

Geological Traverse from Chitral to Karambar (E Hindu Kush to W Karakorum) Preliminary Geological Results

TALK

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In the easternmost Hindu Kush, Hindu Raj and W Karakorum, the following units may be recognized from south to north:

1) The Axial Batholith forms two distinct branches in this region. They are separated by a band of metasediments already described east of this zone as the Darkot Group, of Permian age *pro parte*. Possible Mesozoic fossils have been obtained. The Yarkhun river only cuts through the northern branch where two types of granitoid have been recognized: (i) a dark amphibole-biotite granodiorite to biotite, rich in mafic enclaves, often foliated, resembling the Hunza granodiorite of mid-Cretaceous age, (ii) a porphyritic biotite \pm amphibolite granite, often strongly deformed, more abundant to the north of the section, where it intrudes into the metasedimentary formations with a diffuse contact. This second type, resembling the subalkaline mid-Cretaceous Darkot pass granite, is intimately associated with the first, a situation similar in some way to that of the Karambar section (see Debon & Khan Abstract).

2) North of the Axial Batholith mostly sedimentary rocks crop out, usually arranged in three stacks, thrust southwards. The crystalline basement of the middle stack has been discovered. It is made up of a medium grained biotite granite, largely eroded in a glacial basin, due to its very strong alteration and brittle deformation. To the south, the granite intrudes the dark metapelites of Chikar. The sedimentary succession is directly transgressive on the granite with conglomerates and siltites, in which Early Ordovician acritarchs have been detected (M. Tongiorgi, Pisa). The succession continues upwards with a terrigenous unit, hundreds m-thick, with rare dolomitic intercalations in which Talent et al. (1981) found Middle-Upper Ordovician conodonts. The first significant carbonate unit consists of about 150 m of yellow well bedded dolomites, with peritidal depositional characters. Supposed age: Devonian. A mixed terrigenous carbonate unit, locally extremely rich in corals, brachiopods and bryozoans follows. Field identification: Middle Devonian and Frasnian. Upwards about 100 m of grey wackestone-crinoidal packstones follows, with solitary corals. Supposed age: Carboniferous. The lower part of the Permian is terrigenous and it is correlatable with the Gircha Fm. of the Hunza region. Then a mixed carbonate-terrigenous succession, several hundreds m-thick follows, locally crowded with brachiopods, corals, bryozoans, conodonts, gastropods, bivalves and especially fusulinids. For details refer to Angiolini et al.

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(Poster Section). After an erosional surface, with local emersions and a thin terrigenous unit, a huge peritidal dolomitic formation, 700 m, thick follows. The paleontological control is poor and we suppose it represents the Upper Permian and may be the Triassic up to the Early Jurassic. We have no informations about most of the Mesozoic. The southernmost thrust slice may have at its top the Reshun Conglomerate with *Orbitolina*-bearing pebbles.

3) A system of sinistral strike-slip faults, SW-NE oriented, the Tirich Mir Fault, brings in contact grey pale dolomites, with low metamorphic grade. Phantoms of ? Devonian and Triassic fossils have been found. Most significant are mafic metatuffs and various detrital volcanogenic levels, dark red to dark green, interbedded with the sediments.

4) With faulted contact, the huge, several km-thick Wakhan Slates follows. They are intruded by granitoid bodies made up in general of biotite-amphibole porphyritic granite. A single granitoid pluton (Chatteboj), with a strong contact aureole, was found also intruded in the unit 2). All these granitoid bodies could pertain either to the northern granitoid belt running from Tirich Mir to Khunjerab, in which Cretaceous ages have been obtained, or to the Batura group of Eocene age.