ISLAND ARC REGIONAL METAMORPHISM OF ANDALUSITE-SILLIMANITE LOW PRESSURE TYPE, TIEN SHAN

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The regional metamorphism under the study has been identified in Paleozoic layers of the South-East and South-West part of Tien Shan, within the borders of Atbashi (Kembelskiy) and Turkestan range.Kembelskiy complex forms a narrow strip stretching along the latitude (30 km) and along the Atbashi-Inilchek deep fault. To the South there is an eclogite-glaucophane schist complex of the comparable age. Both of them form a double belt. Both the terrigenic and the ophiolite associations are subject to metamorphosis.The Turkestan complex (width 5-15 km) stretches along the latitude for more than 120 km. Seven metamorphic zones are separated by metapelitic index-minerals. They form a symmetrical zonality of the thermal anticlinal type. The sediments (S) of the marginal marine are subject to metamorphism. Their chemical composition corresponds with the grauwacke clay and alevrolits, oligomictic psammite, metabazites, and rock rich with CaO.The regressive nature of sediment accumulation reflects the change in the regime from the back-arc spreading above the area of the lifted mantle wedge by that of the subduction of the marginal marine floor towards the island arc. This led to the collision of the island arc with the continent. Collision metamorphism have been under condition of shot-lived intensive heating by the mantle wedge, under T condition from green schist up to amphibolite facies, with partial anatexis (P=3 Kbar)