GEOLOGIC COLUMN AND UNIT DESCRIPTIONS

AGE	ROCK UNIT	LITHOLOGY; THICKNESS WHERE KNOWN	UNIT DESCRIPTION
QUATERNARY	Alluvium	Qal — Sand, clay and gravel; thickness less than 10 meters	Alluvium, consisting of sand, clay and gravel, is distributed widely in the drainage basins of the No-min Ho [諾 敏 河] and the Pi-la Ho [畢 拉 山], covering low terrace remnants. It is less than 10 m thick. Eruption of An-tzu Shan and a volcano to the south dammed the Pi-la Ho temporarily, forming a lake. The valley above this dam still contains many marshes and small lakes.
	UNCONFORMITY		
	Quaternary basalt	b_3-c — b_3-c: lava cone basalt; thickness more than 50 m b_3 — b_3: olivine basalt; thickness more than 30 m	The Quaternary lava cone basalt (b_3-c) is sporadically exposed in the eastern half of the map area. It constitutes the following volcanos having craters (after SHIOTA in USHIMARU and others, 1937): Volcano 5 on the map consists of vesicular basaltic lava accompanied by ropy lava. The rock of Hsiao-t'u-hu-lu Shan, generally known as Sha-ti-erh Shan [沙 的 爾 山], consists chiefly of black vesicular basaltic cinder varying between 10 and 20 cm in grain size. Quaternary basalt (b_3) fills the valleys in the No-min Ho and the Pi-la Ho drainage basins. The rock is black, vesicular, hard and compact olivine basalt, having remarkable platy joints in the lower part. It contains phenocrysts of idiomorphic olivine and acicular augite, with tridymite filling the vesicles.
	EFFUSIVE CONTACT		
TERTIARY	Paleogene basalt	Pg — Augite-olivine basalt; thickness more than 130 m	Paleogene basalt is exposed in the southeastern corner of the map area and forms a gently undulating lave plateau. It is black, compact, vesicular, doleritic augite-olivine basalt, containing agate and rock crystal. The phenocrysts are plagioclase, olivine and augite, and the groundmass is black, compact and microcrystalline.
	EFFUSIVE CONTACT		
MESOZOIC	Cretaceous andesite	Mkd — Biotite andesite and hornblende andesite	Cretaceous andesite occurs as flows exposed in the hill northwest of Lo-k'uo Shan [勒 湖 山]. It consists chiefly of biotite andesite locally associated with hornblende andesite.
	EFFUSIVE CONTACT		
	Cretaceous rhyolite	rh — Rhyolite and lithoidite; thickness more than 300 m	The Cretaceous rhyolite occurs as flows exposed in the western part of the map area. Its upper part is composed of rhyolite containing quartz phenocrysts. The rhyolite is dark gray or dark brown, porphyritic or fluidal in texture, and consists of phenocrysts of quartz, feldspar, biotite and hornblende, and dark gray cryptocrystalline groundmass locally containing pyrite crystals. The lower part is composed of cryptocrystalline felsitic lithoidite. The rhyolite flow along the No-min Ho is overlain by Quaternary basalt and rests on Cretaceous granite (g_3) and the Jurassic volcanic complex (Mjv).
	EFFUSIVE CONTACT		
	Quartz porphyry	qp	Gray porphyry (qp) occurs in the southwestern corner of the map area. Though no information is available on phenocrysts, it grades southwestward into quartz porphyry. The rock may be a marginal facies of the Cretaceous granite.
	Diorite	d — Augite-hornblende diorite	Diorite, 10 km northwest of Hsiao-t'u-hu-lu Shan, intrudes the Paleozoic formation (P) contact-metamorphosing it. The rock is dark gray, consists of milky white metamorphosed feldspar, augite, and hornblende, and shows polygonal jointing. It is probably a marginal facies of the Cretaceous granite (g_3).
	Cretaceous granite	g_3 — Biotite granite, graphic granite, aplite, diorite and syenite	The Cretaceous granite is widely distributed throughout the map area. It includes various kinds of granitic rocks, such as graphic granite and aplite near the diorite mentioned above. Aplite is also found in the Cretaceous formation 10 km north of Bugunchi Shan. Diorite and syenite are also included. These rocks occur as batholiths or laccoliths. Placer gold derived from the Cretaceous granite occurs in the Recent deposits along the uppermost reaches of the Pi-la Ho. A molybdenite-bearing quartz vein occurs in the granite on the western bank of the No-min Ho, 20 km south of P'iao Shan [飄 山].
	INTRUSIVE CONTACT		
	Cretaceous(?) formation	MK — Tuff and tuffaceous sandstone; thickness less than 100 m	The Cretaceous(?) formation is exposed in the hill called Eldah-uchi Shan (Long. 123°43' E and Lat. 124°29' N). The formation consists of tuff and tuffaceous sandstone, and is intruded by a Cretaceous aplite dike 30 m wide striking NW.
	UNCONFORMITY		
	Jurassic volcanic complex (Greenstone complex)	Mjv — Diorite porphyry, andesite porphyry, diabase porphyry, dolerite, propylite, rhyolite, breccia, tuff and tuffaceous sandstone	The Jurassic volcanic complex is exposed in the eastern part of the map area, extending north-northeast. The complex was generally called "Porphyrite", or "Greenstone complex" owing to its greenish tinge caused by chloritization and propylitization. It is a complicated assemblage of greenish dark-colored igneous intrusives and extrusives, such as diorite porphyry, andesite porphyry, diabase porphyry, dolerite, propylite, black rhyolite, volcanic breccia, tuff, and tuffaceous sandstone. It is typically exposed in the hills east of the confluence of the Pi-la Ho and the No-min Ho (Long. 123°43' E and Lat. 124°17' N). There the flows are several hundred meters thick.
	EFFUSIVE CONTACT		
PALEOZOIC	Paleozoic formation	P — Phyllitic sandstone; thickness unknown	The Paleozoic formation exposed in the cliff near Eldah-uchi Shan, north of Bugunchi Shan, consists of sandstone, which is overlain by the Cretaceous(?) formation. The formation on the northern bank of the No-min Ho near Lo-k'uo Shan consists of dark-green phyllitic sandstone, containing biotite flakes along the bedding plane, having been contact-metamorphosed by the intrusion of the Cretaceous diorite and aplite.

(Column not drawn to scale)

Name	Elevation	Type	Remarks
T'u-hu-lu Shan [禿 葫 芦 山]	941 m	Konide	Crater intact
Bugunchi San	569	Konide	SW wall destroyed
Kua-leng-ch'i Shan	758	Konide	Crater intact
* 1	720	Konide	S wall half destroyed
2	768	Konide	Crater intact
3	504	Homate	S wall destroyed
4	80	Homate	No distinct crater
5	730	Konide	NE wall destroyed
6	310	Composite	W wall destroyed
Hsiao-t'u-hu-lu Shan [小 禿 葫 芦 山]	669	Konide-aspite	NW wall destroyed

* Numbers refer to localities shown on map.

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