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A NEW AND UNUSUAL SPECIES OF THE
OSTRACOD GENUS *HERRMANNINA* FROM THE
MIDDLE SILURIAN HENDRICKS DOLOMITE
OF MICHIGAN

BY
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A NEW AND UNUSUAL SPECIES OF THE
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INTRODUCTION

A NEW species of leperditiid ostracod with a large ventral spine on each valve is described here and assigned to the genus *Herrmannina*. It occurs in the Middle Silurian Hendricks dolomite. Specimens have been found only in strata exposed in the Fiborn quarry, Mackinac County, Michigan.

Although this ostracod was discovered many years ago, it has not hitherto been described. Dr. George M. Ehlers, for whom the species is named, first found a specimen in 1917 in the Fiborn quarry. In 1956 he collected two more at that place. All three specimens were found embedded in light brownish gray, lithographic limestone, and required considerable care in preparation.

I am deeply grateful to Dr. Ehlers for permission to study this ostracod and for his preliminary work on its classification. Dr. Lewis B. Kellum, Dr. Chester A. Arnold, and Dr. Ehlers offered helpful criticism of this paper.

All specimens are catalogued and deposited in the Museum of Paleontology of the University of Michigan.

LOCALITY

Strata exposed in the banks of a small drainage ditch leading to a sinkhole near the old shop building in the Fiborn quarry (now abandoned), which lies about 3 miles east and 3 miles north of Rexton, Mackinac County, Michigan. Limestone, light brown-

ish gray, lithographic, thinly and irregularly bedded, about 2 feet below the Fiborn limestone member of the Hendricks dolomite, Burnt Bluff group, Middle Silurian Niagaran series. Collected by George M. Ehlers in 1917 and 1956.

SYSTEMATIC DESCRIPTION

Phylum ARTHROPODA

Class CRUSTACEA

Order OSTRACODA

Superfamily Leperditiacea

Family Leperditiidae

Genus *Herrmannina* Kegel

Herrmannella Paeckelmann, 1922, p. 16, *non* Canu, 1891, p. 479.

Herrmannina Kegel, 1933*b*, p. 251.

Type species.—*Herrmannella waldschmidti* Paeckelmann, 1922, p. 16, by original designation the type of *Herrmannella*.

Discussion.—Swartz (1949, p. 314) presents a history of the genus, and offers the following emended description:

Leperditiidae with longitudinal axis oblique to hinge; contact surface of hinge is finely denticulate in a taxodont-like manner; a subocular chevron-mark is present; there is no appreciable development of a post-dorsal swelling in the left valve.

Herrmannina differs from *Leperditia* only in lacking a posterodorsal swelling or hump on the left valve. The boundary between the two genera is rather tenuous.

***Herrmannina ehlersi*, sp. nov.**

(Pl. I, Figs. 1-9)

Description.—Carapace sublenticular, its outline suboval in lateral view, sublanceolate (with lateral extensions) in dorsal view, and suboval (with lateral extensions) in anterior view. Right valve larger than left, overlapping it ventrally. Greatest height posterior. Greatest width, excluding spines, about mid-length and slightly ventral; greatest width, including spines, posterior and decidedly ventral. Hinge line straight; more than two-thirds as long as entire valve. Corners slightly protuberant. Anterodorsal border nearly straight; anterior border round with radius of curvature less than half the height; anteroventral border curved with radius about two-thirds the height; ventral border gently curved; posteroventral border round with radius about one-half the height; and posterodorsal border gently curved. Corner areas subtriangular, each set off from the rest of the lateral surface by a smoothly concave semisulcus.

Eye tubercle distinct, located about one-third the length from the anterior end and about one-eighth the height below the dorsal border; as seen in dorsal view, separated from the hinge by a distance equal to one-third the height; located on the strongly convex dorsal part of the lateral surface.

Low, faint, ridgelike hump parallel to the hinge line in each valve, its posterior end becoming confluent with the rest of the lateral surface in the region of the posterior corner, its anterior end more sharply defined, located in front of the eye tubercle and behind the anterior corner.

Spine or spur extending from the anteroventral part of the lateral surface in each valve, large, hollow, falcate, directed posteriorly. Base of each spine flaring, becoming tangent to the rest of the lateral surface; elliptical in cross section, elongate parallel to the axis of the valve, its front border about one-fifth the length from the anterior border of the valve, and its rear border nearly one-half the length from the anterior border of the valve; its upper border about one-half the height from the hinge line, and its lower border about three-fourths the height from the hinge line. Upper and lower surfaces of the spine gently convex, nearly flat. As seen in dorsal view, front edge of spine slightly convex; rear edge sharply concave near its junction with the rest of the valve and gently concave, nearly straight, for the rest of its length. Spine projecting behind rear border of its base. Tip small but blunt.

As seen in anterior view, ventral part of right valve convex with radius of curvature about one-sixth the height, curved upward and inward to the contact margin.

Muscle scars visible through the shell when immersed in water. Chevron-shaped muscle scar immediately below the eye spot. Large oval adductor-muscle scar behind the chevron-shaped scar and above the base of the spine.

Hinge finely denticulate, at least in its posterior half. Anterior cardinal angle approximately 110 degrees; posterior cardinal angle 120 degrees.

Measurements of holotype, an incomplete right valve: height, 4.75 mm.; width, excluding spine, about 2.3 mm.; and width, including spine, about 3.7 mm. Paratype No. 34566, a right valve with the spine broken off: greatest length (axis), 6.75 mm.; length, 6.70 mm.; and height, 4.45 mm.

Remarks.—The left valve is known only from paratype No. 34567, a badly crushed and distorted carapace. Because it did not show a hump larger than that of the right valve, the species has been assigned to the genus *Herrmannina* instead of *Leperditia*.

After the dorsal view (Pl. I, Figs. 8 and 9) of this specimen was photo-

graphed, the dorsal part of the carapace was ground away to reveal the nature of the hinge.

No part of the spine is preserved in the first specimen discovered (paratype No. 34566). During its removal from the limestone, it broke into seven pieces, which were subsequently reassembled. Some of the faint cracks which can be seen in Plate I, Figure 7, are junctions between these pieces.

The measurements cited above indicate that a complete carapace would be about 6.7 mm. long, 4.6 mm. high, 4.4 mm. wide exclusive of the spines, and about 7.2 mm. wide including the spines.

Spines are unusual in leperditiid ostracods. The only other spined ostracod known in the family Leperditiidae is *Isochilina armata* (Walcott) from the Middle Ordovician. In January 1919 the late Dr. E. O. Ulrich wrote the following note to Dr. Ehlers:

I hate to see this form in the Niagaran rocks, having hoped that it would be confined to the Middle and Lower Ordovician.

Unfortunately, the specimen is defective, but so far as I can see it is a close ally of *Leperditia ? armata* Walcott, a Black River species. Doubtless good specimens would show differences of specific grade.

The position of the spines is also unusual. Although lateral spinelike projections (aside from spines which develop as part of the lobation) are known in many ostracods of other families, they are posteroventral or ventral, not anteroventral.

The use of the spines in *Herrmannina ehlersi* is not known. It may be pointed out that they form elongate cavities extending outward below the adductor muscles. No dimorphism is known in the leperditiids, and the cavities are too small to have served as brood spaces. The rocks in which *H. ehlersi* occurs do not reveal anything peculiar about the environment, so the development of spines does not seem, from our present knowledge, to be an ecological response. In fact, other leperditiids, without any trace of spines, are found in the same strata.

This unusual species is named in honor of Dr. George M. Ehlers of the Museum of Paleontology, University of Michigan, who collected the known specimens.

Occurrence.—Middle Silurian, Niagaran series, Burnt Bluff group, Hendricks dolomite, strata about 2 feet below the Fiborn limestone member. Found only in the Fiborn quarry in Mackinac County, Michigan.

Types.—Holotype, a right valve with the posteroventral part broken off, UMMP No. 34565. Paratypes, a right valve with the spine broken off, UMMP No. 34566; a carapace, incomplete, crushed, and distorted, UMMP No. 34567.

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EXPLANATION OF PLATE I

(All figures $\times 5$)

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FIGS. 1-6. Stereoscopic dorsal, anterior, stereoscopic lateral, and ventral views of an incomplete right valve. Holotype, UMMP No. 34565.

FIG. 7. Lateral view of a right valve with the spine broken off. Paratype, UMMP No. 34566.

FIGS. 8 and 9. Stereoscopic dorsal view of an incomplete and crushed carapace. Paratype, UMMP No. 34567.

PLATE I



