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A NEW GENUS AND SPECIES OF OSTRACOD
FROM THE MIDDLE DEVONIAN LUDLOWVILLE
FORMATION IN WESTERN NEW YORK

BY

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VOLUME XIV

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2. A Chart Useful for Study of Ostracod Carapaces, by Robert V. Kesling. Pages 17-20, with 2 figures.
3. A New Genus and Species of Ostracod from the Middle Devonian Ludlowville Formation in Western New York, by Robert V. Kesling. Pages 21-26, with 1 plate.

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INTRODUCTION

A NEW genus of ostracod has been discovered in the upper part of the Wanakah member of the Middle Devonian Ludlowville formation in western New York. It is related to four other Middle Devonian genera, *Arcyzona* Kesling, *Amphizona* Kesling and Copeland, *Chironiptrum* Kesling, and *Reticestus* Kesling and Weiss, which have been assigned to the family Kirkbyidae.

These ostracods have several diagnostic characteristics in common, which differ from those in *Kirkbya* Jones and related post-Devonian genera, such as *Amphissites* Girty, *Aurikirkbya* Sohn, *Ectodemites* Cooper, *Kelletina* Swartz, *Kirkbyites* Johnson, *Knightina* Kellett, and *Polytylites* Cooper. I regard the differences as familial and will propose a new family for the Devonian genera in the "Treatise on Invertebrate Paleontology," Volume Q, Arthropoda 3, Ostracodes, soon to be published. This new family includes ostracods characterized by a straight hinge line, reticulate surface, a central pit, and some kind of velate structure. In contrast to the Kirkbyidae (*s. s.*), they have a pit that is central instead of subcentral and lack a central node. Inasmuch as there are no known species of the proposed family from rocks younger than Devonian and no known species of the Kirkbyidae (*s. s.*) from rocks older than Mississippian, the classification has an unusually distinct stratigraphic significance.

Certain genera of the proposed family appear to be the direct ancestors of kirkbyid genera. For example, *Amphizona* seems to have been the pro-

genitor of *Amphissites*, *Arcyzona* of *Ectodemites*, and the new genus of *Kirkbya*. *Amphizona* resembles *Amphissites* in having a marginal ridge, a well-developed frill, a carina, and a dorsal ridge; it differs only in having a large central pit instead of a central node and a small subcentral pit. Similarly, except for the location of their pits, *Arcyzona* is very much like *Ectodemites*, and the new genus like *Kirkbya*.

Three Middle Devonian genera, *Amphisella*, *Doraclatum*, and *Bideirella*, described by Stover (1956, pp. 1134, 1136, and 1137), are reticulate, but have a smooth central spot instead of a pit. They are tentatively excluded from the new family and from the Kirkbyidae.

I am deeply grateful to Mr. Raymond R. Hibbard of Buffalo, New York, for supplying a washed sample of shale from which the specimens deposited in the Museum of Paleontology were obtained. Dr. I. G. Sohn kindly loaned specimens for study from the collection of the National Museum. Dr. C. A. Arnold, Dr. G. M. Ehlers, and Dr. L. B. Kellum offered helpful suggestions on the manuscript.

Specimens are catalogued and deposited in the Museum of Paleontology of the University of Michigan and in the United States National Museum.

LOCALITIES

Specimens at the Museum of Paleontology of the University of Michigan are from locality 1. Those at the United States National Museum are from locality 2.

LOCALITY

1. Roadside exposure 2 miles southeast of East Bethany, Genesee County, New York. Shale, gray, weathering easily to clay; highly fossiliferous, with microfossils. Middle Devonian Hamilton group, Ludlowville formation, upper part of Wanakah member. Collected by Raymond R. Hibbard.
2. Outcrop 1½ miles south of East Bethany, Genesee County, New York. Shale, near the top of the Wanakah member. Collected by R. H. Stewart.

SYSTEMATIC DESCRIPTION

Phylum ARTHROPODA

Class CRUSTACEA

Order OSTRACODA

Superfamily Beyrichiacea

Paegnium, gen. nov.

Type species.—*Paegnium tanaum*, sp. nov.

Description.—Carapace nearly equivalved. Right valve slightly larger than the left, overlapping it around the free edge. Hinge line long and

straight. Nonsulcate, except for central pit. Surface reticulate. Submarginal ridge and velate ridge or frill, subparallel to free edge. No carina. Hinge-ment not known.

Remarks.—This genus closely resembles the Carboniferous genus *Kirkbya*, to which it is considered to be ancestral. It differs only in having the pit central instead of subcentral. It also has some features like those in *Chironipterum* (Kesling, 1952, p. 36), such as the central pit, and the smooth frill around the reticulate lateral surface, but differs from it in having a much smaller pit and more distinct corners.

The name of this genus is derived from Greek παίγνιον, n. ("toy, play-thing") and refers to the very small size of the type and the one other known species.

***Paegnium tanaum*, sp. nov.**

(Pl. I, Figs. 1–12)

Description.—Carapace in lateral view elongate subquadrate with curved ends; in dorsal view elongate sublanceolate; and in anterior view suboval. Hinge line long, about nine-tenths as long as entire carapace. Greatest height less than half the length. Greatest width less than two-fifths the length, nearly central. Anterior half of each valve slightly more plicate than the posterior. Dorsal border of each valve nearly straight, extending well above the hinge line throughout its length, curved gently downward at each end. Anterodorsal border gently curved; anteroventral border curved evenly with radius slightly greater than half the height; ventral border gently and evenly convex, subparallel to the dorsal border; posteroventral border curved with radius about two-thirds the height; and postero-dorsal border more sharply curved, its radius about one-half the height.

Each valve nonsulcate except for a small central pit, slightly anterior and about midway between the dorsal and ventral borders. Lateral surface arched outward, evenly convex as seen both in dorsal and in anterior views.

Right valve with a low marginal ridge, overlapping the edge of the left valve. In each valve, a low submarginal ridge, nearly parallel to the free edge; that in the right valve separated from the marginal ridge by a sharply defined, smooth, narrow channel. A narrow frill around the free border of each valve, widest and flaring in its ventral part, dorsally joined at each end to the dorsal ridge. Frill parallel to submarginal ridge, linked to it by numerous short, low crests lying at right angles to the frill and forming a kind of reticulation. Dorsal ridge along the dorsal border, joined anteriorly to the frill at an angle of 100 degrees and posteriorly at about 120 degrees, parallel to hinge line as seen in dorsal view. Short crests at right

angles to the dorsal ridge, sloping toward the hinge line and forming a kind of reticulation. A large distinct tubercle on the inner edge of the dorsal ridge, above the pit; the two tubercles in most carapaces aligned directly opposite each other, their tips separated by only a few microns.

Surface finely reticulate, with irregular polygonal meshes, each only slightly smaller than the pit. Most meshes of about the same size, but a few smaller; in one specimen, one mesh observed larger than the pit.

Hingement not known, but, as seen in dorsal view, hinge line at each end curving toward left valve. Edge of left valve probably fits under these slight terminal projections of the right valve.

Measurements of holotype, a carapace: length, .75mm.; height, .36mm.; and width, .29 mm.

Remarks.—Another species of *Paegnum* has been described by Stover (1956, pp. 1135–36, Pl. 119, Figs. 27–29) from the Windom member of the Middle Devonian Moscow formation in western New York. Stover remarked (p. 1096), “The new species, *Chironiptrum? arcuatum* is very suggestive of *Kirkbya*, and is probably allied with, if not ancestral to, the Kirkbyidae,” and (p. 1135) “. . . it is similar to *Chironiptrum* in that the velate ridges are confluent with the smooth dorsal margin and has a nearly central pit, but differs by having the lateral surface inflated anterocentrally.”

At first I thought the specimens described here were *Chironiptrum? arcuatum*. Upon examining the holotype, NYSM 11029, I found that, for the most part, Dr. Stover's description was accurate and complete. The structure which he called the “smooth dorsum,” however, could be better termed the dorsal ridge. *Paegnum tanaum* differs from *P. arcuatum* (Stover) in having wider velate structures, more sharply defined dorsal ridges, a tubercle on the inner edge of each dorsal ridge, and a small ridge in the channel between the velate and marginal structures. The largest specimen of *P. tanaum* is smaller than the holotype of *P. arcuatum*. Furthermore, although Stover (1956, p. 1135) stated that in *P. arcuatum* the reticules of the surface ornamentation were “without discernible geometric alignment,” the holotype shows those in the marginal areas of the lateral surface, with few exceptions, to be arranged in rows concentric to the anterior, ventral, and posterior borders. The reticules in *P. tanaum* have no such arrangement. The differences between the specimen described by Stover and the specimens from the Wanakah shale do not seem to be the result of preservation or ontogeny. Although they are very similar in shape and general appearance, *P. arcuatum* and *P. tanaum* appear to be two species; additional specimens of each are needed to establish their variability.

Types.—Holotype, carapace considered to be adult, UMMP No. 32489. Paratypes, an adult carapace, USNM No. 128256; an ultimate immature carapace, UMMP No. 32490; and a penultimate immature carapace with valves askew, UMMP No. 32491.

LITERATURE CITED

- KESLING, R. V. 1952. Ostracods of the families Leperditellidae, Primitiidae, Drepanellidae, Aechminidae, and Kirkbyidae from the Middle Devonian Bell shale of Michigan. *Contrib. Mus. Paleontol. Univ. Mich.*, Vol. 10, No. 2, pp. 21–24, 5 pls.
- STOVER, L. E. 1956. Ostracoda from the Windom Shale (Hamilton) of Western New York. *Journ. Paleontol.*, Vol. 30, No. 5, pp. 1092–1142, Pls. 111–119, 8 figs.

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EXPLANATION OF PLATE I

(All figures $\times 85$)

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FIGS. 1-4. Right lateral, dorsal, ventral, and left lateral views of adult carapace. Holotype, UMMP No. 32489.	
FIGS. 5-8. Right lateral, dorsal, ventral, and left lateral views of carapace in ultimate immature instar. Paratype, UMMP No. 32490.	
FIGS. 9-10. Left lateral and dorsal views of adult carapace. Paratype, USNM No. 128256.	
FIGS. 11-12. Lateral views of left and right valves of carapace in penultimate immature instar. Paratype, UMMP No. 32491.	

PLATE I



