

exposed to sunlight, leaves inconspicuous, fruiting in early spring and through the summer.

ORDER.—Polytrichiei, Brid. & Sch.

POLYTRICHUM, commune, L., fruiting in June.

P. JUNIPIRINUM, Hedw., fruiting in June.

ATRICHUM, undulatum, P. Beauv., common, fruiting in autumn, forming dense green patches.

ORDER.—Tetraphidei, Br. & Schimp.

TETRAPHIS, pellucida, Hedw.

Very common in shady woods and on roots of trees, fruiting in summer and autumn, easily recognized by the four-toothed peristome and the cup-shaped cluster of leaves surrounding the gems.

ORDER.—Grimmiei, Br. & Schimp.

SCHISTIDIUM, maritimum, Br. & Schimp.

Leaves rigid, strongly acuminate nerve excurrent, much crowded erectopatent, sporangium obovato truncate, lid very large, shortly rostrate, fruiting in autumn, growing on granite boulders, dark olive green, pulvinate.

ORDER.—Hedwigiacei, Br. & Schimp.

HEDWIGIA, ciliata, Hook & Wils.

Branches fastigiate, leaves imbricated, oblong lanceolate, sporangium globose immersed, veil hairy perichætical leaves ciliated, lid plano convex, with a central papilla, variable, common on granite boulders, lurid green pulvinate, fruiting in autumn and through the winter.

ART II.—ON NOVA SCOTIAN FERNS.—BY REV. E. N. BALL,
MACCAN, *Communicated by* DR. LAWSON.

(*Read November 11, 1878.*)

I HAVE been examining more closely the varieties of *Aspidium Spinulosum* (Gray) this Summer, and offer the following as my more matured observation.

ASPIDIUM SPINULOSUM (Gray).

Though in our Nova Scôtian plants the scales cannot be said to be deciduous (for they are retained by the fronds even when past maturity), yet this fact will scarcely perhaps warrant my calling the indigenous plant a variety—obliquum, and, as the plant in all other respects answers to Gray's description, if I were to revise my paper, I should drop the idea of the variety and give it as Gray does.

A. spin. var. *intermedium*. Early in the Spring I noticed many plants of spinulosum so completely covered with glands as to render them, from this fact, markedly conspicuous to the naked eye even, and very distinct from other plants of same species, growing side by side with them in some instances, so that from a distance of 20 feet the unrolled glandulous fronds could be distinguished from the shining smooth ones. Marking several of these as yet undeveloped fronds, I find that the glandulous are intermedium and the smooth Gray's N. American typical Aspid. spinulosum. I had not noticed this to be the case before.

A. spin. var. *dilatatum*. This is a very distinctly marked variety. The fronds, by their broader growth, the pinnæ wider in the centre than at their bases, and at this season of the year, both in young and old plants, mottled with decay spots. But the most singular distinction is the long creeping rhizome, with the stumps of old fronds very stout, shorter than in var. intermedium and not overlapping so much. Intermedium has a more or less assurgent rhizome. The same characteristics mark both young and old plants, nor are these peculiarities owing to different habitats, for I find specimens of these two varieties most markedly distinct and yet with their rhizomes in contact with each other.

I have sent specimens of the three to the Halifax Nursery, and have asked Mr. Harris (the younger J. H.) to keep one of the roots of dilatata for you.

If you should deem this worthy of bringing to the notice of the Institute, with the rhizome and frond (from Minudie, Cumberland Co.) to illustrate, it is respectfully submitted.

What I have here stated is for the most part not new, but a confirmation of former notice.

ART. III.—A NEW MINERAL (LOUISITE), FROM BLOMIDON, N. S.,
BY H. LOUIS, *Assoc. Royal School of Mines, London.*

(*Read December 9, 1878.*)

H.=6.5 G. 2.41. Vitreous. Leek-green. Translucent. Streak and powder white. Fracture splintery. Brittle. Diff. B. B. In an open tube yields water and becomes pale brown. On platinum wire fuses to a white vesicular enamel.

It gelatinises in and is completely decomposed by hydrochloric acid.

ANALYSIS.

Si O ₂	63.74
Al ₂ O ₃	0.57
Fe O.....	1.25
Mn O.....	trace
Ca O.....	17.27
Mg O.....	0.38
K ₂ O.....	3.38
Na ₂ O.....	0.08
H ₂ O.....	12.96

99.63

The formula appears to be, 12 Si O₂ 4 Ca O 9 H₂ O or perhaps, 3 Si O₂ Ca O 2 H₂ O.

Considering the water as basic, the latter formula may be written. 3 Si O₂ R O. 2 M₂ O where R O=Ca O Fe O Mg O and Mg O=H₂ O K₂ O Na₂ O.

The latter is, I think, the better view to take of its composition.

NOTE.—The Mineral was picked up by Mr. Robert Starr, of Cornwallis, when I was examining the Geology of Blomidon. I have suggested the name Louisite, in consideration of Mr. Louis's kindness in undertaking to analyse it. Prof. Dana remarks in reference to its composition, that if all the silica in it is combined, and none of it free, there is nothing like it in mineralogy.—Mr. Louis says that the silica is all combined.

Mr. Louis exhibited a beautiful specimen of Crystallization in

a tap-cinder from Londonderry Iron Mines. The multitude of Crystals thus formed are considered to be *Olivine*.

D. H.

ART. IV.—NOVA SCOTIAN GEOLOGY. BY THE REV. D. HONEYMAN, D. C. L., *Fellow of the University of Halifax, Curator of the Provincial Museum, Professor of Geology in Dalhousie College and University, and Lecturer on Geology in the Technological Institute.*

(Read Dec. 9, 1878.)

I HAVE received from the Rev. D. Sutherland, of Gabarus, (near Louisburg,) Cape Breton, an interesting specimen of fossiliferous sandstone. The locality where he found it is described as "At a fine spring of water that boils up out of the rock, at the roadside, on A. Walker's farm, Big Ridge, on the road from Marion Bridge, (Mira River,) to Gabarus, at about $1\frac{1}{4}$ miles, as laid down on Church's map, direct south from Marion Bridge." I have referred to Marion Bridge in my "Retrospect" of last session as the locality where Mr. H. Fletcher, of the Dominion Geological Survey, discovered interesting fossiliferous strata, which I referred to the horizon of the *Upper Lingula Flags of Wales*, on account of the occurrence of the Trilobite *Olenus alatus*, associated with *Agnostus*. Mr. Sutherland's specimen of fossiliferous sandstone indicates the width of a fossiliferous band $1\frac{1}{4}$ miles. If the series descends towards Gabarus, we may now have reached the horizon of the *Lower Lingula Flags*. The specimen of sandstone before me measures $2\frac{1}{4} \times 3$ inches; its thickness is from 5 to 4 tenths of an inch; it is metamorphic and subcrystalline. One of the sides is weathered; the other is fresh; both are covered with fossils. On the fresh side they are very beautiful. The forms are *Lingulellæ*. They are acuminate and subcircular. The acuminate forms range from a length $\frac{1}{10}$ and a width $\frac{3}{40}$ to $\frac{10}{40}$ in length and $\frac{7}{40}$ in width. The subcircular are in the proportion of $\frac{6}{40}$ to $\frac{5}{40}$; one appears to be circular, $\frac{3}{40}$ in diameter.

*Mr. Sutherland has sent to me, two other specimens. One is a

* May 10, 1879.