

One fairly reliable deduction that can be made from the hand specimens is that where small, sub-rounded *vitreous inclusions* are seen (e.g., 2, Pl. 1, Fig. 1), the microscope shows them to be fragments of metamorphic quartzite. Exceptionally such fragments may reach 1cm in length (specimen 22).

MICROSCOPIC EXAMINATION

The sample has been divided into two main groups, *quartzites* (by far the most abundant) and *non-quartzites*. Each main group has been further subdivided, but it must be emphasised that, for the quartzites, classification is to some degree subjective, since transitional varieties occur.

QUARTZITES (Groups 1, 1a, 2, 1-2, 3)

Group 1 (Pl. 2, Figs. 1, 2): Angular to subrounded quartz grains range in size from 0.05 to (exceptionally) 0.5mm, with rare well-rounded grains up to 1mm in diameter. In the larger composite fragments of metamorphic quartzite (Pl. 2, Fig. 2), individual crystals sometimes show strain extinction and some preferred orientation.

The intergranular spaces are filled with finely crystalline prismatic and mosaic secondary quartz, in part derived by solution of the detrital quartz grains. Most of the latter show evidence of fretting and embayment.

A further subdivision within this group has been made below on the presence or absence of staining in the intergranular secondary quartz. The staining is in various shades and intensities of brown to grey and is generally amorphous. It may be uniform or quite patchy and sometimes takes the form of fine black dusting, probably of hematite. Staining is not at present considered to be a factor of any importance in assessing petrographic type or geological source, but is distinguished in the specimen list as follows: *Stained*: 2, 3, 4, 6, 8, 9, 21, 22, 27, 42, 44, 56, 57, 73; *Unstained*: 1, 5, 10, 11, 15, 43, 45, 75, 78.

Group 1A (Pl. 2, Fig. 3): This is a variant of Group 1 in which all the grains are subrounded to well-rounded and generally larger and more equigranular, many grains approaching $\frac{1}{2}$ mm in diameter. A small amount of staining is present, and specimen 49 contains plentiful rounded grains of partly altered magnetite. Specimens in this group are: 49, 51, 52.

Group 2 (Pl. 2, Fig. 4): Angular to subrounded grains are characteristic once more, ranging up to 1mm in some specimens (e.g., 66b) but not exceeding $\frac{1}{4}$ mm in others (e.g., 63). Metamorphic quartzite fragments and larger well-rounded quartz grains are less common than in Group 1. The most important difference between Groups 1 and 2 is the virtual absence of secondary quartz in the latter, except possibly as optically continuous overgrowths on grain margins. The intergranular spaces are almost entirely filled with finely comminuted detrital quartz, mostly down to 10^{-3} mm. In some specimens, notably 63 and 81-86, the intergranular material is less finely ground, so that the overall grain-size range is smaller. At the other extreme (specimen 80) there is a greater size difference than usual between large grains and matrix, so that in thin section the rock is gradational to Type 3 (see below). Specimens in this group are: 25, 26, 28, 29, 50, 53, 54, 63, 66B, 79, 80, 81, 82, 83, 84, 85, 86.

Transitional Group 1-2 (Pl. 2, Fig. 6): Some specimens possess features common to Groups 1 and 2, especially intergranular secondary quartz as well as finely comminuted detrital quartz, in varying proportions. The status of this transitional