



Early Palaeozoic trilobites

Tomczykowa, E. 1991. Upper Silurian and Lower Devonian trilobites of Poland. Prace Pastwowego Instytutu Geologicznego 134, pp. 62, 10 text-figs and 9 tables, 16 plates.

This paper presents a palaeontological study with good photographic illustration of 260 well preserved specimens of trilobites collected mainly in outcrops in the Holy Cross Mountains and deep boreholes drilled in the Polish part of the East-European Platform.

As Tomczykowa's paper evidences, Late Silurian and Early Devonian trilobites in Poland are well differentiated. Thus far, however, only few papers concerning these trilobites (all by Tomczykowa) have been published. For this reason, the reviewed paper is a very important contribution to the knowledge of the European trilobites' evolution and paleogeography. More than 50 species, including 15 new ones, have been described in this paper. Descriptions are informative (although often too profuse) and illustrations adequate. New data obtained by Tomczykowa allowed her to re-diagnose most of the families or subfamilies considered and to erect one new subfamily (Eudolatitinae) and to elevate the Asteropyginae and Acastinae to the familial rank. It should be however mentioned, that according to the ICZN rules (art.50C) the author of these two families is not Tomczykowa 1991, as one could conclude from the respective subtitles, but Delo 1935.

It is annoying, that complete geographic ranges of the earlier known species have not been included in the majority of descriptions: 'occurrences' at the end of each description contain only ranges of these species in Poland. Some discussions on the fauna are very unclear. E.g., 'To this group belongs: *Struvertia simrica* ... and its conspecific species *S. howgillensis* ...' (p. 8); 'this author classified the individual species according to their evolutionary sequence...' (p. 20); 'Perhaps the representatives of Eudolatitinae... show an evolutionary link coming from Dalmanitidae independently from Dalmanitinae' (p. 31). Titles of some tables are difficult to understand and often do not conform to their contents (e.g.: table 5: 'Stratigraphic range of Upper Silurian Calymeninae grouped in morphological characters and in relation to Flexicalymeninae'; table 7: 'Correlation chart of some Upper Silurian *Calymene* species' — the table includes only comparisons of these species; table 8: 'Taxonomy of the Dalmanitaceae' — the title is inadequate (its Polish version is 'Systematics of the Dalmanitacea'), as the table presents stratigraphic ranges of dalmanitacean genera). On the latter table, there are arrows between some taxa; such arrows are conventionally understood as indicating phylogenetic relationships, or supposed origins of a taxon; here they seem to be used for showing that the taxa form together a taxon of the higher rank.

Ranges of all trilobites from studied strata, including also homalonotids earlier published by the same author, are presented in tables, unfortunately, without explanation of marks used (arrow, bold lenses) are less readable. World distribution, biostratigraphy and correlation of trilobite fauna are widely discussed in chapter 'Biostratigraphy and correlation', but subsequently, systematic descriptions lack occurrences outside Poland.

Trilobites co-occur here with excellent guide fossils such as: graptolites, conodonts and ostracods in continuous openmarine deposits across the Silurian-Devonian boundary, and for that reason they are very useful in age correlation of the different facially developed sections.

Editorial work on this important paper was very careless (frankly speaking, it seems that there wasn't any). To mention just a few inadequacies: in table 6, a column containing numbers of specimens is labelled 'Acronyms (sic!) of the species'; on p. 18, explanation of the figure, which shows side views of cranidia in type species of some genera reads: 'The type species of *Harpidella*, *Otarion* and *Conoparia* – lateral view'. The present reviewers do not feel competent to evaluate the English translation, however, even according to their limited knowledge of the language, the translation does not seem on a level acceptable for a scientific journal.

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Edge of the Baltic region in the Devonian

Matyja, H. 1993. Upper Devonian of Western Pomerania. *Acta Geologica Polonica* 43, 27–94, 22 text-figs, 36 plates.

During the late Devonian the Western Pomerania area was a fragment of an elongated epicratonic sea which surrounded the southeastern side of the 'Old Red Continent'. The present-day northeastward extent of the Devonian and Carboniferous sediments in Western Pomerania is delineated by the NW-SE tectonic line, corresponding to the margin of the East European Platform.

The thickness of the Upper Devonian sediments varies greatly in Western Pomerania from 700 m to 2000 m. It is due to the differential subsidence of the sub-basins formed during the deposition of the Late Devonian and Early Carboniferous sedimentation of Pomerania by depositional faults.

The paper by Hanna Matyja is the first monographic presentation of the Late Devonian geological history of Western Pomerania. More than 50 borehole sections have been investigated to document stratigraphy and facies distribution from the Frasnian to the lower Tournaisian.

Five informal lithostratigraphic subsurface 'formations' and four 'members' have been distinguished by the author.

The presence of 21 standard conodont zones from the Frasnian *Palmatolepis punctata* Zone up to the Famennian lower *Siphonodella praesulcata* Zone has been documented. The stratigraphic gap comprises the latest Devonian (middle and upper *S.praesulcata* Zones) and the earliest Carboniferous (the *S.sulcata*, *S.duplicata* and part of the *S.sandbergi* Zones). The conodonts of the late *S.sandbergi* Zone are present.

The succession and distribution of six conodont biofacies (palmatolepid-polygnathid, polygnathid-palmatolepid, icriodid-polygnathid, polygnathid, polygnathid-bispathodid, and bispathodid) in settings ranging from offshore pelagic to shallow nearshore is discussed.

On the basis of these data the author presents discussion of the geological history of Western Pomerania. During the Late Devonian, Western Pomerania underwent evolution from an extremely shallow water and coastal environments in the earliest Frasnian, through deeper environments during the rest of the Frasnian and early Famennian, up to the reappearance of shallow water and coastal environments in the late Famennian. Beginning with the late *P.expansa*, an open shelf environment became prevalent almost over the whole area.

Unfortunately, there is a little comment on the relations between the conodont distribution and other fossils (foraminifers, ostracods, brachiopods) common in these sediments.

A sequence of 13 events, both eustatic sea-level changes and epeirogenic movements as well as those of the biotic nature is documented by the author in the Late Devonian of Western Pomerania.

The systematic part includes descriptions of 4 new species of conodonts, other 106 conodont form-species are listed and illustrated.

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