

essentially identical, and one might well be led, at first, to question if they are not, after all, only one form of the same species. But the number of pits which characterize the radial walls of the ray cells, the number of rows of pits on the radial walls of the tracheids, and the size and form of the pits on the tangential walls of the summer tracheids, point with certainty to specific differences, and the fossil is, therefore, described under a new name, for which purpose that of the province seems to be appropriate.

GENERAL CONCLUSIONS.

The character of the material discussed in the foregoing studies, leaves very little room for any conclusions which would be of value in stratigraphical determinations.

The specimen of *Picea* offers only one of a very few examples of the occurrence of cones of this genus in Cretaceous deposits. Berry has recently shown the existence of beautifully preserved cones of *Picea cliffwoodensis* in the Upper Cretaceous of New Jersey.¹ These he regards as comparable with the cones of *P. excelsa*. They, however, offer no points of comparison with *P. albertensis*, inasmuch as they are much larger and more linear-oblong.

As already noted, Penhallow has recorded the sparing occurrence of cones of *P. columbiensis* in the Tertiary of Kettle River, British Columbia. Knowlton has found cones of *P. harrimani*² in the Upper Eocene of Kukak Bay, Alaska, a form which is in no sense comparable with *P. albertensis*, though it presents many features strikingly similar to those of *P. cliffwoodensis*.

It may be recalled in this connection, that the foliage of what are at present regarded as distinct species—*P. tranquillensis*, Penh., and *P. quilchensis*, Penh.,³ — has been obtained from the Tertiary of the Tranquille River and from Quilchena, B.C., and there is no present evidence to show that the more recently observed cone from the Cretaceous of Alberta, is not related to one of them, rather than to *P. columbiensis*. If these two were to be regarded as specifically identical, it would be possible to recognize a wider geological range for the species than has heretofore been known; but in the absence of external characters in the Alberta specimen, such a correlation would be unsafe.

Cupressoxylon macrocarpoides, Penh., has been determined on previous occasions, to be common to both the Tertiary and Cretaceous,⁴ and its present occurrence in Cretaceous deposits,

1. The Flora of the Cliffwood Clays, Geol. Surv. N.J., 1905.

2. Fossil Plants from Kukak Bay Harriman Expd., 1904, iv, 150.

3. Report on the Tertiary Flora of British Columbia, Geol. Surv. Can., Monogr. 1908.

4. N. A. Gymnosperms, Penhallow, 238.