
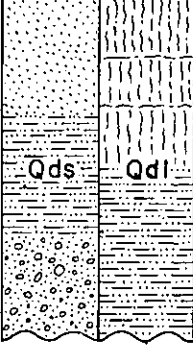

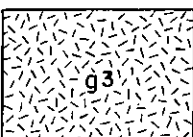
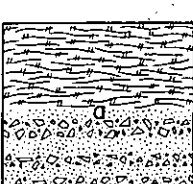
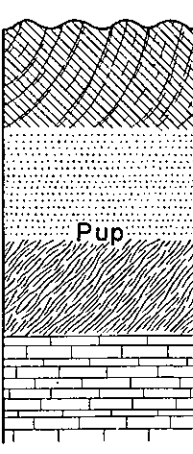


GEOLOGIC COLUMN AND UNIT DESCRIPTION

AGE	ROCK UNIT	LITHOLOGY; THICKNESS WHERE KNOWN	UNIT DESCRIPTION
QUATERNARY	Alluvium	 Sand, gravel and clay; thickness less than 10 meters	Alluvium is distributed along rivers and streams, as well as in playas of the semi-desert districts. It consists of silt, clay, sand and gravel. The thickness is generally less than 10 m.
	Diluvium	 Qds, aeolian dune sand, silt and gravel; thickness less than 30 m Qdl, sandy loess and silt; thickness less than 40 m	Diluvium, with a maximum thickness of 70 m, can be divided into Qds and Qdl. Qds is composed of dune sand and silt, and some gravel. It covers mainly the broad basin of Chahar on the western side of the Ta-hsing-an-ling Range, with a thickness probably less than 30 m. Qdl consists mainly of sandy loess and silt, and is distributed over plains, large valley systems, and low undulating hills skirting east side of the Ta-hsing-an-ling Range.
	UNCONFORMITY		
MESOZOIC	Rhyolite	 Rhyolitic lava, tuff and conglomerate; thickness more than 1,000 m	Rhyolite is probably over 1,000 m thick. It consists of flows and sheets of mostly rhyolitic lavas associated with some tuff and tuffaceous conglomerate. The main body of the Ta-hsing-an-ling Range is composed of these rhyolitic lavas. From their appearance, rhyolitic rocks of the map area can be divided into fluidal, platy, and brecciated rocks. Rhyolite generally covers andesite, granite, and the Upper Paleozoic rocks, and may be correlated with the so-called "Cretaceous volcanics" of the southern Jehol district.
	Granite	 Biotite granite and granite porphyry	Granite includes biotite granite and granite porphyry. It intruded the Upper Paleozoic formation and contact-metamorphism has affected the Upper Paleozoic rocks for about 30 m from the contact.
	Andesite	 Andesite, porphyrite, tuff and breccia	Andesite is mainly in flows and sheets of andesite and porphyrite, with some tuff and breccia. Petrographically it resembles those andesitic rocks of the so-called "Lower Jehol formation" which is assigned to the Lower Jurassic or Triassic-Jurassic.
	UNCONFORMITY		
PALEOZOIC	Upper Paleozoic formation (Hsi-wuchumchin formation or Lin-hsi formation)	 Siliceous slate, sandstone, mica schist and limestone; thickness may be more than 1,000 m	The Upper Paleozoic formation is a marine deposit and was named the "Hsi-wuchumchin formation" by F. UEDA. It consists chiefly of dark gray siliceous slate and gray or black sandstone, intercalated with limestone. The formation is intruded by granite, and the contact zone is generally indicated by the presence of mica schist. In the main body of the Ta-hsing-an-ling Range, the Upper Paleozoic formation is thickly covered by the rhyolite flows and is not exposed in large areas, but in the Chahar plateau beyond the Ta-hsing-an-ling its exposures are fairly large. F. UEDA discovered a marine fauna including <i>Productus</i> sp. nov. A, <i>Productus</i> sp. nov. B, <i>Spirifer mooskhalensis</i> DAVIDSON, <i>Schellienella</i> sp. nov., <i>Maritina</i> sp., bryozoans and crinoid stems from the limestone beds in the vicinity of Hsi-wu-chu-mu-chin, the type locality west of the map area. He correlated this formation with the so-called "Linhsi formation", regarding it as either Upper Carboniferous or Lower Permian in age. The total thickness may be more than 1,000 m.
(Column not drawn to scale)			

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