SOME SILURIAN BRACHIOPODS FROM LITHUANIA AND THEIR PALAEOBIOGEOGRAPHICAL SIGNIFICANCE

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ABSTRACT. Silurian brachiopods are described from 21 boreholes in Lithuania. Nine genera are recognized and represented by one or two species, including the atrypids *Atrypoidea*, *Cromatrypa, Lissatrypa* and *Septatrypa*, athyridids *Collarothyris, Nucleospira, Meristina* and *Pseudoprotathyris*, and rhynchonellids *Ancillotoechia* and *Plagiorhyncha*. Two new species, *Cromatrypa*? *pubes* and *Lissatrypa lithuanica*, are described. The same taxa are reported from England, Gotland, Belarus and Podolia in Wenlock and Ludlow strata, and from Podolia, Urals, the Canadian Arctic archipelago and Russian Arctic islands in Prídolí strata.

KEYWORDS: brachiopods, atrypids, athyridids, rhynchonellids, taxonomy, Silurian, Lithuania.

BRACHIOPODS are commonly used for the accurate correlation of Wenlock–Ludlow and Prídolí rocks, particularly the spire-bearing, smooth brachiopods, and mainly atrypids such as *Atrypoidea*, *Cromatrypa, Lissatrypa* and *Septatrypa*, and the athyridids *Collarothyris*, *Meristina*, *Nucleospira,* and *Pseudoprotathyris*. The smooth brachiopods selected for this study have markedly convergent features, which are a result of their similar life strategies. Most have strong ventral attachment structures and hinge mechanisms, and an absence of macrosculpture on the shell surface. However, the rhynchonellids *Ancillotoechia* and *Plagiorhyncha* are an exception in possessing ribbing. Some of the Lithuanian fauna has been described previously, in particular the enteletoids and athyrididids (Paškevičius 1962; Musteikis and Puura 1983; Modzalevskaya 1985).

GEOLOGICAL SETTING

The Silurian carbonate and siliclastics rocks in the Baltoscandian epicontinental basin covered a large area over Scandinavia and the east Baltic. The general structure, development and detailed palaeogeography of the palaeobasin is well defined in terms of its faunas and lithofacies, summarized recently by Lapinskas (2000) in six phases of basin development.

The Silurian strata in Lithuania are an integral part of the Baltic Basin and represent the most stratigraphically-complete sequences of all facies types in the region from pelagic to lagoonal. The sequences range from between 40–800 m thick and occur at depths of between 100 m (eastern Lithuania) and 1200 m (western Lithuania), with outcrop on the island of Gotland and in northern Estonia. All these facies are grouped into two major facies groups: pelagic, developed mainly in the Baltic syneclise (western Lithuania) and shelf, occupying the slope of the Byelorussian-Mazurian anteclise (eastern Lithuania). The pelagic facies group is represented by black argillites with graptolites; black argillites with interbeds of black, grey and greenish-grey calcareous mudstones; greenish-grey calcareous mudstones; black argillites with thin interbeds of microcrystalline limestone, and greenish-grey calcareous mudstones and marls with interbeds of microcrystalline limestone. These facies were developed in anaerobic to dysaerobic environments below wave-base, and contain mainly graptolites together with an extremely rare shelly fauna including thin-shelled brachiopods. The shelf facies group consists of various open shelf, greenish-grey marls with a benthic fauna; variegated argillaceous marls; grey and greenish-grey marls with interbeds of microcrystalline limestone; greenish-grey marls with limestone nodules; grey nodular

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