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The Early to Middle Paleozoic Revolution
Estonia, 10-19 June 2014

Abstracts & Field Guide



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Palaeogeographical significance of upper lower Cambrian (provisional Cambrian Series 2) trilobites from Gansu Province, China

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China is a complex collage of continental blocks and accretionary belts, as well as several smaller blocks and terranes, including amalgamation of the North China plates and the southern marginal areas of Siberia. As fossils are of fundamental importance for interpretation of complex palaeogeographical situations, providing age and geographic constraints in formulation of tectonic models, we have used palaeogeographically and biostratigraphically important trilobites from northwestern China in order to shed some light on early Cambrian plate configurations. Fossiliferous upper lower Cambrian (provisional Cambrian Series 2) rocks crop out sporadically in the Beishan area, northwestern Gansu Province of China. Trilobites have been collected from three measured sections through the Shuangyingshan Formation, a relatively thin, carbonate-dominated unit that is locally exposed in Subei County of the Beishan area. The trilobite fauna from this formation is dominated by eodiscoid and 'corynexochid' trilobites, together representing at least ten genera: *Serrodiscus*, *Tannudiscus*, *Calodiscus*, *Pagetides*, *Kootenia*, *Edelsteinaspis*, *Ptarmiganoides?*, *Politinella*, *Dinesus* and *Subeia*. Sixteen species have been identified, of which seven are identified with previously described taxa and nine described under open nomenclature. The composition of the fauna, and particularly the presence of species of *Edelsteinaspis*, *Dinesus* and *Politinella*, suggests affinity with Altai–Sayan and marginal Siberian trilobite faunas rather than Gondwanan ones, suggesting that the Middle Tianshan-Beishan Terrane may have been located fairly close to Siberia during middle–late Cambrian Epoch 2. The Beishan trilobite fauna is also similar to a coeval fauna from the Karaganda area in Kazakhstan. This indicates that the Middle Tianshan-Beishan Terrane may have formed part of the Kazakhstan Mid-Plate during Cambrian and Early Ordovician times. Following the closure of the Middle Tianshan Sea during the Darriwilian, the Middle Tianshan-Beishan Terrane was incorporated into the Tarim Plate.