

## AMMONOIDEA OF THE MANGYSHLAK LOWER TRIASSIC

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The Tyururpin Group yields a rich fossil assemblage of different faunal groups: ammonoids, nautiloids, bivalves, brachiopods, gastropods, etc.

Three sections of the Upper Olenekian have been studied in detail: northern slope of the Karatauchik Ridge, near the Dolnaya Well, thickness ~ 880m; northern slope of the Western Karatau Ridge, Dzhikansai sai, near the Shair Village, thickness ~ 1, 150 m and in the Kumshoky and Karashek Mountains, ~ 150 km SE of Karatau, thickness ~ 830 m. Layer-by-layer ammonoid collection enabled to specify the scheme of biostratigraphic subdivision earlier proposed by T.V.Astakhova (1960) and A.A.Shevyrev (1968, 1990). The following levels were established (in ascending order): Beds with *Dorikranites*, Beds with *Tirolites longilobatus*, Beds with *Columbites*, and Beds with *Stacheites*.

Beds with *Dorikranites*, easily recognizable throughout the Mangyshlak, are also traced in Tuarkyr and on the Mt. Bolshoe Bogdo. In the majority of the Mangyshlak sections these Beds are represented only by one or two species of the genus *Dorikranites*. In Tuarkyr and on the Mt. Bolshoe Bogdo the *Dorikranites bogdoanus* species occurs together with *Tirolites cassianus*.

In the overlying Beds with *Tirolites longilobatus*, along with the endemic ammonoid genera, the Alpine species *Tirolites cassianus* is also recorded throughout the section interval. Joint occurrence of the latter with *Dorikranites* in sections of the Mt. Bolshoe Bogdo and Tuarkyr enables to distinguish the Zone *Tirolites cassianus*, comprising Beds with *Dorikranites* and Beds with *Tirolites longilobatus*, in Mangyshlak. However, the lower boundary of the considered zone in the Mangyshlak sections is not paleontologically characterized due to the lack of ammonoids in the deposits, underlying the Beds with *Dorikranites*. Zone *Tirolites cassianus* in Mangyshlak is considered as an age equivalent of the Zone *Tirolites cassianus* in the Alps, Czechoslovakia, Bulgaria, Beds with *Tirolites* in Idaho.

Higher Beds with *Columbites*, noted for a rich diversity of ammonoids, are correlated with the Zone *Neocolumbites insignis* in Southern Primorye, Zone *Columbites costatus* in China, Beds with *Columbites* in Idaho, Beds with *Tirolites – Columbites* of the Salt Range, *parisianus* subzone in Japan.

Beds with *Stacheites* in Mangyshlak correspond to the Zone *Tirolites carniolicus* in Yugoslavia, Zone *Subcolumbites multiformis* in Southern Primorye, *Subcolumbites* beds of Afghanistan, Albania, Chios, Nevada, *Prohungarites* Beds in Idaho, Beds with *Procarnites – Letophyllites* in China, Beds with *Tozericeras pakistanum* in the Salt Range and *perrinismithi* subzone in Japan.