

Stratigraphy and trilobite biofacies of the Late Ordovician (Katian) of the Taimyr Peninsula, Arctic Russia

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The thick Late Ordovician (Katian) succession on the Taimyr Peninsula, Arctic Russia is divided into three regions showing a transition from a southern carbonate dominated facies, a central transitional facies, and a siliciclastic dominated northern facies. All regions are rich in trilobites but hitherto only the southern fauna was described. New collections have been added to this and allow a division into two very different biofacies for the Katian succession. Black limestone and shales have taxa similar to those of the peripheral Laurentian Scoto-Appalachian belt (*Ampyxella*, *Ampxyina*, *Failleana*, *Pararemopleurides*, *Raymondella*, *Remopleurides*, *Robergia*, *Stygina*, *Taimyraspis*, *Telephina*, and *Toernquistia*), and is termed the raphiophorid association. Further subdivisions may be possible, but the small number of new collections does not allow this at the moment. From shelf limestone a contrasting fauna contains monorakine trilobites (*Carinopyge*, *Ceratevenkaspis*, *Elasmaspis*, *Evenkaspis*, and *Monorakos*) endemic to the Siberian platform. Trilobites such as *isotelines*, *Calyptaulax*, *Xylabion*, and *Cheirus* otherwise typical of inshore Laurentia co-occur with this fauna. This biofacies is termed the monorakine-cheirurid-illaenid association. Our results show that the Taimyr Peninsula, as an open shelf marginal to the Siberian Platform, typically would have the endemic monorakine-cheirurid-illaenid association, while similar conditions to those on the eastern fringes of the Iapetus Ocean permitted a short lived establishment of comparable faunas of the raphiophorid association.