

# A LIMESTONE CONGLOMERATE OCCURRING IN THE EDEN OF CLARK COUNTY, KENTUCKY

WILLARD ROUSE JILLSON

Frankfort, Kentucky

During the latter part of the morning of September 13, 1963, while checking outcrops of Cynthiana and Eden limestones recently trenched by low rock cuts along the new super-highway I-64, northeast of the *Winchester Disturbance*,<sup>1</sup> in northeastern central Clark County, Kentucky, the writer made discovery of a thin but prominent limestone conglomerate. Of unusual lithological character, unknown extent and unrecorded, it is believed, in the pertinent geological literature of Kentucky. Its occurrence coupled with its rather high position on the eastern flank of the Cincinnati Arch, bespeaks for it some passing notice, if only, as it must be at this time, of a preliminary nature. Brief additional studies of this exposure, including rock and fossil collections on both sides of the expressway and stratigraphic sections were made on September 21, 1963 and an overall review of the entire exposure including additional rock and fossil collections, preliminary to the writing of this paper was made on October 9, 1965.<sup>2</sup>

The exposure in which this unique conglomeratic limestone occurs is to be seen at a point about 8000 feet northeast of the U. S. Highway overpass at a crushed rock "crossover" on the north side of the north (west-bound) lane of expressway I-64. Topographically this outcrop is on the upper northern slope of a ridge forming the southern headwaters divide of Cabin Creek, a northeasterly flowing tributary of Stoner Creek. The conglomeratic line occurs at an altitude of 1017 feet A. T., Bar. For further surface detail, if desired, the reader is referred to the recent Austerlitz quadrangle.<sup>3</sup>

The conglomerate limestone of central note in this paper ranges from 2.5 to 6 inches in thickness. It exhibits a very hard and thoroughly indurated gray crystalline ( $\text{CaCO}_3$ ) matrix into which are imbedded a great many subangular to angular calcareous pebbles, rock and fossil fragments ranging in length from .6 to 2.2 inches; in width from .3 to 1 inch and in thickness (as exposed) from .3 to .65 of an inch. Fossils found in or attached to the calcareous matrix of this conglomerate

1. *Geology of the Winchester Disturbance*. 24 pp. 8 photos. Map. Pamph. by Willard Rouse Jillson. Roberts Printing Co. Frankfort, Ky. November 6, 1963.
2. Author's field *Note Book "FF"*, pp. 132, 140, 141 and 143. Sept. 13, and 21, 1963; and *Note Book "HH"*, pp. 6, October 9, 1965.
3. *Austerlitz Quadrangle*. Anonymous. Colors. Scale: 1-24,000. Ten foot contours. U. S. Geol. Surv., Washington, D. C. 1959 See S E. quadrant.



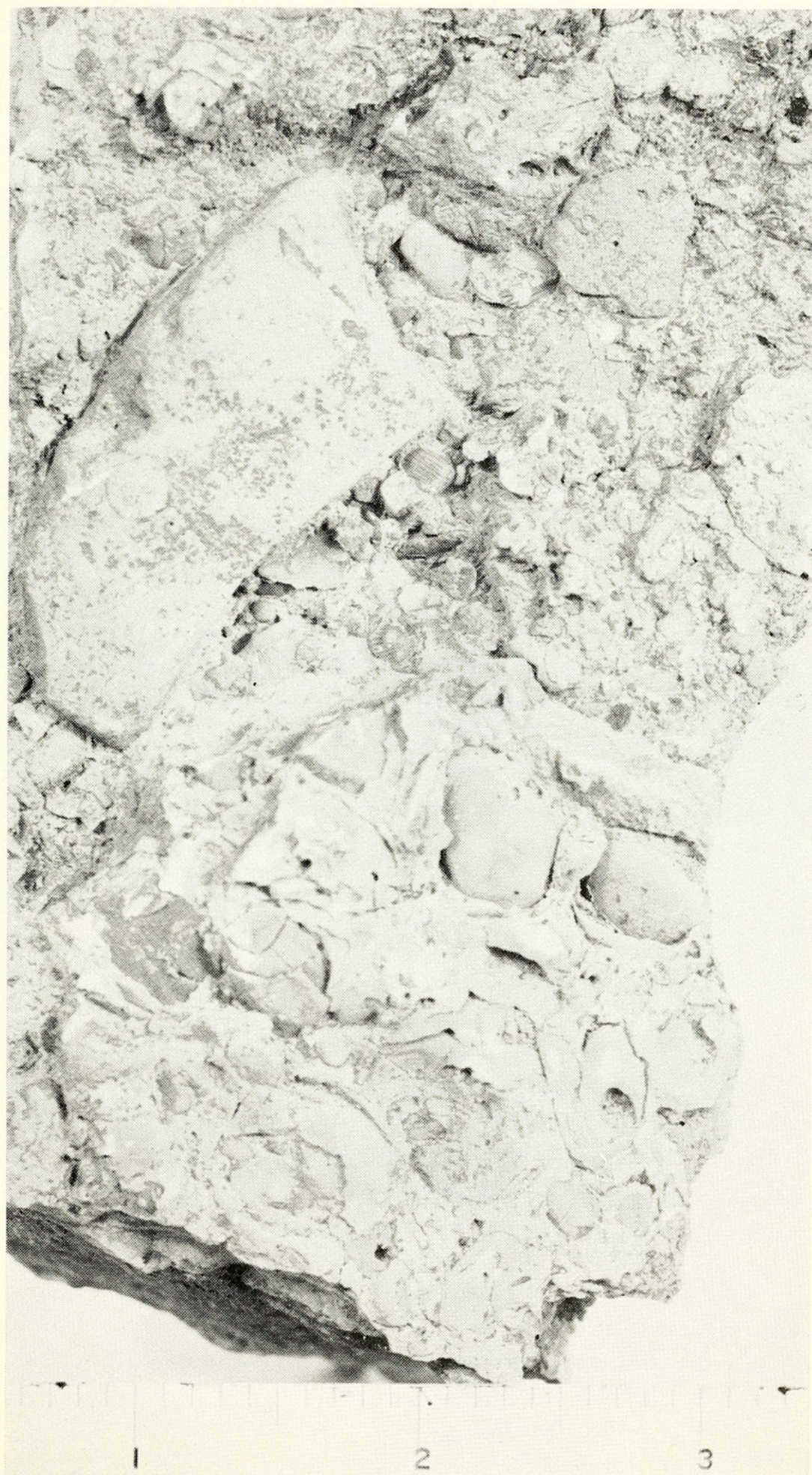


Figure 1.—Limestone conglomerate from the Eden of Clark County, Kentucky.



were: *Dalmanella emacerata*, *Dalmanella multisecta*, *Dekayella ulrichi*, *Hallopora onealli*, *Ectenocrinus grandis*, *Aspidopora eccentrica* and *Plectambonites rugosus*, a dependable Eden assemblage, but certainly not an abundant one!

This group of well known forms suggests middle Eden, but as this seems quite unlikely, further field work here is indicated as important. Unfortunately, however, there appears to be no immediately observable continuance of this distinctive pebble-stone due to the local vagaries of erosion and topography. Although they appear, so far as examined, to contain no fossils, the pebbles and rock fragments of this conglomerate are assumed to have been derived from Upper Cynthiana beds (Upper Middle Ordovician) at no very great distance. Cynthiana (Rogers Gap) limes dipping  $2^{\circ}$ - $3^{\circ}$  to the southwest underlie this Eden conglomerate which cuts diagonally across them in its  $1^{\circ}$ - $2^{\circ}$  dip N.  $80^{\circ}$  E. The entire exposure here is about 250 feet long and not more than 10 feet high from the expressway ditch to grasslands and fence line above.

The gray limestones and limey shales immediately underlying the thin Eden conglomerate of principal interest in this paper, were carefully examined and from them on both sides of I-64, at the crushed rock "crossover", the following Rogers Gap and Greendale (Cynthiana-upper Trenton) fossils were collected and identified by the writer on September 21, 1963. Those marked by asterisks are regarded as reliably characteristic forms.

## List

### I CYNTHIANA

#### Rogers Gap

1. *Strophomena halli*\*
2. *Clitambonites rogersensis*\*
3. *Bellerophon rogersensis*\*
4. *Eridorthis rogersensis*\*
5. *Eridorthis nicklesi*\*

#### Greendale

1. *Cyclonema varicosum*\*
2. *Triarthrus becki*
3. *Rafinesquina alternata*
4. *Rafinesquina winchesterensis*\*
5. *Lophospira bowdeni*
6. *Orthoceras duseri*
7. *Herbertella occidentalis*\*

8. *Herbertella subjugata*\*
9. *Echarspora maculata*\*
10. *Constellaria fischeri*\*
11. *Eridotrypa briareus*\*
12. *Homotrypa norwoodi*\*
13. *Prospora falesi*
14. *Zygospira modesta*





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