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TRILOBITOMORPHA ARTHROPLEURIDA, II

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Trilobitomorpha, Arthropleurida, II

Since publication of a previous paper (Richardson, 1956b) on the arthropleurids of the Mazon Creek fauna, another fragment of an *Arthropleura* from this same area has come into the possession of Chicago Natural History Museum. It is described below as the type of a new species, *A. cristata*. The four known specimens from this area were all found in the spoil heaps of Pit 1 of the Northern Illinois Coal Company's strip mine workings near Braidwood and Coal City, in Will County, Illinois. The complete leg described in the previous paper was found in the fill supporting the railroad track formerly used to carry waste in dump cars from the old tipple, and presumably came there as an ingredient of that waste. The two rosette organs described at the same time were found about one half mile from the site of the new specimen.

The new specimen represents a portion of the dorsal covering of one of the pleura, making possible a comparison with similar parts of the known European species. It was collected by Dr. Glen Boas, of Chicago, in 1957, and has been presented by him to the Museum.

Phylum **ARTHROPODA**

Subphylum **TRILOBITOMORPHA**

Class **ARTHROPLEURIDA**

Family **ARTHROPLEURIDAE**

Genus **Arthropleura** Jordan

Arthropleura cristata, new species

Diagnosis.—A very large species. Pleura characterized by a very slightly curved posterior margin, a small spinose projection at the outer angle, a very pronounced concave-sided spinose ridge separating the anterior and posterior fields, and a row of very large mammiform spines near the posterior border, with a row of smaller spines between them and the border. Many small, distally directed spines occupy the anterior field.

FIG. 42. *Arthropleura cristata*, new sp., holotype; × 1. CNHM no. PE5262. Impression of under side of test.

Description.—Since it is not certain how much of the pleuron is preserved in the specimen before us, the dimensions of the pleuron can best be judged from the photograph and drawing published herewith. The spacing of the series of points formed by the projecting outer angle and the three large spines is uniform, as is the spacing of the series of smaller spines along the posterior margin. The posterior field is essentially smooth anterior to the large spines, but bears a few tubercles and pits of various small sizes. The crested ridge dividing the anterior and posterior fields rises in a concave slope on each side and is accordingly very sharp. The anterior field is occupied by many small spine bases, slanting postero-laterally, with increasing slant and decreasing size as they approach the outer corner; in the middle of the field these slant along the midline; on either side they are angled outward toward the anterior margin and the crested ridge, respectively.

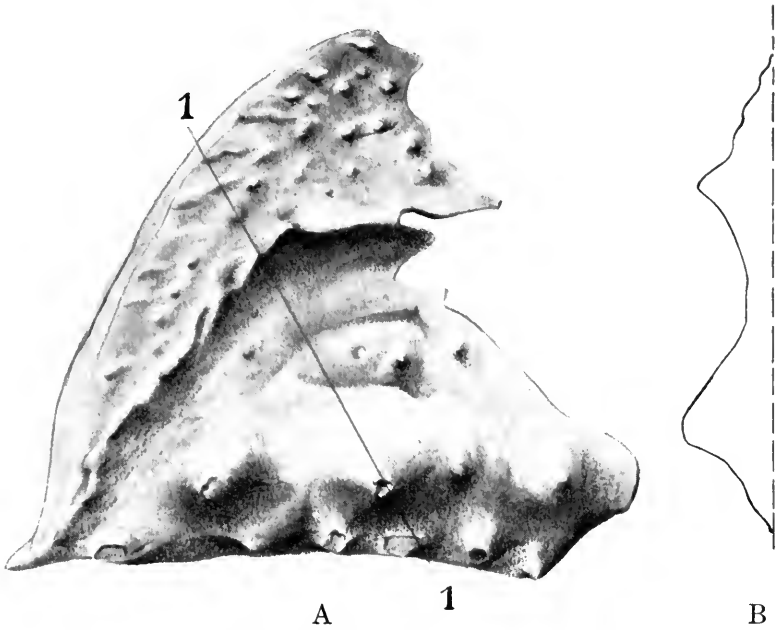

FIG. 43. *Arthropleura cristata*, new sp. A, holotype; B, profile on line 1, showing high concave-sided ridge and large mammiform spine. Drawing by Maidi Wiebe.

Comparisons.—Since Waterlot (1934, p. 105) has published a key summarizing the characters of the known species of *Arthropleura*, it is not necessary to review them here. The only species to which *A. cristata*, new sp., seems to be at all closely related are *A. mammata* Salter and, less closely, *A. britannica* Andrée. Both of these species have large mammiform spines on the posterior field of the pleuron and a ridge extending to the pleural angle. Both, however, have a far more concave posterior margin, a much less sharp keel, and a less tuberculose anterior field. Both, likewise, are smaller.

Judged by size, the pleural fragment of *A. cristata* could have belonged to an animal of the same species as the leg and rosette organs previously discussed (Richardson, 1956b). In view of this and of the close geographic association of the several specimens, all are here referred to the same species.

Arthropleura mammata occurs in the "Middle Coal Measures" in England and in the Westphalian B of Belgium and northern France; *A. britannica*, a slightly later form, occurs in the "Upper Coal Measures" of England; *A. cristata*, occurring in the Francis Creek shale

member of the Carbondale formation of Illinois, is in a position equivalent to the top of the European Westphalian C, according to the Pennsylvanian correlation chart of the National Research Council Committee on Stratigraphy (Moore, *et al.*, 1944). Fitted into Waterlot's (1934, p. 106) phylogenetic sketch, the new species should succeed *A. mammata* and *A. britannica*, but not on the line leading directly to *A. fayoli*.

Holotype and referred specimens.—The type specimen of *A. cristata* is in two complementary halves of a concretion, no. PE5262, Chicago Natural History Museum, a gift of Dr. Glen Boas. The three specimens described earlier as *Arthropleura* sp. (Richardson, 1956b) are referred to this species.

Locality.—The holotype of *A. cristata* was found in the most northwesterly spoil heap of Pit 1, at position d7.6, *F*8.0 in terms of the map coordinates used in locating specimens of this fauna (Richardson, 1956a, fig. 3). It is from the Francis Creek shale member of the Carbondale formation in the Allegheny series of the Pennsylvanian.

REFERENCES

Moore, R. C., et al.

1944. Correlation of Pennsylvanian formations of North America. Bull. Geol. Soc. Amer., **55**, pp. 657–706, 1 pl.

Richardson, E. S., Jr.

1956a. Pennsylvanian invertebrates of the Mazon Creek area, Illinois: Introduction. Fieldiana, Geol., **12**, no. 1, pp. 1–12, 3 figs.

1956b. Pennsylvanian invertebrates of the Mazon Creek area, Illinois: Trilobitomorpha, Arthropleurida. Fieldiana, Geol., **12**, no. 4, pp. 69–76, 4 figs.

Waterlot, Gérard

1934. Études des gîtes minéraux de la France. II. Faune fossile. Étude de la faune continentale du terrain houiller sarro-lorrain, viii+317 pp., 24 pls., 66 text figs.

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