

Smithsonian Institution
Washington City, Ap. 16th 1872.

Prof. Dawson

Dear Sir

I send you herewith a photograph and some ^{rough} sketches of a few fossil plants, in regard to which I would be glad to have your opinion. They are from about the horizon of the Old Red sandstone, in the mountains of Virginia, near the boundary line between Virginia and West Virginia. The photograph No. 1, is reduced about one-fifth diameter, and shows, under a magnifier, nearly as distinctly, the noctation, as the specimen itself. I have supposed it and the others to belong to sections of the genus Cyclopteris, as defined in your Monograph of Devonian and Upper Silurian plants. Will you be so good as to inform me whether or not you think it belongs to your group Archæopteris. It seems to me to belong near Cyclopteris (Archæopteris) Halliana. Do you not think so? I mean to the same subgenus - not to the same species.

Lesquereux thought so, on examining the specimens when here a few months since; but Dr. New-

berry, after a very hasty glance at them, not long since, expressed the opinion that this species is a Sphaeropteris.

The nervation, however, seems to me not to agree with that of that genus.

Do you not think the ^{larger of the} other two species related to your Arenites? They were found directly associated with the one photographed? The sketches will give you the general outline as far as seen, and I have marked in the nervation of ~~some~~ of the pinnules of each, as nearly as I can. In one of these ^{(sketch No 2),} latter, the rachis is smooth; but in No 3. it seems to be a little wrinkled transversely, as is also the case with that of No 1; which appears to be concave along the upper side. (Not seen in the specimen photographed.)

Would you regard such specimens as No 1, as fronds of a bipinnate form; or as the primary pinnulae of a ^{larger} tripinnate form?

I collected these specimens myself last summer; and while preparing a little paper on the geology of the locality, commenced studying these plants with no other intention than to identify the species

, supposing that they must have been described; but after
wading through all the works without finding any figures
or descriptions that seem to me to agree with them,
and believing them to be new, I have concluded to describe ^{the}
them, ^{in my little paper;} though I have not the slightest idea of entering
the field of fossil botany, beyond these few things that
chance has thrown in my way. Both Lesquereux
and Dr. Newberry agree in the opinion that they are
new, but as you are the recognized authority on
regard to the Devonian flora of this side of the Atlantic,
I thought I would consult you in regard to them.

I have been consulting Schimper, and it seems
to me his work must have been prepared very hastily.
He appears to have disregarded all rules of priority, and
evidently must consider dates of no consequence whatever.
He changes names in many cases where, ^{at least} in any other
department of natural history, it would certainly not
be allowed - such for instance, is his change of
your Auenites into Auenioides, and others in the same
way. Lesquereux thought Schimper's name Palaeopteris
ought to be retained, because he thinks Palaeopteris of
Gimetry is not a fern; but that seems to me to be

no reason whatever, for rejecting Grinith's name, provided the type for which it was proposed is a good genus. At least such is the rule followed in zoological nomenclature.

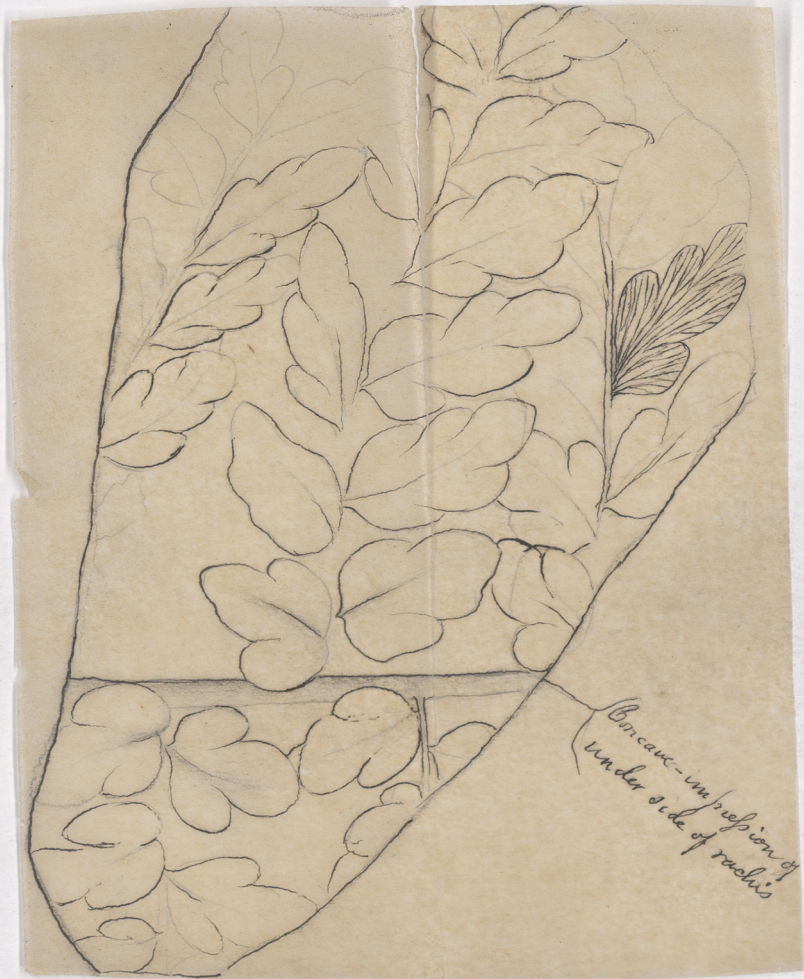
I also send a gutta-purchase cast of a Lepidodendron, found associated with the other plants. This is the character of the smaller branches—say one inch and a half to two inches in breadth, as flattened by pressure. It is extremely variable, however, some of the larger branches presenting markings more like Stigmaria, and, in still larger specimens, the surface becomes longitudinally furrowed, nearly like Sigillaria; while there are all intermediate gradations of markings. I do not mean to say that the specimens show intermediate gradations between these widely distinct types; but that the surface markings of what seem to me to be different parts of the same plant, simulate those of these several types. So far as I have been able to determine, the markings of which I send the cast, do not appear to agree with any you have figured.

I can send you^a a specimen of the species represented by the photograph; but not so fine a one as that; though such as will show its characters nearly as well.

If you will be so kind as to give me the benefit of your opinion in regard to these plants, it will afford me pleasure to give you due credit for the same. I forgot to say, ^{that} they occur associated with a very thin bed of coal.

Very truly yours
J. B. Meek

I have these plants in progress of illustration on stone



Concave-imp. of
rachis under side of rachis

Cyclopterus

(3) Alepharicus

? of Jubile Fund
of Mexican



(2)

Cyclopterus
Wopman
mk

Impatiens
rescurvans

No. 1.



You can retain the photograph and sketches, if you can about