

II.—REMARKS ON SOME FEATURES OF THE KENTUCKY FLORA.
BY THE LATE PROFESSOR GEORGE LAWSON, LL. D.,*
of Dalhousie College, Halifax, N. S.

(Read December 11th, 1893.)

Having received a set of the extensive collection of plants made in the south-eastern part of the State of Kentucky during the past summer by Mr. T. H. Kearney, Jr., of the Botanical Department of Columbia College, New York, Dr. Lawson embraced the opportunity to show some of the more remarkable species to the members of the Institute, and to point out some of the prominent resemblances and differences in feature between the Kentucky and Eastern Canadian floras.

The most striking feature of the Kentucky flora to a Nova Scotian or Eastern Canadian botanist, is the presence of noble arboreous forms that do not extend northerly so as to spread into Canada, and others that only touch its southern limits, about Lake Erie and the western part of Lake Ontario. Such southern forms, represented in Mr. Kearney's collection, are seen specially in the magnificent magnolias, of which three species were shown, viz., *Magnolia Fraseri*, *M. macrophylla*, with leaves a foot or more in length, and *M. tripetula*. These are the remnants of a genus at one time widely spread over the American continent, as shown by comparatively abundant fossil remains that have been found even in the arctic regions, but which in later time, presumably as the result of climatic change, retreated to the south. The specimens of the last named species had ripe fruit, with the remarkable pendent seeds, the nature of the thread-like connection between the fruit and seeds being described and illustrated by figures from Schnitzlein's *Iconographia* and the *American Sylva*.

* This short account of a communication made to the Institute by the late Professor Lawson, on the 11th December, 1893, and never completely elaborated, has been found among his manuscripts. Though written for insertion in the Proceedings, it is printed here without change.

The following synonymy of these magnolias is gleaned from Index Kewensis, vol. iii :—

Magnolia Fraseri, Walt. Fl. Carol., p. 159. *M. auricularis*, Salisb. Parad. Lond., t. 43. *M. auriculata*, Desr. in Lamarck's Ency. iii, p. 673. *M. pyramidata*, Bartram ex Pursh Fl. Am. Septent., ii, p. 382.

M. macrophylla, Michaux, Fl. Bor. Am., I, p. 328. *M. Michauxiana*, Hort. ex D. C. Syst., I, p. 455.

M. Umbrella, Desr. in Lamarck's Encyc., iii, p. 673. Hook. and Jacks, Ind. Kew., p. 146, 1. *M. frondosa*, Salisbury, Prod., p. 379. *M. Umbellata*, Hort. ex Stendel, Nom. ed. 2, ii, p. 90. *M. Virginiana*, Linn. Sp. Pl., 535 = (*acuminata*, *glauca*, *Umbrella*). *M. tripetala*, Linn. Syst., ed. 10, p. 1082.

The Kentucky Oaks shown were of three species, *Quercus alba*, valuable for its timber; *Q. Prinos*, called chestnut oak from the resemblance of its leaves to the true (not horse) chestnut (*Castanea*), and whose thick furrowed bark is used for tanning; and, lastly, *Q. tinctoria*, the quercitron oak, which, as the name indicates, is used by the dyer as well as the tanner.

The southern beech (*Fagus atropunicea*), although obviously related to our Canadian *F. ferruginea*, which forms the bulk of the original hardwood forest in many parts of Nova Scotia, is nevertheless quite a different tree, and instead of having a more ample foliage, as we might expect in the southern form, has even smaller leaves than ours. The European beech, *F. sylvatica*, was probably as abundant in western Europe in early times as our Canadian beech is still along the Atlantic seaboard, and it is difficult to separate it as a species.

The only maple in the collection is *Acer Rugelii*.

The red-bud, or Judas tree, was named *Cercis Canadensis* by Linnæus at a time when the geographical limits of "Canada" were rather vague. New York State embraces its most northerly range.

Kalmia latifolia, also, must be relegated as a southern (although a mountain) plant. From its northern range in the

United States, it seems difficult for American botanists to realize that it does not extend into Canada through some of the valleys that connect the two countries. It was attributed to Canada by Michaux. Like the *Cercis*, it was included in Hooker's *Flora Boreali-Americana*, an authority of Pursh; and even in Dr. Asa Gray's last and greatest work, the Synoptical Flora, it was recognized as Canadian. The fact is, however, that we have no actual evidence of the occurrence of this species in British America. The only definite record to the contrary is that of Mr. B. Billings, Jr., who thirty years ago included the name in a list of Prescott Plants published in the Annals of the Botanical Society of Canada. Mr. B., however, found, some some years later, that he had mistaken a broad-leaved form of *K. angustifolia* for the more southern species. That the southern limitation of certain woody plants is not due to unsuitable climatal conditions in the north at the present time is shown by the readiness with which such plants grow when planted, as in the case of the southern *Rhododendron Catawbiense*, which has flourished in a remarkable manner at Lucyfield, near Halifax, growing freely, and forming thickets of from ten to fifteen feet in height, blossoming abundantly, and spreading itself by seed to adjoining grounds. Indeed it is a much more robust plant and more rapid grower than the native *R. maximum*, which seems to be now almost extinct in Nova Scotia, and to have become very rare in the Province of Quebec. At Lucyfield, *Rhododendron ponticum* has not survived, although large numbers have been planted, while *Azalea pontica* that grows with it in beech woods in the Caucasus, is perfectly hardy and grows as vigorously as any native bush.

Of other plants in Mr. Kearney's collection may be noticed the oil nut, *Pyrularia pubera*; sassafras (the *Laurus Sassafras* of Linnæus, *Sassafras officinale* of Nees and Esenbeck, and of the forthcoming volume of Hortus Kewensis), the fruit as well as the bark of the root of which yields sassafras oil. This species, although indicated in books such as Lindley's Flora Medica, as growing generally in "woods of North America from Canada to

Florida," is really essentially southern in its range, occurring sparingly on the banks of the Humber near Toronto, (only one bush six or seven feet high was seen in 1860,) and a few other favoured spots in the extreme southern parts of the Province of Ontario.

There is also the spice-bush, *Lindera Benzoin*, of Meissner in DeCandolle's Prodrromus, and of Hortus Kewensis, iii, p. 89, located in the latter as "Am. Bor." This is not Adamson's genus *Lindera* (1763), now referred to *Myrrhis*, Tourn., (Umbelliferæ), but that established later by Thunberg, Diss. Nov. Gen., iii, p. 44, (1783). This is the *Laurus Benzoin* of Linnæus, Sp. Plantarum, p. 370, amplified by Michaux in the Fl. Bor. Am. into *L. pseudo-Benzoin*, for the obvious purpose of preventing confusion of this lauraceous plant with a conspicuous one belonging to the Styracaceæ, viz., the Siamese *Styrax Benzoin* of Dryander (Phil. Trans., lxxvii, 308, t. 12,) which yields gum benzoin, and was called *Benzoin officinale* by Hayne. (Buchanan-Hamilton used the name *Laurus Benzoin*, according to Wallich's Catalogue of Indian plants, for *Cinnamomum obtusifolium*).

Our American plant, which forms a bush from eight to ten feet high, was named *Benzoin odoriferum* by Nees von Esenbeck (Laurin., 497). The berries yield an aromatic oil; the wood and bark are also highly aromatic, and, as this plant is said to have been used in the United States during the first American war, as a substitute for allspice, it may be responsible for the American tradition of wooden nutmegs. It is known by the several names of spice-bush, spice-wood, spice-berry, fever-wood, &c. Dr. Lindley, in Flora Medica, indicates its range thus: Low moist places, damp shady woods, from Canada to Florida.

Rhus copallina, Sumach.

Azalea lutea.

Vitis aestivalis.—The Summer Grape. The bunches bore bunches of ripe fruit, from the seeds of which plants are being raised for comparison with more northern forms.

Ilex opaca.—The American Holly, a species that closely resembles in habit, its bright shining evergreen foliage, the

English Holly, with which it is often cultivated in English gardens.

Stuartia pentagyna was named by Linnæus in compliment to John Stuart (Lord Bute), who was a prominent patron of botany in his time, and author of a remarkable book, of which some account has been recently given in the Journal of Botany.

Diospyros Virginiana.—The Date Plum, with large ripe fruit on the specimens, like ordinary plums in size and form.

Resemblance to our Nova Scotian flora is seen in the occurrence, in southern Kentucky, of *Rhododendron maximum*, the magnificent species brought from Ship Harbour, N. S., by the late Robert Morrow, many years ago (the history of which is given in our Transactions), and of such plants as *Vaccinium stamineum*, the widely spread *Viburnum acerifolium*, found by Cormack and De la Pylaie in Newfoundland, Richardson and Drummond from Lake Huron to the Saskatchewan, and Scouler and Douglas at Vancouver, and other species of which specimens were exhibited. Several of the ferns are identical with Nova Scotian species, such as *Lastrea Noveboracensis* and *Polypodium vulgare*, two of our common species, and the rarer *Asplenium Trichomanes*. There is also the Walking-leaf Fern, which, although generally regarded as a southern species, occurs in several parts of Ontario, as at High Falls, Portland Township, Oxford, Hamilton, Ancaster, Lake Medad, Wolfe Island, Owen Sound, and Ottawa,—having been also found at Montreal. Mr. Kearney's collection includes the beautiful and still more southern mountain spleen-wort, *Asplenium montanum*, of which fine, large tufts were shown.