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CONTRIBUTIONS FROM THE NEW YORK BOTANICAL
GARDEN—No. 6

NOTES AND DESCRIPTIONS OF NORTH
AMERICAN PLANTS—I-II

BY JOHN K^{umpfel} SMALL

NEW YORK
1900

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and Vol. 27, No. 7, May, 1900.]

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Notes and Descriptions of North American Plants.—I.

By JOHN K. SMALL.

SAXIFRAGA NAPENSIS.

Perennial by very short rootstocks, scapose, almost glabrous or sparingly glandular-pilose above. Leaves basal; blades thinish (drying very thin), more or less obliquely oval or ovate, 2-7 cm. long, rounded at apex, undulate, abruptly or gradually narrowed at base, ciliate, sometimes slightly pilose on both surfaces: petioles slightly shorter than the blades or longer, broadly winged: scapes erect, slender, 1.5-3 dm. tall, loosely-paniculate-corymbose: calyx glabrous or glabrate; tube broadly turbinate, nearly 1 mm. high; segments oblong or ovate-oblong, slightly longer than the tube, obtuse or acutish, gland-tipped: corolla white, 5 mm. broad; petals broadly oval or suborbicular, 2 mm. long, rounded or notched at apex, sessile or nearly so, 5-7-nerved: ovaries united to calyx-tube, surrounded by a conspicuous lobed disk: follicles short and stout, 4 mm. high, united to each other to about the edge of disk: seeds dark red, 0.3 mm. long.

On hillsides, Napa Valley, California.

Collected by J. M. Bigelow (Whipple's Expedition) and George Thurber, no. 496.

A species of lax habit, resembling *Saxifraga claytoniaefolia* more closely than any other member of the subgenus *Micranthes*. It differs from *S. claytoniaefolia* by its broadly oval or suborbicular 5-7-nerved petals.

SAXIFRAGA VAN-BRUNTIAE.

Perennial, bright green, minutely glandular-pilose or glabrate below. Stems tufted, 2-7 cm. long, simple, or sometimes corymbosely branched above, leafy to the top: leaves alternate; blades linear, 4-8 mm. long, leathery, blunt, with a thick apex, sessile, turning black at the base of the plants: calyx glabrate in age; tube broadly turbinate; segments oblong or ovate-oblong, obtuse, longer than the tube, spreading: petals yellow, oblong, about 4 mm. long, obtuse, firm, more or less crisped, much longer than the calyx-segments: stamens 10, filaments filiform.

The original specimens of this hitherto undescribed *Saxifraga* were collected by Mr. and Mrs. Cornelius Van Brunt during the

past season on the summit of Sulphur Mountain near Banff, British Columbia. The species is related to *Saxifraga scrypyllifolia* and *S. chrysanthia*; the habit suggests those species but the stems are copiously leafy to the top and the leaves are narrower. The petals are smaller, of a much less brilliant yellow and oblong or ovate-oblong instead of oval-orbicular or obovate as they are in the two related species.

GALPINSIA TOUMEYI.

Perennial from a shrubby base, slender, bright green, puberulent. Stems branching near the base; branches erect or ascending, wire-like, 1-3 dm. long, usually simple above, leafy, pale when young; leaves numerous, sometimes clustered in axils; blades linear-spatulate to linear, 1-2 cm. long, acute, entire, with midrib prominent beneath, lower ones short-petioled, upper sessile; spikes few-flowered, leafy-bracted; calices very minutely pubescent; tube slender, 3-5 cm. long; segments about 1-5 cm. long, their free tips 5-6 mm. long; corolla yellow; petals orbicular-obovate, 1.5 cm. long, undulate; anthers linear, as long as the filaments; capsules linear-prismatic, 2 cm. long.

Arizona: Chinahua Mountains, July 25, 1894, J. W. Toumey, no. 197. Fort Huachuca, August, 1892, T. E. Wilcox.

The species just described is related to *Galpisia Hartwegii*, but is of a much more slender build. There are minor characters in the foliage and habit, but one of the more crucial points of difference lies in the calyx, where we find the free tips of the segments 5-6 mm. in length.

LIMONIUM LIMBATUM.

Perennial, bluish green or glaucescent. Leaves basal; blades leathery, spatulate or oblong-spatulate, 0.5-1.5 dm. long, obtuse or notched at the apex, prominently nerved beneath in drying; petioles shorter than the blades or rarely longer, margined; scapes erect, solitary or several together, corymbosely branched; branches zigzag, ascending; spikes in dense terminal corymbs; bracts suborbicular or sometimes orbicular-oval, obtuse, often eroded at the apex, hyaline-margined; calyx trumpet-shaped with a flaring limb, nearly 4 mm. long; tube hirsute; segments broadly deltoid, apiculate; corollas bright blue.

In alkaline soil, Texas and New Mexico.

As far as I can learn there has been no attempt heretofore to

separate the Texan plant referred to *Limonium Californicum* either varietally or specifically. An examination of considerable material both from the Texas and the Californian districts discloses the fact that there have been two perfectly distinct species confused under the old *Limonium Californicum*. As in the case of all the species of the genus the two under consideration resemble each other in habit. The diagnostic characters are contrasted below:

Limonium Californicum. Calyx narrowly funnellform; tube glabrous; segments erect or nearly so, rounded and mucronulate.

Limonium limbatum. Calyx trumpet-shaped; tube hirsute; segments more or less spreading, broadly deltoid.

The following specimens belong here: Wright, no. 1435; Woodhouse, Zuni Mts., N. M., Aug., 1851; Wootton, no. 172.

ANDROSACE DIFFUSA.

Annual, acaulescent, more or less pubescent. Leaves basal; blades oblanceolate to spatulate or nearly linear, 1-4 cm. long, obtuse or acute, sharply serrate above the middle or sparingly toothed near apex only, sessile or with short winged petioles; scapes erect and spreading, often diffusely branched at base, 5-10 cm. long or shorter; bracts lanceolate; pedicels filiform, very variable in length, often 1-8 cm. long in the same cluster; calyx campanulate to turbinate-campanulate, 3-3.5 mm. high; segments triangular, acute, ciliate, about $\frac{1}{2}$ as long as the 5-ridged tube; corolla white or pink, included, sometimes equalling the tips of the calyx-segments, 3-3.5 mm. broad; segments oblong, obtuse or retuse at apex, about as long as the tube; filaments shorter than the anthers; capsules subglobose, about 3 mm. in diameter.

In rocky soil, western Arctic America to the Dakotas, New Mexico and Arizona. Spring and summer.

For some inexplicable reason the species here described as new has always been associated with *Androsace septentrionalis* with which it has not even a habitual resemblance. *Androsace septentrionalis* is a plant with strict, conspicuously elongated scapes which are surmounted by umbel-like clusters of pedicels of nearly equal length, whereas *Androsace diffusa*, has comparatively short, more or less diffusely spreading scapes, while the pedicels of the clusters are exceedingly variable in length. A more tangible

character exists in the corolla. In *Androsace septentrionalis* this organ conspicuously surpasses its calyx while in the newly described species it is shorter than its calyx or barely equals it.

ANDROSACE SUBUMBELLATA (A. Nelson).

Androsace septentrionalis subumbellata A. Nelson, Bull. Wyom. Exp. St. 28: 149. 1896.

Annual, diminutive, sparingly pubescent. Leaves basal; blades thick, oblong, 2-8 mm. long, obtuse, entire, sessile; scapes 1-5 mm. long, or wanting; bracts ovate-lanceolate or lanceolate, pedicels solitary or several together, 5-10 mm. long; calyx nearly glabrous, turbinate-campanulate, 2.5 mm. high; segments triangular, acute, slightly shorter than the 5-ridged tube; corolla white or pink, 2.5-3 mm. broad, surpassing the calyx; segments oblong, obtuse, or retuse at the apex, shorter than the tube; filaments much shorter than the anthers; capsule globose-pyriform, about 2 mm. thick.

On hillsides, near summit of Union Peak, Wyoming. Summer.

In order to treat this genus consistently, we should recognize the above as a species. On the one hand *Androsace subumbellata* is related to *Androsace diffusa*: this species it resembles in habit and foliage, but it is more diminutive in all its parts. On the other hand it is related to *Androsace septentrionalis* in having the corolla exerted beyond the calyx.

PRIMULA SERRA.

Perennial, glabrous or nearly so, deep green. Leaves basal, 5-10 cm. long; blades narrowly oblong or spatulate, much longer than the broadly winged petioles, rather regularly dentate, acute or apiculate; scapes erect, 1-2 dm. tall, solitary or several together; bracts scarious, ovate-lanceolate, acuminate, often minutely pubescent; pedicels 1-3 cm. long, glabrous in age; calices 6-7 mm. long; tube campanulate; segments lanceolate, granular-ciliate, acuminate, as long as the tube or shorter; corollas lilac-purple; tube as long as the calices or somewhat longer; segments suborbicular or obovate-orbicular, notched at apex, 7-8 mm. long, destitute of apiculations.

Primula serra resembles *Primula Rusbyi* in habit, but both the foliage and the inflorescence furnish characters for distinguishing the two species. In the case of the species just described we find

more coarsely toothed leaf-blades and shorter petioles; but more prominent characters exist in the inflorescence: The calices are twice as large as those of *Primula Rusbyi*, the corolla-tubes are comparatively stout and they never twice exceed the length of the calices as do the very slender tubes of *Primula Rusbyi*. In addition, the lobes of the corolla-segments are destitute of the minute but characteristic apiculations found in the related species.

The original specimens were collected by Mr. Pringle on damp ledges, Santa Rita Mountains, Arizona, at an altitude of 8000 feet, on July 25, 1884.

PRIMULA TENUIS.

Perennial, glabrous, bright green. Leaves basal, 0.5-1.5 cm. long; blades oblong, oval or suborbicular, undulate or toothed, obtuse or acutish, much shorter than the slender petioles: scapes erect, wire-like, 5-10 cm. tall, solitary: bracts linear-subulate, 1-5 mm. long; calices 3-5 mm. high, tubes turbinate, segments narrowly lanceolate to narrowly linear, longer than the tube, acute: corollas pink, 4-5 mm. broad; tubes surpassing the calices, 4 mm long, notched at the apex.

In moist places, Pastolic, Alaska.

A delicate species related to *Primula borealis*, but much more slender; easily distinguished by its flimsy leaves, shorter pedicels turbinate calyx-tubes and narrow calyx-segments. The corolla tube is further exerted than in *Primula borealis* and the more delicate lobes less deeply notched.

The original specimens were collected by W. H. Dall, on June 25, 1871, or 1872.

Notes and Descriptions of North American Plants.—II

BY JOHN K. SMALL.

I. NOTEWORTHY SPECIES

HABENARIA GARBERI Porter, Bot. Gaz. 5: 135. 1880

The original and second known stations for this interesting orchid are both near Manatee, Florida. A second locality can now be placed on record; this is Orange County, Florida, where Mr. F. L. Lewton discovered the species at several stations in the summer of 1894. His specimens are essentially the same as the type.

HABENARIA MACROCERATITIS Willd. Sp. Pl. 4: 44. 1805

This remarkable tropical *Habenaria* has been found native in Florida, by Mr. Lewton. It is not rare in Sumter County, where he first met with it in 1894.

THERMOPSIS MOLLIS (Michx.) M. A. Curtis, Mem. Am. Acad. II. 3: 47. pl. 9. 1848

Heretofore this comparatively rare species has been reported as growing in the mountains of Virginia and North Carolina. But its range is wider than this; in May, 1869, Mr. Canby collected it on Lookout Mountain, Tennessee, and on May 21, 1890, Professor Scribner rediscovered it at the same locality.

PLUCHEA IMBRICATA (Kearney) Nash, Bull. Torr. Club, 23: 108. 1896

Excellent specimens of this *Pluchea* were collected in swamps about Forest City, Orange County, Florida, by Mr. F. L. Lewton in July, 1893. The specimens of this collection agree almost perfectly with the type.

HIERACIUM SCRIBNERI Small, Bull. Torr. Club, 21: 20. 1894

Professor Ruth has sent me almost typical specimens of this rare member of *Hieracium* from near Knoxville, Tennessee, where he collected the plant in 1897.

SENECIO MILLIFOLIUM T. & G. Fl. N. A. 2: 444. 1843

In 1887 Mr. E. R. Memminger rediscovered this rare *Senecio* in Henderson County, North Carolina, where it was collected many years ago by Buckley. In 1895 Mr. A. M. Huger sent me specimens from Macon and Jackson counties, North Carolina, where he found it growing plentifully on sloping cliffs at altitudes ranging from 1100-1400 meters.

II. HITHERTO UNDESCRIBED SPECIES

Allium arenicola

Bulbs nearly 1 cm. long, with fibrous outer coats. Leaves basal; blades very narrowly linear, becoming almost filiform, about as long as the scape or shorter: scapes erect, sometimes several together, 1-3 dm. tall, more or less curved: umbels erect, 10-30-flowered: pedicels 5-10 mm. long, slender: perianth deep pink; segments linear to narrowly linear-lanceolate, about 4 mm. long, very delicate: filaments dilated below: capsules not crested.

In sandy soil, Mississippi. Spring.

This species has been confused with *Allium mutabile* Michx. for nearly three quarters of a century. It is much more slender in habit and smaller in all its parts. The type specimens were collected by Martha B. Flint at Brookhaven, Mississippi, April 1, 1888.

Ranunculus cuneiformis

Foliage hirsute below the inflorescence. Roots thickened, clustered: stems usually several together, 2-3 dm. tall, erect or ascending, rather slender: leaves mainly basal; blades, at least some of them, twice-divided into cuneate rather obtuse segments, 5-10 cm. long, about as long as the petioles; upper stem leaves with blades 3-parted; segments narrow, often incised: flowers yellow, about 1.5 cm. broad, on strigillose peduncles: heads of fruit subglobose or ovoid-globose, about 1 cm. long: receptacle barely elongated: achenes 4 mm. long, conspicuously winged and with a triangular beak.

On prairies, near Kerrville, Texas. Spring. Heller, Pl. S. Tex. no. 1688. It differs from its relative as shown below:

RANUNCULUS CUNEIFORMIS

Blades of lower leaves twice-divided: corollas 1.5 cm. broad: heads of achenes subglobose or ovoid-globose, receptacle barely elongated: achenes conspicuously winged, with triangular beaks.

RANUNCULUS MACRANTHUS

Blades of lower leaves once-divided: corollas 3-5 cm. broad: heads of achenes oblong to cylindric: receptacle elongated: achenes narrowly margined, with subulate slightly curved beaks.

Ranunculus Mississippiensis

Perennial, stoloniferous, fleshy. Stems stout, about 2 dm. tall, more or less branched: leaves various; basal or those on the lower part of the stem with ovate or ovate-lanceolate sinuate-dentate blades 1.5-4 cm. long, and elongated petioles, upper leaves with oblong or linear remotely-toothed blades 3-8 cm. long: flowers few: sepals oblong to suborbicular, sparingly pubescent: corollas about 1.5 cm. broad; petals about 9, nearly oblong, deep yellow and lustrous within.

In low grounds, Arkansas and Mississippi. Spring.

ARKANSAS: Varner, Lincoln Co., April 28, 1898; *Bush*, no. 12.

MISSISSIPPI: "Alluvions." 1840; *Peck*.

Related to *Ranunculus oblongifolius*, but more robust, with truncate or cordate blades terminating the elongated petioles of the lower or basal leaves and much larger corollas consisting of about nine petals.

Thalictrum mirabile

Perennial, slender, glabrous, bright green. Stems erect, 1-3 dm. tall, wiry, dichotomously branched above: leaves various, basal usually ternately compound, with petioles about 2 cm. long; upper leaves gradually more simple and shorter petioled: leaflets suborbicular or orbicular-reniform, 2-3 cm. broad, very thin, delicately nerved, glaucescent beneath, broadly crenate or shallowly crenate-lobed, truncate or subcordate at the base, longer than the petiolules: peduncles hair-like: flowers white: sepals spatulate or rhombic-spatulate, fully 1.5 mm. long: filaments fully 2 mm. long, club-shaped by an abrupt thickening about the middle: fruit spreading at right-angles to the peduncle; body plump, about 2 mm. long, acute, not depressed along the upper side, as long as the filiform stalk or shorter.

Resembles *Thalictrum clavatum* but more delicate and smaller throughout, and with very short-petioled basal leaves. The fruit

is only about one-half the size of that of *T. clavatum* and has a plump barely ribbed body not at all depressed along the upper side.

The original specimens were collected by Prof. F. S. Earle under sandstone bluffs on Little Mountain near Moulton, Alabama, June 25, 1899, no. 2212.

Phyllanthus Avicularia

Perennial, bright green. Stems branched at the base and throughout, 3-6 dm. long, puberulent, striate in age; leaves numerous, ascending; blades oblong, or slightly broadest above the middle, 8-18 mm. long, blunt or barely pointed, slightly paler beneath than above, rounded or truncate at the base; petioles 1 mm. long, or shorter; calices short-pedicelled; staminate delicate, barely 2 mm. broad, sepals orbicular-obovate or suborbicular; pistillate firmer, fully 2 mm. broad or barely 3 mm. broad at maturity; sepals oblong or oval, scarious-margined, persistent; capsules spheroidal, 3 mm. broad.

In dry soil, along the Brazos River, Texas. Type from Columbia, Texas, collected by B. F. Bush, October 26, 1899, no. 263.

Related to *Phyllanthus polygonoides*, but much more robust in all its parts. The leaves, too, are of an oblong type. The capsules conspicuously surpass the mature pistillate calyx, whereas those of *P. polygonoides* are at least equaled by the mature sepals.

Oenothera nyctaginiifolia

Apparently annual or biennial, sparingly pubescent. Stems branched at the base, branches spreading or decumbent, 2-5 dm. long, more or less branched; leaves rather few; blades lanceolate to ovate-lanceolate, 2-5.5 cm. long, acute or slightly acuminate, often somewhat crisped and twisted, undulate, ciliate, cuneate or truncate at the base; petioles 2-6 mm. long, pale, margined; flowers axillary; hypanthium bristly and with very slender hairs, especially about the ovary; tubular portion about as long as the ovary; sepals linear-lanceolate, fully 1.5 cm. long, thin and delicate; capsules 4-5 cm. long, club-shaped by the sterile basal portion which is slightly shorter than the fertile portion, about 4 mm. thick; seeds 1.5 mm. long, reticulated.

In dry soil, Flagstaff, Arizona, September 5, 1894, *J. W. Toumey*.

More closely related to *Oenothera laciniata* than any other species. It differs in the larger flowers and the club-shaped capsules, besides the conspicuous character of the leaves. These members are very suggestive of the leaves of *Nyctaginia* or the broad-leaved species of *Allionia*.

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Phlox Brittonii

Perennial, deep green. Stems copiously branched; branched matted, forming wide tufts, glandular-pilose: leaves numerous, small ones often clustered in the axils of the larger; blades subulate or narrowly linear-subulate, 5-10 mm. long, ciliate, especially near the base: calices 5-6 mm. long, glandular-pubescent like the branches; segments subulate, about as long as the tube: corolla white: tube curved, about 1 cm. long; limb 12-13 mm. wide; segments cuneate, with 2 pale magenta spots near the base, cleft by a V-shaped sinus about 3 mm. deep, usually with a minute tooth in each sinus, tips acute or acutish.

On dry mountain slopes, Virginia and West Virginia to North Carolina. Spring and Summer.

A relative of *Phlox subulata* but more delicate in all its parts. The contrasting characters may be shown as follows:

PHLOX BRITTONII

Stems or branches glandular-pilose: leaf blades mostly 5-10 mm. long: calices 5-6 mm. long: limb of corolla less than 14 mm. broad; lobes usually with a minute tooth in each sinus.

PHLOX SUBULATA

Stems or branches not glandular: leaf-blades mostly 10-15 mm. long: calices 8-9 mm. long: limb of corolla over 15 mm. broad; lobes usually with toothless sinuses.

The specimens upon which the species is based were collected by Dr. N. L. Britton, at White Sulphur Springs, West Virginia, May, 1898. Dr. Britton then introduced the species in the herbaceous grounds of the New York Botanical Garden where the plants have become thoroughly established.

Vernonia interior

Perennial, finely and usually closely pubescent. Stems erect or ascending, 1-2 meters tall, simple below the inflorescence: leaves numerous; blades elliptic to elliptic-lanceolate, 6-20 cm. long, acuminate, sharply and rather finely serrate, sessile or nearly so: heads numerous, rather crowded: involucre campanulate, 6-7 mm. high, 4-5 mm. broad: bracts pubescent; sometimes hoary, acute or with short keel-like acuminations, the tips erect or slightly spreading: achenes pubescent: pappus purple.

On plains or prairies, Missouri and Kansas south to Texas. Spring to fall.

The species just described has heretofore been confused with *Vernonia Baldwinii* and *V. Drummondii*. It is readily separable from its nearest relative, *Vernonia Baldwinii* by the smaller involucre and their bracts which have erect or barely spreading tips. The following cited specimens belong here:

MISSOURI: Jackson County, *Bush*, no. 233A; McDonald County, *Bush*, no. 232.

NEBRASKA: Lincoln, *Webber*, September, 1888.

TEXAS: Kerrville, *Heller*, Pl. S. Tex. no. 1927.

This species has been raised from seed in the nurseries of the New York Botanical Garden and is now established in the herbaceous grounds.

Vernonia maxima

Foliage glabrous or sparingly pubescent. Stems erect, 1-3 meters tall, branching above: leaves rather numerous: blades narrowly elliptic to lanceolate or linear-lanceolate, 1-3 dm. long, acuminate, sharply serrate, narrowed into short petioles or the upper ones nearly sessile: corymbs 1-4 dm. broad: peduncles angled, barely enlarged upward: involucre hemispheric, 4 mm. to nearly 5 mm. high, rounded at the base: bracts ovate to oblong, acute to mucronate, ciliate, appressed: achenes 3 mm. long, upwardly barbed on the ribs: pappus light or deep purple.

In low ground, Ohio to Missouri, south to Alabama and Louisiana. Summer and fall.

For many years *Vernonia gigantea* or *V. altissima* has been an aggregate. The campestrian plant that has been known under both of those names is very distinct from the Carolinian and Floridian plant to which both the above cited names were originally applied.

The campestrian plant may easily be separated from the southeastern species by the lower involucre with rounded bases and their proportionately broader appressed and compactly arranged bracts. The involucre of the related species are narrowed at the base and have narrower loosely spreading bracts. The following cited specimens belong here:

MISSOURI: Jackson County, *Bush*, no. 230.

OHIO: no locality, *Riddell*, 1834. Scioto, *Merriam*, September 28, 1891.

WEST VIRGINIA: Monongalia County, *Millsbaugh*, no. 677.

KENTUCKY: no locality, *Short*, 1842. Harlan County, *Kearney*, no. 188.

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Stems erect, 1-3
numerous : blades
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achenes 3 mm. long,
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TENNESSEE : Knoxville, *Ruth*, September, 1894.

MISSISSIPPI : Agricultural College, *Pollard*, no. 1267.

Lacinaria Halei

Perennial, glabrous or nearly so. Stems erect, 6-9 dm. tall, simple or sparingly branched : leaves various ; lower with linear blades 1-2 dm. long, upper narrowly linear and much shorter, not ciliate near the base : heads short-peduncled or nearly sessile, not densely crowded : involucre becoming narrowly turbinate, 7-9 mm. high : bracts lanceolate to oblong-lanceolate, acuminate, ciliate, rigid : pappus plumose : achenes closely pubescent.

On prairies, Louisiana. Summer.

This species has heretofore been included in *Lacinaria acidota*, with which it has little or nothing in common, and it may be separated by its fewer leaves and much smaller heads which are disposed in elongated interrupted spikes. The bracts of the involucre are much shorter than those of *L. acidota* and have less elongated tips.

The species is founded on Hale's no. 334.

Lacinaria platylepis

Perennial, bright green. Stems erect, 8-9 dm. tall, simple, glabrate below, pubescent with white hairs above : leaves not very numerous, narrowly linear, 2-10 cm. long, or longer at the base of the stem, glabrous or nearly so : heads rather approximate, sessile, surpassing the subtending bracts : involucre cylindric-campanulate, 7-9 mm. long ; outer bracts often ovate, acute, inner larger and broader, broadest above the middle, rounded at the apex, ciliate : pappus not plumose, pale.

In sandy soil, Louisiana.

Plants belonging here have been referred to *Lacinaria acidota*, although none of the several characters warrant such a disposition. The fewer and shorter leaves, the elongated more or less interrupted spikes and smaller heads and involucre with their broad rounded inner bracts, are some of the characters that separate *Lacinaria platylepis* from *L. acidota*. The pappus too is not plumose.

The original specimens were collected in Louisiana by Dr. Hale.