

138. Sand from dune against west wall of Kharakhoto (45. C 1).

Multicoloured sand, with the larger grains well rounded.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 34% 29% 36% 1%

The greater proportion of the grains are composite, but green amphibole, muscovite, and biotite are common in the heavy crop.

139. Sand, about three miles NE. of Kharakhoto (45. C 1).

Subangular, multicoloured sand, with grains ranging up to 3 mm. and with branching; tubular aggregates.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 9% 6% 8% 77%

Of the heavy minerals, green amphibole and biotite are abundant and glaucophane is noteworthy. There are many fine-grained composite grains. The aggregates contain quartz grains up to .2 mm., mica up to .6 mm., and much very fine material cemented by calcium carbonate.

140. Sand specimen taken between tamarisk cones, four miles S. of Ārpišme (29. B 1).

Multicoloured sand, with angular to rounded grains and many prominent red grains.

.2-.4 mm. .4-.7 mm. .7-2 mm.

Mechanical analysis: 3% 13% 84%

Magnetite is common in the heavy crop, which otherwise contains few simple mineral grains. Among the larger grains, subangular, turbid red orthoclase and subangular to angular quartz and quartzite are prominent. The remainder comprise a few limestone and many composite grains.

141. Soil specimen of 'Kim' near S. end of Dasht-i-Lūtāk Sīstān (wind-eroded surface of alluvial plateau) (Lūtāk. 01).

Brown sand, with a few subangular pebbles ranging from 3 mm. to 28 mm. in length.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 13% 45% 26% 16%

The pebbles consist of quartz and a grey chert-like rock.

The fine material contains much calcium carbonate and some gypsum. Of the heavy minerals, altered and unaltered biotite and green amphibole are common. There are many composite grains of all sizes.

142. Drift-sand from top of dune above right bank of Kan-chou R., thirteen miles below Cheng-i (43. D 1).

A variously coloured sand consisting of well-rounded and subangular grains up to 2 mm.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 60% 30% 7% 3%

The larger grains are mainly composite, with much quartz and some felspar.

Composite grains of high specific gravity also occur in association with green amphibole.

143. Dune near Charchan R., Koirük-tokai (26. A 3).

Variiegated sand, with the larger grains well rounded and the smaller grains subangular.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 1% 42% 12% 45%

The larger grains are mainly quartz, with some felspar, but many semi-opaque composite grains are also present. There is much quartz in the smaller fraction and abundant felspar, while of the heavy minerals, composite grains predominate, though green amphibole, biotite, and muscovite are common.

144. Sand specimen, M. v., Mirān site, Lop (29. B. 2).

Light brown sand, with many coloured grains, mica, and subangular and rounded pebbles up to 12 mm.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 47% 12% 10% 31%

Among the pebbles and large grains are quartz, grey chert-like rock, mica-schist, and red granite.

The fine material contains calcium carbonate and gypsum, and among the heavier minerals altered and unaltered biotite is abundant as well as green amphibole.

145. Sand specimen from low dune within belt of Yārdangs, two miles N. of dry river-bed, Girdī-chāh. R.R. 04. 1 (desert site S. of Sīstān oasis).

.2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 6% 54% 40%

There are very many composite grains, especially among the heavier minerals. Biotite and green amphibole are common.

146. Sand from top of mound, Ko-ta-ch'üan-tzū (E. of Ying-p'an, Kansu; 42. A 1).

Fine brown sand, with gypsum crystals up to 30 mm. long. The gypsum crystals are corroded and contain much mud.

.2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 6% 14% 80%

There are many composite grains and much gypsum. Of the heavy minerals green amphibole and altered as well as unaltered biotite are common.

147. Sand from bed of Indus river, at mouth of Hodar valley.

A light grey sand, with many black grains and abundant coloured and colourless mica.

< .2 mm. .2-.4 mm. .4-.7 mm. > .7 mm.

Mechanical analysis: 17% 47% 27% 9%

The suite of heavy minerals is very interesting. Biotite and muscovite in subangular cleavage flakes predominate, but angular to subangular grains of quite clear hypersthene and augite are abundant. The hypersthene sometimes contains typical inclusions. Green amphibole and magnetite are common. Of the larger grains, some are composite, others simple; of the simple minerals, angular cleavage fragments of green amphibole are noteworthy.

One grain picked out by the magnet consists of serpentine (?) and magnetite. It resembles decomposed olivine.