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XXII.—*A Brief Description of the Map of Shetland, issued with Vol. II of the Mineralogical Magazine.*

BY PROFESSOR HEDDLE.

THE accompanying map is the outcome of a survey of Shetland, conducted during part of several summers.

Almost the whole of the junctions laid down were visited by myself; for the few that were not, and also for certain of the lines continued inland—which from an almost unbroken covering of peat and turf, are more or less conjectural—I am indebted to Dr. Hibbert's narrative.

To Professor Geikie's map of Scotland I am indebted for the southern limit of the isolated mass of sandstone of the Lerwick district.

The small strip of volcanic rock on the west side of Noss Sound was observed in 1878 by Messrs. Horne and Peach of the Geological Survey; that in the island of Noss was observed by myself in 1848.

I have, after considerable hesitation, assigned to the two rock-masses which lie between Gruting Bay and Melby on the west of the large island, the age of the Old Red Sandstone.

I have noticed, in the text of my papers in the Magazine, the observation by myself of doubtful organisms in the vicinity (north-west) of Veila Sound; and Professor Geikie tells us* that his two officers, above-named, last-year discovered "numerous plants evidently similar to

* Transactions of Royal Society of Edin., Vol. XXVIII, part 2.

those of Lerwick in the altered sandstones or quartzites south of Melby:”—namely in the west of the mass.

This rock was considered, both by Hibbert and by Nicol, as true quartzite. To me it seemed of much the same nature as the peculiar rock which is found on the east shore of Foula, and which I have (while indicating that I had not sufficient opportunity of studying it), set down as showing a probable passage of the underlying schists into the members of the Old Red Sandstone series,—and hence as being truly of that age.

If the red sandstone of Sandness Hill be really Old Red, it is the most highly altered member of the series to be seen probably anywhere in Scotland.

Rocks of a seemingly intermediate character, also occur on the east shore of Fetlar in the neighbourhood of Helinàbretta; and compose the weird rocks termed the Ramnay Stacks, which outlie the Point of Fethaland.

Granites of three descriptions occur in the Island.

First, that which in the south runs up like a great dyke from Quendale Bay in the direction of Mavisgrind; this I believe to be continuous with the wide mass which includes the Islands of Yell-Sound; though here it contains little of the epidote which it carries in the south.

This mass, in the south at least, cuts the strata sharply off, and seems to plug a rent.

The small mass in the north-east of Unst can hardly be regarded as distinct from this.

Second, the porphyritic granite which forms a triangular wedge between Seelie and Gruting Voes:—this sends down veins through the schists of the west shore of the first-named Voe.

Third, an evidently more recent rock—and one which presents some of the characters of vitreous fusion—which lies westward of, and above all the metamorphic rocks of the islands. To this last mass, Messrs. Horne and Peach assign a much more recent date, but the grounds of their speculation are not yet before the public.

A *guide-course* has been dotted on the map; and I now note the minerals of which there is a reasonable hope of obtaining good specimens in a hurried, and what might be called a *sight-seeing tour* in the country.

Sandlodge.

Malachite—Chalybite—Limonite.

Seelie Voe.

Purple quartz—Porphyritic granite.

Bigsetter Voe.

Graphic albite.

Hillswick.

Radiated Hornblende — Pink albite—Actynolite — Anthophyllite — Precious serpentine—Purple quartz—Ripidolite coating magnetite—Kyanite—Margarodite—Chlorite—Talc.

Pundy Geo.

Magnetite in chlorite—picrolite

Colafirth.

Various serpentines—Black radiated hornblende—Actynolite—Chrysotile—Albite.

Balta.

Hornblende—Augite—Labradorite—Amianthus—Nephrite—Picrolite and various pseudomorphosed varieties of the above.

Swinaness.

Precious serpentine—Brucite—Asbestos.

Chromite Quarries.

Kammererite—Hibbertite—Chromite.

Cross Geo.

Green talc—Breunnerite—Dolomite—pseudo-diallage in rolled pebbles.

Woodwick.

Grenatite—Kyanite.

Fetlar.

Chrysotile—Hornblende—Anorthite—Chromiferous magnetite—Diallage—Serpentines.

Haaf Grunay.

Precious serpentine—Pyroaurite.