

## THE SILURIAN FAUNAS OF SOUTHEASTERN MISSOURI.\*

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For several years study of certain Silurian faunas of Southeastern Missouri has been in progress. Part of the investigation has been completed, but the work continues because recent additions have been made to the collections.

Silurian strata outcrop discontinuously between Ste. Genevieve and Cape Girardeau, Missouri. The fossils were collected chiefly in localities near each of these cities. Until early in the summer of 1927 the work had been under the direction of the late Stuart Weller. Richard Flint of Yale University and Josiah Bridge of the Missouri Bureau of Geology and Mines have contributed much assistance in connection with their own work in the same region.

### Faunal Summary.

That part of the faunas studied includes 151 species. Illustrations of 147 of the species have been prepared for publication, and descriptions of 124 species have been written or rewritten. Of the described forms 58 species are new and 27 individuals either have been referred provisionally to certain genera or compared with closely related forms. This makes the aggregate of new species practically 85.

The species are distributed as follows:

Corals .....	18	Bryozoans .....	6	Gastropods.....	13
Graptolites .....	1	Brachiopods .....	55	Cephalopods .....	6
Echinoderms .....	22	Pelecypods .....	7	Trilobites .....	20
Vermes .....	1				
Stromatoporoids...	1				

One coral, very common in the collections, of general Auloporoid habit, was placed in a new genus of the Auloporidae.

### Formations.

In addition to the faunal aspect thus indicated, the study has developed some additional facts concerning the number of Silurian formations represented in Southeastern Missouri.

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Formerly, but one formation, the Bainbridge limestone was recognized in the area. The collections include, however, *Triplecia ortonii* a brachiopod, *Phaenopora multifida*, a bryozoan, *Illaenus daytonensis*, a trilobite, and three other forms highly characteristic of the Brassfield limestone, a lower Silurian formation of Kentucky, Ohio and Indiana. Equivalent strata also are in Illinois as Savage has indicated<sup>1</sup>. Ulrich, Reeds, and others have reported the occurrence of the Brassfield farther south and west as well. The presence of the Brassfield in this part of Missouri, therefore, extends the domain of that Early Silurian sea to this region as well as to the others above mentioned. Recently, Flint has recognized the Edgewood formation, another member of the Alexandrian Series, in this area. The Silurian succession, as now known, therefore, is as follows:

Niagaran .....	Bainbridge limestone (Unconformity)
	Brassfield limestone (Unconformity)
Alexandrian .....	Edgewood limestone (Unconformity)
	Girardeau limestone

### Correlation.

Another matter considered in the investigation has been the correlation of the Bainbridge formation with Silurian strata elsewhere in the United States. The most obvious correspondence of the Bainbridge fauna is with that of the Brownsport beds of southwestern Tennessee. This locality is about 150 miles distant. Of seventeen Bainbridge species, sixteen appear in, and nine are restricted to the Brownsport beds. The Waldron beds of Indiana is a classic locality for Niagaran or Middle Silurian fauna. The Bainbridge fauna includes individuals that have interesting affinities with the Waldron forms. The two faunas possess some ten or eleven species in common, but only one of this number is restricted to the Waldron beds. Several Bainbridge species are strongly suggestive of characteristic Waldron forms but yet are not identical. Such instances are seen in two of the new species of the Bainbridge which have been named *Camarotoechia indianoidea* and *Camarotoechia neglectoidea* because of their striking resemblance to the well-known

<sup>1</sup> T. E. Savage "Stratigraphy and Paleontology of the Alexandrian Series in Illinois and Missouri." Illinois State Geol. Survey Bull. Vol. XXIII (1917).

Waldron species, *Camartoechia indianensis* and *Camartoechia neglecta*.

With the fauna of the Silurian limestone in the vicinity of Chicago the Bainbridge has still less in common. Eight instances, some of doubtful identity, are recognized, but in several cases the fossils are of wide areal distribution, almost ubiquitous in Silurian strata. One peculiar coincidence, however, is in the presence of *Pisocrinus quinquilobus*, formerly reported only from the Brownsport and Chicago regions. This fossil also is quite abundant in the Missouri Bainbridge. The peculiarity of the Chicago occurrence is that the fossil has not been noted in place in the limestone. Where found, the crinoid, well silicified, has been washed into clay pockets in the bedrock along the Des Plaines River below Lemont. Mr. Slocum, of Walker Museum, who has discovered the fossils in such position, has not observed them elsewhere in place.

For both of the Missouri Silurian formations, then, mentioned especially in this paper, the conclusion seems possible that their faunas have their closest affinities with those in strata of the same age, particularly to the east, but to some extent west, also, of the Mississippi River.