Cenozoic Areas of Orogenesis in North-Eastern Russia

SMIRNOV V.N. North-East Interdisciplinary Research Institute Far East Branch of the Russia Academy of Sciences, Magadan, Russia

In north-eastern Russia Cenozoic orogenesis occured on the following geotectonic basement: the Mesozoic Verkhoyansk-Chukchi and Cenozoic Koryak folded system; the Okhotsk-Chukotsky volcanogenic belt of Cretaceous age. By the end of the Cretaceous, the Yana-Kolyma and Okhotsk-Chukchi areas of orogenesis were stabilized. The former region inherited the linear structure of the northwestern part of mesozoids.

The laner covered the Okhotsk-Chukchi volcanogenic belt and adjacent Mesozoic folded structures, combining them into a line of conjugate arched-block mountains. During the Paleocene, both regions experiennced condenudation. The planation surface with a weathering crust was formed.

In the Eocene, the submergence of peripherai parts of the regions under discussion took place. Vast continental and marine basins were formed. Along the southern margin of the Okhotsk-Chukchi area, the Tauisk-Anadyr area of block and folded-block mountains and intermontain basins originated.

In the Miocene, with the slow rise of the region, an extension of destructive zones occurred in the inner parts of the area of orogenesis. Riftogene basins formed mainly along the tension zones of north-western and north-eastern strike. The Protoorogene arched uplift of the Koryak fold area formed at this time. During the Pliocene, tectonic stabilization and formation of polygenetic planed surfaces took place at all places.

At the end of the Pliocene-Quaternary (the neotectonic stage), thick orogenesis had covered all of the region, and the modern orographic plan was formed. This plan was inherited from previous stages of orogenesis. In the Yana-Kolyma area, the Moma rift occurred along the boundary of the Eurasian and North American lithosphere plates.