GEOLOGIC COLUMN AND UNIT DESCRIPTIONS

AGE	ROCK UNIT	LITHOLOGY; THICKNESS WHERE KNOWN	UNIT DESCRIPTION
QUATERNARY	Alluvium	Qal — *Mud, clay, sand and gravel; thickness about 10 meters.*	Alluvium consists of mud, clay, sand, and gravel; distributed on river flats and playas.
	Diluvium	Qds — *Aeolian sand and silt; thickness 5 to 20 m.* Qdl — *Sand, sandy loess, loess and clay; maximum thickness 50 m.*	Diluvium, with a maximum thickness 70 m, can be divided into Qds and Qdl. Qds is composed of wind-blown sand and silt deposited in lacustrine basins mostly at the end of Pleistocene. Uplifted and wind-eroded later, the deposits formed desert. With the prevailing westerly winds, sands are drifting eastward demolishing pastures. Qdl consists mainly of interstratified sand, sandy loess and clay, and is distributed over plains and large valley systems. A loess also occurs on hill sides with residual clay underlying it.
		Unconformity	
TERTIARY	Basalt	b2 — *Olivine basalt, with tuff and sandstone; thickness 5 to 100 m or more.*	The basalt is flows of olivine basalt in association with tuff and sandstone. The flows came from fissure eruptions. At some places the lava, which is composed of thin sheets 5 to 10 m thick, attains a total thickness of more than 100 m. The basalt is generally fresh, dark green, and is either compact or vesicular. Its phenocrysts include olivine, and the groundmass is either microcrystalline or cryptocrystalline.
		Unconformity	
MESOZOIC	Rhyolite	rh — *Rhyolite and tuff.*	The rhyolite comprises flows and sheets of rhyolitic rocks and their pyroclastics known as the "Cretaceous volcanics". It is locally intruded by dikes or apophyses of granite porphyry. The rhyolite may be Lower Cretaceous in age.
	Granite	g3 — *Biotite granite and biotite-hornblende granite.*	The granite comprises Cretaceous intrusives including medium-grained biotite granite and biotite-hornblende granite. It is generally marked with tabular joints; it is occasionally porphyritic and is likely related to the rhyolite (rh).
		Intrusive contact	
	Upper Jehol formation	Mju — *Sandstone, conglomerate, shale, tuff and lignite; thickness not known.*	The Upper Jehol formation generally consists of sandstone, conglomerate, shale and tuff, is rarely intercalated with lignite, and occurs on the south bank of Hsi-la-mu-lun Ho[西拉木倫河]. It may be Upper Jurassic in age, although no detailed data are available.
		Probable unconformity	
	Andesite	a — *Andesite and its pyroclastics; thickness may be several hundred meters.*	The andesite consists of flows and sheets of andesitic rocks and their pyroclastics. It may be contemporaneous with the Lower Jehol formation of presumably Upper Triassic to Jurassic age.
	Porphyrite	P — *Porphyrite and its pyroclastics.*	The porphyrite is mainly sheets of diabase porphyry which may be a variety of andesitic lava but which seems older in age than the andesite (a).
		Unconformity	
PALEOZOIC	Linhsi series	Pup — *Shale, slate, sandstone, limestone, hornfels and mica schist; thickness about 1,000 m.*	The Upper Paleozoic is the so-called Linhsi series named by P. T. de Chardin. It may be Permian in age. It consists of shale, slate, sandstone, limestone, hornfels, and mica schist. The effects of contact metamorphism by igneous intrusion can be observed at many localities. Limestone predominates east of Jo-ho-ti[熱河地] where it has been calcined by Chinese. The total thickness may be around one thousand meters.
		Unconformity	
PROTEROZOIC	Wutai system?	p€m — *Mylonite gneiss, mica phyllite and porphyroid; thickness not known.*	The Middle Precambrian (or Wutai system?) consists of mylonite gneiss, mica phyllite and porphyroid. Thickness not known.

(Column not drawn to scale)

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