Note on the Beds affording the Devonian Insects described by Dr Scudder. By Principal Dawson, LLD &c.

The beds affording these remains ~~have~~ occur in the vicinity of the City of St John, New Brunswick and are well exposed in the shores of Courtney Bay on the East side of the City and at Duck Cove Lancaster on its Western Side. They consist of Sandstones, Shales and Conglomerates having an aggregate thickness of about 7500 feet,* as shown in the following Section:— (Order ascending)

1. Bloomsbury Conglomerate — Reddish gray Conglomerate with intercalated hard red shale — 500 ft

2. Dadoxylon Sandstone (Lower part of Little River Group in Acadian Geology) — Gray Sandstone and grit with beds of gray and black graphitic Shale — Fossil Plants, Crustaceans & Insects — 2800 ft

3. Coalitic Shales (Upper part of Little River Group) Green, Red, Gray and Black Shales with beds of Sandstone and Conglomerate, Fossil plants, — 2400 ft.

4. Musquash Conglomerate. Red Conglomerate and Shale — 1800 ft.

* Report E Bailey and Matthew Geol Survey of Canada 1871. In the Acadian Geology the thickness is given at 9500 feet; but later observations have reduced the thickness of the lower members.

In the vicinity of St John these beds rest on Cambrian rocks of the Acadian (Menevian) group and are overlain unconformably by Lower Carboniferous ~~Da~~ Carboniferous Conglomerates which in these localities Eastward are associated with the Albert Shales holding fossil fishes and plants of characteristic Lower Carboniferous types. Elsewhere in Southern New Brunswick they overlie Lauentian and Huronian rocks, and are seen to rise unconformably from beneath the Carboniferous beds of the great central Carboniferous area of New Brunswick. They are everywhere much more disturbed and altered than the Carboniferous rocks and Messrs Bailey and Matthew have shown that it is probable that the ~~Eruptions~~ intrusive masses & dykes of pre-Carboniferous granite occurring in Southern New Brunswick were erupted subsequently to the deposition of these beds.

~~These beds &~~ The vegetable fossils of this formation are very numerous. Those catalogued and described from there upwards of 80 species of plants

of the genera Dadoxylon, Sigillaria, Calamites, Archaeopteris, Lepidodendron, Cordaites, Psilophyton, Neuropteris, Sphenopteris Hymenophyllites, Pecopteris &c, the whole constituting a well marked Devonian assemblage quite distinct from the Upper Devonian Flora of Perry in Maine which is perhaps newer than the Oneota conglomerate and still more distinct from the Lower Carboniferous Flora of New Brunswick and Nova Scotia, while it is on the other hand incomparably better developed than any known flora of Upper Silurian age. Owing to the richness of this flora, and the fact that in North America the Devonian Flora immediately antedates that of Europe, most European palaeontologists have been unwilling to admit the Devonian age of this formation; but entirely without good reason.

The crustaceans imagined in these beds are Eurypterus pulicaris Salter, Acuminipeltis paradoxus Salter,

a precursor of the Stenacanths, and a Pygidium of a small Trilobite, unfortunately too imperfect for determination; and a species of Spirorbis. No other aquatic animal remains have been found in these beds, which must have been deposited under conditions not very dissimilar from those of the Coal-Measures.

It is difficult to correlate the subdivisions of the Devonian in Nova Scotia and Eastern Canada with those in the great Erian area of New York, owing to the absence of the Marine limestones so largely developed in the latter. In my Report on the Fossil plants of the Devonian and Upper Silurian of Canada* I have suggested that the Dadoxylon Sandstone and Carbonaceous Shales may be equivalent to the Hamilton group of New York and Ohio which has yielded trunks of tree-ferns and conifers of the genus Dadoxylon (Araucarioxylon)

In the Report above cited and in my Acadian Geology will be found details of the plant-bearing beds

* Geol. Survey of Canada, 1871

derived mainly from the careful and laborious researches of the late Prof Hartt and descriptions and figures of the ~~Vegetable~~ fossils,

From Prof Hartt's detailed sections I give below the portion of the Series containing the insect remains*. The order is ascending:—

Black arenaceous shale, with many fossil plants	1 ft	
Gray sandstone & flags, remains of plants	2 "	6 ins
Black arenaceous shales	—	11 "
Flaggy gray sandstone, remains of plants	2	—
Soft gray shales, fragments of plants	4	—
Hard gray and black shale, very numerous plants, also Sarcopteris feticaris, Amphipelites paradoxus and fragments of Trilobites, Insect wings	1 "	—
Compact Flaggy Sandstone	5 "	10 "
Gray and black shale, many plants	—	10
Coarse sandstone, obscure Stemberginæ & Calamites	6 "	6 "
Soft shale & Sandstone, Calamites,	— "	37 "
Sandstone	2	3 "

* Acadian Geology Pp 516 et seq.

	ft.	ins
Shale — obscure plants	0	22
Sandstones	4	10
Sandstone & Shale (~~Calamites & Cordaites~~)	0	9
Sandstone & Shale	5	10
Light greenish coarse shale, Fern stems, Cordaites & obscure markings	0	7
Sandstones & coarse shales	18	9
Coarse shales, Numerous plants	1	0
Sandstone	9	6
Soft fine-grained light greenish shale, many plants, & Spirorbis	0	6
Compact flaggy sandstones & shales, plants	8	0
Fine-grained light coloured shale, many plants	2	0
Sandstones & Coarse shales many plants	5	0
Shales of various quality, abundant plants, ~~coal seams~~		
Compact sandstone & Coarse shales	3	0
Sandstones & shales many plants	1	10
Sandstones and Coarse shales, plants	26	0
Fine-grained light shale	1	0
Sandstone & shales, Calamites	23	0

In the finer shales of this section the remains of plants are very perfectly preserved the most delicate leaves being represented by films of graphitic carbon showing the veinings as well as the ~~form~~ outline of the fronds as if in pencil drawings on a dark gray ground, and the finest lines are preserved in the same manner.

1st Copy Note
D Scudder
on Insects

Published
Unk