

# TORREYA

Vol. 19

No. 11

November, 1919

## SCROPHULARIACEAE OF THE LOCAL FLORA. IV

BY FRANCIS W. PENNELL

(Continued from September TORREYA)

### 13. AUREOLARIA Raf. New Fl. Amer. 2: 58. 1837

Type species, *A. villosa* Raf.

Annual. Stem, leaves and calyx with stalked or sessile glands. Leaves bipinnatifid, more or less pectinately cut. Calyx-lobes dentate to pectinate. Corolla externally glandular-pubescent, within pubescent over bases of the posterior lobes; more or less marked or tinged with purple-red. Anther-sacs 2.5-4 mm. long. Capsule ellipsoid, 9-12 mm. long,  $1/2-2/3$  enclosed in the calyx-tube, glandular-puberulent. Seeds .8 mm. long, not winged. Pedicels 10-28 mm. long. (*Panctenis* Raf.)

Stem closely pubescent above, not or scarcely glandular. Leaves puberulent, not or slightly glandular. Capsule narrowly ellipsoid, 9-11 mm. long.

Leaves 3-6 cm. long. Pedicels mostly shorter than to equaling the bracts.

Stem (frequently) glandular-hirsute below.

1. *A. pedicularia*.

Leaves 1.5-2.5 cm. long. Pedicels longer than the bracts. Stem not glandular-hirsute below.

1a. *A. pedicularia caesariensis*.

Stem glandular-pubescent above with scattered glands. Leaves glandular-puberulent to pubescent. Capsule ellipsoid, 11-12 mm. long.

1b. *A. pedicularia intercedens*.

Perennials. Not glandular. Leaves entire to pinnately cut, and slightly bipinnatifid, though not pectinate. Corolla externally glabrous, within glabrous or diffused-pubescent; not marked or tinged with red-purple. Anther-sacs 4-6 mm. long. Capsule ovate to globose-ovate in outline, not enclosed within the calyx-tube, not glandular. Seeds 1.5-2.7 mm. long, broadly winged.

[No. 10, Vol. 19 of TORREYA, comprising pp. 187-204, was issued Dec. 1, 1919.]

Pedicels 1.5-10 (-15) mm. long. (*Euaureolaria*.)

Capsule densely rusty-pubescent. Stem pubescent and leaves downy-pubescent. Pedicels 1.5-3 mm. long.

2. *A. virginica*.

Capsule glabrous. Stem glabrous and leaves glabrous or minutely puberulent on the upper surface. Pedicels 3 mm. long or longer.

Stem slender, not glaucous, rarely purplish. Petioles very short, less than 10 mm. long. Lower leaves lanceolate to ovate-lanceolate, widest below the middle, long-acuminate. Pedicels 3-8 mm. long. Corolla 30-35 mm. long. Seeds 1.5-1.7 mm. long.

3. *A. laevigata*.

Stem relatively stout, glaucous, frequently purple. Petioles mostly over 10 mm. long. Lower leaves ovate-lanceolate to ovate, widest about the middle, not long-acuminate. Pedicels 5-10 (-15) mm. long. Corolla 35-40 mm. long. Seeds 2-2.7 mm. long.

4. *A. flava*.

#### I. AUREOLARIA PEDICULARIA (L.) Raf.

*Gerardia pedicularia* L. Sp. Pl. 611. 1753. "Habitat in Virginia, Canada." Type not seen, but description sufficiently distinctive.

*Panctenis pedicularia* (L.) Raf. New Fl. Amer. 2: 61. 1837.

The specific name spelled by Rafinesque "pedicularis."

*Aureolaria pedicularia* (L.) Raf. l.c. 61. 1837.

*Dasystema pedicularia* (L.) Benth. in DC. Prod. 10: 521. 1846.

*Agalinis pedicularia* (L.) Blake in Rhodora 20: 70. 1918.

Flowering from early August to late September, fruiting from September into November.

Dry oak-woodland, thin soil, sandy or rocky, occasional or local above Fall-line, more frequent southwestward; in the Coastal Plain of Long Island and New Jersey, passing into var. *caesariensis*. Northwestward the species passes into var. *intercedens*. Ranges, southward and westward mainly through its varieties, from western Maine to North Carolina and Minnesota.

1a. *AUREOLARIA PEDICULARIA CAESARIENSIS* Pennell in Bull. Torrey Club 40: 413. 1913. "Type, Atco, Camden Co., New Jersey, Sept. 7, 1911, *F. W. Pennell* 3545 in Herb. University of Pennsylvania."

Sandy open woodland, Coastal Plain of Long Island and New Jersey, mainly in the Pine Barrens, where it replaces the species. Occurs northeastward to southeastern Massachusetts.

1b. *Aureolaria pedicularia intercedens* Pennell, var. nov.

Stem glandular-pubescent above, with spreading or recurved short hairs, scattered among which occur glands which are borne on stalks shorter than or longer than the pubescence. Leaves somewhat puberulent with short-stalked glands. Calyxlobes 8–13 mm. long. Capsule 11–12 mm. long. Otherwise as in the species.

Type, Mt. Arlington, Morris Co., New Jersey, collected in flower August 26, 1906, *K. K. Mackenzie* 2356; in Herb. Missouri Botanical Garden.

Environment of the species, between which and the densely hirsute western *A. pedicularia ambigens* (Fernald) Farwell it forms a connected series of intergradations. Occasional in northern New Jersey and eastern Pennsylvania, to be expected with the species in our northwestern counties in New York.

2. *AUREOLARIA VIRGINICA* (L.) Pennell.

*Rhinanthus virginicus* L. Sp. Pl. 603. 1753. "Habitat in Virginia." As specimen in the Linnean Herbarium bears the handwriting of Linné the younger and so appears to have been a late addition, Gronovius's plant must be taken as the type. This is *Clayton* 488, recently identified by *Dr. S. F. Blake*, in *Rhodora* 20: 66. 1918, as the plant here considered. Our traditional applications of the names *virginica* and *flava* must be transposed.

*Aureolaria villosa* Raf. New Fl. Amer. 2: 59. 1837. No type locality given, nor type known to exist. Description sufficiently distinctive.

*Dasyctoma pubescens* Benth. in DC. Prod. 10: 520. 1846. "In Americae sept. civitatibus orientalibus frequens." Type not verified, but description sufficiently distinctive.

*Gerardia virginica* (L.) Britton in Prelim. Cat. N. J. Pl. 40. 1888.

*Dasystema virginica* (L.) Britton in Mem. Torr. Bot. Club 5: 295. 1894.

*Aureolaria virginica* (L.) Pennell in Bull. Torr. Bot. Club 40: 409. 1913.

*Agalinis virginica* (L.) Blake in Rhodora 20: 71. 1918.

Flowering from early July to mid-August, fruiting from August to October.

Dry open oak-woods, usually sand or a sandy loam, frequent or common throughout our area, less general within the Pine Barrens. Ranges from New Hampshire to Florida, west to Michigan, Kentucky and Louisiana.

### 3. AUREOLARIA LAEVIGATA (Raf.) Raf.

*Gerardia levigata* Raf. Ann. Nat. 13. 1820. "It grows on the knob hills of Kentucky, the Cumberland mountains and the Alleghany." No type known to exist, unless it be a specimen in Herb. New York Botanical Garden, labeled in Rafinesque's handwriting, "Gerardia—n. sp.—Kentucky."

*Aureolaria levigata* (Raf.) Raf. New Fl. Amer. 2: 59. 1837.

*Dasystema laevigata* (Raf.) Chapm. Fl. S. Un. St. ed. II: 636. 1883.

*Agalinis laevigata* (Raf.) Blake in Rhodora 20: 71. 1918.

Oak-woodland, usually rocky, along streams or on mountainsides along the Susquehanna River in Lancaster Co., Pennsylvania. Ranges through the Appalachians from central Pennsylvania to South Carolina and Tennessee.

### 4. AUREOLARIA FLAVA (L.) Farwell.

*Gerardia flava* L. Sp. Pl. 610. 1753. "Habitat in Virginia, Canada." Specimen in Linnean Herbarium identified by Bentham; see in Comp. Bot. Mag. 1: 198. 1836.

*Gerardia glauca* Eddy in Med. Repos. N. Y., IIInd Hex. 5: 126. 1807. Plandome, Long Island. C. W. Eddy. Type not seen nor known to exist, but description quite distinctive.

*Gerardia quercifolia* Pursh, Fl. Amer. Sept. 423. 1814.  
 "On the banks of rivers, in rich shady places, Pennsylvania to Carolina." Type not seen, but description distinctive.

*Aureolaria glauca* (Eddy) Raf. New Fl. Amer. 2: 60. 1837.  
*Dasystoma quercifolia* (Pursh) Benth. in DC. Prod. 10: 520. 1846.

*Dasystoma flava* (L.) Wood, Class-Book 529. 1861. As to synonymy, not description, the latter applying to *Aureolaria virginica*.

*Agalinis glauca* (Eddy) Blake in Rhodora 20: 71. 1918.

*Aureolaria flava* (L.) Farwell in Rep. Mich. Acad. Sci. 20: 188. 1918.

Flowering from late August to late September, fruiting from September to November.

Dry to rather moist oak-woodland, usually on rocky hillsides, loam or sometimes in sandy soil, frequent or locally common through the counties above the Fall-line, especially toward the mountains; on northern Long Island, but rare in southern Long Island and very rare in the Coastal Plain of New Jersey. Including varieties, this species ranges from Maine to Florida, Illinois, Arkansas and Louisiana.

#### 14. *AGALINIS* Raf. New Fl. Amer. 2: 61. 1837

Type species, *A. palustris* Raf.

Corolla with lobes all spreading, pubescent within at base of posterior lobes.

Seeds dark-brown. Plants tending to blacken in drying. Calyx-tube not evidently reticulate-venose.

Pedicels less than 12 mm. long. Inflorescence of normal racemes. Seed-coat with dark-brown ridges, between which are broad areas, paler and minutely reticulate.

Leaves and calyx-lobes obtuse to acutish. Anthersacs obtuse to acutish. Plant fleshy, bushy-branched below, with elongated racemes above. Pedicels 5-12 mm. long. Corolla 12-17 mm. long.

1. *A. maritima*.

Leaves and calyx-lobes acute to acuminate. Anthersacs mucronate to minutely awned. Plants not fleshy, more uniformly branched. Pedicels rarely over 5 mm. long.

- Calyx-lobes  $\frac{4}{5}$ - $\frac{7}{8}$  the length of the tube, triangular-lanceolate to lanceolate. Corolla 12-20 (-23) mm. long. Stem 1-6 dm. tall. Anther-sacs somewhat pubescent to glabrous. 2. *A. paupercula*.
- Calyx-lobes  $\frac{1}{6}$ - $\frac{1}{2}$  the length of the tube, triangular-lanceolate to subulate. Corolla 20-38 mm. long. Stem 3-12 dm. tall. Anther-sacs densely lanate.
- Stem relatively stiffly branched, sparingly scabrellous. Calyx-lobes triangular-lanceolate to subulate. Corolla 20-38 mm. long. Leaves linear, 1-3 mm. wide. 3. *A. purpurea*.
- Stem slender, virgately branched, glabrous. Calyx-lobes triangular-subulate to subulate. Corolla 20-25 mm. long. Leaves narrowly linear to almost filiform, .5-1 mm. wide. 4. *A. virgata*.
- Pedicels 15-40 mm. long. Inflorescence a short raceme, one pedicel (by arrested growth of the rhachis) appearing terminal. Seed-coat with dark-brown ridges, between which are narrow scarcely paler areas. Corolla 18-25 mm. long. Leaves narrowly linear to filiform. 5. *A. Holmiana*.
- Seeds yellowish-brown. Plants scarcely tending to blacken in drying. Calyx-tube evidently reticulate-venose. Corolla 13-15 mm. long.
- Calyx-tube campanulate, 3 mm. long, firmer in texture,  $\frac{2}{3}$ - $\frac{3}{4}$  the length of the capsule, its lobes .5-1 mm. long, triangular-acuminate, not or scarcely callose. Seeds .4-.6 mm. long, strongly reticulate. Pedicels mostly 1-2 times the length of the bracts. Stem usually 1-4 dm. tall. 6. *A. acuta*.
- Calyx-tube hemispheric, 2.5-3 mm. long, thinner in texture,  $\frac{3}{5}$ - $\frac{2}{3}$  the length of the capsule, its lobes minute, .05-.2 (-.3) mm. long, strongly callose. Seeds .6-.8 mm. long, obscurely reticulate. Pedicels mostly 2-3 times the length of the bracts. Stem usually 2-5 dm. tall. 7. *A. decemloba*.
- Corolla with the posterior lobes ascending-arched over the stamens and style, glabrous within at base of the posterior lobes. Racemes elongated, normal. Pedicels 12-27 mm. long. Seeds dark-brown. 8. *A. tenuifolia*.

1. *AGALINIS MARITIMA* (Raf.) Raf.

*Gerardia maritima* Raf. in Med. Repos. N. Y., II Ind Hex. 5: 361. 1808. "Found in the islands of Egg-Harbour, in New Jersey." No type known to exist, but description

quite distinctive. An unpublished plate of Rafinesque's is in the library of the New York Botanical Garden.

*Gerardia purpurea crassifolia* Pursh, Fl. Amer. Sept. 422. 1814. "In salt marshes, near New York." Type not seen, but description sufficiently distinctive.

*Agalinis maritima* (Raf.) Raf. New Fl. Amer. 2: 62. 1837.

Flowering from mid-July to early September, fruiting September to October.

Salt marshes, along the Atlantic coast, Connecticut, New York and New Jersey. If separable from the much larger plant of the Southern and Gulf coast, our species ranges from Virginia northward to Maine, becoming progressively smaller and simpler northward.

## 2. AGALINIS PAUPERCULA (A. Gray) Britton.

*Gerardia purpurea paupercula* A. Gray, Syn. Fl. N. Amer.

II. 1: 293. 1878. "Lower Canada to Saskatchewan and southward from coast of New England to Penn., N. Illinois and Wisconsin." Numerous specimens labeled by Gray seen, but none indicated as typical. In synonymy is mentioned the name *intermedia* Porter in herb., so selecting a type.

*Gerardia paupercula* (A. Gray) Britton in Mem. Torr. Bot. Club 5: 295. 1894.

*Agalinis paupercula* (A. Gray) Britton in Britton & Brown, Ill. Fl. ed. II. 3: 210. 1913.

Flowering from early August to September, fruiting September to October.

Moist soil, borders of lakes and in bogs, especially where sandy, in the glaciated region; through the area east of the Hudson River, occasional in Connecticut and northward in New York, very rare southward and on Long Island only at Lake Ronkonkoma; near Dingmans Ferry, Sussex Co., New Jersey (*W. M. Van Sickle* (E)), and doubtless occasional elsewhere in the glaciated region west of the Hudson, especially in New York. Ranges through glacial bog country from New Brunswick to Minnesota, but seems to be much more common in northern New England and in Michigan than through the intervening

area. Along their lines of contact in southern New England, our area and in northern Indiana and Illinois, this intergrades somewhat with its obvious parent, *A. purpurea*.

3. *AGALINIS PURPUREA* (L.) Pennell.

*Gerardia purpurea* L. Sp. Pl. 610. 1753. "Habitat in Virginia, Canada." The Linnean diagnosis includes both long and short-pedicelated plants, so could include all pink (= "purple") flowered species. The first citation accompanied by a figure, Plukenet's "*Digitalis virginiana rubra, foliis & facie Antirrhini vulgaris*," evidently the prevalent plant of the Atlantic seaboard now under consideration, is counted as the type.

*Gerardia purpurea grandiflora* Benth. in Comp. Bot. Mag. 1: 208. 1836. "Hab. New Jersey." Type, labeled "New Jersey, Torrey 1834," seen in Kew Herbarium.

*Agalinis palustris* Raf. New Fl. Amer. 2: 62. 1837. "Near marshes . . . From New England to Carolina." Type not known to exist. Evidently intended for the prevalent plant of the Atlantic seaboard.

*Agalinis longifolia* Raf. l.c. 62. 1837. "Near streams New Jersey to Virginia." Type not known to exist. A smaller form.

*Gerardia purpurea* f. *albiflora* Britton in Bull. Torr. Bot. Club 17: 125. 1890. New Jersey. An albino state. Plants with pure white corollas are occasional in any species of this genus.

*Gerardia purpurea parvula* Pennell in Proc. Acad. Nat. Sci. Phila. 62: 572. 1911. "Serpentine, Wawa, Delaware county, Penna., F. W. Pennell 2689, coll. Sept. 25, 1910, in Herb. Acad. Nat. Sci. of Phila." The smaller-flowered depauperate plant characteristic of the Serpentine Barrens.

*Agalinis purpurea* (L.) Pennell in Bull. Torr. Bot. Club 40: 126. 1913.

*Aureolaria purpurea* (L.) Farwell in Rep. Mich. Acad. Sci. 20: 189. 1918.

Flowering from late August to mid-September, fruiting September to October.



Moist sandy soil, edges of salt-marsh, of lakes, or of rivers, in depressions among sand-dunes, or locally on barren magnesian loam in the Serpentine; abundant through the Coastal Plain of New Jersey and common in southern Long Island, in the Pine-Barrens replaced by *A. virgata*; above the Fall-line occasional near ponds and bogs of northern New Jersey, in the bogs of Lancaster Co., Pennsylvania, and in meadows and on dry grassy upland of the Serpentine Barrens of Delaware and Chester counties, Pennsylvania. Ranges from Massachusetts to Florida, Minnesota and Texas, mainly in the Coastal Plain or at low elevations inland.

4. *AGALINIS VIRGATA* Raf. New Fl. Amer. 2: 62. 1837. "Glades of Pine woods in South New Jersey near Mullica Hill, &c." Type not known to exist.

*Gerardia racemulosa* Pennell in Torreyia 11: 15. 1911. "Type—Parkdale, Camden Co., N. J., F. W. Pennell 2692 Coll. Sept. 27, 1910, in Herb. Acad. Nat. Sci. of Phila."

Flowering from September to mid-October, fruiting slightly later.

Moist sandy pine-barrens, or occasionally in open sand, in the Pine Barrens of Long Island (Great River, Suffolk Co., *E. P. Bicknell*) and of southern New Jersey. Ranges from Long Island to South Carolina, in the pine barrens of the Coastal Plain. An obvious derivative of *A. purpurea*.

5. *AGALINIS HOLMIANA* (Greene) Pennell.

*Gerardia Holmiana* Greene, Pittonia 4: 52. 1899. "Plentiful in open pine and oak groves along Michigan Avenue south of the Soldiers' Home grounds near Brookland, D. C., collected by Mr. Holm and the writer, 20 Oct., 1898." No specimen of this date seen, but one in the herbarium of the New York Botanical Garden, of Dr. Greene's collecting, from Brookland, D. C., dated Oct. 16, 1898, may stand as the type. I have collected this plant at the type station.

*Agalinis Holmiana* (Greene) Pennell in Bull. Torr. Bot. Club 40: 429. 1913.

Flowering early September to mid-October, fruiting slightly later.

Dry sandy pine-land, in the Coastal Plain. Occasional on Long Island, and common through the Pine Barrens of southern New Jersey. Ranges from Long Island to Alabama, through the Coastal Plain.

6. *AGALINIS ACUTA* Pennell in Bull. Torr. Bot. Club 42: 338. 1915. "Type: dry sandy downs, Edgartown, Martha's Vineyard, Massachusetts, collected in flower September 12, 1901, *M. L. Fernald* 45 in United States National Herbarium."

Flowering from late August to mid-September, fruiting September to October.

Dry sandy soil, sterile sandy loam, local in the Coastal Plain of Long Island, and known inland from Farmington, Hartford Co., Connecticut (*Bissell* 14, 48, 439). Abundant on the Hempstead Plains of Long Island, one of the most distinctive plants of that prairie.

7. *AGALINIS DECEMLOBA* (Greene) Pennell.

*Gerardia decemloba* Greene, Pittonia 4: 51. 1899. "Plant not uncommon about Brookland, D. C., inhabiting grassy knolls and hillsides bordering on pine woods." A specimen in herb. New York Botanical Garden, collected by Dr. E. L. Greene at Brookland, D. C. in Oct., 1898, may stand as the type.

*Agalinis decemloba* (Greene) Pennell in Bull. Torr. Bot. Club 40: 434. 1913.

Flowering from early September into October, fruiting late September an October.

Dry soil, sand or clay, in our area only in southern Lancaster Co., Pennsylvania. (New Texas and Wakefield.) Ranges from thence southwestward to northern Alabama, but with a distribution much broken, though, like the last, locally common.

8. *AGALINIS TENUIFOLIA* (Vahl) Raf.

*Gerardia tenuifolia* Vahl, Symb. Bot. 3: 7. 1794. "Habitat in America septentrionali." Type in Herb. Universi-

tetets Botaniske Museum, Copenhagen, Denmark, collected by *Von Rohren*, and said to be probably from Philadelphia, is identified by Dr. C. H. Ostenfeld as identical with my number 2681 from Secane, Delaware Co., Pennsylvania.

*Agalinis tenuifolia* (Vahl) Raf. New Fl. Amer. 2: 64. 1837.

*Gerardia tenuifolia* f. *albiflora* Britton in Bull. Torr. Bot. Club 17: 125. 1890. "Found by Mr. Leggett at South Amboy, and by Mr. Schuh at Rosemont, [New Jersey]." An albino state.

*Aureolaria tenuifolia* (Vahl) Farwell in Rep. Mich. Acad. Sci. 20: 189. 1918.

*Aureolaria tenuifolia albiflora* (Britton) Farwell, l.c. 190. 1918.

Flowering from late August to early October, fruiting September and October.

Dry loam, or at times sandy soil, usually in open deciduous woodland, common throughout the area above the Fall-line; on northern Long Island; in the Coastal Plain of Long Island and New Jersey occasional, or frequent in heavy soils, not in the Pine Barrens. Ranges from Maine to Georgia, Louisiana, Michigan and Missouri, and in its varieties westward to North Dakota, Colorado and Texas.

15. OTOPHYLLA Benth. in DC. Prod. 10: 512. 1846

Type species, *Gerardia auriculata* Michx.

(?) *Tomanthera* Raf., New Fl. Amer. 2: 65. 1837. Type species, *T. lanceolata* Raf.

I. OTOPHYLLA AURICULATA (Michx.) Small.

*Gerardia auriculata* Michx. Fl. Bor. Amer. 2: 20. 1803.

"In pratis regionis Illinoensis." Type not verified, but description sufficiently distinctive.

*Seymeria auriculata* (Michx.) Spreng. Syst. 2: 810. 1825.

(?) *Tomanthera lanceolata* Raf. New Fl. Amer. 2: 66. 1837.

"My specimen of Collins' herbarium was collected by Dr. Cleaver in New Jersey." The description of this is erroneous for our plant in describing the anther-sacs as

unequal; actually they are alike in each stamen but those of the posterior stamens are smaller. However I am convinced that ours must be the plant of Rafinesque, and that such an error is due either to a lapse of memory in recording his observation or more likely to confusing in his dried specimen the sacs of two different stamens. This opinion is confirmed by Rafinesque's inclusion in his new genus of Michaux's plant. However for anything less than a certainty and for an untrue name it may be unwise to dispossess Bentham's well-chosen name.

*Tomanthera auriculata* (Michx.) Raf. l. c. 66. 1837.

*Otophylla Michauxii* Benth. in DC. Prod. 10: 512. 1846.

New name for *Gerardia auriculata* Michx.

*Otophylla auriculata* (Michx.) Small, Fl. S.E. Un. St. 1075, 1338. 1903.

*Agalinis auriculata* (Michx.) Blake in *Rhodora* 20: 71. 1918.

*Aureolaria auriculata* (Michx.) Farwell in Rep. Mich. Acad. Sci. 20: 189. 1918.

Flowering from late August to mid-September, fruiting September and October.

Old fields and railway banks, occasional in New Jersey and Pennsylvania. Certainly introduced from the prairies of the Mississippi Valley states.

(*To be concluded.*)

## THE GRASSES OF SALEM, OREGON AND VICINITY

BY JAMES C. NELSON

The following list represents the result of five seasons' collecting in the general region adjacent to Salem. Although the work has been done in the all-too-brief moments that could be snatched from arduous professional duties, and makes no claim to completeness, the writer ventures to believe that most of the grasses growing spontaneously in the territory under consideration have been included. In the case of the introduced species, there is the constant possibility of the establishment of new