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A NEW SPECIES OF *PHLYCTISCAPHA*
FROM THE MIDDLE DEVONIAN FERRON POINT
FORMATION OF MICHIGAN

BY
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A NEW SPECIES OF *PHLYCTISCAPHA* FROM
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INTRODUCTION

A NEW species of beyrichiid ostracod of the genus *Phlyctiscapha*, from the Middle Devonian Ferron Point formation of Michigan, is described in this paper. The only other known species of *Phlyctiscapha*, the genotype, is from the Rockport Quarry limestone, which lies immediately below the Ferron Point formation. Some specimens of the new species have an L/R overlap and others, about an equal number, an R/L. Occurrence of both kinds of overlap in the same species is unusual in the family Beyrichiidae.

The author is grateful to Dr. Chester A. Arnold, Dr. George M. Ehlers, and Dr. Lewis B. Kellum for helpful criticism of this paper. He also desires to thank the Horace H. Rackham School of Graduate Studies of the University of Michigan for providing the special photographic equipment used in preparation of the plate.

REGISTER OF LOCALITIES

The ostracods described in this paper were collected from the following localities of Ferron Point formation exposures:

LOCALITY

1. Abandoned quarry of Kelley's Island Lime and Transport Company at Rockport, Alpena County, sec. 6, T. 32 N., R. 9 E.; Locality 38 of the Michigan Geological Survey. Upper part of the west wall of the quarry. Collected by Robert V. Kesling in 1949.
 - 1a. Bed 7 of Warthin and Cooper (1943, p. 581).
 - 1b. Bed 13 of Warthin and Cooper (1943, p. 581).
2. Abandoned shale pit of the Alpena Portland Cement Company, about 8 miles north-east of Alpena, Alpena County, SE. ¼ sec. 18, T. 32 N., R. 9 E.; Locality 51 of the Michigan Geological Survey. Channel sample of the upper 19 feet of the formation. Gray shale, easily weathered. Collected by George M. Ehlers, Erwin C. Stumm, and Robert V. Kesling, in 1949, and by George M. Ehlers, Martin Weiss, and Robert V. Kesling, in 1952.

SYSTEMATIC DESCRIPTION

Phylum ARTHROPODA

Class CRUSTACEA

Order OSTRACODA

Superfamily Beyrichiacea

Family Beyrichiidae

Genus *Phlyctiscapha* Kesling

Genotype.—By original designation, *Phlyctiscapha rockportensis* Kesling, 1953, pp. 222–25, Pls. I–II.

***Phlyctiscapha apleta*, sp. nov.**

(Pl. I, Figs. 1–15)

Description of female.—Carapace subovate in lateral view; subpyriform, anteriorly acuminate in ventral view; subcardioid and dorsally acuminate in end view. Greatest height anterior, a little in front of the middle. Greatest width posterior. Left valve overlapping the right in some specimens and right valve overlapping the left in others. Hinge line straight. Anterior border round, with radius of curvature equal to about one-half the height. Ventral border subround, with radius of curvature equal to about three-fourths the height. Posteroventral border gently curved; posterodorsal border subround, with radius of curvature equal to about two-fifths the height. Each valve with slight swing. Anterior end slightly more plicate than the posterior. Valves nonsulcate. Dorsal part of each valve extending above the hinge line as a hump. Lateral surface of each valve flat or slightly concave along a line parallel to the dorsal border and about one-sixth the height below the dorsal border. Anterior corner surface separated from the rest of the lateral surface by a sharp groove, which continues down and back, parallel to the free edge of each valve, and marks the distal edge of a very low marginal ridge. Posterior corner surface present as a narrow sublunate area, acuminate in the middle of its convex side, separated from the rest of the lateral surface by a continuation of the groove.

Pouch in each valve; posteriorly confluent with the rest of the valve; anteriorly separated from the rest of the valve by a semisulcus.¹ This semisulcus curves forward and down from its end in the front part of the ventral central area of the valve, recurving in the anteroventral part of the valve, and thence confluent with a sharp groove extending to the posterodorsal

¹“Semisulcus” is used here as defined by Henningsmoen (1953, p. 188): “Whereas a sulcus lies between two inflations, the semisulcus is only bordered on one side by an inflation.”

part of the valve. This groove parallel to the groove marking the distal edge of the marginal ridge, separated from it by about one-tenth the width of the valve. Semisulcus and confluent groove form a large dark line on the valve; dark line interpreted as the position of an internal partition in each valve, similar to that within each valve in females of *Phlyctiscapha rockportensis* Kesling (1953, p. 223, Fig. 1).

Cardinal angles not sharply defined. Anterior cardinal angle about 130 degrees; posterior cardinal angle about 120 degrees.

Surface smooth. Pores faint, discernible only on well-preserved specimens. Dark spot in the central area of each valve, posterodorsad to the upper end of the semisulcus around the front of the pouch, interpreted as the position of an internal adductor muscle scar.

Dimensions of holotype, No. 30482, a female carapace, are listed in Table I.

TABLE I
MEASUREMENTS OF HOLOTYPES (FEMALE CARAPACES) OF THE
TWO SPECIES OF *Phlyctiscapha*

	<i>P. apleta</i>	<i>P. rockportensis</i>
Length (mm.)	1.74	1.35
Height (mm.)	1.15	.98
Width (mm.)	1.03	.93
Height/length66	.73
Width/length59	.69
Width/height90	.95

Description of male.—Hinge line, outline in lateral view, marginal ridge, ornamentation, and hump like those of female. Carapace sublanceolate in dorsal and end views. No pouch. No groove. No semisulcus like that around the front of the pouch in the female.

Dimensions of allotype, No. 30490, a carapace: length, 1.72 mm.; height, 1.28 mm.; and width, .85 mm.

Immature instars.—Specimens found represent the first, third, and fourth instars (numbered in the sequence resulting when the smallest specimen is called the first). All immature specimens have the same shape as the adult male, except for greater concavity along a line parallel to the dorsal border, giving the hump the appearance of a curved ridge.

Remarks.—*Phlyctiscapha apleta*, sp. nov., resembles *P. rockportensis* Kesling (1953, pp. 221–29, Pls. I–II, Fig. 1), the genotype and only other known species, in the general shape of the adult male and female carapaces. It can easily be distinguished from that species by its much larger adult

carapace, which is proportionately longer and narrower (Table I), and by the groove that is parallel to the free edge and continuous from the anterior to the posterior corner areas of each valve. Furthermore, some carapaces of *P. apleta* have an R/L overlap and some have an L/R; whereas in *P. rockportensis* only carapaces with the L/R overlap are known.

The name of this species is derived from Greek ἀπλετος ("immense, extraordinary") and refers to the large size of the adult carapace.

Occurrence.—Localities 1a, 1b, and 2, but specimens are rare at all three sites. They have not been found in other beds of the formation, nor in other formations of the Traverse group.

Types.—Holotype, a female carapace, No. 30482; allotype, a male carapace, No. 30490; paratypes, three female carapaces, Nos. 30483, 30489, and 30491, one carapace in the fourth instar, No. 30484, one carapace in the third instar, No. 30486, and one carapace in the first instar, No. 30485.

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- WARTHIN, A. S., JR., and COOPER, G. A. 1943. Traverse Rocks of the Thunder Bay Region, Michigan. Bull. Amer. Assn. Petrol. Geol., Vol. 27, No. 5, pp. 571-95.

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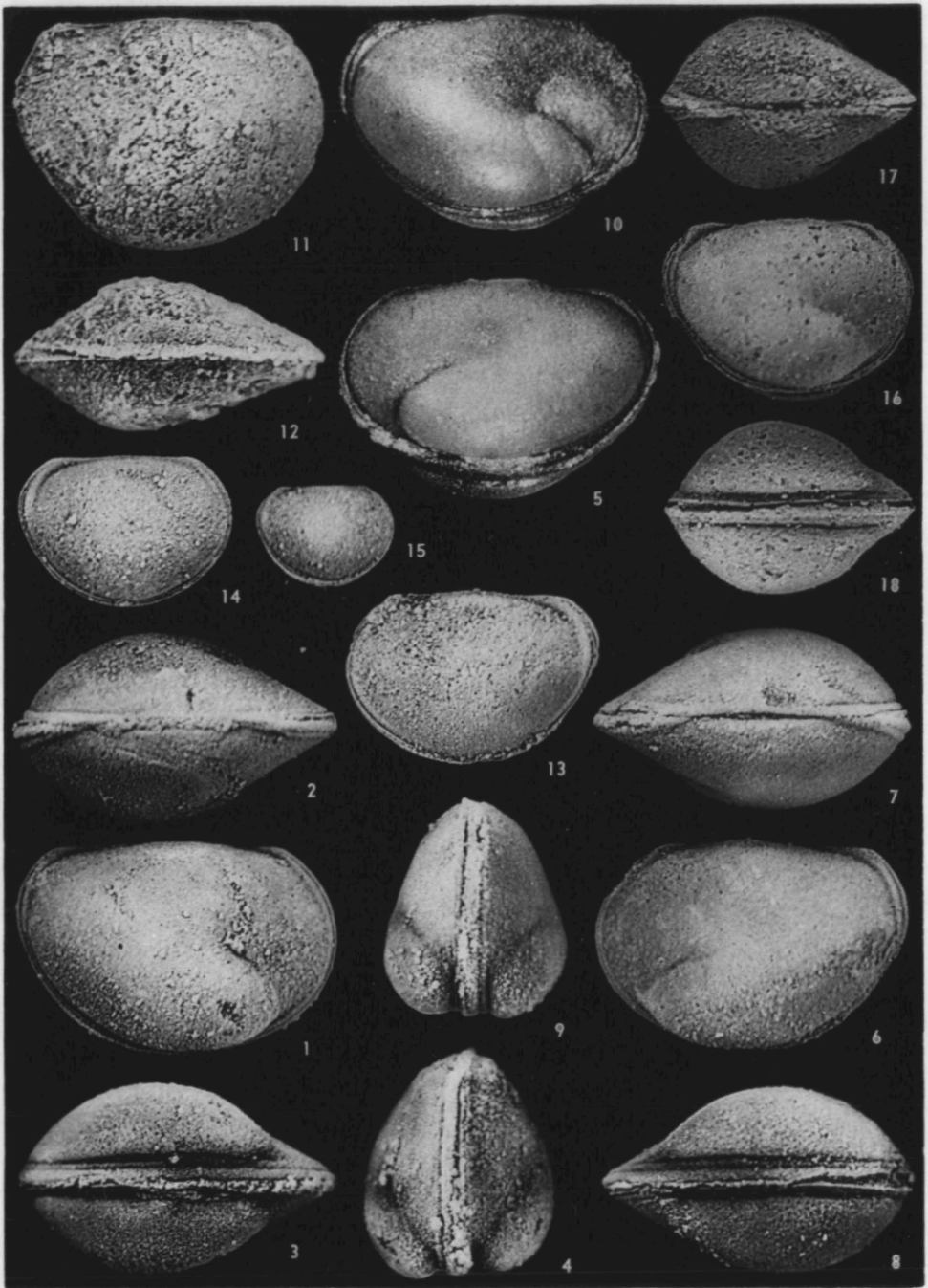
PLATES

EXPLANATION OF PLATE I

(All figures $\times 25$)

- Phlyctiscapha apleta*, sp. nov. 188
 FIGS. 1-5. Right lateral, dorsal, ventral, anterior, and inclined left lateral views of female carapace. Holotype No. 30482. Figure 5 photographed without coating of ammonium chloride. Locality 2.
- FIGS. 6-10. Left lateral, dorsal, ventral, anterior, and inclined right lateral views of female carapace. Paratype No. 30483. Figure 10 photographed without coating of ammonium chloride. Locality 2.
- FIGS. 11-12. Right lateral and ventral views of male carapace. Allotype No. 30490. Locality 1b.
- FIG. 13. Left lateral view of carapace in the fourth instar. Paratype No. 30484. Locality 2.
- FIG. 14. Right lateral view of carapace in the third instar. Paratype No. 30486. Locality 2.
- FIG. 15. Right lateral view of carapace in the first instar. Paratype No. 30485. Locality 2.
- Phlyctiscapha rockportensis* Kesling 189
 FIGS. 16-18. Right lateral, dorsal, and ventral views of female carapace. Holotype No. 29603. Illustrated for comparison with *P. apleta*, sp. nov.

PLATE I



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