

ON TWO NEW SPECIES OF MARINE OSTRACODES IN THE
CARBONIFEROUS OF ASTURIAS, SPAIN

BY

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SUMMARY

This note is the result of a preliminary investigation made in the summer of 1964. During that season the author visited the coal-mine "Villoria" of "Cementos Fradera S.A." (Asturias, Spain) in order to collect specimens of Carboniferous ostracodes. Two new species of *Hollinella* were found and are being described in this article. Besides it turned out that, at least in this coal-mine, the marine bed from which the fossils were collected directly overlies one of the two productive zones in the mine. Wherever the marine bed is present it could serve as an aid in determining one's position in the local stratigraphic sequence.

STRATIGRAPHY

The geological age of these coal-layers is still uncertain. J. A. Martínez Alvarez (1962, p. 123) described them as "Westfaliense alto (C—D?)". The general succession is very simple (in descending order):

- (5) Shales and sandstones; marine fossils at base,
- (4) Productive coal-layer (Capa 4a),
- (3) 20—30 m shales and sandstones,
- (2) Productive coal-layer (Capa 3a),
- (1) Sandstones and sandy shales.

This section belongs to the "Productivo pizarroso" (Tramo D) of Martínez. Immediately above bed nr. 4 (Capa 4a) is a fossiliferous shale, containing a number of lamellibranchs and ostracodes, which are always considered as marine forms. In the group of ostracodes specimens belonging to the genera *Hollinella* and *Macrocypris* are abundant. It has been noted that samples with an abundance of *Hollinella* only contain a few specimens of *Macrocypris* and that samples with an abundance of *Macrocypris* only contain a few specimens of *Hollinella*. This phenomenon may be seen also in other coal-mines, but it is not clear what factors are of influence here.

Many other forms are only recognized as indistinct impressions on shale and not suitable for determination. All other shales and sandstones are unfossiliferous or contain only a few indeterminable fragments of flora. Thus the "Capa 4a" can be distinguished from the "Capa 3a" by the presence of a marine horizon just above the upper coal-layer. This can be followed through the whole mine. The presence

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of this marine horizon is not mentioned by Martínez (1962), but is in conformity with the opinions of Prof. Dr. A. Brouwer (Leiden) on the Carboniferous basin of Asturias ('64, personal communication).

How far this marine horizon extends in the basin is subject of further investigations, the results of which soon will be published.

SYSTEMATIC DESCRIPTION

Order PALAEOCOPIDA Henningsmoen, 1953.

Suborder BEYRICHCOPINA Scott, 1962.

Superfamily HOLLINACEA Swartz, 1936.

Family HOLLINIDAE Swartz, 1936.

Genus HOLLINELLA Coryell, 1928.

Type-species *Hollinella dentata* Coryell, 1928.

Stratigraphic distribution of genus: Middle Devonian — Middle Permian.

Hollinella cristinae Bless, nov. spec.

Fig. I, III, IV.

Holotype. No. Fr. 4—19.

Locus typicus. Coal-mine "Villoria" of "Cementos Fradera S.A.", Villoria, Asturias, Spain ("Primer piso, pizarra del techo de la Capa cuarta").

Stratum typicum. Westphalian C—D? (See J. A. Martínez Alvarez, 1962, p. 123).

Description of species. Small, suboblong, straight-backed ostracodes, with a strongly developed lobation. Frill, distinctly spinose, restricted to anterior and ventral part of free margin. L2 nodelike, L3 knob, ventral lobe prominent. Median sulcus deep and flaring out to the dorsal margin. Cardinal angles are well-defined, posterior a little spine. Surface finely granulose. H/L:0.70—0.75.

Type-description. Well preserved, wide-frilled female form. Single valve on shale, which does not seem to be deformed. Some of the spines of the anterior part of free margin have been broken by preparation. No hinge-structures have been observed. Height: 0.73 mm, length: 1.05 mm. (Measures included frill).

Remarks. Only females have been recognized. The specimens are prepared by a needle, preserving them on a part of the shale to eliminate breaking of spines. Preparation by chemical or mechanical methods was not possible. Although no hinge-elements are seen, there is no doubt, after study of the typical hollinelloid form and other characteristics of the carapace that this species belongs to *Hollinella*.

Discussion. The prominent ventral lobe and the wide spinose frill avoid confusing with other species of *Hollinella*.

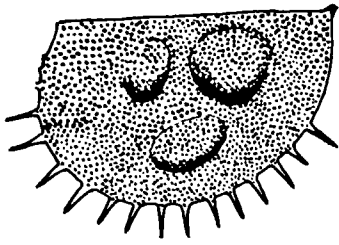


Fig. I Fr. 4-19

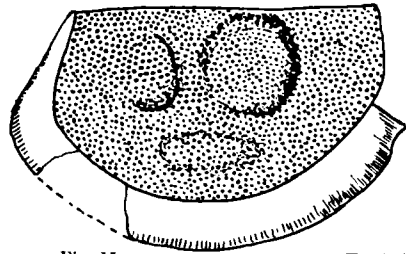


Fig. II Fr. 4-2

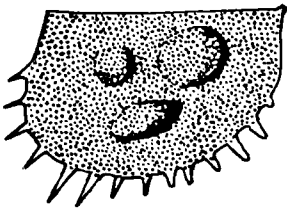


Fig. III Fr. 4-9

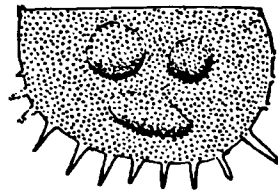


Fig. IV Fr. 8-26

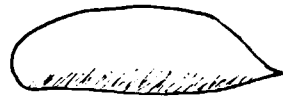


Fig. V Fr. 6b-36



Fig. VII Fr. 6b-30

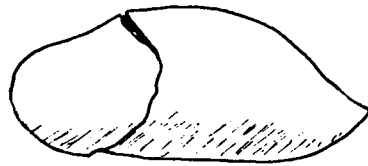
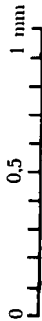


Fig. VI Fr. 6a-37

EXPLANATION OF THE FIGURES

- Fig. I, III, IV: *Hollinella cristinae* Bless, nov. spec.
 Fig. II: *Hollinella fraderae* Bless, nov. spec.
 Fig. V: *Macrocypris garrisonensis* Upson, 1933.
 Fig. VI: *Bairdia* sp. aff. *kingii* Reuss, 1854.
 Fig. VII: *Macrocypris menardensis* Harlton, 1929.

Hollinella fraderae Bless, nov. spec.

Fig. II.

Holotype. No. Fr. 4—2.

Locus typicus. Coal-mine "Villoria" of "Cementos Fradera S.A.", Villoria, Asturias, Spain. ("Primero piso, pizarra del techo de la Capa cuarta").

Stratum typicum. Westphalian C—D? (See J. A. Martínez Alvarez, 1962, p. 123).

Description of species. Suboblong, straight-backed ostracodes, with strongly developed lobation. Wide, smooth frill, with outer rim distinctly radially striated, restricted to anterior and ventral part of free margin. L2 node, L3 knoblike, ventral lobe conspicuous to prominent. Median sulcus deep and flaring out to the dorsal margin. Cardinal angles well-defined. Surface finely to coarsely granulose. H/L: 0.60—0.65.

Type-description. Well preserved, wide-frilled female form. Single valve on shale, which has been broken a little by preparation. The frill is gently curved. No hinge-elements have been observed. Length: 1.38 mm, height: 0.83 mm.

Remarks. Only females have been recognized. The specimens are prepared by a needle, preserving them on a part of the shale to eliminate breaking of thin parts. Nevertheless, the bad conservation of the material has caused, that some specimens have been broken. Preparation by chemical or mechanical methods was not possible. After study there seems nothing to doubt the place of this species in the genus *Hollinella*.

Discussion. This species is characterized by its conspicuous to prominent ventral lobe and partially striated frill. The wide-frilled species *H. grandis* Cooper, *H. cushmani* Kellett and *H. burlingamensis* Kellett don't show the striated outer rim of the frill of *Hollinella fradera*. *H. dentata* Coryell possesses a frill terminated posteriorly by a spine and its L2 is bulbous. Moreover its surface is partially papilose.

Order PODOCOPIA Müller, 1894.
Suborder PODOCOPINA Sars, 1866.
Superfamily BAIRDIACEA Sars, 1888.
Family MACROCYPRIDIDAE Müller, 1912.
Genus MACROCYPRIS Brady, 1867.

Type-species *Macrocypris* (= *Cythere*) *minna* (Baird, 1850).

Stratigraphic distribution of genus: Lower Ordovician? — Recent.

Macrocypris garrisonensis Upson, 1933.

Fig. V.

Macrocypris garrisonensis Upson, 1933. Nebraska Geol. Surv. Bull., 8, p. 25, pl. 2, figs. 14a-b. Virgilian Stage, Nebraska.

Macrocypris delicatula Bradfield, 1935. Bull. Am. Pal., vol. 22, p. 194, pl. 8, figs. 12a-d, Lower Hoxbar gr., Oklahoma.

Description. Small, convex-backed, elongate ostracodes. Anterior margin rounded, ventral margin slightly convex, antero-ventral margin slightly concave, posterior end sharply pointed below midheight. Carapace smooth. H/L: 0.33. Length of figured specimen: 0.90 mm, height: 0.30 mm.

Remarks. Only single valves on shale have been noted. No hinge-structures might be seen. The recent hinge-characteristics and muscle-scar pattern never have been demonstrated in the pré-Tertiary species of this genus. Until this moment there seems no reason to create a new genus.

Macrocypris menardensis Harlton, 1929.

Fig. VII.

Macrocypris menardensis Harlton, 1929, Texas Un. Bull. 2901, p. 161, pl. 4, figs. 7a-b, Canyon gr., Texas.

Description. Small, convex-backed, semilenticular in lateral outline. Anterior end rounded, posterior end acuminate below mid-height, dorsal margin broadly arched, ventral margin straight to slightly convex. Carapace smooth. Height: 0,35 mm, length: 0.92.

Remarks. Only single valves have been noted on shale. No hinge-elements have been seen.

Family BAIRDIIDAE Sars, 1888,

Genus BAIDIA McCoy, 1846.

Type-species *Bairdia curtus* McCoy, 1846.

Stratigraphic distribution of genus: Ordovician — Recent.

Bairdia sp. aff. *kingii* Reuss, 1854.

Fig. VI.

Bairdia kingii Reuss, 1854. Wettereauer Gesell. Gesamm. Nat. Hanau, p. 67, fig. 4. Zechstein, Germany.

Description. One single left valve on shale shows the characteristic bairdian shape in lateral view. It has a broadly arched dorsal border, that becomes concave terminally. Venter straight in the centre, but curved upward terminally so that extremities are nearly at mid-height. Anterior end rounded, posterior acuminate. Carapace elongate. Surface smooth. Length: 1.26 mm, height: 0.54 mm.

Remarks. The low form-ratio and shape of this valve seems to agree with *B. kingii* Reuss, recognized in the Zechstein of Germany and England and in the Virgilian Stage of Illinois. But the posterior acuminate end of our specimen is more elongate and the size is also larger than that of the described forms of *B. kingii*.

ACKNOWLEDGEMENTS

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