

XLVII.—*The Minerals of the Storr.* By Professor M. F.
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[The following paper is a portion—somewhat abridged in part—of a paper read by Dr Heddle before the Geological Society of Edinburgh on 6th March 1856. No corrections or additions have been made, but in order that it may be more useful the crystallographic symbols are given as in Dana's Mineralogy (6th Edition). The Society did not at that time issue Transactions, and the paper was therefore never printed. As no mineralogical description of the locality has since been published, the account will be read with interest even after this lapse of over forty years.]

THE hill, or to speak more correctly the huge pillar, called the Storr is about ten miles north of Portree. In favourable weather it is most easily reached by taking a boat from Portree to a point about eight miles to the north. Landing here near the foot of a lofty cascade and surmounting a steep ascent of 1800 feet, we find ourselves in a vast amphitheatre resembling the crater of an extinct volcano, closed in behind by a dark and beetling cliff, while the view seaward is almost shut out by huge columns, rising in one instance to a height of over 150 feet.

It is from among the debris which is constantly falling from these pillars, or by the laborious breaking up of the larger and more solid masses which are more rarely loosened from the cliff, that the mineral specimens are obtained.

We approach the Storr from the south-east by keeping alongside of a wall which leads us to a cliff at the foot of which is a large quantity of debris containing the finest specimens of *Gyrolite* to be found at the Storr. The rock being a tough basalt, good specimens are only to be obtained by blasting.

Ascending a steep grassy slope, we next come to masses of amygdaloid fallen from two pillars which form a sort of gateway to the amphitheatre above. Here the following minerals are to be obtained:—

Mesolite or *Faroelite*, coating the cavities with mammillations and with spheres which are sometimes almost complete. The specimens from this locality are the finest to be obtained in the British Islands and almost rival the Faroel specimens.

Apophyllite, in small crystals superimposed on the Faroelite, and not so fine as at the next locality.

Stilbite, occurring similarly.

Mesolite, in delicate feathery tufts, occupying cavities by itself.

Following a sheep-track northward among the pillars, we pass a spring, and between the four larger pillars and the cliff come upon an enormous quantity of fallen rock which, about 1845, was hurled from the precipice by the splitting action of freezing water. The noise of the fall was heard at Portree. This may be considered perhaps the finest zeolite locality in Britain, as it yields eleven different species. These arranged according to the frequency of their occurrence are :—

Chabazite.—Nearly every cavity of the amygdaloidal rock is lined with minute highly polished crystals of this mineral in the primary form *r*. It also occurs rarely in the combination *ts* and in minute twins of *rs* and *res*. A fifth form seems sometimes to be present, but I have convinced myself by the examination of many crystals that this is nothing more than an oscillation between the faces *t* and *r*.

Apophyllite occurs in specimens of great beauty, the crystals sometimes attaining the length of 2 inches with a breadth of 1 inch, and exhibiting, by polarised light, in great perfection, the structure from which the species obtained from Brewster the name of Tesselite. The combinations here are *ac*, *arc*, *apc*, *apcr*.

Stilbite.—The specimens found here vary very much in appearance. At one spot they occur associated with Laumontite in the large sheafy conglomerations of crystals found so generally in Iceland and Faroe. At another spot they are in isolated and highly perfect forms; while at a third the crystals are grouped like a fan, the crossing of different individuals of this variety forming spheres resembling those so common in our Scottish Prehnites. The forms of Stilbite to be seen here are *bef*, *befm*, *bem*, and twins of *bem*.

Laumontite is here found in veins about 1 inch in thickness, which consist of a congeries of minute crystals so confused as to present a granular appearance. This mineral, strange to say, used to pass under the name of Hypostilbite, and under that name came into the hands of Dr Scott, who analysed it. So large a mass of this Laumontite is attached to the cliff that I have been able to distinguish the white spot from the Sound of Scalpay, some twenty miles away.

Gyrolite occurs here in great abundance, generally associated with Apophyllite. It is further found *per se* at the east side of the foot of the great pillar, and also at a spot a little south of this. Unweathered specimens of this mineral are rare, as it seems to lose water as readily as Laumontite; and on account of the foliæ flying asunder at the slightest shock, fine specimens are obtained with considerable difficulty.

Sphaerostilbite.—The mineral so named by Beudant occurs here

in minute spheres. I was not successful in obtaining a quantity sufficient for analysis; but when viewed under a microscope the mineral so much resembles Stilbite that I have little doubt of their identity.

Analcime is rarely found in small but brilliant crystals of the usual form.

Mesolite occurs as at the last locality in delicate acicular crystals.

Faroelite does not occur at this locality in specimens so fine as those last mentioned, but it lines all cavities which do not contain *Chabazite*, which seems to supply its place.

Steatite [Saponite] of a pure white and of a pale green colour fills up the smaller nests and lines larger cavities.

Calcite, here an unusual mineral, occurs in minute rhombs and sharply acuminated prisms.

Heulandite occurs in colourless crystals, the lustre of which is quite equal to that of the Icelandic specimens, but which do not exceed, so far as I have seen, $\frac{1}{2}$ inch across the face *b*. The following combinations occur: *cstmb*, *cstbma*, *cstmbu*, *cstmbua*.

Levyne is rarely found here, as usual twinned in the form *crs*. Specimens obtained from Mr Doran of the form *rs* are doubtless also from this locality. It is the sole occupant of the druses in which it occurs.

The *Plynthite* of Thomson occurs in veins which intersect the columns.

The lower portion of the cavities is sometimes occupied by *Onyx*, formed of alternate layers of bluish Chalcedony and milk white Cachalong.

Hardly a cavity can be opened that does not contain water. Some of those about the capacity of a thimble are full of it, containing nothing else except a mere film of *Faroelite*. Others again, which appear to be quite filled with needle *Mesolite*, pour out water when the finger is thrust into them. The *Steatite* [Saponite] also, when first taken from the cavities, contains so much water as to have the consistence of butter. This zeolitic water has a slightly alkaline taste, and a small quantity evaporated on a watch-glass left a film of a gritty powder which did not scratch the glass.

It is worthy of notice that some of these minerals—such as *Analcime*, *Chabazite* and *Apophyllite*—are found sometimes loose without attachment in the cavities, of course crystallised all round, or suspended on a microscopic needle of *Mesolite*. The *Apophyllite*, *Analcime*, *Chabazite* and *Gyrolite* are, when the cavities are first broken into, so devoid of colour and so perfectly transparent that were it not for the reflection of light from their faces they would be absolutely invisible. *Apophyl-*

lite and Gyrolite have, when fresh, not a trace of pearly or fish-eye lustre, such being consequent upon a loss of water. In Heulandite and Stilbite again the lustre is inherent, and the loss of water causes them to become chalky in appearance.

In the return from the Storr a point on the summit of the cliff almost directly above Prince Charles's Cave should be visited, as it affords *Pectolite* of a delicate bluish-green colour, not elsewhere equalled. I am indebted for this locality to Mr Doran, who supplied the specimens analysed by Dr Scott, by whom, however, the Storr was erroneously given as the locality.

Inferior specimens of many of the zeolitic minerals may be obtained at almost every spot in the neighbourhood of Portree, at which the trap is exposed in cliffs or broken open as quarries. The nearest locality, however, worthy of notice is at Rudha na h-Airde Glaise on the shore two miles north of Portree. Here a considerable amount of debris has accumulated from which may be obtained indifferent specimens of *Gyrolite*, *Apophyllite* and *Mesolite*. These three minerals sometimes occur together in a cavity. When this is the case the Mesolite is invariably next the rock, and covered in turn by Gyrolite, the Apophyllite filling up the centre of the nest. In some instances the Mesolite is wanting: in others the Apophyllite is absent: frequently the Mesolite occurs alone. In all cases, however, when more than one is present the order or superposition is as noted.