
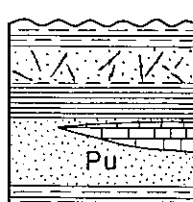
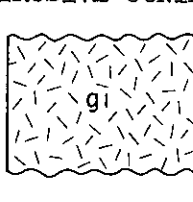


G E O L O G I C C O L U M N A N D U N I T D E S C R I P T I O N

AGE	ROCK UNIT	LITHOLOGY; THICKNESS WHERE KNOWN	UNIT DESCRIPTION	REFERENCES
QUATERNARY	Alluvium	 Clay, sand and gravel; thickness less than 10 meters	Alluvium, consisting chiefly of clay, intercalated with thin sand and locally with gravel, is widely distributed in the drainage basins of the Amur River and its tributaries. It covers low terrace remnants and is covered by vast marshes. The thickness is less than 10 m.	<p>AHNERT, E. E., 1935, Geologic map of Siberia, scale 1:50,000: Unpub. rept., Geol. Inst., S. Manchuria Ry. Co.</p> <p>KRYSHTOFVICH, A. N., 1926, Geology: Pac. Russian Sci. Inv.</p> <p>LEONTOVICH, A., PINADA, B., and PECK, A., 1932, Report of the geological expedition in the Khabarovsk district in 1930: USSR United Geol. and Prosp. Survey Trans., fasc. 191.</p> <p>MASLENNIKOV, D. F., 1937, The Permian of the Far East: Internat. Geol. Cong., 17th USSR, 1937, Abs.</p> <p>MONDEN, Shigeyuki, 1936, Survey report of the geology of the route between Ch'i-k'o-tel' # 1 and Fu-yüan' # 1 along the Amur River: Unpub. rept., Geol. Inst., S. Manchuria Ry. Co.</p> <p>NALIVKIN, D. V., editor, 1955, Geological map of U.S.S.R., scale 1:5,000,000: U.S.S.R. Ministry of Geology.</p> <p>OBRUTSCHEW, W. A., 1926, Geologie von Sibirien.</p>
	Diluvium	 Sand, clay and gravel; thickness unknown	Diluvium, consisting of sand, clay and gravel, occurs mostly in the U.S.S.R. Soviet geologists define it as an Upper Quaternary deposit.	
MESOZOIC	Cretaceous volcanic complex	 Andesite, andesite porphyry, diorite porphyry, basalt and pyroclastics	The Cretaceous volcanic complex consists of flows of andesite, andesite porphyry, diorite porphyry, basalt and their pyroclastic breccia. Soviet geologists define it as Lower Cretaceous intermediate and basic effusive rocks (NALIVKIN, 1955).	
	Quartz porphyry	 Quartz porphyry and rhyolite	Quartz porphyry exposed near O-t'u' # 1 is generally light brown or grayish black, granitic microcrystalline in texture, and is locally associated with rhyolitic rock which consists of a holocrystalline groundmass and large phenocrysts of quartz and feldspar. The quartz porphyry may be an acidic effusive rock of Cretaceous age, or may be a marginal facies of Cretaceous granite (g3). The rock is hard and compact, and is quarried as a building stone.	
	Cretaceous granite	 Granite, granodiorite and quartz diorite	The Cretaceous granite consists of granite, granodiorite and quartz diorite, and intrudes the Upper Paleozoic formation (Pu). According to Soviet geologists, the age of intrusion ranges from Jurassic to Lower Cretaceous.	
	Jurassic formation	 Sandstone, shale and conglomerate; thickness unknown	The Jurassic formation, consisting of sandstone, shale and conglomerate, is found near Birofel'd and Shoseynaya. It is overlain by the Cretaceous volcanic complex (Mkv) and rests unconformably on the Upper Paleozoic formation (Pu).	
PALEOZOIC	Upper Paleozoic formation	 Quartzite, graywacke, chert, slate, clay slate, hornfels and limestone; thickness unknown	The Upper Paleozoic formation consists of quartzite, graywacke, chert, siliceous slate, clay slate, hornfels, and locally is associated with crystalline limestone. Soviet geologists define it as a marine formation of Permian age. The lower part of the formation on the hill south of Ch'in-te-li' # 1 consists of dark green phyllitic clay slate, and the upper part is an alternation of quartzite and siliceous slate both grayish white or light brown. There the formation strikes N 80° - 90° E and dips 30° S.	
	Middle Paleozoic granite	 Granite, granodiorite and quartz diorite	The granite consists of granite, granodiorite and quartz diorite. According to Soviet geologists the age of intrusion is Middle Paleozoic.	
PRECAMBRIAN	Precambrian granite	 Granite, granodiorite and quartz diorite	The Precambrian granite (defined as pre-Paleozoic granite by Soviet geologists) consists of granite, granodiorite and quartz diorite.	

(Column not drawn to scale)