 N., R. 10 E.

Southwest edge of Muncie

Date of field examination: August 25, 1947

Geologic formation: Lietzen Creek - 48.2 feet exposed, upper part eroded

Products: crushed stone and agricultural lime

GRANT COUNTY

24 Pipe Creek Stone Company
Location: SE1/4 sec. 25, T. 25 N., R. 6 E.

2.5 miles west of Sweatertown

Date of field examination: July 12, 1947

Geologic formation: Lietzen Creek - 18.5 feet thick, upper part eroded

Mississippian - 17.3 feet exposed

Products: crushed stone, agricultural lime, and raw material for rock wool
HAMILTON COUNTY

25 Condon Stone Company
Location: NE1/4 sec. 29, T. 3 S., R. 3 E.
Northwest edge of Condon
Date of field examination: September 9, 1947
Geologic formation: St. Louis - 52.1 feet exposed
Products: road rock and agricultural lime stone

26 Condon Stone Company
Location: NE1/4 sec. 25, T. 3 S., R. 4 E.
2.5 miles southwest of Lanesville
Date of field examination: September 9, 1947
Geologic formation: Salem - 26.2 feet thick, upper part eroded
Harrodsburg - 41.5 feet exposed
Products: agricultural lime and crushed stone

27 Davis Brothers Stone Company
Location: NE1/4 sec. 15, T. 2 S., R. 3 E.
1 mile northwest of Ramsey
Date of field examination: June 30, July 2, 1948
Geologic formation: Paoli - 5.1 feet thick, upper part eroded
St. Genevieve - 33 feet exposed
Products: agricultural lime stone and road stone

28 Lebanon Stone Company
Location: NE1/4 sec. 13, T. 2 S., R. 2 E.
1.5 miles west of DePauw
Date of field examination: July 28, 1948
Geologic formation: Paoli - 17.6 feet exposed, upper part eroded
Products: flux stone and raw stone for burned lime

29 LOUSIVILLE CEMENT COMPANY
Location: NW sec. 14, T. 2 S., R. 2 E.

Northwest edge of Milford
Date of field examination: July 31, September 8, 1947
Geologic formations: Sta. Genview - 36.6 feet being mined
St. Louis - 18.5 feet exposed
Products: raw stone for lime kilns; crushed stone and agricultural lime

30 HARRISON COUNTY QUARRY
Location: NE sec. 12, T. 5 S., R. 2 E.

1.5 miles east of New Amsterdam
Geologic formations: Paoli - 21 feet exposed, upper part eroded
Sta. Genview - 10 feet exposed
Note: not sampled or examined

HENDERSON COUNTY
31 COEBEE CREEK STONE COMPANY
Location: SE 1/4, SW 1/4 NE 1/4, T. 23 N., R. 4 E.

2 miles southwest of Kokomo
Date of field examination: July 15, 1947
Geologic formations: Kameh - 4 feet thick, upper part eroded
Kokomo - 12.4 feet exposed
Products: agricultural lime and crushed stone

HUNTINGTON COUNTY
32 ERIE STONE COMPANY
Location: SE 1/4 and SW 1/4 sec. 12, T. 26 N., R. 9 E.

Eastern edge of Huntington
JACKSON COUNTY

33 Severn Gravel Company
Location: Severn, sec. 29, T. 5 N., R. 3 E.
2 miles northwest of Medora
Date of field examination: June 15, 16, 1948
Geologic formation: Harrodsburg - 25 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

JASPER COUNTY

34 Babcock Construction Company
Location: Babcock, sec. 30, T. 29 N., R. 6 W.
Southeast edge of Racine
Date of field examination: July 30, 1947
Geologic formation: Decatur (Jeffersonville?) - 15.5 feet exposed, upper part eroded
Products: crushed stone and agricultural lime

JAY COUNTY

35 Reklerle Products Company
Location: Rekllee, sec. 30, T. 23 N., R. 14 W.
1.5 miles west of Portland
Date of field examination: August 30, 1947
Geologic formation: Huntington - 52.5 feet exposed, upper part eroded
Products: crushed stone and agricultural lime
JEFFERSON COUNTY

36 Independent Stone Company
Location: SW NE sec. 26, T. 5 N., R. 9 E.
3 miles northwest of Mt. Perry
Date of field examination: August 9, 1947
Geologic formations: Jeffersonville - 9.2 feet thick, upper part eroded
            Genoa - 15.7 feet thick
            Laurel - 29.5 feet exposed
Products: agricultural lime and crushed stone

JEFFERSON COUNTY

37 Paul Frank Quarry
Location: NE NE sec. 34, T. 7 N., R. 8 E.
Northeast edge of North Vernon
Date of field examination: August 28, 1947
Geologic formations: Beechwood - 3.4 feet thick
            Speed - 1.7 feet thick
            Jeffersonville - 29.4 feet exposed
Products: crushed stone and agricultural lime

JEFFERSON COUNTY

38 Wesolatuck State School Quarry
Location: SW NW sec. 16, T. 7 N., R. 9 E.
1.5 miles northeast of Butlerville
Date of field examination: July 26, 1948
Geologic formations: Laurel - 36.8 feet exposed
Products: agricultural lime and road rock (all used by institution)

LAWRENCE COUNTY

39 Heltonville Limestone Company
LAURENCE COUNTY, cont'd.
Location: NE4 sec. 24, T. 6 N., R. 1 E.
1 mile northwest of Hollonville
Date of field examination: July 30, 1947
Geologic formation: Salem (spalls from company's building stone mill)
Products: agricultural lime

90 Hostetler Quarry
Location: NE[NE] sec. 31, T. 6 N., R. 2 W.
3.5 miles southeast of Springville
Geologic formation: Ste. Genevieve
Note: not sampled

40 Hostile Portland Cement Company
Location: SI sec. 30, T. 4 N., R. 1 E.
2 miles northeast of Mitchell
Date of field examination: June 24, 25, and July 30, 1948
Geologic formations: St. Louis - 10 feet thick, upper part eroded
Salem - 62.7 feet thick
Harrodsburg - 53.3 feet exposed
Products: raw stone for cement manufacture

11 Holly, Ballard, and Gate
Location: NE2[NE2] and NE[NE] sec. 13, T. 3 N., R. 2
.5 mile west of Georgia
Date of field examination: June 30, 1948
Geologic formations: Paoli - 21.6 feet thick
Ste. Genevieve - 44.1 feet exposed
Products: agricultural lime and crushed stone
42  Oolitic Gneiss Limestone Company
Location: SE\NW sec. 16, T. 5 N., R. 1 W.
   1 mile west of Bedford
Date of field examination: June 23, 1948
Geologic formation: Salem - 37.8 feet exposed, upper part eroded
Products: flux stone and agricultural lime

43  Ralph Rogers Company
Location: SE\NW sec. 30, T. 6 N., R. 2 W.
   2 miles southwest of Springville
Date of field examination: April 30, May 21, 1949
Geologic formation: Ste. Genevieve - 109.8 feet exposed
Products: crushed stone and agricultural lime

45  Williams Limestone Company
Location: NW\SE sec. 24, T. 5 N., R. 1 W.
   East edge of Bedford
Date of field examination: July 8, 12, 1948
Geologic formation: Salem - 20.3 feet being quarried
Products: crushed stone and agricultural lime

MADISON COUNTY

44  Indiana Limestone Quarry
Location: SE\NW sec. 25, T. 18 N., R. 6 E.
   2.5 miles southwest of Pendleton
Date of field examination: August 20, September 1, 1947
Geologic formation: Limestone Creek - 51.7 feet exposed, upper part eroded
Products: crushed stone and agricultural lime
MADISON COUNTY, cont'd.

45 Standard Materials Corporation
Location: NW\SW and NW\NE sec. 36, T. 19 N., R. 9 W.
Northwest corner of Lapel
Date of field examination: August 27, 28, 1947
Geologic formation: Linton Creek - 30.9 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

MARTIN COUNTY

46 Gerkin Quarry
Location: NW\SW sec. 12, T. 3 N., R. 4 W.
2.6 miles northwest of Shoals
Date of field examination: July 11, 1947
Geologic formation: Copen Dam - 36.8 feet exposed
Products: crushed stone and some agricultural lime

47 Bl. Silve Quarry
Location: NW\SW sec. 1, T. 4 N., R. 3 W.
2 miles west of Williams
Date of field examination: July 15, 16, 1948
Geologic formation: Ste. Genevieve - 36.1 feet exposed
Products: crushed stone

MONTES COUNTY

48 Bloomington Crushed Stone Company
Location: SW\SE sec. 28, T. 9 N., R. 1 W.
.5 mile north of Bloomington
Date of field examination: July 17, 1948
Geologic formation: Salem - 15.6 feet thick, part of formation eroded
Harrodsburg - 39.9 feet exposed

Products: crushed stone and agricultural lime

49 Oldford and Dishoun Quarry
Location: SW 1/4 NW 1/4 sec. 6, T. 7 N., R. 2 W.
2.8 miles south of Stanford
Date of field examination: June 17, 1948
Geologic formations: Beaver Bend - 14.5 feet thick
Pavoii - 15.4 feet thick
Aux Vases - 8.4 feet thick
St. Genevieve - 25.4 feet exposed

50 New Ross Limestone Company
Location: NE 1/4 SW 1/4 sec. 3, T. 17 W., R. 3 W.
1.5 miles southwest of New Ross
Date of field examination: August 7, 1947
Geologic formation: Harden (reef) - 13.6 feet thick, upper part eroded
Products: mostly agricultural lime, some crushed stone

51 Wawland Quarry Company
Location: SE 1/4 NW 1/4 sec. 34, T. 17 W., R. 6 W.
2 miles southwest of Wawland
Date of field examination: August 8, 1947
Geologic formation: St. Louis - 30.2 feet quarried
Note: Identification tentative. May be Harrodsburg.
Products: crushed stone and agricultural lime

MONTGOMERY COUNTY
Newton County

52 Newton County Slate Quarry
Location: NE\(\frac{3}{4}\) sec. 25, T. 27 N., R. 9 W.
2.5 miles east of Kemland
Date of field examination: July 31, August 1, 1947
Geologic formations: Middle Ordovician limestones and dolomites (depth of quarry 100 feet)
Products: Crushed stone and agricultural lime

Orange County

53 Calfar Quarry
Location: NE\(\frac{3}{4}\) sec. 6, T. 1 N., R. 1 E.
1 mile southeast of Paoli
Date of field examination: June 23, 24, 1948
Geologic formations: Paoli - 30.2 feet thick
Aux Vases - 4.3 feet thick
Ste. Genevieve - 67.1 feet exposed
Products: Agricultural lime and read stone

54 Gave Slate Quarry
Location: NE\(\frac{3}{4}\) sec. 29, T. 2 N., R. 1 W.
2.5 miles northwest of Paoli
Date of field examination: July 1, 1948
Geologic formation: Ste. Genevieve - 51.3 feet exposed, upper part eroded
Products: Agricultural lime and crushed stone

Orange County

55 Radcliff and Perry, Inc.
Location: SW\(\frac{3}{4}\) sec. 3, T. 3 N., R. 1 W.
1 mile northwest of Orleans
<table>
<thead>
<tr>
<th>Location</th>
<th>Date of Field Examination</th>
<th>Geologic Formations</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>56 Thunder Quarry</td>
<td>June 28, July 1, 1948</td>
<td>Paoli - 14.9 feet thick, upper part eroded, Aux Vases - 3 feet thick, Ste. Genevieve - 70 feet exposed</td>
<td>Agricultural lime, crushed stone, aggregate for blocks and other concrete products</td>
</tr>
<tr>
<td>57 Dana Limestone Company</td>
<td>June 29, 1948</td>
<td>Paoli - 17.7 feet thick, upper part eroded, Ste. Genevieve - 56.2 feet exposed</td>
<td>Agricultural lime and road stone</td>
</tr>
<tr>
<td>58 Heine Brothers Quarry</td>
<td>July 21, 22, 1948</td>
<td>Beech Creek - 18.5 feet exposed</td>
<td></td>
</tr>
</tbody>
</table>
59 Midwest Rock Products Corporation
Location: NE4 sec. 30, T. 10 N., R. 3 W.
1 mile southwest of Spencer
Date of field examination: July 6, 1948
Geologic formation: Ste. Genevieve - 50.8 feet exposed (upper few feet eroded)
Products: crushed stone and agricultural lime

60 Winters and Sons Quarry
Location: NE4/SE4 sec. 2 and SW4/SE4 sec. 12, T. 10 N., R. 4 W.
1.6 miles northwest of Spencer
Date of field examination: July 19, 1948
Geologic formation: Ste. Genevieve - 32 feet exposed (upper part eroded)
Products: agricultural lime and crushed stone

61 Leopold Quarry
Location: SW4 sec. 6, T. 5 S., R. 1 W.
1.5 miles east of Leopold
Date of field examination: July 27, 1948
Geologic formation: Glenn Dean - 22.4 feet exposed
Products: agricultural lime and crushed stone

62 Lutzing and Sons Quarry
Location: NE4 sec. 18, T. 4 S., R. 1 W.
.6 mile east of Brownsville
Date of field examination: July 23, 1947
Geologic formation: Glen Dean - 23.9 feet thick
Products: agricultural lime and road stone

**Schmeler Quarry**
Location: NE 1/4 sec. 32, T. 5 S., R. 1 W.
1 mile northeast of Derby
Date of field examination: July 16, 26, 1946
Geologic formation: Glen Dean - 28 feet exposed
Products: agricultural lime and crushed stone

**PUTNAM COUNTY**

**Indiana Slate Farm Quarry**
Location: NE 1/4 sec. 17, T. 13 N., R. 4 W.
1 mile southwest of Putnamville
Date of field examination: August 20, 1947
Geologic formation: Ste. Genevieve - 83.9 feet thick, upper part eroded
Products: agricultural lime and small amount of crushed stone

**Lone Star Cement Company**
Location: junction of secs. 28, 29, 32, and 33, T. 14 N., R. 4 W.
.25 mile southeast of Lineville
Date of field examination: August 14, 15, 1947
Geologic formation: Ste. Genevieve - 47.9 feet exposed, upper part eroded
Products: raw limestone for manufacture of Portland cement

**Ohio and Indiana Stone Company**
Location: junction of secs. 19, 20, 29, and 30, T. 14 N., R. 4 W.
1 mile southwest of Oromastia
Date of field examination: August 12, 13, 1947
OKIO COUNTY, cont'd.

Geologic formation: Ste. Genevieve - 53.4 feet exposed, upper part eroded
Products: crushed stone, agricultural lime, and high-calcium limestone dust

67 Russellville Stone Company
Location: NW\SW sec. 8, T. 16 N., R. 5 W.
.5 mile south of Russellville
Date of field examination: August 9, 1947
Geologic formation: Harrodsburg - 20.7 feet exposed, upper part eroded.
Note: Identification tentative
Products: agricultural lime and crushed stone

RANDOLPH COUNTY

68 A. and B. Stone Company
Location: SW\NW sec. 12, T. 21 N., R. 13 E.
.5 mile southeast of Hillsville
Date of field examination: August 31, 1947
Geologic formation: Huntingdon - 17.6 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

69 A. B. & B. Stone Company
Location: SE\NE sec. 10, T. 21 N., R. 12 E.
1.5 miles southeast of Fairview
Date of field examination: August 29, 1947
Geologic formation: Huntingdon - 21.1 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

RIPLEY COUNTY

70 Baldwin Quarry
Location: NE\NW sec. 3, T. 7 N., R. 10 E.  
1 mile west of Holton  
Date of field examination: September 23, 1947  
Geologic formation: Laurel - 21.3 feet exposed, upper part eroded  
Products: crushed stone and agricultural lime

72 Core Stone Company

Location: SE\NW sec. 26, T. 7 N., R. 11 E.  
2.8 miles southwest of Versailles  
Date of field examination: August 12, 1947  
Geologic formation: Laurel - 26.8 feet exposed, upper part eroded  
Products: agricultural lime and crushed stone

72 Napoleon Lime Industry

Location: NE\NW sec. 29, T. 9 N., R. 11 E.  
5.5 miles east of Napoleon  
Date of field examination: August 14, 1947  
Geologic formation: Laurel - 19.7 feet exposed, upper part eroded  
Product: crushed stone

73 Hinkle Gravel Construction Company

Location: NW\SW sec. 23, T. 8 N., R. 11 E.  
South edge of Osgood  
Date of field examination: August 13, 1947  
Geologic formation: Laurel - 20.5 feet exposed, upper part eroded  
Products: roadstone and agricultural lime

BIRD COUNTY

74 McCorkle Stone Company
ROUSH COUNTY, cont'd.
Location: NW\NW sec. 17, T. 12 N., R. 9 E.
4 miles west of Milroy
Date of field examination: July 15, 1947
Geologic formation: Geneva - 23.7 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

75 RUSH COUNTY STONE COMPANY
Location: NW\NE sec. 18, T. 12 N., R. 9 E.
West edge of Milroy
Date of field examination: September 3, 1947
Geologic formation: Geneva - 23 feet exposed, upper part eroded
Products: crushed stone and agricultural lime

SCOTT COUNTY

76 Scott County Stone Company
Location: NE\SE sec. 20, T. 3 N., R. 8 E.
3 miles south of Blocher

2 miles south of Blocher
Date of field examination: August 27, 1947
Geologic formations: Beekmantown - 4.9 feet thick
Silver Creek - 0.9 feet thick
Speed - 13 feet thick
Jeffersonville - 40 feet exposed
Products: agricultural lime and crushed stone

SHELBY COUNTY

77 BURLE STONE COMPANY
Location: NW\NE sec. 29, T. 11 N., R. 7 E.
West edge of Burriston
Date of field examination: August 15, 1947
Geologic formation: Geneva - 20.2 feet exposed, upper part eroded
Product: agricultural lime

80 Camp Stone Company
Location: SW 1/4 SW 1/4 sec. 32, T. 11 N., R. 7 W.
1 mile west of Geneva
Date of field examination: July 20, 1947
Geologic formation: Geneva - 16.3 feet exposed, upper part eroded
Product: agricultural lime and road stone

81 St. Paul Stone Company
Location: NE 1/4 SE 1/4 sec. 9, T. 11 N., R. 8 E.
1.5 miles southwest of St. Paul
Date of field examination: September 3, 1947
Geologic formation: Laurel - 27.7 feet exposed, upper part eroded
Product: agricultural lime and road stone

SULLIVAN COUNTY
80 Alklein Brothers Quarry
Location: SE 1/4 SW 1/4 sec. 29, T. 6 N., R. 8 W.
3 miles north of Freelandville
Date of field examination: July 22, 1947
Geologic formation: Maria Creek - 4.9 feet thick
Product: agricultural lime

SWITZERLAND COUNTY
81 Leatherbury Brothers Quarry
Location: SE 1/4 sec. 9, T. 5 N., R. 12 E.
1.5 miles northwest of Pleasant
SWITZERLAND COUNTY, cont'd.

Date of field examination: September 22, 1947
Geologic formation: Whitewater - 9.3 feet exposed, upper part eroded
Products: agricultural lime and crushed stone

WASHINGTON COUNTY

82 Celotes Quarry
Location: NE1/4 SE1/4 sec. 3, T. 27 N., R. 7 E.,
1 mile south of Lagro
Date of field examination: July 3, 5, 1947
Geologic formation: Mississinewa - 48.6 feet exposed, upper part eroded
Product: sand for manufacture of rock wool

83 National Rock Wool Sales, Inc.
Location: NE1/2 SE1/2 sec. 3, T. 27 N., R. 7 E.,
1 mile south of Lagro
Date of field examination: July 4, 5, 1947
Geologic formation: Mississinewa - 24.8 feet exposed
Product: raw sand for manufacture of rock wool

WASHINGTON COUNTY

84 Houston Lime and Stone Company
Location: NE1/4 sec. 26, T. 2 N., R. 7 E.,
2 mile west of Salem
Date of field examination: August 19, September 9, 1947
Geologic formation: Salem - 40.5 feet exposed, upper part eroded
Products: agricultural lime and road stone

85 Ralph Rogers Company
Location: NE 1/4 sec. 20, T. 2 N., R. 4 W.
1 mile south of Salem
Geologic formation: Harrodsburg limestone
Product: road stone (on demand)
Note: not sampled or examined

86 Washington County Quarry
Location: NE 1/4 sec. 13, T. 2 N., R. 3 W.
2 miles east of Livonia
Date of field examination: June 28, 1948
Geologic formations: Paoli - 7.4 feet thick, upper part eroded
Ste. Genevieve - 43.6 feet exposed
Products: road stone

WAINES COUNTY
87 Debolt Quarry
Location: NE 1/4 sec. 11, T. 13 N., R. 1 W.
3 miles southeast of Richmond
Date of field examination: November 12, 1947
Geologic formation: Ekhorn - 15.2 feet exposed, upper part eroded
Products: agricultural lime and road stone

WELLS COUNTY
88 Roll Stone Company
Location: NE 1/4 sec. 28, T. 27 N., R. 12 W.
1.5 miles north of Bluffton
Date of field examination: July 16, 1947
Geologic formation: Liston Creek - 38.7 feet exposed, upper part eroded
Products: agricultural lime and crushed stone
WHITE COUNTY

99 Moon Crushed Stone Quarry

Location: 52N46E sec. 20, T. 28 N., R. 4 W.
1 mile south of Moon

Date of field examination: July 29, 1947

Geologic Formation: Banting - 85 feet exposed, upper part eroded

Products: agricultural lime and crushed stone

ANALYSIS

All determinations in the following tables, except those of carbon dioxide, were made in the spectrographic laboratory of the Division of Geology by Mr. R. H. Leuzinger. The carbon dioxide determinations were run chemically by Mr. Raymond Collier. All samples were run in duplicate or triplicate.

The numbers in the column headed "Quarry" refer to the quarries on the map (Plate 1). Formations are arranged alphabetically. The samples are placed in the same order and vertical relationship that they had in the quarry wall. The word "total" in parentheses after the thickness of a sample indicates that the sample represents all of the formation exposed or quarried.

Chip samples were used for all the analyses except one, No. 455. Chip sampling was done by removing small chips of rock from the quarry face in such a way as to give nearly continuous samples from the bottom to the top of the rock unit. The chips were taken from unweathered surfaces and were kept free of clay and other contamination. Chips of equal size were taken from equal thicknesses of rock within a given unit.
<table>
<thead>
<tr>
<th>Formation</th>
<th>Quarry</th>
<th>Sample Number</th>
<th>Thickness</th>
<th>CaO2O3</th>
<th>MgO2O3</th>
<th>Al2O3</th>
<th>Fe2O3</th>
<th>SiO2</th>
<th>TiO2</th>
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</thead>
<tbody>
<tr>
<td>Aux Vases</td>
<td>49</td>
<td>PA629</td>
<td>Upper 6.6 feet</td>
<td>51.1</td>
<td>2.66</td>
<td>4.87</td>
<td>1.18</td>
<td>29.9</td>
<td>0.26</td>
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<td></td>
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<td>PA627</td>
<td>Lower 1.8 feet</td>
<td>55.0</td>
<td>1.40</td>
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<td>Aux Vases</td>
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<td>PA8111</td>
<td>3 feet (total)</td>
<td>48.5</td>
<td>22.5</td>
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<td>Beaver Bend</td>
<td>45</td>
<td>PA636</td>
<td>*Rock sample 6.0 feet</td>
<td>98.1</td>
<td>0.36</td>
<td>0.063</td>
<td>0.32</td>
<td>0.59</td>
<td>N.D.</td>
<td>43.8</td>
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<td>Beech Creek</td>
<td>58</td>
<td>PA7153</td>
<td>Upper 9.6 feet</td>
<td>91.6</td>
<td>1.89</td>
<td>0.98</td>
<td>0.50</td>
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<td></td>
<td>PA7151</td>
<td>Lower 4.7 feet</td>
<td>94.0</td>
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<td>Beechwood</td>
<td>76</td>
<td>PA7105</td>
<td>4.9 feet (total)</td>
<td>69.0</td>
<td>13.3</td>
<td>0.52</td>
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<td>PA7109</td>
<td>3.5 feet (total)</td>
<td>97.7</td>
<td>0.64</td>
<td>0.17</td>
<td>0.22</td>
<td>1.12</td>
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<td>Brassfield</td>
<td>19</td>
<td>PA777</td>
<td>4.5 feet (total)</td>
<td>97.2</td>
<td>1.09</td>
<td>0.34</td>
<td>0.44</td>
<td>0.89</td>
<td>0.005</td>
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<td>Devonian (undiff)</td>
<td>34</td>
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<td>14.9 feet (total)</td>
<td>51.0</td>
<td>41.4</td>
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<td>1.15</td>
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<td>Elkhorn</td>
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<td>Upper 3.9 feet</td>
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<td>10.3</td>
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<td>7.4 feet</td>
<td>86.4</td>
<td>12.3</td>
<td>0.79</td>
<td>0.76</td>
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<td>0.10</td>
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*Note: The data represents the chemical composition of limestone samples from different locations.*
<table>
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<th>#</th>
<th>P47171 Upper 8.2 feet</th>
<th>P47172 Lower 10.5 feet</th>
<th>P47175 7.4 feet</th>
<th>P47177 11.1 feet</th>
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**Salem 84**

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<th>P47169 7.4 feet</th>
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**Salado 48**

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<th>P47168 12.7 feet</th>
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<td>97.2</td>
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**Saluda 15**

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**Saluda 14**

| P4759 4.6 feet (total) | 50.0 | 29.7 | 4.50 | 1.96 | 19.5 | 0.43 | 33.8 |

**Silver Creek 76**

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**Silver Creek 10**

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**Silver Creek 9**

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<td>feet</td>
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<td>61.8</td>
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**Speed 9**

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**Whitewater 12**

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**Whitewater 19**

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BIBLIOGRAPHY


BIBLIOGRAPHY


APPENDIX

The following quarries, which came to the attention of the author after this report was in an advanced stage of publication, do not appear on the map:

HARRISON COUNTY

Carl Mathas Quarry
Location: SW(W) sec. 13, T. 4 S., R. 3 E.
3 miles south of Corydon
Geologic formation: Ste. Genevieve
Products: crushed stone and agricultural lime
Note: not sampled

PULASKI COUNTY

Francervoir Stone Company
Location: NE(SW) sec. 21, T. 29 N., R. 4 W.
2.5 miles south of Francesville
Geologic formation: Huntington
Products: crushed stone and agricultural lime
Note: not sampled

WELLS COUNTY

Faller Stone Company
Location: sec. 29, T. 27 N., R. 11 E.
7 miles west and 1 mile north from Blanchon
Geologic formation: Liston Creek
Products: crushed stone and agricultural lime
Note: not sampled or examined
### Northern Indiana

#### Devonian

<table>
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<th>Producing Formations</th>
<th>Thickness in Feet</th>
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<td>Kenneth limestone</td>
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### Central and Southern Indiana

#### Pennsylvanian

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<td>Glen Dean limestone</td>
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<td>Beech Creek limestone</td>
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<td>Paoli limestone</td>
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<td>Aux Vases sandstone</td>
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Map showing the geological formations and thickness in feet across different regions of Indiana.
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*Quarry location (Number refers to discussion of each quarry in text)*
QUARRIES PRODUCING CRUSHED STONE IN INDIANA

Compiled by John B. Patton
April, 1949
Base from U.S. Geological Survey
Map of Indiana, Edition of 1912.

INDIANA DEPARTMENT OF CONSERVATION, DIVISION OF GEOLOGY, REPORT OF PROGRESS NO. 3

EXPLANATION
ADDENDA
REPORT OF PROGRESS NO. 3, CRUSHED STONE IN INDIANA
January 1954

Allen County
May Sand and Gravel Corporation Quarry
Location: SE1/4NW1/4NE1/4 sec. 29, T. 30 N., R. 12 E.
0.5 mile southwest of Waynedale and 2.0 miles southwest of Fort Wayne
Date of field examination: July 13-14, 1953
Geologic formation: Kokomo limestone 21.1 feet
Production: crushed stone

Cass County
Studebaker Construction Company Quarry
Location: NW1/4SW1/4 sec. 28, T. 27 N., R. 1 E.
2.5 miles west of Logansport
Date of field examination: July 6-7, 1953
Geologic formations: Kenneth limestone 32.0 feet
Kokomo limestone 43.9 feet
Production: crushed stone

Clark County
Sellersburg Stone Company Quarry
Location: Grant 132 (and part of 131) Clark Military Survey
1.0 mile northeast of Speed
Date of field examination: August 12-13, 1953
Geologic formations: Jeffersonville limestone 3.7 feet
Louisville limestone 3.5 feet
Production: crushed stone and agricultural limestone

DeSauur County
St. Omer Quarry Inc.
Location: SE1/4SE1/4SE1/4 sec. 2, T. 11 N., R. 8 E.
0.8 mile southeast of the village of St. Omer
Date of field examination: June 23, 1953
Geologic formation: probably Laurel limestone 6.4 feet
Production: crushed stone
Hamilton County

Stony Creek Stone Company

Location: SE1/4NW1/4 sec. 3, T. 18 N., R. 5 E.
3.0 miles east of Noblesville on State Highway 38

Date of field examination: July 10, 1953

Geologic formation: Liston Creek limestone 10.0 feet

Production: crushed stone and agricultural limestone

Howard County

Stunts-Yeoman Stone Company Quarry

Location: NE1/4NE1/4 sec. 3, T. 23 N., R. 3 E.
1.8 miles southwest of Kokomo

Date of field examination: July 9, 1953

Geologic formation: Kokomo limestone 24.2 feet

Production: crushed stone and agricultural limestone

Jefferson County

Hardin Crushed Stone Quarry

Location: SW1/4NE1/4 sec. 16, T. 3 N., R. 9 E.
3.1 miles west of Hanover

Date of field examination: August 19, 1953

Geologic formations: Beechwood limestone 4.4 feet
Speed limestone 10.5 feet

Lawrence County

Mitchell Crushed Stone Company Quarry

Location: SW1/4NW1/4 sec. 12, T. 3 N., R. 2 W.

Date of field examination: March 13, 1953

Geologic formations: Paoli limestone 12.9 feet
Ste. Genevieve limestone 8.0 feet

Production: crushed stone and agricultural limestone

Ralph Rogers Company

Location: SE1/4SE1/4 sec. 29, T. 6 N., R. 2 W.
2 miles southwest of Springville

Date of field examination: February 5, 1953
Ralph Rogers Company (cont’d)

Geologic formations: Paoli limestone 12.8 feet
Aux Vases 4.6 feet
Ste. Genevieve limestone 115.5 feet
St. Louis limestone 14.6 feet

Production: crushed stone and agricultural limestone

Morgan County

Porter Cave Quarry

Location: NW1/4SW1/4 sec. 34, T. 12 N., R. 2 W.
Date of field examination: July 1-2, 1953
Geologic formation: Harrodsburg limestone 28.3 feet
Production: crushed stone and agricultural limestone

Perry County

Mulzer Brothers Quarry

Location: SE1/4SE1/4 sec. 32, T. 5 S., R. 1 W.
1.0 mile west of Derby on State Highway 70
Date of field examination: July 30, 1953
Geologic formation: Galconda limestone 43.9 feet
Production: crushed stone and agricultural limestone

Putnam County

Manhattan Stone Company

Location: NW1/4SW1/4 sec. 24, T. 13 N., R. 5 W.
Date of field examination: August 23, 1953
Geologic formations: Paoli limestone 27.3 feet
Ste. Genevieve limestone 41.7 feet
Production: crushed stone and agricultural limestone

Randolph County

Hiatt Stone Quarry

Location: SE1/4NW1/4 sec. 11, T. 21 N., R. 12 E.
1.7 miles southeast of the village of Fairview
Date of field examination: July 21, 1953
Geologic formation: Huntington dolomite 19.9 feet
Production: crushed stone and agricultural limestone
Ripley County

Nally and Boone Quarry

Location: SE1/4SW1/4 sec. 19, T. 6 N., R. 11 E.
0.8 mile south of the village of Rexville

Date of field examination: August 18, 1953

Geologic formation: Laurel limestone 17.1 feet

Production: crushed stone

Shelby County

Cave Stone Company, Inc.

Location: NE1/4NW1/4 sec. 32, T. 11 N., R. 7 E.
Near west edge of the village of Norristown

Date of field examination: July 28, 1953

Geologic formation: Geneva dolomite 6.9 feet

Production: crushed stone and agricultural limestone

Switzerland County

Tri-County Stone Company

Location: NE1/4NW1/4 sec. 9, T. 5 N., R. 12 E.
4 miles south of Cross Plains

Date of field examination: August 17, 1953

Geologic formations: Brassfield limestone 13.0 feet
Whitewater formation 14.2 feet

Production: crushed stone and agricultural limestone

Warren County

Lemmons and Company, Inc.

Location: SW1/4NE1/4 sec. 11, T. 4 S., R. 8 W.
3 miles south of Lynnville

Date of field examination: August 17, 1953

Geologic formation: Universal limestone 5.0 feet

Production: crushed stone and agricultural limestone

Tecumseh Coal Corporation

Location: NW1/4SE1/4 sec. 11, T. 4 S., R. 8 W.
2 miles southeast of Lynnville

Date of field examination: August 17, 1953

Geologic formation: Universal limestone 5.1 feet

Production: crushed stone for own use
ERRATA
REPORT OF PROGRESS NO. 3, CRUSHED STONE IN INDIANA
January 1954

Page 15
For 1 change 22 feet to read 22.4 feet
For 2 change 38.1 feet to read 29.6 feet
For 3 change 25.0 feet to read 47.4 feet

Page 16
For 4 add below Jeffersonville:
   Geneva dolomite 5.5 feet
   Laurel limestone 4.2 feet
For 5 change 34.7 feet to read 59.7 feet
For 6 change 25.2 feet to read 59.0 feet

Page 17
For 7 add above Kokomo: Jeffersonville limestone 15.7 feet
   change 22.5 feet to read 31.5 feet
For 8 add Inc. after title
For 9 change 13.9 feet to read 15.4 feet
   change 35.9 feet to read 39.6 feet
   add below Jeffersonville: Louisville limestone 3.5 feet

Page 20
For 18 change 14.2 feet to read 23.2 feet
   add below Laurel limestone: Osgood formation 1.0 foot
For 20 change NW1/4NE1/4 to read NE1/4NW1/4
   add above Laurel: Waldron 3.1 feet

Page 21
For 22 add 39.2 feet after Linton Creek
   delete note: not sampled or examined

Page 22
For 27 change Davis Brothers Stone Company to read Davis Crushed
   Stone and Lime Company
   change 5.1 feet 12.3 feet

Page 23
For 29 delete after semicolon the words crushed stone and agricultural lime
Errata
Report of Progress No. 3, Crushed stone in Indiana
Page 2

Page 24
For 32 change 34 feet to read 69.3 feet
For 34 delete all after geologic formation
add after geologic formation:
Jeffersonville (?) 1.9 feet
Kokomo (?) 11.0 feet
For 35 delete the word Company from title
add Inc. to read Rockledge Products, Inc.

Page 26
For 39A add after Ste. Genevieve 40.0 feet

Page 27
For 42 add Harrodsburg limestone (?) 34.0 feet

Page 28
For 45 change 20.9 feet to 74.8 feet (stratigraphic thickness)

Page 31
For 56 change Thacker Quarry to read Radcliff and Berry, Inc.

Page 32
For 59 change Midwest Rock Products to read France Stone Products, Inc.

Page 33
For 65 add above Ste. Genevieve: Beaver Bend 13.3 feet

Page 34
For 68 change 17.6 feet to read 38.0 feet

Page 35
For 70 change 21.3 feet to read 25.2 feet
For 72 change Napoleon Lime Industry to read Napoleon Quarry, Inc.
For 73 change 20.5 feet to read 22.9 feet
Errata
Report of Progress No. 3, Crushed stone in Indiana
Page 3

Page 37
For 79 change St. Paul Stone Company to St. Paul Quarries, Inc.

Page 38
For 84 add below Salem: Harrodsburg 30.8 feet

Page 47
Under Harrison County add after Ste. Genevieve 68.3 feet; delete:
Note: not sampled
Under Pulaski County change sec. 21 to read sec. 16; after Huntington
add dolomite 37.6 feet; delete: Note: not sampled
Under Wells County add after Liston Creek 120.8 feet (stratigraphic
thickness); delete: Note: not sampled