

Deformation history of the upper sequence of the Hidaka metamorphic belt in the upper reaches of Satsunai-gawa river.Hokkaido

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Various kinds of rock-structures and mineral textures are found in the upper sequence of the Hidaka metamorphic belt in the upper reaches of Satsunai-gawa River,Hokkaido,Japan.The deformation history of metamorphic rocks on this area is divided into eight stages(D0-D7) based on sequence of deformation.The metamorphism has started from D1 stage.Deformation of D3 stage was layer normal shortening.Angles of the S3-foliation and D2-vein decrease westward.This suggests that as metamorphic grade increases,degree of the D3-layer-normal shortening is higher. During D4 stage,tonalite magma intruded.And cordierite porphyroblasts were formed.Some D4-tonalite intrusives intruded along left-lateral shear zones.During D5 stage,dextral mylonitization took place,and then sinistral shear deformation occurred during D6 stage.Actinolite porphyroblasts and muscovite porphyroblasts were formed in D4 to D5 stages,and D5 to D6 stages respectively.E-W trending faults with pseudotachylyte are the product of the last stage of the deformation history in the study area.