

Sum of 172

Principal Dawson
McGill College
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Kirkbank
Burnside Road
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Dear Sir

In case this letter gets too long for its contents I put first the only point involving a question & answer. When you were in this house I showed you what you at one pronounced hypersthene & a very fine specimen. It was that of the Skyl Cubullins. I have remembered since, that you expressed a pretty decided opinion as to the petrology of the Skyl hypersthene. I am anxious to get you to repeat your opinion to me, and to add what light you think your North American hypersthene rocks throw on those of Skyl. I was working out classification among the Cubullins after Forbes (Principal), and into some conclusions bearing on current controversies.

It was since you were here, that opinion among the Cubullins (now quite a brother of mine) I faced the question - what sort of rock are they built of?

The first idea was of altered sedimentary rock. I now know this conclusion to be arbitrary. Beds of volcanic ash are equally valid,

For they afford all that I saw as special
to the bedded aspect of the Cuchullins.

I still reserve decision till I revisit
Skyl & the Cumbrian hills in West
Ross & Sutherland. For if the Cuchullins
are altered anything, perhaps they are
allied to Sulven, Quinag, and other
mountains of dull red Cumbrian.

I read what Prof. Geikie says in
his *Physical Geology of Scotland* about the
Cuchullin hypersthene - also what he re-
ferred there to, in a former paper of his
in *Trans. Roy. Soc. Edin.* - also what Mr
Haughton says (cited by Geikie in same
connection) in *Geol. Mag.* some years ago.

Between the two the Cuchullin
hypersthene falls badly. It is a
doubtful Laurentian forliss (like). It
is metamorphosed ~~at~~ the age of the in-
jected trap dykes of Strath. (Geikie)

It is dygnite. (Haughton) "A
dygnite = augite + labradorite. Beds of
metamorphic rocks, with labradorite essentially
constituent, important part Laurentian in Canada,"
Haughton, "was glad to examine similar in situ."
Whereas Geikie has it that the

Skyl has been cut through & metamorphosed by
great hills of gneiss - that to the age of
the gneiss must be attributed metamorphism
of the Cambrian hypsitherium. Forbes, like
Leake, & McCulloch, clearly distinguish the
Red Hills (gneiss) from the Cambrian peaks
(hypsitherium) & Skyl. But Haughton, cited
by Glikie, deals with the Cambrian hypsitherium
there, as the gneiss. Among them
they effectively eliminate the element of
intelligibility: & leave the Cambrian as mythical
as ever. Barring the final comparison with
the Cambrian, I would now take it that
the Cambrian hypsitherium is volcanic. That
the gneiss masses seen, are the acidic
products; & the Cambrian, later, & super-
posed (eg Blaven) on the gneiss, are
the basic or pyroclastic products of a
very active volcanic centre. And that
the reiterated cutting up, & injection among
the basic masses, of injected lava, gives
the Cambrian hypsitherium its metamorphic,
reticulated, & some times even fractured
aspect. And it is quite open to assume
that the basic masses were ejected at
first in form of ash, & otherwise obvious.

In all this I am coming back to believe
that Forbes (& Macculloch?) is right about
the *Cuchullius*; & that Leslie & Haughton, are,
both, wrong, & opposed to each other.

I. Forbes in London, I only know
by his writings, but he would have some
weight in decision after an inspection.

Thanks for introduction to Manchester
Prof. Williamson. He is doing no kind of work
at Fleming's, you know. Inter alia studied
Diplomylon to be *Lepidoceras*. It is a pleasure
to find just to his mind, he is so keen in it.

Saw your son Joseph, twice at Excursion
Point. After Scot. Edinburgh last summer.
He appeared to me much stronger than
formerly, and went through Stiffish
hill work as he did not when in the town.

I mean to be at the *Cuchullius* again very
shortly, even next month if season favors, &
shall be all the better pleased with your reply
beforehand. In re volcanics, as precedes,
I do not talk at random. Shortly but carefully
I studied somewhat of Olduvium, the Pliocene fields, &
the *Ursus dolpatanus*: & kind, continually, the fossil
volcanics here & elsewhere in Scotland.

Yours sincerely
Geo. D. Brieve