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## *BAIRDOPPILATA*, A NEW GENUS OF OSTRACODA, WITH TWO NEW SPECIES

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### INTRODUCTION

The genus *Bairdia* McCoy, 1844, from the Carboniferous of Ireland, has been one of the most commonly used genera, whether in discussions, citations, faunal lists, or as the recipient of a varied assortment of species. Up to the present time more than 380 specimens have been described as different species of *Bairdia*, and many of them are by most students of these forms still considered as properly classified. Scarcely a large fauna of Ostracoda has been described from the late Paleozoic, Mesozoic, Tertiary, or later deposits without finding a few species of *Bairdia* in the assemblage. It should be unusual to expect an arthropod to maintain a constancy of developmental trends through so long a period of time, without some fundamental additions to its methods of living, or structural changes supported by biological habits. Whenever the anatomy of the soft tissues among the recent Crustacea shows variations, these differences reflect their presence in the structures of the hard parts, and it seems possible that the reverse method of interpretation would be possible among the fossil forms where only the skeletons are left.

Those features of the skeleton that should most readily show evidence of other anatomic change in the individual of the arthropod group should be on the inner surface of the exoskeleton, and would very probably be connected with those tissues that employ the hard parts in performing their own services to the individual. Among those characters are the muscle scars, vascular furrows, and articulation surfaces.

The dentition or area of articulation of the Ostracoda has been considered of primary importance. Several genera have been distinguished from one another on this basis. It is thought that a difference in arrangement of the articulating grooves, sockets, bars, protuberances, or area of dorsal contact, whether complex or simple, ranks quite high in reflecting other changes among the body tissues. Among specimens

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which have been buried in the rocks for a long time, these features are given this broad style of interpretation.

There is some difficulty in preparing the older specimens for a study of the contact relationships, and not every one possesses the possible proper conditions. Because of the extra labor, and the destruction of many otherwise splendidly preserved specimens in making them ready for observations of the contact, the study of the interior of the ostracods has been done mostly by those paleontologists working with single valves, and especially with those specimens from the late Mesozoic or younger strata.

In addition to the genera already described and separated from one another on articulating structure, we wish to call attention to another one that has many external characters in common with the genus *Bairdia*, and yet is different from it in the hingement features. It is even possible that many of the species that belong to the new group have been referred to *Bairdia*.

#### DESCRIPTION OF THE GENUS AND SPECIES

##### **BAIRDIIDAE** Sars, 1887

##### **BAIRDOPPILATA**, new genus

##### GENOTYPE.—**Bairdoppilata martyni**, new species

Carapace small, smooth, or finely punctate; bairdiaoid in lateral view; left valve is larger and overlaps the right on all margins, but more on the dorsal and mid-ventral than elsewhere. The ventral margin of each valve may or may not be frilled. The hingement of the left valve consists of a groove and an adjacent ridge on the dorsal side, along the straight contact, posterior to the highest angulation of the dorsal margin; along the dorsal margin to the anterior angulation, and along the posterior dorsal slope to the posterior acute angulation, the groove structure disappears before the middle of each slope is reached; just dorsal of the angulations on each end of the valve, and within the overlap margin, are a short series of transverse teeth and sockets, supported upon the internal marginal platform. The hingement of the right valve consists of a bar-like ridge with a groove along its dorsal side, which fits into the articulating structure of the left valve, and also a series of teeth set upon the margin of the valve just above the terminal angulations to mesh with those of the left valve.

RANGE.—Cretaceous and Tertiary.

This genus is easily distinguished from *Bairdia* by the articulating pattern that includes the transverse teeth.

**Bairdoppilata martyni**, new species

Carapace is short, the height greater than twice the length; dorsal margin is highly arched and angulated at the location of greatest height. The surface is smooth, strongly convex; greatest height slightly anterior of the middle; greatest thickness nearly central. The hinge contact is straight, consisting of a groove and bar type, characteristic of the genus; this straight contact surface slopes from the highest portion of the dorsal

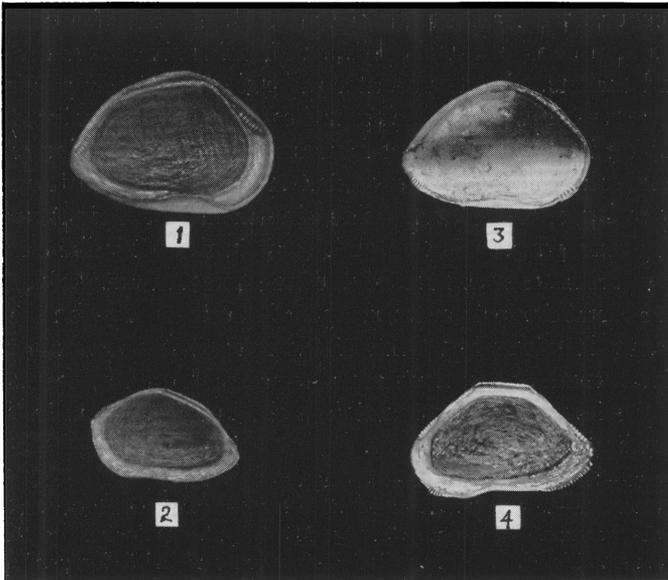


Fig. 1. *Bairdoppilata martyni*, n. sp. Cotype. Interior of left valve.  $\times 25$ . Amer. Mus. Cat. No. 24251.

Fig. 2. *Bairdoppilata martyni*, n. sp. Cotype. Interior of right valve.  $\times 20$ . Amer. Mus. Cat. No. 24252.

Fig. 3. *Bairdoppilata viticula*, n. sp. Cotype. Right valve.  $\times 20$ . Amer. Mus. Cat. No. 24253.

Fig. 4. *Bairdoppilata viticula*, n. sp. Cotype. Interior of right valve.  $\times 20$ . Amer. Mus. Cat. No. 24254.

margin, downward to the median angulation in the posterior slope. The internal marginal platform rises gradually from the middle of the lower half of the dorsal posterior slope to its widest portion around the posterior acute angulation, and extends inward as a shelf. This shelf becomes very narrow in the region of the greatest ventral overlap of the left valve over the right, and it appears as if the polished surface of the

internal platform becomes completely adnate to the interior of the valve here. Farther towards the front of the valve the inner margin of the platform rises from the inner surface of the valve and becomes a narrow shelf or septum, while most of the width of the internal platform remains in contact with the inner surface. The areas of dentition in the left valve lie just above the terminal angulations of the valve, and extend diagonally across the width of the internal platform surface, with the outer end nearest the angulation of the shell, and continue upward and inward near to the inner border of the platform (line of concrescence), forming a broad arc, convex inward, and bearing six or seven transverse teeth and sockets. Near the outer margin of the inner platform is a sinuous groove that receives the ventral edge of the right valve, the sinuosity curving inward as it passes around the extended overlap of the left valve, and conforms to the depression in the right valve in which the lip-like overlap of the left fits. The hingement of the right valve consists of bar and groove to mesh with those in the left valve on the posterior slope from the highest portion of the dorsal margin to the angulation. The remaining part of the margin of the right valve, on the ends, is narrowed to fit with the border of the left; just above the terminal angulations, teeth and sockets are present on the edge, to mesh with those in the left. The construction of the inner platform in the right valve is quite like that in the left.

LENGTH.—1.03 mm. HEIGHT.—0.68 mm.

OCCURRENCE.—Lower Miocene: Marl just below Chione Limestone in Lower Chickasawhay formation, Wayne County, Mississippi. Collected by Mr. C. H. Sample and named for P. F. Martyn, Geologist of the Houston Oil Company, Houston, Texas.

TYPES.—American Museum of Natural History, New York, N. Y. Catalogue numbers 24251, 24252.

#### ***Bairdoppilata viticula*, new species**

Carapace short, bairdiaoid in lateral view; the dorsal margin highly arched and angulated at the crest; the dorsal contact is angulated at the crest and again near the mid-posterior slope. The posterior acuteness lies below the line of mid-height; and the anterior angulation projects forward at the line of mid-height. The dorsal articulating ridge and groove hingement contact is shorter than in *B. martyni* and dips posteriorly less steeply. The construction of the internal marginal platform is less adnate along the edges and ventral margin than in *B. martyni*. The surface is strongly convex, with the greatest thickness of the specimen near the center, and is finely punctate, with the puncta scarcely

showing on the crest of the convexity, conspicuous and very closely spaced on the anterior half of the valve, and somewhat more widely spaced on the posterior slope; the closely spaced arrangement is also more common near the ventral margin.

Very near to, and paralleling the edge of the valve is located a delicate, narrow, radially grooved, broadly scalloped frill. It is attached to the exposed margin of the closed valves along the ventral anterior and posterior borders, and extends upward along the terminal margins to the acuminations. It is more conspicuous on the right valve.

LENGTH.—1.13 mm. HEIGHT.—0.75 mm.

OCCURRENCE.—Upper Cretaceous: *Exogyra cancellata* zone of the Mount Laurel Sand. Collected by Mr. Philip H. Jennings on Crosswicks Creek, .6 mile north of New Egypt, New Jersey, on Mr. Nutt's farm.

TYPES.—American Museum of Natural History, New York, N. Y. Catalogue numbers 24253, 24254.

