

The pinnules are rather larger, more narrow and more pointed upward than in Heer's specimens. It may be described as follows: Bipinnate, or tripinnate, pinnules elongate, free or united only at the base, lanceolate, slightly curved upward, 15 millimetres long and 4 to 5 broad, entire. Midrib slender, giving off veins at an acute angle and which are dichotomous. The species is widely distributed in time and space, and our specimens are probably of one of its varietal forms.

Collected by G. M. D. near Canmore, Rocky Mountains.

2. *Cycadaceae*.

DIOONITES BOREALIS, Dawson. (Plate I. Fig. 2.)

Cretaceous and Tertiary Floras, Transactions of the Royal Society of Canada, Vol. I. Sec. IV, p. 24, Pl. III.

This species was described in the memoir above cited from a specimen collected by Mr. R. G. McConnell, at Willow Creek, in beds known to be Cretaceous, but of uncertain horizon. Additional specimens, collected at Martin Creek by Dr. G. M. Dawson, show that the frond contained twenty or more pairs of pinnules nearly at right angles to the midrib below, but above curving upward to an angle of 30°. The pinnules are 10 to 15 millimetres broad and with 15 to 20 veins.

This frond might be referred to the provisional genus, *Pterophyllum*, but its characters are so much those of *Dioon* that I have no hesitation in giving it the generic name indicating this affinity, and the association of *Dioon*-like fruits with similar leaves in the Lower Cretaceous of the Queen Charlotte Islands confirms the reference. The genus is elsewhere in the northern temperate regions characteristic of the Wealden and other beds at the base of the Cretaceous, but it extends into the Middle Cretaceous and still exists in Mexico.

Collected by G. M. D.

PODOZAMITES LANCEOLATUS, Lindley. (Plate I. Fig. 3.)

Zamia lanceolata, Lindley and Hutton.

Leaves undistinguishable from those of this world-wide species occur in all of the collections from the beds of the Kootanie group throughout its range, and contribute, by their abundance in some layers, to give a Jurassic character to the whole. It is regarded as a Jurassic type, though varieties or sub-species belonging to or allied to it extend into the Urgonian or Lower Cretaceous. This species has been recognised in England, in Sweden, in Siberia, in India, and in China; and Heer, apparently with reason, identifies with it *P. distans* and *P. Eichwaldii*, of Schimper, and *Zamites Hauseri*, of Ettingshausen. The specimens from Martin Creek, and from Coal Creek, Crow's Nest Pass, are very good and characteristic, and belong to the ordinary variety. Var. *latifolia* occurs at Martin Creek, and a narrow variety at the Middle Branch of the North Fork of Old Man River. This may be regarded as the most characteristic form in the Kootanie series, and is the more valuable, as nothing resembling it is known to occur in the flora of the Upper Cretaceous.¹

Collected by G. M. D. at Martin Creek, N. Kootanie Pass, etc.

¹ In his Report of 1883, Lesquereux has noticed several leaflets from the Dakota group referable to this genus.