VIII.

Neviusia, *a New Genus of Rosaceæ.*

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A specimen of the plant which forms the subject of this communication was sent to me, in May last, by the discoverer, the Rev. R. D. Nevius, of Tuscaloosa, Alabama. A specimen of a *Sedum*, also apparently undescribed, was communicated at the same time. The two plants were detected by Mr. Nevius in the spring of 1857, along cliffs in the vicinity of Tuscaloosa.

The *Sedum* — a small, white-flowered species, with short and nearly terete leaves, which may be named *Sedum Nevii* — cannot be adequately characterized until better specimens shall be obtained.

The other plant — a shrub, with the habit of *Spiræa* — was at once seen to be a new type. As the discovery of a shrub of a new genus within the United States east of the Mississippi is an uncommon event, and as this plant presents some points of peculiar interest, I take this opportunity to indicate its characters and affinities.

Mr. Nevius, upon being informed of the interest of his discovery, proposed to dedicate the genus to the memory of our lamented friend, the late Professor Tuomey, who, when suddenly removed from the scene of his scientific labors, was officially and most efficiently prosecuting his researches into the geology and the whole natural history of the State of Alabama. So that this elegant shrub, peculiar to the district of his residence, was appropriately chosen by his near friend and associate to commemorate his scientific labors and deck his early tomb. But the publication of the third part of the *Nereis Boreali-Americana* (since the present communication was made to the Academy) shows that the name of *Tuomeya* is preoccupied, Dr. Harvey having dedicated to Professor Tuomey's memory a curious fluviatile Alga discovered by the latter in Alabama, as well as by the late Professor Bailey in Virginia.

I may now, therefore, be permitted to name the present genus in honor of the discoverer. His name, however, is so nearly like that of the celebrated Roman poet, for whom (I presume) the learned Swedish mycologist has named his genus *Nævia*, that I must needs Latinize it in an unclassical, but not wholly unprecedented manner, as follows: —

NEVIUSIA, Nov. Gen. Rosacearum.

Calyx ebracteolatus, patentissimus, 5-partitus, segmentis foliiformibus inciso-serratis persistentibus. Corolla nulla. Stamina indefinita, disco tenui plano fundum calycis vestiente pluriseriatim inserta: filamenta subulato-filiformia, post anthesin marcescentia: antheræ didymæ. Ovaria 2 – 4, in fundo calycis sessilia: styli subterminales, filiformes, apice introrsum stigmatosi. Ovulum unicum, pendulum, anatropum. Achenia drupacea, epicarpio tenui carnoso, endocarpio crustaceo lævi. Seminis testa tenui-membranacea. Embryo in albumine parco carnoso inclusus, cotyledonibus ovalibus planis, radicula brevi supera accumbenti-inflexa. — Frutex alternifolius; stipulis parvis setaceo-subulatis liberis; pedunculis filiformibus ramulos breves terminantibus solitariis paucisve fasciculatis.

N. Alabamensis. — In præruptis umbrosis prope Tuscaloosam Alabamæ, ubi legit *Dom. R. D. Nevius.*

Caules glabri, 2 – 5-pedales, recurvo-patentes, medulla ampla farcti. Ramuli graciles, juniores cum foliis pedunculisque tenuiter puberuli. Folia ovata, nunc oblonga, rarius subcordata, membranacea, duplicato-serrata, vix incisa, recte penninervia, læte viridia, 1 – 2½-pollicaria. Pedunculi nudi, floriferi semipollicari, fructiferi fere pollicaria. Calycis lobi patentissimi vel reflexi oblonga, 3 lin. longa, post anthesin paullo aucta et obovata, obtusa, supra medium argute inciso-serrata, nervoso-reticulata. Filamenta alba, calyce demum longiora, e basi crassiori filiformia: antheræ breves, subintrorsæ, biloculares, longitudinaliter dehiscentes. Ovaria gibboso-ovata, cano-sericea: styli glabelli, staminibus æquilongi, subpersistentes, apice leviter incrassato recurvo intus longitrorsum stigmatosi. Ovulum suturæ ventrali prope apicem, ad insertionem styli respondenti, appensum. Achenia drupacea, oblique ovata, acuta, turgida, lineas 2 longa, angulo interno basilari inserta; sarcocarpio tenui sed manifesto; putamine nec reticulato nec punctato. Semen pendulum, loculo conforme; testa tenui albumini manifesto sed parco (embryonem omnino includenti) adhærente. Cotyledones subcarnosi, plani, late ovales, basi emarginati: radicula brevis versus hilum inflexa, cotyledonum margini fere accumbens.

As I have seen no unexpanded flowers, it is barely possible that there may be petals, which are caducous. But as no traces of their insertion can be detected, it is thought that the flowers are really apetalous.

The manifest stratum of albumen in the seeds of this plant no more hinders me from referring it to the Order *Rosaceæ*, than it would from referring *Cercis*, &c. to the *Leguminosæ*. Nor can I disregard the clear indications of affinity in this case, because the presence or absence of albumen has appeared to form the sole absolute technical distinction between the *Saxifragaceæ* and the *Rosaceæ*. If I am correct in this view, there now remains no single absolute distinction between these two great orders, taken in the largest sense. But, between the *Rosaceæ proper* (*Rosaceæ*, Endl. &c.) and the *Saxifrageæ*, the absence of all union of the carpels *inter se* and with the calyx, the fewness of the seeds, and the distinct development of the stipules in the former, contrasted with the manifestly opposite tendencies of the latter in all these respects, seem to afford well-founded distinctions; and these in the present instance outweigh that derived from the presence of a moderate amount of albumen in the seeds. Upon these grounds I venture to suggest a reversal of the position in which Dr. Hooker sets the two connecting links between these orders; namely, that "*Neillia* may be safely referred to *Saxifrageæ*, and *Astilbe* must, technically, fall into *Saxifrageæ* also, though its relationship to *Spiræa* is all but generic." * In my opinion, the resemblance of *Astilbe* to *Spiræa Aruncus*, close as it is, is one of habit, rather than in the floral characters, which are truly Saxifrageous; while *Neillia* — really the more ambiguous of the two — is so Rosaceous in the preponderance of its characters, as well as in aspect, that I think it must be remanded to that order. †

Intimately related to *Neillia* is Zuccarini's *Stephanandra*, from Japan; — a shrub

* In Journal of the Proceedings of the Linnæan Society, 2. p. 54.

† I could not, indeed, maintain this upon Dr. Hooker's diagnosis of *Neillia* (l. c. p. 57); but, having examined the two species, I may state that I find the calyx perfectly free from the gynæcium, and the latter in both species occasionally consisting of two pistils, perfectly separate and free, although closely sessile in the bottom of the calyx. I may add, that the calyx-lobes are evidently imbricated in æstivation, and the stamens not always numerous, being often as few as 15, or even 10, in *N. thyrsiflora*. The seeds in my specimens are all empty, so that I have not verified their internal structure.

However the line be drawn, it is evident that no grouping of the orders can be truly natural which does not bring the *Saxifragaceæ* and the *Crassulaceæ* into the same alliance with the *Rosaceæ*, or into contiguity thereto. This would have the further advantage of approximating the *Cunonieæ* to the *Legnotideæ*, according to the affinities indicated by Brown and confirmed by Bentham, and also, in bringing *Philadelphus* and its relatives (purely Hydrangeous genera in my opinion) nearer to *Myrtaceæ*, better satisfy those with whom "no doubt can exist that these plants have a near relation to Myrtleblooms."

with the habit, stipules, foliage, and flowers of *Spiræa*, but decandrous and monogynous, and with style, stigma, and seeds of *Neillia*, but only dispermous, or by abortion monospermous; while the achenioid pericarp resembles that of our genus *Neviusia*.

For the more immediate relatives of our new genus, we must still look to Japan, which abounds in counterparts of Eastern North American plants; and we find them in *Kerria* and *Rhodotypos*, both illustrated by Zuccarini. Both of these genera accord well with our plant in their whole habit, foliage, &c.; and no less so in the floral structure, except that *Neviusia* is apetalous. *Rhodotypos*, moreover, has foliaceous and serrated sepals (but only four in number, much like those of our plant, which simulate those of *Duchesnea* or *Fragaria Indica*), but differing remarkably from all its allies in its opposite leaves.* Nor does our plant exhibit any trace of the extraordinary *urceolus* of *Rhodotypos*, within the staminiferous disk, and enclosing the ovaries, like the disk of *Pæonia Moutan*. In this, as in other respects, it most resembles *Kerria*, and the staminiferous disk is similar, but broader. The stamens and the pistils are essentially alike in all three genera,† except that the stigma in *Rhodotypos* is terminal and capitellate; and the ovary biovulate, as in *Rubus* and *Dalibarda*. The fruit of both Japanese genera is like that of our genus, and (which is of most consequence) the embryo, as illustrated by Zuccarini, is quite the same, having the radicle bent down towards the ventral edge of the cotyledons, as in no other *Rosaceæ* known to me.

I have not myself seen ripe fruit or seeds of *Kerria* or *Rhodotypos*. Zuccarini describes the latter as exalbuminous. If it be so, these genera, with *Neviusia*, must needs form a part of the subtribe *Dalibardeæ*. If they all have a thin albumen, they would compose a separate division or subtribe, near to *Dalibardeæ*.

* So described without exception by Zuccarini, and so they are in my specimen. But upon the plate (tab. 99) a sterile branch with alternate leaves is represented, which receives no explanation in the letter-press.

† When the pistils accord in number with the sepals, they are opposite them in *Kerria*, and apparently in *Rhodotypos* also. In *Neviusia* they are fewer than the sepals.

PLATE XXX. Fig. 1. A branchlet in flower. 2. A branch in fruit. 3. Parts of a flower in vertical section. 4. The pistils. 5. View of the disk after flowering. 6. Vertical section of a nearly mature fruit. 7. Transverse section of a mature fruit and seed. 8. Vertical section of a fruit, exhibiting the embryo. 9. The embryo extrated. — The analyses all more or less magnified.