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THE BIOSTRATIGRAPHIC POTENTIAL OF EARLY CAMBRIAN MOLLUSCS

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Molluscs are the most prominent constituent of the so-called Small Shelly Fossils fauna . The oldest molluscs are known from the late Nemakit-Daldynian of the Siberian platform. Shortly after, molluscs and other SSF experienced an explosive radiation. Evolutionary sequences of molluscs have a stratigraphic utility that has been previously recognised by various authors. Several schemes of biozonation based on molluscs distribution or on SSF including molluscs have been proposed for the correlation of the early Cambrian strata within the Siberian platform. Some regional molluscan biozones were recognised elsewhere outside of Siberia. Though, some of these biozones were based on the same molluscs and possibly coeval, these data were virtually ignored in most proposed stratigraphic charts. The level of first appearance of the geographically widely-distributed mollusc Watsonella crosbyi is proposed for correlation for early Cambrian strata coeval to the basal Tommotian of Siberia. Watsonella crosbyi (= Heraultipegma sibirica) Biozone is also proposed here as a globally recognised early Cambrian biostratigraphic unit. This zone is recognised in Newfoundland, Siberia, southern France, Mongolia, China, and Australia. It is also possible to trace this unit into Baltica, Iran and elsewhere by co-occurrence with the molluscs Anabarella plana and Aldanella ex gr. attleborensis, and some other SSF. Underlying Watsonella crosbyi Biozone strata are known as the Purella antiqua Biozone. However, the systematic position of this fossil is not yet settled, most probably it belongs to Mollusca. For strata overlying the W. crosbyi Biozone, the evolutionary sequences of Aldanella, Pelagiella, Yochelcionella and some other molluscs may have a potential utility for a biozonal division of the early Cambrian.