

XXX.—*On some additional Palæozoic Bivalved Entomostraca from Canada.* By T. RUPERT JONES, F.G.S.

To the Editors of the Annals of Natural History.

GENTLEMEN,

Within the last week, Mr. E. Billings, Palæontologist of the Geological Survey of Canada, has, at Sir W. E. Logan's request, submitted for my examination a series of Silurian bivalve Entomostraca from Canada, which comprise far better individuals than any that I had previously seen.

This collection includes specimens of *Leperditia* from two localities; namely, 1. The east side of St. Joseph's Island, Lake Huron; and, 2. East Point, Anticosti.

No. 1. A small specimen of grey Trenton limestone, containing a Bryozoon, and weathering yellowish, bears a right valve, $\frac{2\frac{1}{2}}{40}$ inch long, and $\frac{1\frac{3}{4}}{40}$ inch broad; and there is a separate perfect carapace of the same form ($\frac{1\frac{1}{4}}{40}$ inch thick) from the same limestone. The valves are of a light-brown colour; the eye-spots are indistinct; the radiate markings of the muscle-spot are more visible on the left than on the right valve; the overlapping ventral edge is neither straight, nor symmetrically curved; the general form of the lower half of the carapace is rounded and bulky.

No. 2. A piece of light-grey limestone (of the Upper Hudson River group) bears on its weathered surface Encrinital ossicles and eleven separate valves of a *Leperditia* of different sizes; and there is a separate perfect carapace of the same form (half an inch long, $\frac{1\frac{3}{4}}{40}$ inch broad, $\frac{8}{40}$ inch thick). These specimens have a rather short hinge-line, a well-marked ocular tubercle, and a muscle-spot visible only by its slightly darker tint. In some instances these valves appear to have a peculiar delicacy of make and substance; they slope rapidly from the central convexity; the ends of the carapace are thin; and the overlapping part of the right valve is distinctly central and neatly curved. This form (No. 2) differs from that of No. 1 in having a shorter hinge-line and a more prominent eye-spot; in the apparent absence of external radii to the muscle-spot; in the somewhat more delicate substance of the valves; in the less thickness of the carapace, in its attenuated edges before and behind, and in the symmetrical curvature of the overlapping ventral edge.

The St. Joseph's form more nearly resembles the large variety of *Leperditia Canadensis* (Pl. IX. figs. 16 & 17) than do the Anticosti specimens; and, as I did not feel authorized to separate specifically the little Grenville varieties, that from Louck's Mill, and that of Allumette, neither can I regard, at present, these

comparatively large and well-grown specimens as belonging to another specific type. This Trenton form, which I propose to term *L. Canadensis*, var. *Josephiana*, may possibly be the same as Conrad's *L. fabulites*; if so, his name has priority.

The neatly shaped *Leperditia* from Anticosti more nearly resembles its almost gigantic allies of Sweden* than do any other American *Leperditia* that I have seen. Still it is not without good points of relationship with *L. Canadensis*; and, for the present at least, I propose to term it *L. Canadensis*, var. *Anticostiana*.

In the series brought me by Mr. Billings there are several specimens of *Leperditia*-rock from the Chazy limestone† of L'Orignal, Canada.

No. 3. Amongst these I recognize, in fragments from "near the N.W. corner of the township of L'Orignal, C. W.," the *Isochilina Ottawa*, under similar conditions to those in which it occurs at the Grenville Canal, except that in one specimen it is associated with a *Modiolopsis*-like shell. I have only to remark, that, when the shell is broken off, the casts of the valves show a distinct muscle-spot (concave on the inner side of the valve) with numerous radii.

No. 4. Several specimens of a dark-grey limestone, labelled "1 mile west of L'Orignal," are rich in valves (separate) of a handsome *Leperditia*, which, at first sight, has much the aspect of *Isochilina Ottawa*; but it is larger, blacker, has a proportionally shorter hinge-line, the hinder portion of the valves being boldly and obliquely rounded, forming about one-third the length of the carapace; and, though the valves have a marginal rim, this is only on the two ends, being wanting below, where the middle third of the ventral border is turned in, overlapping on the right, and overlapped on the left side. The surface is smooth; the eye-spot prominent, and accompanied by a slight, irregular nuchal furrow; muscle-spot indistinct. The carapace is $\frac{8}{20}$ in. long, $\frac{5}{20}$ in. broad, and $\frac{3}{20}$ in. thick, and most convex at the anterior third.

Though numerous in the rock, the individuals are not massed together in layers, as the *Isochilinae* are at L'Orignal, Grenville, and White Horse Rapids. I propose to distinguish this well-marked species by the name of *Leperditia amygdalina*.

I take this early opportunity of correcting some important

* Annals Nat. Hist. 2 ser. vol. xvii. p. 85. pl. 6.

† This stratigraphical horizon is nearly coincident with that of the "two-foot limestone" and *Isochilina*-bed described in the April No. of the 'Annals,' pp. 245 and 248, as being at or near the summit of the "Calcareous Sandrock."

mistakes in the references to Plate X. in my paper in the April No. of the 'Annals.'

At page 250, line 7 from top, for figs. 10, 11, read figs. 8, 9.

line 16, for 10 & 11 read 8 & 9.

line 24, for 7-9 read 7, 10, & 11.

At page 251, line 4 from top, for 8 & 9 read 10 & 11.

I am, Gentlemen, yours &c.,

T. RUPERT JONES.

Geol. Soc., Somerset House,

April 8, 1858.

XXXI.—On the Canellaceæ. By JOHN MIERS, F.R.S., F.L.S.&c.

HAVING been engaged for a long time in the study of the *Clusiaceæ*, I have been led to examine the several genera that have been referred at different periods to that family, and in this manner *Canella* and *Cinnamodendron* came under my especial notice. The former genus was arranged by DeCandolle and Choisy in *Guttiferae*, but it was partially separated from the order by Martius and Endlicher, and made the type of a sub-order of that family under the name of the *Canellaceæ*, associating with it *Cinnamodendron* and *Platonia*. It will, however, be seen that *Canella* has no relation with *Platonia*, but that its real affinity tends towards the *Winteraceæ*. I will therefore proceed to state my reasons for this conclusion, will expose the characters of both groups, and describe their genera severally.

This small family consists only of the two genera above mentioned, *Canella* and *Cinnamodendron*. They form evergreen trees, with a bark possessing the taste and smell of cinnamon; they have a copious foliage of alternate, somewhat fleshy, exstipulate leaves, which are furnished with dotted glands, and have a taste similar to that of the bark: the flowers are small, in short axillary or terminal corymbs, having a persistent calyx of 3 sepals, 5 petals with dotted glands, or sometimes 10 petals in 2 series, extrorse monadelphous stamens, a unilocular ovary with two or more parietal placentations; a small, baccate, 1-celled fruit, containing a few black, shining, reniform seeds having a parietal attachment. Many of these characters are possessed by the *Winteraceæ*, from which the *Canellaceæ* differ in the union of their stamens into a monadelphous tube; in the shape and disposition of the anther-cells; and in lieu of several distinct carpels, they have only one solitary unilocular ovary, with 2 to 5 parietal placentations. In the former family, whether there be several ovaria, or whether by abortion they be reduced to one, these, although 1-celled, invariably exhibit a single placentation along the ventral face.



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