The necessities of transport rendered it impossible to collect more than very small fragments of rock, and these were obtained from projecting faces fully exposed to the weather, but fortunately, owing to the dryness of the climate, they are almost all still remarkably fresh and suitable for microscopic analysis. This is a very encouraging fact, since it shows that an explorer in a dry climate may bring home a valuable representative series of rocks without unduly burdening his impedimenta.

The results of our investigation are almost purely petrological and throw but little light on the structure of the country, with the possible exception of one instance afforded by a specimen, No. 6, from Mazār-tāgh on the Khotan river. This is a grit, but as it contains a good deal of carbonate of lime it may stand in some connexion with the limestone region of the Lāl-tāgh–Chok-tāgh area.

A point of particular interest to the petrologist is the presence in the limestone No. 27 of crystals of felspar which we were at first disposed to regard as having been formed in place. Subsequent examination showed that they are foreign bodies introduced into the area of deposition during the formation of the limestone. This observation may prove to have an important bearing on the occurrence of albite in some metamorphic limestones.

I. THE ROCKS AND MINERALS

MARĀL-BASHI REGION

1. **Marāl-bāshi** (01 and 02). *Augite Andesite.*

From Chādir-tāsh hillock ten miles ENE. of Marāl-bāshi (01 and 02). These specimens both come from the same rock, which is probably a dike as it is said to dip ENE. at 75° and to strike NW. to SE.

A fine-grained holocrystalline rock of a grey colour which is due, as seen under a lens, to an intimate mixture of lighter and darker components. Sp. gr. 2·83.

The ground mass consists of (1) Labradorite in long rectangular sections, orientated in all directions, and rendered turbid by alteration. (2) Augite in small colourless crystals, scattered irregularly, but sometimes clustered in little rosettes. They are bounded by the forms (110), (100), and (010) and extinguish at 39°. (3) Magnetite in abundant grains. (4) Quartz also occurs in small quantity but always as an interstitial constituent, never as a xenocryst.

Occasional phenocrysts of labradorite occur; these are sometimes broken across and, as shown by the displacement of the albitic twinning, faulted as well. The augite also shows signs of having been subjected to pressure, its cleavage planes being sometimes curved and its extinction undulose. It is never ophitic.

Chlorite is present as a product of alteration (pleochroism X, colourless; Y and Z, bluish-green). It occurs in interstitial patches and as a fibrous growth round oval areas (? vesicles) now occupied by felspar. It never presents forms suggestive of the original presence of olivine.

2. **Chok-tāgh**, S. foot of. *Limestone.*

A fragment of dark grey limestone polished by the wind.

Under the microscope this is seen to consist of finely granular areas, usually oval or rounded, immeshed in a network of calcite having a coarse mosaic structure. Some sections of minute crystals of quartz are also visible.

Whether the granular areas are original or secondary formations is extremely doubtful, but some structures are present which are obviously the remains of organisms.

On solution a residue is left which consists almost entirely of minute quartz crystals having the characteristic form of a hexagonal prism bounded by a 'pyramid' at each end, but the sides of the prism are plane with no indication of horizontal striae. The smallest measured was found to be ·002 mm. in diameter by ·006 mm. in length, some of the larger ·055 mm. by ·143 mm. The length is usually about three times the breadth, but there is no constant ratio; an unusually large example gave ·11 mm. by ·176 mm.

It is noteworthy that these crystals not infrequently include minute rhombohedra of calcite, and from this it may be inferred that they are not xenocrysts but formations in place. Similar crystals have been observed in the Carboniferous limestone of the British Isles. The silica of which they are composed was probably supplied by organisms, possibly Radiolaria.

2 a. **Chok-tāgh,** from ridge at second fixing S. of C. XXIV (02–04). *Rock-salt.*

Fragments of a bed of rock-salt. The bed, which was 25 mm. in thickness, presents a kind of prismatic structure due to the continuous growth of its constituent crystals in a vertical direction.

3. **Lāl-tāgh,** Western Promontory, C. XVIII (024). *Limestone.*

A reddish-brown granular limestone, composed of white granular ovoid bodies, set in a matrix of mosaic calcite. They are rarely in contact with each other, being sometimes separated by a distance equal to half their diameter. They range in size from ·16 mm. to ·55 mm., or in one exceptional case to 1·0 mm. in diameter. Some are bounded by a definite wall or dusty film of ferric oxide, and sometimes the crystals of the surrounding calcite are definitely orientated with their vertical axes radiating.

(025) from the same locality is the same rock.

4. **Bēl-tāgh** (01 and 02). From stratified rock at pass, Bēl-tāgh (21. X. 1913). *Limestone.*