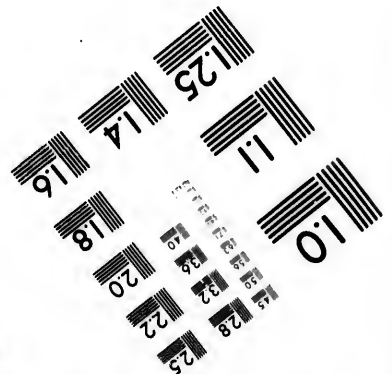
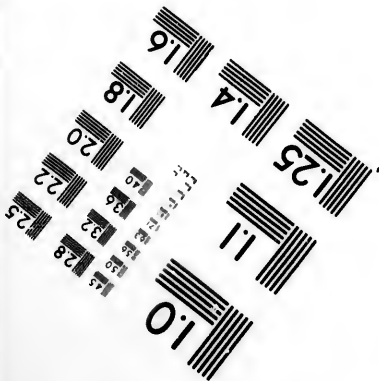
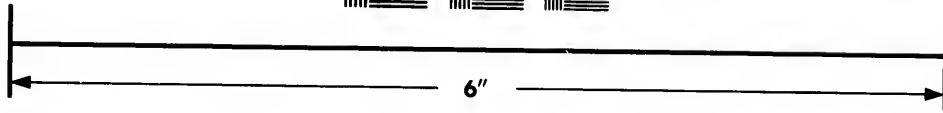
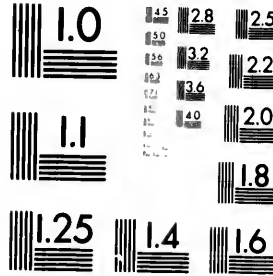


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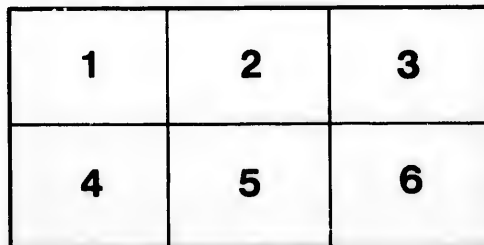
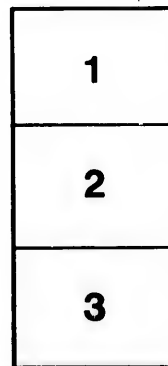
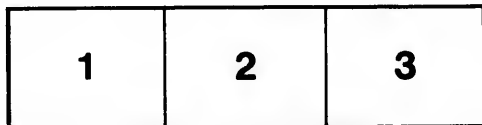
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[FROM THE AMERICAN JOURNAL OF SCIENCE, VOL. XXXVIII, JULY, 1889.]

ART. I.—*A new Erian (Devonian) Plant allied to Cordaites* ;
by Sir WM. DAWSON.

I HAVE recently, through the kindness of R. D. Lacoë, Esq., of Pittston, Pa., had an opportunity to study a remarkably fine specimen collected by him in the lower Catskill (Upper Devonian) at Meshoppen, Wyoming Co., Pennsylvania, and which promises to throw much light on some difficult questions of fossil botany, as well as to add a new and very interesting form to the Devonian flora. The present note is intended as merely a preliminary notice. The full discussion of this unique plant will require a reference to much of the work that has been done in *Cordaites*, *Næggerathia*, etc., from the time of Sternberg to the recent reports of Lesquereux and Fontaine, and I hope will illustrate a number of fragmentary and enigmatical specimens which have long been in my own collections, and which need further study in connection with it.

The specimen is a branch or small stem $2\frac{1}{2}$ cm in diameter and 46 cm in total length. It is flattened and pyritised, and shows, under the microscope, merely the indications of a pith surrounded by a fibrous envelope, the minute structure of which is not very well preserved, but it is hoped by proper treatment may give some further information. The stem shows portions of about 15 leaves which have been at least 16 cm long and 3 to 4 cm broad. They are decurrent, apparently by a broad base, on the stem. Their distal extremities are seen in a few cases, but in all seem injured by mechanical abrasion or decay. It seems most probable that they were truncate and uneven at

their extremities. The stem is terminated by a cluster or compound corymb of spikes of which 20 are seen. They are slender, but seem to have been stiff and woody, and the largest are about 15^{cm} in length. They have short pointed bracts, and some of them bear oval fruits, but only a few of these remain, the greater part of them having apparently fallen off before the plant was fossilized. So far the characters do not differ



from those of the genus *Cordaites*, except that in those plants the spikes of fructification are more usually lateral than terminal. A remarkable peculiarity, however, appears in the leaves, which instead of having the veins parallel, have them forking at a very acute angle, and slightly netted, by the spreading branches of the veins uniting with the others near them. This allies the leaves with those of the provisional genus *Næggerathia*, some of

which belong to the genus *Cordaites*. It is out of the question to name *Cordaites* as near Eury in name *D.*

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which have this peculiarity, as also certain modern Cycads of the genus *Zamia*, which Professor Penhallow has kindly pointed out to me. The present plant would seem to be a form of *Cordaiteæ*, tending to *Næggerathia*, which many paleobotanists believe to have been a gymnospermous genus allied to *Cordaites*. The affinities, however, so far as can be judged, are nearer to the latter; and following the example of Grand Eury in his nomenclature of the genera, I would propose the name *Dictyo-cordaites* for the present genus, and the specific name *Lacoi*, in honor of its discoverer.

It is apparent that this specimen combines the fructification of the *Cordaiteæ* with leaves akin to those of *Næggerathia*, thus connecting two groups of paleozoic plants, both of which are now considered as allied to *Cycadeæ* and *Taxineæ*, and I entertain the hope that when it is fully studied and brought into comparison with other specimens in my collections, or which have been figured and described by other paleobotanists, it will throw additional light on a great number of Paleozoic Canadian leaves, fruits and stems, now designated as *Cordaites*, *Næggerathia*, *Psymnophyllum*, *Gingkophyllum*, *Sternbergia*, *Lepidoxylon*, *Saportea*, etc.; and which have been waiting for some specimen thus complete to bring them into harmony with each other.

I hope to be able to bring the whole of this material, which will necessitate some change in the nomenclature of some of my own species, under the notice of geologists at the approaching meeting of the American Association.

I may add that the oldest true *Cordaites* known to me is *C. Robbii* of the Middle Devonian, which is said to have also been found in the Silurian. *C. angustifolia* of the Lower Devonian is a somewhat uncertain species. Plants of the genus *Næggerathia* are known in the Upper Devonian.

EXPLANATION OF FIGURE.—*Dictyo-cordaites Lacoi*, much reduced. (a) Venation of leaf, natural size. (b) Fruit enlarged.

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