

EXCERPT MINUTES OF COUNCIL MEETING.

Held in the Unitarian School-room, High Street, Swansea, August 27th, 1880.

A letter was read from the President regretting his inability to attend, and enclosing the draft "Report of the Council," with sundry suggested emendations, which were adopted.

The following members having been proposed in accordance with the rules, were declared duly elected as ordinary members.

DR. JAS. HECTOR, F.R.S., Director of the Geological Survey of New Zealand.
 MR. THOS. STEWART, of the Glasgow Corporation Water Works.
 MR. JOS. GILL, of Leadhills, Lanarkshire.
 REV. GEO. GORDON, L.L.D., Manse of Birnie, Elgin.

FIFTH ANNUAL GENERAL MEETING.

Held in the Unitarian School-room, High Street, Swansea, August 27th, 1880.

The voting papers previously issued to the members were examined, when it appeared that the following members were elected as office-bearers for the ensuing year (1880-81.)

PRESIDENT.

PROFESSOR M. FORSTER HEDDLE, F.R.S.E.

VICE-PRESIDENTS.

REV. PROFESSOR HAUGHTON, F.R.S.

REV. PROFESSOR BONNEY, F.R.S.

COUNCIL.

PROFESSOR A. H. CHURCH, M.A.

MR. T. W. DANBY, F.G.S.

MR. JAS. S. MERRY, F.G.S.

MR. I. F. WALKER, F.G.S.

(In place of Messrs. T. Davies, T. M. Hall, M. H. Johnson, and B. Oxland, who retire by rotation.)

TREASURER.

MR. R. P. GREG, F.G.S.

GENERAL SECRETARY.

MR. J. H. COLLINS, F.G.S.

FOREIGN SECRETARY.

DR. C. LE NEVE FOSTER, F.G.S.

AUDITORS.

MR. B. KITTO, F.G.S.

MR. F. W. RUDLER, F.G.S.

The following "Report of the Council" was adopted unanimously by the members present:—

COUNCIL REPORT, 1880.

"The year that has just been completed, the fourth year of the Society's existence, finds it full of life and vigour, notwithstanding heavy numerical losses which it has sustained in its membership during that period. Since the last annual meeting we have lost by death one corresponding member, and five ordinary members; and by withdrawal seven ordinary members and two associates. The election during the year of a corresponding member, twelve ordinary members, and two associates, leaves us exactly the same in number as we were at our last meeting, viz:—

CORRESPONDING MEMBERS,	24.
ORDINARY MEMBERS,	... 124.
ASSOCIATES, 24.
TOTAL.	172.

The balance sheet issued with the 17th number of the Magazine, shews that the financial position of the society is good.

The 3rd volume of the Magazine, which has been completed since our last annual meeting, is not less valuable than its predecessors. The society is again largely indebted to Dr. Heddle for a continuation of his exhaustive work on the geognosy of Scotland, and for other interesting communications; we cannot but regret that he has had so few coadjutors. A very remarkable paper by Mr. J. Milne, of Yedo, should not however be passed unnoticed.

To the unwearied editorial labours of its secretary the excellence of the Magazine is largely due, and the Council have again the pleasure of requesting Mr. Collins's acceptance of the honorarium of £20.

It is satisfactory to find that there is an increasing demand for the Magazine outside the society. The net result of the sales last year amounted to £15 8s. and there is good reason to believe that this amount will next year be considerably exceeded."

The following alterations in the rules having been previously proposed in accordance with rule 29, were agreed to.

Rule 8.—To add the words "and a sum equal to two-thirds of the composition fees shall be invested in Consols."

Rule 30.—To add, "after which they shall be authorised to append the following letters to their names:—"

Corresponding Members.—C.M.S. (for "Corresponding Member of the Mineralogical Society)."

Ordinary Members.—M.M.S. (for “Member of the Mineralogical Society).”

Associates.—A.M.S. (for “Associate of the Mineralogical Society.”)

The following papers were read and discussed :—

“On the chemical formula of epidote,” by M. l’ Abbe Renard.

“On certain crystallized products formed in smelting operations,” by Mr. W. Terrill, F.C.S., communicated by Mr. J. H. Collins.

“On the serpentine, hornblende, and schistose rocks of the Porthalla coast,” by Mr. J. H. Collins.

Specimens in illustration of their papers were exhibited by Messrs. Terrill and Collins.

LOCAL MEETING.

Field Meeting at Skye, September, 1880.

A field meeting of the Members resident in the “Central District of Scotland” was called by the local Secretary, the Rev. W. W. Peyton; the little Bay of Talisker on the south-west coast of Skye being the locality chosen. A number of the members accordingly met at Sligican Inn, and upon the 17th Sept., along with some strangers who were resident at the inn, proceeded by coach to Talisker, which is some twelve miles distant.

The sandy little bay of Talisker is buttressed on both sides by mural precipices of great height; those upon the south rising in sheet after sheet of bedded trap, to the altitude of 867 feet. Over these vast walls of nearly vertical rock, torrents precipitate their waters from the very verge; that verge being in one spot the edge of a range of basaltic columns. Caught instantly by the wind which is sweeping upward from the extended face of rock, these waters become dishevelled and broken up into myriad drops, which, in the form of a misty veil, are waved hitherward and thitherward in perpetually changing folds; becoming for so long the sport of the winds, that it is only the drenched rocks beneath which vouch for their ultimate fall. Occasionally among the waving folds the sunbeams play, refracted into prismatic colours of rare brilliancy; producing a spectacle marvellous from the rarity of its occurrence, and conferring upon the locality a charm which enhances many times the interest which primarily attaches to it from the plenitude of its mineral wealth.

The party, conducted by the President, who had many years ago examined the locality, proceeded in the earlier part of the day along the *southern* shore, on account of there being on this side a risk of their being cut off and imprisoned by the tide.

To direct in some measure the researches of the party, Dr. Heddle gave a list of the minerals to be found here. This list included—

Analcime,—*Stilbite*,—*Chabasite* in pure blue crystals, and also of a colour approaching to *acadielite*,—*Mesolite* in downy acicular-crystals, and in feathery-like arrangements.

He also mentioned that the late Mr. James Russel here found the only two specimens of *Epistilbite* which have yet been got in Britain; one of these is now in the British Museum, the other in Dr. Heddle's own collection. The correctness of the locality is proved by the occurrence of *acadielite* in the matrix of the specimens. Russel also gave this as the locality from which he obtained a specimen which appears to be *scolecite*; and this is also the locality given by him as that which yielded one or two bits of a finely-tinted pale-green *pectolite*, which is associated with large and fine crystals of *apophyllite* in very short prisms. The dealer Doran, however, assigns these to the east shore of Skye, near the so-called Prince Charles' Cave, and the near presence of liassic limestone points to this as being the more probable locality.

With these hints to guide them, the party commenced their explorations, and before rounding the southern horn of the bay, had found *stilbite* in large spheres, resembling the sheafs of Faroe; they also got *analcime*.

Immediately upon rounding the promontory, they found themselves upon the boulder-attrited pediment of two picturesque sea-stacks; and here they found certain of the above recorded minerals in so great a plenty, that the breaking them out of the rock consumed all the time which the advancing tide accorded to them.

The observation of chief moment was the finding of *Heulandite* by Mr. Mackenzie, a gentleman who in a continental University had taken high honours in his mineralogical examination. This Heulandite was in colourless and highly lustrous *btsP* crystals: this is the second locality in which it has been found in Skye; common as is *stilbite*, *Heulandite* is one of the rarest Scotch zeolites.

In close proximity with this, *stilbite* was found in sheafy or club-head aggregations of crystals of *abpr*, and in crystals of the form *abp*.

The observation of most interest, however, was the extraordinary extent to which certain beds of the rock were pervaded with amygdulæ, which apparently sometimes constituted a third of its mass. In these cases the amygdulæ contained, in contact with the rock, the pale-blue and the flesh-coloured *Chabasite*; immediately upon these were disposed rosettes of a pale-blue colour, consisting of aggregations of small crystals with the form of *Thomsonite*, or of *farvelite*. The President was disposed to assign them to the former, from his having by analysis proved the occurrence of

Thomsonite in igneous rocks of this age, which occur at the north end of the island. Superimposed upon these rosettes there lay beautifully delicate interwoven and matted arrangements of downy *mesolite*, or individual crystals of the same, of marvellous tenuity; these, which yielded with perfect elasticity to every breath of wind, shot from side to side of the cavity. *Analcime* in minute brilliant crystals, *n*, also frequently occurred here, for the most part in separate amygdules; a single crystal rarely presenting itself among those of *chabasite*.

Of the last named mineral it was observed that simple rhombohedra (and these were of the *acacialite* variety) very rarely occurred; twins of the same, somewhat less rarely; this variety being almost always in highly complex twins, which generally presented upwards the crossed face *a*. The blue variety was always in twins, but these were of less complex form. The flesh-coloured crystals were of very much more frequent occurrence, and the two shades never passed into one another.

This goes to support an observation which has been already recorded, that these varieties have a totally different composition. The forms in which the *acacialite* was found were, *p*, *pe*, *p t e*; twins *p t e s*, and the same with 12 small crystals of *pe* inserted upon the *e* planes. The form of the *blue* variety is *pe s* twin.

As regards this, the cliff-foot *south* of the bay, the extent of new information is confined to the discovery of *Heulandite*.

Hurried away by the advancing tide, the party made for the beach north of the Bay, and, in crossing the shores of the cove, observed that its singularly dark sands were composed almost entirely of comminuted dolerite, with about a fourth part of its bulk of clear granules of *olivine*.

Among the smoothed boulders which line the shore, before the rocks of the northern coast line are reached, there were found several which contain imbedded fairly-well developed lozenge-shaped crystals of *olivine* of the form *a d c*. Though these are not over a third of an inch in length, they are probably the best crystals yet noted from Scotland. Striated twins of *labradorite* of a pale-brown, and over an inch in length, rarely occur in a finer-grained rock, in others of these boulders.

Immediately upon reaching the fallen masses which lay upon the shore, the party found abundance of *analcime*, in both large and small crystals;—highly brilliant, colourless, and transparent; as also opaque and muddy-white, rarely bluish. No form other than *n* was seen. It was sometimes associated with superimposed crystals of stilbite *a b r*.

The interesting observation of the occurrence of *bitumen* was next made. It was first seen as a thick coating on the rock, surrounding an empty cavity which was lined with crystals of *analcime*. The rock in the

vicinity showed "tears" of the soft, tenaceous, and highly odouriferous substance, which had streamed over its surface for an inch or more. On breaking into the fresh rock, cavities,—sometimes half empty, sometimes full,—were found. In those which were only partially filled, the bitumen occurred with rounded or semi-globular forms, and its passage through the substance of the rock to the surface most directly exposed to the sun's rays, was shown by a dark stain.

It has been said that it was lodged in amygdules which were lined with crystals of analcime; minute filaments of *mesolite* sometimes passed through its substance also; but it occasionally occurred not in amygdules but filling rents in the substance of the rock; and sometimes apparently merely pervading the rock substance itself.

As lignite of liassic age, reduced frequently almost to mineral charcoal, has been found in many parts of Skye, imbedded in trap, there can be little doubt that the action of heat has distilled this bitumen out of the entombed exogenous plants.

Close to this bitumen much capillary mesolite occurs, traversing with its crystals the vacuous centre of analcime amygdules.

A gentleman who accompanied the party got a fine specimen of brown calcite in simple rhombs of the form *f*, these rhombs undoubtedly owe their colour to an impregnation of bitumen.

Mr. Peyton here made, in one block, a double find;—a far from rudely-formed crystal of very dark-green *labradorite*, 9 inches in length, by 5 in breadth. This, being made up of a multiplicity of crystals lying in every direction, went to pieces in the extraction. The small individual crystals are finely striated; it is called *labradorite* at present merely from association.

This assumption of a fairly well-pronounced simple form, by the aggregation of a multitude of small individuals which lie in polar discordance, is of very difficult explanation. It is to be seen in the orthoclase of Pitfechie in Aberdeenshire, and in several other minerals.

The substance which occurred in association with this giant crystal, was *lydian-stone*; it was in imbedded and rounded masses of a dark brownish-green colour; the masses were some inches in dimensions.

The tide did not permit the party to reach a spot where the fallen masses contain fine specimens of *chabasite*, and at which, many years ago, Mr. Dudgeon found probably the finest specimen of *analcime* which Scotland has yet afforded.

The following additions to the minerals of this locality were made:—*Olivine*, *labradorite*, *lydian-stone*, and *bitumen*, none of which had been chronicled by Dr. Heddle on his previous visit.

Retracing their steps, the party observed bands of *plynthite*, of some inches in thickness, zoning the cliff horizontally from bottom to top, at distances of about forty feet, and imparting to it an appearance which was altogether new to most of the members.

It was remarked that, as the specimens obtained were got almost solely from fallen blocks, and as falls were apparently not of altogether rare occurrence, the locality must be almost an exhaustless one. This is hardly a correct inference in either respect. The President did not see much change as regarded the number of fallen blocks since his last visit,—some five and twenty years before; while at the more northerly locality of the Storr, where at that time nearly every stone yielded a specimen, not a bit worth carrying away is now to be had,—the tourist love of *trophies* having swept it bare.

It is mentioned as a detriment to the tourist, and an instruction to the mineralogist, that good specimens are not to be obtained here without the employment of a hammer of at least 14 lbs. weight, while one of 17 lbs. will do twice the work.

LIST OF BOOKS RECEIVED FROM JULY 1ST TO SEPTEMBER 23TH, 1880.

- From *Prof. Groth, Strasburg.*
Zeitschrift für Krystallographie und Mineralogie. iv, 4, 5, 6.
- From *Soc. Toscani di Scienze Naturali, Pisa.*
Processi verbali, p.p. 53-64.
- From *Soc. Minéralogique de France, Paris.*
Bull. III. 5.
- From *Prof. Tschermak, Vienna.*
Min. und Pet. Mitt. III. 1, 2, 3, 1880.
- From *Dr. C. Le Neve Foster, Llandudno.*
 Reports of the chief inspectors of Mines for Victoria, 1874-5.
 Reports of the Mining Surveyors and Registrars of Victoria, 1875 to March 1880.
 Mineral Statistics of Victoria, 1875 to 1879.
- From *Prof. Geo. J. Brush, Newhaven.*
 On crystallized Danburite from Russell, St. Lawrence Co., New York, by G. J. Brush and E. S. Dana.
- From *Prof. T. Rupert Jones, F.R.S., Surrey.*
 On the practical advantages of geological knowledge by T. R. J.
 On the Fossil Fuels of Italy, by the Chevalier W. Jarvis,
- From *B. J. Harrington, B.A., Ph.D., Nova Scotia.*
 Notes on Chrome Garnet &c., by B. J. H.
- From *Prof. Dana, Newhaven.*
American Journal of Science, July to September, 1880.

From *Reale Comitato Geologico*, Rome.

Bolletino, 5 to 8, 1880.

From *Professor G. Vom Rath*, Bonn.

Mineralogische mittheilungen, by G. v. R.

Ueber den kentrolith, eine neue Mineral species, by A. Damour
and G. Vom Rath.

From *Professor F. J. Wiik*, Helsingfors.

Mineralanalyser utfordra på Universitetets kemiska laboratorium
&c., by F. J. W.