

## PLEISTOCENE SANDSTONE

Pleistocene sediments are exposed on the northern slopes of the Cherat Range, about  $1\frac{1}{2}$  miles south east of Jalozei village. The beds dip gently to the south, making an angular unconformity with the older rocks. The base of these sediments is composed of sandstone, which is overlain by friable shale, which in turn is overlain by grit stone. This note is written with the intention to introduce the sandstone that has interesting mineralogy which shed some light on the provenance.

In hand specimen, the sandstone is brownish on weathered surfaces, and light grey to whitish on fresh surfaces. Concentration of light and dark components in different layers imparts some degree of banding. Lithic fragments, ranging from a few millimeters to  $1\frac{1}{2}$  centimeters in size, are sparsely dispersed in the rock.

Examination of the rock in thin section reveals the following characters:—

<i>Components</i>	<i>%</i>	<i>Size</i>	<i>Roundness</i>
Calcite	40	mostly fine matrix	—
Orthoclase and sodic plagioclase	12	upto 1 mm	subrounded
Lithic fragments	18	upto $1\frac{1}{2}$ cm	—do—.
Quartz	19	upto 1 mm	—do—.
Muscovite and Biotite	8	upto $1\frac{1}{2}$ mm	subrounded to subangular
Pyroxene and Hornblende	3	upto $\frac{1}{2}$ mm	Subrounded

The rock is classified as calc - lithic arenite according to Gilbert's classification (1954).

The above description indicates that there are more than one possible sources of the sediments making the sandstone.

Calcite and lithic fragments are most probably derived from the rocks exposed nearby, in Cherat Range.

In view of the absence of over-saturated plutonic rocks in the area, quartz, feldspar and micas are probably derived from the igneous rocks of the north (Malakand and lower Swat). Pyroxenes and hornblende (more rounded and smaller in size compared to other constituents may have been derived from rocks still farther away, though not certain, because roundness and size do not tell much until detail study is conducted since hornblende and pyroxenes alter more readily than quartz and feldspars.

The above description indicates that part of the northern flank of the Cherat Range was connected with the north, during Pleistocene epoch before the present channel of the Kabul River was carved.

Further work, based on mineral study and paleo-current analyses, would be carried out to establish a definite source for the sandstone under discussion.

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