

A finely granular limestone composed of minute crystals of calcite with patches of coarse mosaic of calcite scattered through it, which are often circular or oval in form and sharply defined from the matrix. They appear to be replacements of some calcareous organism. In addition, fragments of molluscan shells are seen in section.

The residue left after solution in acid consists of cryptocrystalline growths of silica resembling flint and sometimes taking the form of sponge spicules.

Foreign minerals introduced from without are rare; occasional minute flakes of muscovite, a little hornblende, and rutile have been observed. Small grains of ferric hydrate are, however, numerous.

This and specimen (01) are from the same stratified rock at the pass, Bēl-tāgh.

5. Taklamakān Desert, S. of Marāl-bāshi. C. xxiv.
Quartz Grit.

A fine-grained red quartz grit composed almost entirely of grains of quartz, most of them angular; comparatively few

rounded. They are all well defined by a thin continuous coating of ferric oxide. The quartz sometimes contains minute crystals of an undetermined mineral and vapour cavities. A few grains are composite, minutely mosaic, and recall the basis of some granophyres.

Grains of felspar are fairly numerous; some are microcline, quite fresh and unaltered, some oligoclase, and many are too much sericitized for determination.

In addition to ferric oxide there are patches of a black opaque mineral.

This rock is also met with as broken flakes included in the fragments of rock-salt described under No. 2 a.

6. Mazār-tāgh of Khotan (052). *Red Grit.*

An extremely fine-grained grit consisting chiefly of minute angular particles of quartz cemented by ferric hydrate and calcium carbonate.

Associated with this are several specimens (053-058) of gypsum.

LOP DESERT

7. Camp C. civ (01). *Amphibolite.*

A compact dark green rock composed almost entirely of hornblende with an angle of extinction of 22° and pleochroism: X, faint yellow to almost colourless; Y, dark sage green; Z, dark green. Biotite is absent, but a little muscovite occurs as an interstitial constituent.

Anorthite and labradorite are scattered through the rock in small allotriomorphic grains. Zoisite is present often in well-formed crystals, and there is a small quantity of magnetite with sometimes associated sphene.

7a. An incrustation covering the ground, two to four miles SE. of C. civ (01). A thin porous layer of gypsum coated on one surface with an irregular compact layer of the same mineral.

8. Camp C. civ (04), from 'Sai' about thirteen miles SE. of C. civ. *Vogesite.*

The specimen is an irregular rod of a grey rock speckled with minute black grains (hornblende) and comparatively large phenocrysts of white felspar, quartz, and biotite or hornblende. It has been polished by the wind and worn into little pits corresponding with the presence of felspar phenocrysts.

The ground mass consists chiefly of plank-like sections of albite and orthoclase with numerous elongated prisms of hornblende and interstitial quartz. Magnetite is present throughout. The albite is much altered by weathering, with the development of minute grains which give it a milky white appearance by reflected light. The hornblende presents the forms (110), (100), and (010); it extinguishes at 19° , and its pleochroism is, X, faint brownish yellow, almost colourless; Y and Z, yellowish brown. It is irregularly dispersed, while the felspar frequently presents a radiate or sheaf-like arrangement and sometimes occurs as elongated forms included in quartz which recall some of the radioles met with in grano-

phyre. The phenocrysts are hornblende, biotite, oligoclase, and quartz, the latter two of great size in comparison with the constituents of the matrix.

The biotite is brown when fresh and strongly pleochroic: X, light yellow; Y and Z, warm brown. It includes large crystals of apatite and some magnetite, is often much corroded by the matrix, and in many cases has suffered by alteration, and is then green in colour, with pleochroism: X, very faint green; Y and Z, deep green. The change is accompanied by the development of epidote.

The oligoclase occurs in single crystals or crystal complexes, is often zonal, much corroded by the matrix, and sometimes invaded by it.

The quartz occurs in single individuals or as a coarse mosaic: in one instance a reaction rim is present, formed by an intergrowth of quartz and chlorite. The chlorite appears to have resulted from the transformation of the adjacent hornblende.

9. From the same locality as No. 8. *Mica schist.*

A long thin parallel-sided rod of fine-grained mica schist, composed of quartz, abundant biotite with pleochroism: X, colourless; Y and Z, brown, some muscovite and iron oxide.

9, a. (05, 06). Two worn crystals of pure quartz.

10. From stony 'Sai', sixteen miles SSE. of C. civ. (07 and 08) mica schist; (09 and 010) quartz.

11. C. civ (011). *Granophyre.*

Ground mass micrographic and pilotaxitic, with phenocrysts of orthoclase, oligoclase-albite, quartz, and biotite. The felspars and quartz lie severally in the middle of an area of micrographic structure, the growth of which they seem to have determined. The quartz has been corroded by the matrix, and the felspars are crowded with minute granules.

The biotite is present in fragmentary remains represented