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RHODODENDRON CAROLINIANUM, A NEW RHODODENDRON FROM NORTH CAROLINA.

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FOR a year we have cultivated at the Arnold Arboretum a *Rhododendron* which was received from the nurseries of Harland P. Kelsey of Highlands, North Carolina, under the name *Rhododendron punctatum*. Growing side by side with the *R. punctatum* Andrews brought over from the Botanic Garden in Cambridge where it was introduced from the South about 60 years ago probably by Asa Gray, the two plants present marked differences at the first glance. The plant from North Carolina forms a low compact bush with broad leaves, flowering after the middle of May before the development of the shoots of the year, while the other plant which agrees exactly with the form figured by Andrews and cultivated formerly in European gardens,¹ is a taller loose-growing shrub with narrower leaves, and it flowers about four weeks later, when the young shoots springing from below the inflorescence are already developed and overtop it. Generally the differences as regards habit, shape of the leaves, time of flowering and also the shape of the corolla are about the same as those between *R. catawbiense* and *R. maximum*, only in a lesser degree. In examining the available herbarium material I find that both forms are native to the southern Atlantic States; the low compact form being apparently restricted to the high mountains of North Carolina, while the other form inhabits lower altitudes and has a wider distribution.

¹ The plant now in cultivation in Europe as *R. punctatum* seems to be a hybrid between *R. punctatum* and *R. ferrugineum*.

The Rhododendron generally known as *R. punctatum*, was discovered in 1788 by Michaux on the banks of the Savannah River and in 1792 briefly described under the name *R. minus* (in Jour. d'Hist. Nat. I. 412) in the following words: "Rhododendron minus, foliis minoribus ellipticis petiolatis subferrugineis. Se trouve sur les rives de la rivière de Savannah." Though the description is rather short, the species is sufficiently characterized, particularly by the description of the leaves as subferrugineous, since the two other species of the Atlantic States known to Michaux, *R. maximum* and *R. catawbiense*, have perfectly glabrous foliage. There can be, therefore, hardly any doubt what Michaux meant, and his name being six years older than Andrews' *R. punctatum* based on cultivated specimens introduced about 1786 by John Fraser, must be considered the valid name for this species. Both names refer to the same form, namely to the form of the lower altitudes; for this is the form represented by the plate accompanying Andrews' description, and in regard to Michaux's species the locality quoted with the first description leaves no doubt. The identity of the two species is also confirmed by Michaux's original specimens which I had the opportunity of examining last year; of the three sheets two are without labels and one has two labels; all contain the form of the lower altitudes, partly in flowering specimens, and only the sheet with two labels contains besides these specimens two branchlets of the form of the higher mountains in fruit; to these two specimens belongs apparently the label reading "hautes montagnes de Caroline septentrionale" while the label reading "aux sources de la rivière Savannah" belongs to the other specimens and corresponds to the locality given in the first description: in his Flora he quotes both localities, but the description is based also here chiefly on the form from the lower level, as he had no flowering material of the other shrub.

The first to recognize the form of the higher mountains as distinct was Ker when he figured it in 1815 as *Rhododendron punctatum* β in the Botanical Register. He states there that it was only lately introduced from North Carolina by John Fraser who also had introduced the typical *R. punctatum*. This form, however, seems to have been subsequently lost to cultivation, as it is never mentioned again in horticultural or botanical literature. All later references and descriptions apply only to the other form, until in 1902 Small distinguished the two forms as species, but unfortunately he identified

the form of the higher mountains with *R. punctatum* and gave a new name, *R. Cuthberti*, to the true *R. minus*. It is, however, the form of the higher mountains which is in need of a name, if the two forms are considered distinct species, and I propose *Rhododendron carolinianum* as a fitting name, because it seems to be restricted to North Carolina, while the other species ranges farther south.

RHODODENDRON carolinianum Rehder, n. sp. *Rhododendron punctatum* β Ker, Bot. Reg. I. t. 37. 1815. *R. punctatum* Small, Fl. Southeast. U. S. 884. 1903 (non Andrews). Frutex ramis crassiusculis; ramuli novelli virides v. purpurascens, squamis ferrugineis laxe conspersi; gemmae floriferae ovoideae, acutae, circiter 1 cm. longae, perulis 7-9 late ovatis acuminulatis dense minuteque albo-fimbriatis extus ferrugineo-lepidotis, gemmae foliiferae multo minores et angustiores. Folia coriacea, ovalia v. elliptica v. anguste elliptica, basi late cuneata, apice acutiuscula v. in acumen breve contracta, 5-8 cm. longa et 2.5-4 cm. lata, supra initio lepidota, mox glabra, subnitentia, intense luteo-viridia, subtus pallidiora, dense v. interdum sparsius ferrugineo-lepidota, margine leviter revoluta, nervis utrinsecus circiter 8 obsoletis, costa media supra vix, subtus manifeste elevata; petioli robusti, circiter 1 cm. longi, ferrugineo-lepidoti. Flores 4-9 in racemo umbellato terminali, sub anthesi innovationibus vix evolutis; pedicelli 1-1.5 cm. longi, lepidoti; sepala semiorbicularia v. lata ovata, 1 mm. longa, trientem ovarii vix aequantia, extus et ad marginem lepidota; corolla rotato-campanulata, 2.5 cm. longa et 3.5-4 cm. diam., lobis late ovatis margine planis apice rotundatis tubum brevem e basi sensim ampliatus subaequantibus v. eo paullo longioribus, pallide roseo-purpurea v. rarius albida, maculis destituta v. interdum sparse maculata, extus glabra v. sparsissime lepidota; stamina 10, inaequalia, corolla paullo breviora, filamentis basi villosis, antheris pallidis; stylus glaber, staminibus paullo brevior, purpureus; ovarium conico-oblongum, dense albido-lepidota. Capsula anguste oblonga, 8-12 mm. longa et 3-4 mm. crassa, fusca.

Low compact shrub with thickish branches; young branchlets greenish or purplish lepidote; floriferous winter-buds ovoid, acute, about 1 cm. long, with 7-9 broadly ovate scales mucronate and densely white-ciliolate, outside lepidote. Leaves coriaceous, oval or elliptic to elliptic-oblong, broadly cuneate at the base, acutish at the apex or shortly acuminate, 5-8 cm. long and 2.5-4 cm. broad, above at first lepidote, soon becoming glabrous, somewhat lustrous, deep yellowish green, paler beneath and densely or sometimes more sparsely lepidote, slightly revolute at the margin, with about 8 pairs of obscure veins, midrib above slightly, beneath strongly elevated. Flowers 4-9 in dense umbel-like terminal racemes, the young shoots at the flowering time scarcely developed; pedicels 1-1.5 cm. long, lepidote; sepals semiorbicular or broadly ovate, scarcely one third as long as

the ovary, outside and on the margin lepidote; corolla rotate-campanulate, 2.5 cm. long and 3.5–4 cm. wide, pale rosy-purple or rarely whitish, without spots or only slightly spotted, outside glabrous or very sparingly lepidote, the lobes broadly ovate, about as long or slightly longer than the short gradually widened tube; stamens 10, slightly shorter than the corolla, with the filaments villous at the base and with pale-colored anthers; style glabrous, slightly shorter than the stamens, purple; ovary conic-oblong, lepidote. Capsule narrow oblong, 8–12 mm. long and 3–4 mm. thick, brown.

NORTH CAROLINA: Tyron, April 20, 1897 (Biltmore Herb. No. 4463); Roan Mtn., June 16, 1879 (*A. Gray, C. S. Sargent, J. H. Redfield & Wm. W. Canby*); Table Rock Mtn., Burke Co., July 2, 1890, *J. K. Small & A. A. Heller* (No. 281, in part, the specimens in fruit); Macon Co., (*T. G. Harbison*, Nos. 119, 168); cultivated at Highlands, from Linville Mtn., May 20, 1911, (*T. G. Harbison*, No. 626); without precise locality, 1889 (*F. Boynton*).—At one time this species seems to have been cultivated in the Botanic Garden at Cambridge, for there is a specimen in the Gray Herbarium collected by C. E. Faxon, and dated June 18, without indication of the year, but probably collected about 1870.

Rhododendron carolinianum is easily distinguished from *R. minus* by the short and wide tube of the corolla as long as, or slightly shorter than the lobes; the corolla is usually not spotted and is glabrous outside, the leaves are generally broader, less pointed and of thicker texture, the branches are shorter and stouter forming a compact, usually low shrub and the flowers appear several weeks earlier, before the young leaves are out. As an ornamental plant it is superior to *R. minus* and has proved perfectly hardy at the Arnold Arboretum and in General Weld's garden at Dedham where a large number of plants have been established for several years.

Small gives for his *R. punctatum*, which, according to his description, is identical with this species, a distribution ranging from North Carolina to Tennessee, Georgia and Alabama, but I have seen it so far only from North Carolina.

RHODODENDRON MINUS Michaux, Jour. d'Hist. Nat. I. 412. 1792, and Fl. Bor. Am. I. 258. 1803; Persoon, Syn. Pl. I. 478. 1805. *Rhododendron punctatum* Andrews, Bot. Rep. I. t. 36. 1798; Donn, Hort. Cantabr. 49. 1786 (nomen nudum); Pursh, Fl. Am. Sept. I. 298. 1814; Willdenow, Sp. Pl. II. 607. 1799; Ventenat, Descr. Jard. Cels. t. 15. 1800; Aiton, Hort. Kew. ed. 2, III. 51. 1811; Sims, Bot. Mag. XLIX. t. 2285. 1822; Watson, Dendr. Brit. t. 162 A. 1825; Chapman, Fl. South. U. S. 266. 1860; Gray, Syn. Fl. N. Am. II. 1, 42. 1878. *Rhododendron Cuthberti* Small, Torrey, II. 9. 1902, and Fl. Southeast. U. S. 885. 1903.

GEORGIA: Banks of the Savannah River (*A. Michaux*, in Herb. Mus. Paris, type); near Augusta, S. T. Olney & J. Metcalf (no. 123); river bank at Locks, near Augusta, May 16, 1901, (*A. Cuthbert*, type of *R. Cuthberti*); same locality, March 30, 1908, (*C. S. Sargent*); two miles northwest of Cuthbert, Randolph Co., July 21, 1903 (*R. M. Harper*, No. 1895); north slope of Pine Mtn. near Flint River, Meriwether Co., June 9, 1910 (*R. M. Harper*, No. 2261); dry rocky ridges, Banks Co., Sept. 24, 1910, (*T. G. Harbison*, No. 155); Hull Co., near Cornelin, May 17, 1911 (*T. G. Harbison*, No. 609). NORTH CAROLINA: Table Rock Mtn., Burke Co., J. K. Small & A. A. Heller, July 2, 1891 (No. 281, in part, the specimens in flower). ALABAMA: Sulphur Mtns. near Tulledega Springs, May 15, 1911, (*T. G. Harbison*, No. 591); bank of Chestnut Creek, below Verbena, Chilton Co., Feb. 2, 1906, *R. M. Harper* (No. 26).

Rhododendron minus is chiefly distinguished from *R. carolinianum* by the longer cylindric corolla-tube which is longer than the lobes, by the corolla being lepidote outside and the upper lobe being distinctly spotted. The habit of the plant is much looser and more straggling with longer and slenderer branches and the leaves are larger and comparatively narrower and more pointed.

The type locality of *Rhododendron minus* seems to be the same as that given for *R. Cuthberti*, for Michaux mentions in his Journal under the entry for November 11, 1788, among the plants observed near Augusta, Georgia, on the banks of the Savannah River an unnamed *Rhododendron* and again under December 4 he records in the vicinity of Seneca (Oconee Co.) a *Rhododendron species nova* which is without doubt the same. As Michaux refers the deciduous *Rhododendrons* to *Azalea*, the only other species of *Rhododendron* growing in this region is *R. maximum* with which Michaux of course was perfectly familiar; the unknown species therefore could not have been any other than *R. minus*. As Michaux in his first description of *R. minus* does not mention the flowers and as he states that it grows on the banks of the river Savannah, it is most likely that his description is based on the specimens collected in November, 1788, near Augusta.

The leaves of the plant cultivated in Europe as *R. punctatum* are generally somewhat smaller and narrower than those of the wild specimens from Georgia, but in the shape of the corolla both plants agree perfectly.

In Banks County, Mr. T. G. Harbison has collected a form of *Rhododendron minus* with considerably larger flowers, which seems worthy of being introduced into cultivation on account of its much more

showy flowers. Though it can hardly be considered a botanical variety, it seems advisable to give it a distinct name.

RHODODENDRON MINUS f. **Harbisonii**, forma nova.

A type differt floribus majoribus, 3.3–4 cm. longis in racemis circiter 10-floris, sepalis inaequalibus majoribus ovatis longe ciliatis.

GEORGIA: Banks Co., May 18, 1911, *T. G. Harbison* (Nos. 615, 616 in Herb. Arnold Arboretum).

This differs from the typical form which has the flowers 2.5–3 cm. long and the racemes generally 7–8-flowered, in the larger flowers and larger racemes; also the leaves are somewhat larger, attaining 11 cm. in length. In its large flowers and denser flower-clusters it resembles *R. Chapmanii* Gray, but that species has smaller obtuse or acute, not acuminate leaves very densely lepidote beneath and revolute at the margin.

ARNOLD ARBORETUM.

THE FORMS OF PELTANDRA VIRGINICA.

SIDNEY F. BLAKE.

Plate 94.

IN 1836 Rafinesque, in the *New Flora of North America*, part 1, pp. 85–89, elaborated his previous treatment of the genus *Peltandra* into a monograph in which eight species were described, founded principally on differences in leaf outline,¹ although the number of seeds and some supposed diagnostic characters from petiole, scape, and spathe were also employed. Of Rafinesque's species two were recently taken up as varieties by Mr. Ivar Tidestrom,² on the basis of field study of the plants in Maryland and Virginia. My collection last fall of one or two forms obviously distinct from any of these has led to a study of Rafinesque's monograph in connection with the material in the Gray Herbarium, the herbaria of the New England Botanical Club and the Boston Society of Natural History, and a

¹ Except *P. alba* Raf. (= *P. sagittifolia* (Mx.) Raf.), type of the subgenus *Leucospatha* Raf.

² RHODORA 12:47–50, pl. 83 (March, 1910).



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