
Chapter 26 Sheets exclusive of cone-sheets: south-west Mull. Gribun and Ben More

Gribun district (sheet 43)

The sills of the Gribun District, as defined (Chapter 23), are only separable from those of Loch Scridain by the relative infrequency of pitchstone and of 'accidental' xenoliths. Even this distinction is not absolute: a conspicuous sheet, descending the lava-escarpment above the 11th milestone from Salen, shows, in its interrupted northward continuation, cores of pitchstone, and also large quartzite-xenoliths; while another xenolithic sill occurs in the higher of the two escarpments at the north end of Fionn Aoineadh, but the xenoliths in this case look as though they may be 'cognate.'

As in the Loch Scridain country, glassy margins are a rarity but an east and west sheet crossing Beinn an Lochain has two-inch vitreous selvages.

The Gribun Sheets are often about 5 ft. thick, and are sharply distinguished in appearance from the lavas which they cut, for their joint-system commonly divides them into upright slabs. Their inclination -is varied-, but is generally directed towards the south. Chilled edges are conspicuous.

Such sheets have been noted cutting gneiss, Mesozoic sediments, and Tertiary lavas, in the Gribun Peninsula, and also the mugearite-plug of Na Torranan and the dolerite-plug of Dùn Mòr, on the north side of Loch na Keal.

Only one sheet has been sliced from the district, as field-determination showed clearly that the prevalent type is non-porphyrific tholeiite, or allied stony leidiite. The selected specimen is from the summit of Creag Mhòr, overlooking the Loch na Keal road ([S17111](#)) [NM 4591 3550]. It is a tholeiite with a few porphyritic feldspars, and, what is more interesting, very occasional crystals of fresh hypersthene.

Ben More district (Sheet 44)

The Ben More district, as defined in Chapter 23, furnishes several points of interest which will now be discussed under the headings Field-Relations, Age, and Petrology.

Field relations

The Ben More district lies for the most part within the Pneumatolysis Limit of (Plate 3), p. 91. In a general way, the sheets have suffered the same type of alteration, within this limit, as the lavas among which they occur; in fact, only one exception to this rule has been noted.

A few of these sheets are coarser and more basic than their fellows. Some of them perhaps belong to the same suite as the small laccolithic masses lettered eD on Ben More (Chapter 11), which are freely cut by several of the normal sheets of their neighbourhood. Good examples of fine-grained olivine-dolerite sills are afforded by a group mapped on the southern slopes of Maol nan Damh ([S17281](#)) [NM 5258 3112]—one of them, in particular, of massive dimensions. Another good instance is shown half a mile farther west, on the slopes leading down to Allt na Coille Mòire ([S18519](#)) [NM 5091 3091]. Other sheets of similar type are illustrated by ([S17262](#)) [NM 5197 3205], ([S18520](#)) [NM 5106 3275], ([S18521](#)) [NM 5155 3256]. The petrology of these sills reproduces, in abundant olivine and purple augite, the essential features of the Plateau Lavas of Chapter 10 and Early Basic Cone-Sheets of Chapter 21.

The most characteristic sheets of the Ben More district are an assemblage of thin sills, seldom exceeding 5 or 6 ft. in thickness, abundantly developed within a triangle, having Maol nan Damh at its apex and extending northwards to include the Scarisdale River and Eorsa. In the southerly part of their distribution, in Ben More, A' Chioch, and Maol nan Damh, these sheets are linked together by a tendency to dip west or north-west at gentle angles. They have been grouped on this basis under the title A' Chioch Sheets.

Even in their type-development, the A' Chioch Sheets are very irregular, and often follow the bedding of the lavas instead of maintaining an independent inclination. On the steep south-western slopes of Ben More, the conditions are particularly complex, as there are two groups of sheets which are locally separable from one another—although, for all we know, both groups may be included in the A' Chioch assemblage. One of these local groups consists of horizontal sills, some of them composite, showing an association of olivine- and olivine-free-tholeiite ([S18523](#)) [NM 5237 3280], ([S18524](#)) [NM 5237 3280]; the other, and apparently later group, is distinguished by a northerly dip of its constituent sheets.

The A' Chioch assemblage dies out along its strike southwards from the Ben More massif. E.M.A.

Westwards and north-westwards from Ben More, the inclination of the A' Chioch Sheets becomes too irregular to serve as a ground for comparison with the type-occurrences. However, on the north faces of Ben More and A' Chioch, before the general west or northwestward inclination is lost sight of, another distinctive feature of the assemblage becomes prominent: this is the common occurrence of crystal-concretions, or 'cognate' xenoliths, towards the centre of the sills. Such concretionary sheets are a characteristic of the whole country lying between Ben More, Dishig, and the Scarisdale River. Good roadside exposures may be mentioned a mile north-west of Dishig between two streams flanking the 7th milestone from Salen. J.E.R.

Age

An inferior limit to the age of the A' Chioch Sheets is provided by several of these sheets cutting an acid cone-sheet (Chapter 19), which crosses the coil between Ben More and A' Chioch. This relationship is illustrated by a single example on the one-inch Map. It is important as showing that the A' Chioch Sheets are almost certainly later than any of the lavas that are still preserved in Mull. E.M.A., J.E.R.

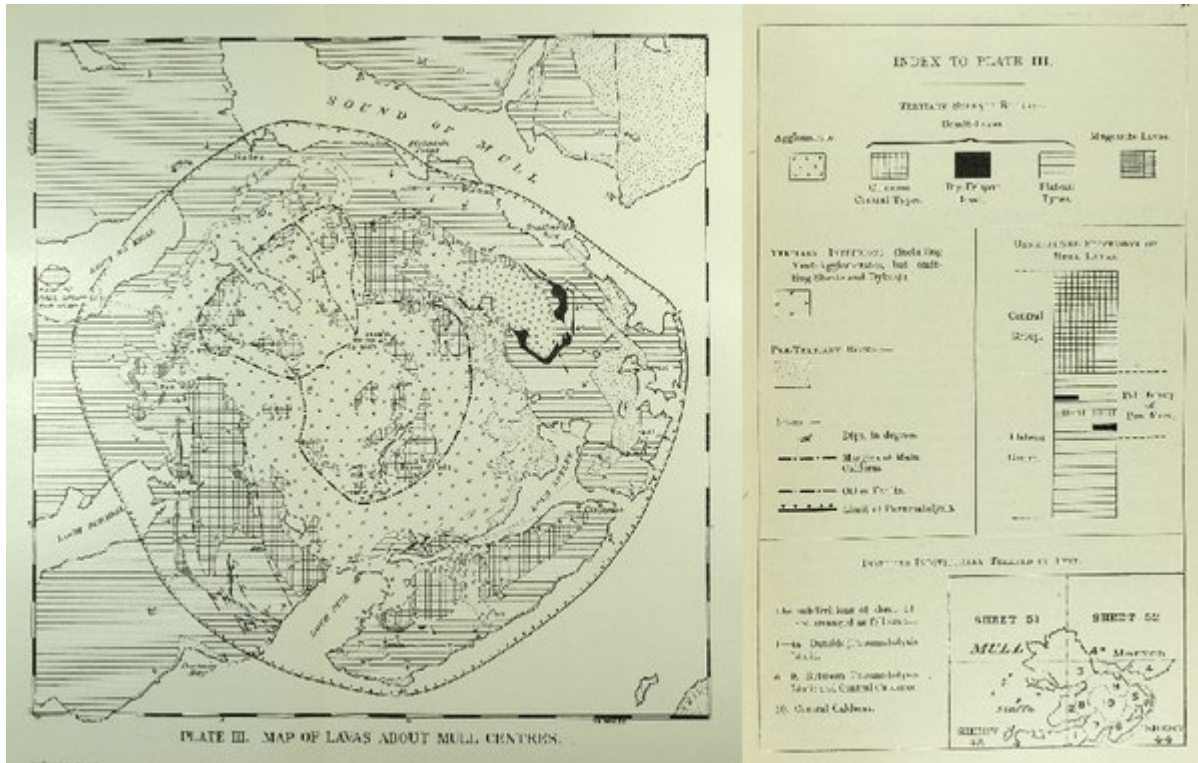
An upper limit to the age of these sheets is afforded by several intersections of the sheets by Late Basic Cone-Sheets (Chapter 28) at the east end of Beinn Fhada. In keeping with this, the sheets are absent from the Beinn a' Ghràig Granophyre (Chapter 32), and are baked in its neighbourhood ([S16617](#)) [NM 5282 3575]. In Chapter 28, it will be shown that the Beinn Fhada cone-sheets are probably among the latest of their kind, whereas the acid cone-sheet crossing the Beinn More *arête* may be one of the earliest; so all that seems established from their field-relations is that the A' Chioch Sheets belong to some part of the time characterized by the cone-sheets as a whole.

When one turns to petrology, there is some reason for supposing that these sheets belong to a phase of the Late Basic Cone-Sheet period. The magma is of tholeiitic type, much more comparable with that of the Late Basic, than the Early Basic, Cone-Sheets. So far as petrology is concerned, the sheets may equally well be compared with the Central Lavas, but, as pointed out, the field-evidence is strongly opposed to any suggestion of contemporaneity in this connexion.

Petrology

The somewhat decomposed condition of most of the sheets renders detailed petrological description out of place. It is only necessary to say that the prevalent types ([S16626](#)) [NM 5270 3412], ([S16635](#)) [NM 5266 3757], ([S16638](#)) [NM 5077 3601], ([S16640](#)) [NM 5100 3587], ([S16652](#)) [NM 5404 3530], ([S17141](#)) [NM 5354 3471], ([S17162](#)) [NM 5354 3353], ([S17163](#)) [NM 5114 3436], ([S17261](#)) [NM 5304 3321], ([S18522](#)) [NM 5244 3281] are reminiscent of non-porphyrific Central Lavas, only, often, with a more advanced tholeiitic crystallization. A slice from Eorsa ([S17612](#)) [NM 4875 3830] is a Salen Type of tholeiite (p. 285) with fresh olivine and purple augite. The fresh olivine, in this case, is in keeping with the position of Eorsa outside the Pneumatolysis Limit of Plate III. (p. 91). Occasionally, the slices show a porphyritic tendency ([S16620](#)) [NM 5205 3412], ([S16968](#)) [NM 5307 3325], ([S17263](#)) [NM 5234 3169], and one of them ([S16637](#)) [NM 5250 3665] is indistinguishable from porphyritic basalt-lava of Central Type. Only one good example ([S17158](#)) [NM 5139 3396] of the 'cognate' xenoliths, so characteristic of many of the field-exposures, has been cut. It shows glomero-porphyrific aggregates of basic plagioclase and olivine (as pseudomorphs) in a variolitic base; and could be matched precisely among the pillow-lavas of Central Type (Chapter 10). In what is probably an A' Chioch sheet, at the western limit of the Ben More district, and well outside the Pneumatolysis Limit, similar glomeroporphyrific aggregates of feldspar and olivine occur, and the olivine is fresh.

A few rather acid sheets are of acicular crystallization ([S16941](#)) [NM 5417 3331], ([S16969](#)) [NM 5429 3352], ([S17280](#)) [NM 5250 3018], and are best classed as craignurite, defined in Chapter 19. Two examples of composite sheets, centred by rhyolite or felsite, with small alkali-felspar phenocrysts, are represented in the collection. One of these ([S17275](#)) [NM 5252 3063] is lettered F on Am Binnein; the other ([S17164](#)) [NM 5247 3320], not shown on the one-inch Map, occurs 300 yds. north-west of the summit of Ben More. E.B.B.



(Plate 3) Map showing the distribution of lava-types and the limit of pneumatolysis