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TWO NEW SPECIES OF TRILOBITES
FROM THE MIDDLE DEVONIAN SILICA SHALE
OF NORTHWESTERN OHIO

BY
ERWIN C. STUMM



MUSEUM OF PALEONTOLOGY
THE UNIVERSITY OF MICHIGAN
ANN ARBOR

CONTRIBUTIONS FROM THE MUSEUM OF PALEONTOLOGY

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TWO NEW SPECIES OF TRILOBITES FROM THE MIDDLE
DEVONIAN SILICA SHALE OF NORTHWESTERN OHIO

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ABSTRACT

The new species *Dechenella (Basidechenella) lucasensis* and *Greenops chilmanae* are described from the Middle Devonian Silica Shale of northwestern Ohio.

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INTRODUCTION AND ACKNOWLEDGMENTS

EVER SINCE the original quarries were opened at Silica about 1921, a gray shale containing remarkably well-preserved fossils has been exposed. It was named the Silica Shale by Grace Anne Stewart (1927, p. 5).

For many years collectors have visited the area and have assembled great numbers of the fossils from this formation. The specimens are replaced partly by calcite and partly by pyrite. They weather out of the shale easily as the matrix breaks down into a gummy clay on exposure. Among the fossils are large numbers of trilobites. Until recently all of the trilobites recorded were of two subspecies of *Phacops*. These are *P. rana milleri* Stewart (1927, pp. 58-60, Pl. V, Figs. 14-17), and *P. rana crassituberculata* Stumm (1953, pp. 136-37, Pl. IX, Figs. 5-13; Pl. X, Figs. 19-21. In recent quarrying northward more of the Silica Shale was exposed and in this area species of two other genera of trilobites were found. All known specimens are illustrated in this paper.

I wish to thank Professor R. D. Hoare of Bowling Green State University for donating the specimens of *Dechenella (Basidechenella) lucasensis* and Mrs. Ruth Berner Chilman for donating the specimen of *Greenops chilmanae*.

I also wish to thank Professors L. B. Kellum, C. A. Arnold, and R. V. Kesling for critically reviewing the manuscript.

SYSTEMATIC DESCRIPTIONS

Genus *Dechenella* KayserSubgenus *Basidechenella* Richter***Dechenella* (*Basidechenella*) *lucasensis* sp. nov.**

(Pl. I, Figs. 1-8)

Description.—Cephalon with well-preserved glabella, fixigenae and librigenae. Glabella tapering anteriorly, averaging 6 mm long, 5 mm wide at posterior end and 4 mm wide at anterior end. First pair of lateral glabellar furrows very faint or obsolete. Second and third pair shallow but distinct. Third pair more clearly defined than second. Entire glabella covered with fine tubercles. Brim unusually wide for species of the subgenus, measuring 2 mm in width and bearing a very distinct medial groove. No tubercles present on brim. Fixigenae consisting of palpebral lobes, flat or slightly elevated peripherally, nontuberculate. Occipital lobes laterally elongate, smooth. Occipital ring well defined, nontuberculate, with very faintly developed median node on some specimens. Librigenae with well-developed eyes, a tuberculate preocular field and a distinct genal spine reaching to a point between the sixth and seventh thoracic segments. Terrace lines present on peripheral parts of brim and genal spines.

Thorax of 10 segments. Axial part of each segment with an axial node. Nodes faint on anterior segments, becoming more prominent progressively on posterior segments. Pleural lobes with distinct medial grooves. Thorax segments weakly granulose.

Pygidium with 10 axial lobes and 7 pleural lobes. Each axial lobe with a distinct axial node. Anterior pleural lobes with a medial groove. Axial and pleural lobes finely tuberculate. Brim smooth, slightly convex.

Remarks.—This species is distinguished from *D. B. rowi* (Green) in having a wider more prominent brim with a medial groove and from *D. B. nodosa* Stumm in having more clearly defined glabellar furrows. The holotype was presented to the Museum of Paleontology by Professor R. D. Hoare of Bowling Green State University.

Occurrence.—Middle Devonian, Silica Shale, north quarry of the Medusa Portland Cement Company at Silica, 1½ miles southwest of Sylvania, Lucas County, Ohio.

Types.—Holotype No. 49757, paratypes Nos. 49759, 49760, 49761, 49762, and 49763, Museum of Paleontology, University of Michigan. Paratype (Pl. I, Fig. 6) in possession of Mr. John E. Struble of Ann Arbor, Michigan.

Genus *Greenops* Delo

***Greenops chilmanae* sp. nov.**

(Pl. I, Fig. 9)

Description.—Cranidium with left librigena preserved. Glabella 8 mm long; 7 mm in maximum width near anterior end; 2 mm in width at posterior end just above occipital ring. Three pairs of lateral glabellar furrows distinct. Surface of glabella covered with tubercles more closely concentrated in the axial part, and in the part anterior to the first pair of glabellar furrows. Tubercles more widely spaced on lateral glabellar lobes and on fixigenae. Tubercles concentrated on palpebral lobes. Anterior brim narrow, slightly elevated toward periphery. Occipital ring with narrow, elevated axial part and low, narrow peripheral parts. Axial part closely tuberculate, peripheral parts weakly tuberculate. Genal spine spatulate, 8 mm long and 4 mm in maximum diameter. Entire surface of spine finely tuberculate. Eyes with facets in alternating vertical rows with approximately 6 facets to a row. Preocular field closely and very finely tuberculate. Thorax and pygidium unknown.

Remarks.—The subspecies is most closely related to *G. boothi* (Green) but differs in the more rapidly tapering glabella posteriorly, and in the much narrower, more highly arched axial occipital ring. From *G. arkonensis* it is distinguished by the much weaker tuberculation on the glabellar lobes and on the fixigenae, by the more rapidly tapering glabella and by the lack of a node on the occipital ring.

The species is named for Mrs. Ruth Berner Chilman who found the holotype and donated it to the Museum of Paleontology.

Occurrence.—Middle Devonian, Silica shale, north quarry of the Medusa Portland Cement Company at Silica, 1½ miles southwest of Sylvania, Lucas County, Ohio.

Type.—Holotype UMMP No. 49758.

LITERATURE CITED

- STEWART, GRACE ANNE. 1927. Fauna of the Silica Shale of Lucas County. Geol. Surv. Ohio, 4th Ser., Bull. 32.
STUMM, E. C. 1953. Trilobites of the Devonian Traverse Group of Michigan. Contrib. Mus. Paleontol., Univ. Mich., Vol. X, No. 6.

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EXPLANATION OF PLATE I

(All figures $\times 2$, except figure 2 which is $\times 4$)

	PAGE
<i>Dechenella (Basidechenella) lucasensis</i> sp. nov.	164
FIG. 1. Cranidium showing medial groove on brim and showing second and third glabellar furrows. Paratype No. 49762.	
FIG. 2. Cranidium of juvenile specimen. Paratype No. 49760.	
FIG. 3. Right librigena with well-preserved eye and genal spine. Paratype No. 49759.	
FIG. 4. Incomplete pygidium showing impression of doublure. Paratype No. 49763.	
FIG. 5. Complete pygidium with well-developed axial nodes. Paratype No. 49761.	
FIG. 6. Relatively complete specimen showing well-preserved occipital ring and genal spines. Original in possession of Mr. John E. Struble of Ann Arbor, Michigan.	
FIGS. 7-8. Side and top view of almost complete specimen showing all major features. Holotype No. 49757.	
<i>Greenops chilmanae</i> sp. nov.	165
FIG. 9. View of glabella, left fixigena and librigena. Holotype No. 49758.	

PLATE I



1



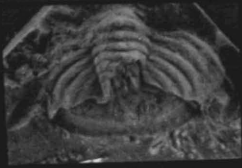
2



9



3



4



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6



8

