

modern *Viburnum opulus*, and the leaf is scarcely distinguishable from leaves of that species taken from young and vigorous shoots, except in the auricles at the base.

Collected by G. M. D. at Shaganappi Point, near Calgary.

*VIBURNUM CALGARIANUM*, S. N.

Leaf simple, nearly round, obtusely toothed at margin. Venation as in *V. rotundifolium*, Lesquereux, except that the ultimate venation is much coarser. The marginal teeth are also much more rounded, being merely waves of the edge.

This leaf is very near in general appearance to that described in my former memoir as *Abies insignis*, from the Cretaceous of Vancouver Island. I believe, however, it is quite distinct.

Collected by G. M. D. at Shaganappi Point, near Calgary, Upper Laramie.

In the same beds with the above species are oval drupelets of the structure of those of *Viburnum*, and which may have belonged to the same plants from which the leaves were derived.

*SALISBERIA*, Sp.

Fragments of a flabellate leaf, similar in form and size to that of the modern ginkgo, and also nuts, occur in the sandstones of Shaganappi Point.

V.—GEOLOGICAL RELATIONS OF THE FLORAS.

In my memoir in the first volume of the Transactions of this Society, I have given a table of the Cretaceous formations of the western Northwest Territories of Canada, prepared by Dr. G. M. Dawson, and have fully stated the geological position of the plants at that time described. The new facts above detailed now require us to intercalate in our table three distinct plant-horizons not previously recognized in the western territories of Canada. One of these, the Kootanie series, should probably be placed at the base of the table as a representative of the Urganian or Neocomian, or, at the very least, should be held as not newer than the Shasta group of the United States Geologists, and the Lower Sandstones and Shades of the Queen Charlotte Islands. It would seem to correspond in the character of its fossil plants with the oldest Cretaceous floras recognized in Europe and Asia, and with that of the Komé formation in Greenland, as described by Heer. No similar flora seems yet to have been distinctly recognized in the United States, except, perhaps, that of the beds in Maryland, holding cycads, and which were referred many years ago by Tyson to the Wealden.

The second of these plant-horizons, separated according to Dr. G. M. Dawson, by a considerable thickness of strata, is that which he has called the Mill Creek series, and which corresponds very closely with that of the Dakota group, as described by Lesquereux, and that of the Atané and Patoot formations in Greenland, as described by Heer. This fills a gap, indicated only conjecturally in the table of 1883. Along with the plants from the Dunvegan group of Peace River, described in 1883, it would seem to represent the flora of the Cenomanian and Turonian divisions of the Cretaceous in Europe.

Above this we have also to intercalate a third sub-flora, that of the Belly River series at the base of the Fort Pierre group. This, though separated from the Laramie proper by