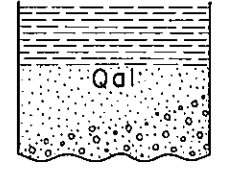
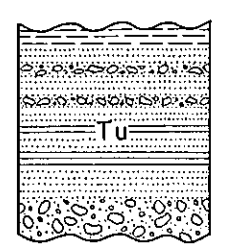
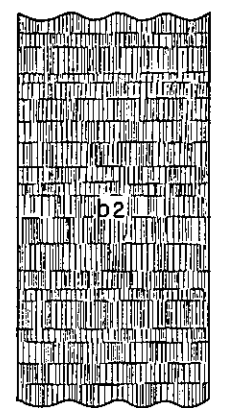
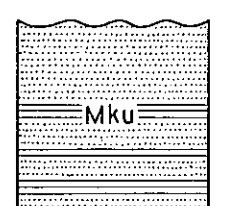
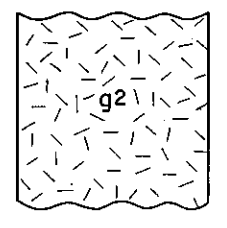



GEOLOGIC COLUMN AND UNIT DESCRIPTION

AGE	ROCK UNIT	LITHOLOGY; THICKNESS WHERE KNOWN	UNIT DESCRIPTION
QUATERNARY	Alluvium	 <p>Sand, clay and gravel; thickness less than 15 meters</p>	Alluvium, consisting of sand, clay and gravel, is distributed in the drainage basins of the T'ang-wang Ho [濠旺河], the K'u-erh-pin Ho [庫爾濱河] and the Tu-lu Ho [都魯河], and covers low terrace remnants and flood plains. Placer gold is found in the uppermost reaches of the A-yen Ho [阿延河], the Wu-yün Ho [烏雲河] and the T'ang-wang Ho.
~::~:~ UNCONFORMITY ~::~:~			
TERTIARY	Neogene formation	 <p>Sandstone, shale and conglomerate; thickness unknown</p>	The Neogene formation, probably of Pliocene age, is exposed along the K'u-erh-pin Ho, the Chan Ho [占河], the Wu-yün Ho and the Chieh-lieh Ho [結列河]. It consists of unconsolidated sandstone, clayey shale and conglomerate, unconformably resting upon the Neogene basalt (b ₂), the Upper Cretaceous formation (Mku) and the pre-Jurassic granite (g ₂). It may be correlated with the Pliocene continental deposits in the U.S.S.R.
~::~:~ UNCONFORMITY ~::~:~			
TERTIARY	Neogene basalt	 <p>Flows of doleritic augite-olivine basalt</p>	The Neogene basalt, probably ranging from Miocene to Pliocene in age, is widely exposed in the northwestern part of the map area, forming a typical gently undulating lava plateau. It occurs as flows of dark gray to dark brown doleritic augite olivine basalt. The rock is coarse-grained, nonporous when fresh, and holocrystalline, containing microcrystals of augite and olivine. The basalt along the I-chi-min Chih-liu [依齊民支流] is dark gray, somewhat porous, and is coarse in fracture. Under a microscope it shows an ophitic texture, with augite phenocrysts, 0.4 mm in diameter, and smaller phenocrysts of plagioclase. Small idiomorphic crystals of olivine occur in the groundmass which consists chiefly of microcrystals of plagioclase associated with a small amount of magnetite. The plagioclase, ranging from andesine to oligoclase, is idiomorphic and acicular, showing albite twins. The basalt along the Wu-te-lin Ho [烏德林河] is dark gray, porous and holocrystalline. Under a microscope the rock shows a doleritic texture, with plagioclase crystals, 0.5 mm to 1 mm in diameter, and the groundmass consisting of microcrystals of olivine and augite associated with small amounts of glass and magnetite. The Neogene basalt is overlain by the Neogene formation (Tu) and rests on the pre-Jurassic granite (g ₂).
~::~:~ EFFUSIVE CONTACT ~::~:~			
MESOZOIC	Upper Cretaceous formation	 <p>Sandstone and shale; thickness unknown</p>	The Upper Cretaceous formation is exposed in the northeastern part of the map area. It consists chiefly of light gray or brown coarse-grained sandstone intercalated in the lower part with grayish black tuffaceous shale. The sandstone contains some pebbles, 1 cm in diameter, and marcasite nodules. The pebbles are porphyry, diorite porphyry, andesite porphyry, granite, schist, gneiss, quartz and agate.
~::~:~ UNCONFORMITY ~::~:~			
MESOZOIC	Pre-Jurassic granite	 <p>Biotite granite, hornblende granite, biotite-hornblende granite, two-mica granite, lepidolite granite, pegmatite, aplite, granodiorite, quartz diorite, granite porphyry and gneissose granite</p>	The pre-Jurassic granite occurs as a batholith and is widely exposed along the T'ang-wang Ho and its tributaries. It consists of fine- to coarse-grained biotite granite, hornblende granite, biotite-hornblende granite, two-mica granite and rarely lepidolite granite, accompanied by pegmatite, aplite, granodiorite, quartz diorite, granite porphyry and gneissose granite. The granite intrudes the granite gneiss (gg _n). Soviet geologists defined the age of the intrusion as Middle Paleozoic.
~::~:~ INTRUSIVE CONTACT ~::~:~			
PRECAMBRIAN	Granite gneiss	 <p>Biotite orthogneiss, hornblende orthogneiss, biotite and hornblende metagneiss, and gneissic granite</p>	The granite gneiss is exposed in the southeastern corner of the map area. It consists chiefly of biotite orthogneiss or hornblende orthogneiss and gneissic granite, locally associated with biotite metagneiss or hornblende metagneiss. The orthogneiss contains large phenocrysts of quartz, orthoclase, plagioclase, biotite, hornblende and such accessory minerals as apatite and zircon. It is probably equivalent in age to the Precambrian gneiss in the area of the Fo-shan sheet (NL 52-12) to the east. To the south, however, in the Tui-men Shan sheet (NL 52-2) it is designated as granite gneiss of unknown age.
(Column not drawn to scale)			

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