

# BOTANICAL MUSEUM LEAFLETS

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### A SYNOPSIS OF THE GENUS UROSKINNERA

BY

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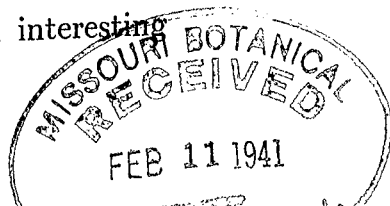
FOR a number of years, the genus *Uroskinnera*, a member of the Scrophulariaceae, has commanded the attention and interest of horticulturists because of its beauty and its rarity.

Lindley described *Uroskinnera* in 1857, basing the genus on the Guatemalan *U. spectabilis*. For twenty-two years thereafter the genus was considered to be monotypic.

In 1879, however, Hemsley described a second species from southern Mexico, naming it *Uroskinnera hirtiflora*. Since that time *Uroskinnera* has been represented only by these two species, neither of which had been collected again until very recently. Since herbarium material was scanty, and there was but little information concerning the habit of the plants, the genus remained imperfectly understood.

Several collections of *Uroskinnera* were made by the author in northeastern Oaxaca in 1939. These are referable to *U. hirtiflora* and apparently represent the first collections of this plant that have been made in a century, and appear to constitute the only material of the species in American herbaria.

In 1939, Mr. Eizi Matuda collected an interesting



*Uroskinnera* in Tabasco which represents a hitherto undescribed species. Its diagnosis is presented in this paper by Dr. C. L. Lundell.

Recently, an unidentified specimen of *Uroskinnera*, collected in Guatemala in 1885 by Sereno Watson, was brought to my attention by Dr. Lyman B. Smith of the Gray Herbarium. This proves to be a second new species, the description of which is given below. In 1940, Dr. Julian Steyermark collected in Guatemala what proves to be this same species, together with additional material of *Uroskinnera spectabilis*.

In view of the fact that the last few years have seen not only the rediscovery of the two older species, but also the discovery of two new species, the time seems appropriate for a revision of the genus.

*Uroskinnera Lindley* in Gard. Chron. (1857) 36—Hooker in Bot. Mag. 83 (1857) t. 5009—Bentham & Hooker filius Gen. Pl. 2 (1876) 942—Baillon Hist. Pl. 9 (1888) 437—Wettstein in Engler Pflanzenfam. IV. 3b, (1891) 63, 67—Baillon Dict. Bot. 4 (1892) 240—Hallier filius in Bull. Herb. Boiss. 3 (1903) 194, 206—Lemée Dict. Genr. Pl. Phan. 6 (1935) 804.

ORIGINAL DESCRIPTION: "Aestivatio imbricato-bilabata. Calyx cyathiformis 4-dentatus. Corolla et stamina Penstemonis. Stylus planus stigmatate furcato. Capsula calyce arctissime vestita, loculucide dehiscens. Semina scrobiculata, membrana cincta. Herba facie Gesnerae, floribus spicatis violaceis."

A more extended generic description of *Uroskinnera* is given in Bentham & Hooker filius Gen. Pl. 2 (1876) 942. The following diagnosis is a translation of that of Bentham and Hooker with the addition of minor changes necessitated by the discovery of the new species and the

acquisition of more accurate knowledge in regard to the habit of the older ones.

Calyx tubular-campanulate, with four or five short, setaceous or puberulent teeth. Corolla tube elongate, enlarged above; limb spreading, 5-parted, with broad, flat, slightly unequal lobes, the two outer posterior. Stamens four, didynamous, included, with filiform filaments; locules of the anthers divergent, confluent apically. Staminodium posterior, linear-clavate, shorter or longer than the stamens. Style elongate, apically stigmatose, shallowly or deeply bifid; ovules numerous in the locules. Capsules globose, almost included by the calyx, loculicidally dehiscent; valves entire, septate at the middle with connate placentae. Seeds numerous, small, scrobiculate, enclosed by a thin membrane, or naked. Shrubs, softly villous or puberulent-hirtellous. Leaves opposite, petiolate, velutinous or hirtellous, crenate or dentate. Spike or raceme terminal, dense or rather lax, secund. Flowers rather large, rose-purple or yellow, declinate, subsessile or short-pedicellate, with two setaceous or puberulent bracts at the base.

TYPE SPECIES: *Uroskinnera spectabilis* Lindley.

*Uroskinnera* consists of four species endemic to southern Mexico and adjacent Guatemala. One species occurs in Oaxaca, one in Tabasco, and two in Guatemala.

#### KEY TO THE SPECIES OF UROSKINNERA

- A. Flowers yellow; leaves membranaceous, pubescent and hirtellous beneath; calyx and floral bracts puberulent; staminodium longer than fertile stamens *flavida*
- AA. Flowers rose-purple; leaves chartaceous, sericeous (usually densely so) beneath; calyx and floral bracts villous-hirsute; staminodium shorter than fertile stamens

B. Calyx 5-dentate, its teeth 5-6 mm. long; inflorescence long, lax; floral bracts 3.5-5 mm. long; corolla externally hirsute; staminodium eglandular, 3 mm. long

*hirtiflora*

BB. Calyx 4-dentate, its teeth 1.5-2 mm. long; inflorescence short, compact; floral bracts not exceeding 3 mm. in length; corolla externally glabrous; staminodium glandular-lepidote, 6-12 mm. long

C. Leaves elliptic-ovate, 6-16 cm. long, 4-10 cm. wide; corolla 3.5-4 cm. long; fertile stamens 12 and 17 mm. long; staminodium 12 mm. long

*spectabilis*

CC. Leaves elliptic-lanceolate, 4-8 cm. long, 2.5-3.5 cm. wide; corolla 2.5-3 cm. long; fertile stamens 9-14 and 15 mm. long; staminodium 6-8 mm. long

*Watsonii*

### ***Uroskinnera flavida* Lundell sp. nov.**

Frutex, ramulis puberulis. Petioli usque ad 6.8 cm. longi. Lamina membranacea, crenato-dentata, ovata vel ovato-elliptica, apice obtusa vel acutiuscula, basi subcordata vel rotundata, utrinque puberula et parce hirtella. Inflorescentiae subspicatae, usque ad 13.5 cm. longae. Pedicelli circa 1.3 mm. longi. Calyx 2.8-4 mm. longus, quattuor-dentatus. Corolla flavida, usque ad 3.8 cm. longa, parce glanduloso-pilosa, quinquelobata. Stamina quattuor.

A shrub; branchlets slender, densely short-hirtellous or puberulent. Petioles slender, canaliculate, puberulent and sparsely hirtellous, striate, up to 6.8 cm. long. Leaf-blades membranaceous, conspicuously crenate-dentate, the teeth minutely apiculate, ovate or ovate-elliptic, 5-13.5 cm. long, 3-9.5 cm. wide, apex obtuse or acutish, base subcordate or rounded, both surfaces puberulent and sparsely hirtellous, the hairs denser along the midrib and veins, dark green above, paler beneath, costa and veins slightly raised above, conspicuous beneath, primary veins five or seven on each side. Inflorescence terminal, subspicate, long, slender, densely puberulent,

up to 13.5 cm. long. Pedicels about 1.3 mm. long. Calyx 2.8-4 mm. long, accrescent, puberulent and sparsely glandular-pilose outside, glabrous within, shallowly 4-dentate, the teeth apiculate, 1 mm. or less in length. Corolla yellowish, up to 3.8 cm. long, ampliate above, 5-lobed, sparsely glandular-pilose outside, sparsely glandular within with sessile or short-stipitate glands. Stamens four, didymous, included, the two shorter ones about 1.3 cm. long, the two longer ones about 1.7 cm. long; filaments glabrous; staminodium linear-clavate, glandular-lepidote. Ovary glabrous, 2-celled, with axillary placentae and numerous ovules. Style filiform, about 2.6 cm. long, glabrous, shallowly bifid, the stigmatic lobes unequal, the shortest one erect.

SPECIMENS EXAMINED:

MEXICO: Tabasco, on limestone rocks at Retiro, near Tenosique, June 19-25, 1939, *Eizi Matuda 3425* (TYPE in Herb. Univ. Michigan; ISOTYPE in Econ. Herb. Oakes Ames No. 7113).

*Uroskinnera flavida* is easily distinguished from the other known species of the genus by its yellow rather than rose-purple flowers, by its membranaceous rather than chartaceous leaves, and by its puberulent, not sericeous, indument. Florally, *U. flavida* differs strikingly from the other species in having a staminodium which is longer than the fertile stamens.

The long and lax inflorescence of *Uroskinnera flavida* resembles somewhat that of *U. hirtiflora*, but it is entirely unlike the short, crowded inflorescences of the two Guatemalan species. In *U. flavida*, the calyx and floral bracts are puberulent, while in the other species these structures are densely hirsute. The glandular-lepidote corolla of *U. flavida*, which resembles the hirsute corolla of *U. hirtiflora*, is unlike the glabrous corollas of *U. spectabilis* and *U. Watsonii*.

While *Uroskinnera flavida* is obviously closely related

to *U. hirtiflora*, it possesses a number of characters which indicate a relationship with *U. spectabilis* and *U. Watsonii* as well. *U. flavida* resembles both the Guatemalan species in having a 4-dentate calyx. A corresponding resemblance is to be found in the glandular-lepidote staminodium of *U. flavida*, *U. spectabilis* and *U. Watsonii*, as opposed to the glabrous staminodium of *U. hirtiflora*.

An evaluation of the important characters of *Uroskinnera flavida* indicates that this species, which is geographically intermediate between the Oaxacan and the Guatemalan species, is also taxonomically intermediate between *U. hirtiflora* on the one hand, and *U. spectabilis* and *U. Watsonii* on the other. A closer affinity exists between *U. flavida* and the Oaxacan *U. hirtiflora*, than between *U. flavida* and the Guatemalan species, *U. spectabilis* and *U. Watsonii*.

***Uroskinnera hirtiflora* Hemsley** Diagn. Pl. Nov. . . . Mex. et Centr.- Am., pt. 2 (1879) 34—Hemsley in Godman & Salvin Biol. Centr.-Am., Bot. 2 (1881-82) 447—*ibid* 5(1882) t. 64—Conzatti & Smith Fl. Sin. Mex., ed. 2 (1910) 150, 161.

Zapotec name: *yet-le*

On the basis of the four collections cited below, and the field notes which accompany them, the following amplified description of *Uroskinnera hirtiflora* is presented.

A stout shrub 6-8 feet in height. Leaves long-petiolate, oblong-elliptic or ovate-elliptic, serrate, rather obtuse at the apex, rounded or slightly cordate at the base, thick-chartaceous, velvety villous-sericeous above and below, 7-12 cm. long, 4.5-7.5 cm. wide (the members of a pair often unequal), yellow-green above, grey-green below. Petioles densely villous-hirsute, 1.5-5 (usually 4-5) cm. long. Inflorescence a long, dense, many-flowered raceme. Pedicels up to 5 mm. long, but usually much shorter,

very densely villous-hirsute. Bracts linear, very hairy, 3-5 mm. long. Flower 2.5-3 cm. long, 1-1.3 cm. wide at the tip when expanded. Calyx 5-dentate, cup-shaped, the cup 5-6 mm. long, densely white-hirsute, the hairs up to 1 mm. long, the teeth linear, 5-6 mm. long. Corolla purple, narrowly infundibuliform, 5-lobate with rounded, subequal lobes, 2-lipped, densely hirsute externally and internally at the insertion of the stamens. Fertile stamens four, glabrous, the shorter two about 1.1-1.5 cm. long, the longer two 1.7-1.9 cm. long; staminodium linear-clavate, about 3 mm. long, not glandular. Style elongate, glabrous, 2.2 cm. long; stigma shallowly bifid. Ovary subglobose, about 2-3 mm. in diameter. Seeds very numerous, small, scrobiculate. Flowering season: June and July.

SPECIMENS EXAMINED:

MEXICO: Oaxaca, District of Choapam, Santa María Yahuvé, long.  $95^{\circ}50'$ , lat.  $17^{\circ}19'$ , alt. 1200 m., May 15, 1939, *Schultes & Reko 918*; District of Choapam, between San Juan Teotalcingo and Santiago Choapam, long.  $95^{\circ}57'$ , lat.  $17^{\circ}18'$ , alt. 1300 m., June 1, 1939, *Schultes 566*; *ibid.*, alt. 1400 m., June 1, 1939, *Schultes 566a*; District of Choapam, between Santiago Choapam and San Juan Comaltepec, long.  $95^{\circ}58'$ , lat.  $17^{\circ}24'$ , alt. 1000 m., June 3, 1939, *Schultes 571*.

This striking endemic is very local in occurrence. It has been collected only in the mountains of the Districts of Villa Alta and Choapam in the northeastern part of the state of Oaxaca. Galeotti (*Galeotti 1040*) collected it a century ago, "in rupibus montium orientalium Oaxacae, alt. 2,500 ped". It was found shortly thereafter by Jürgensen (*Jürgensen 642, 842, 936*) on San Pedro Nolasco, a mountain near the boundary of the Districts of Villa Alta and Ixtlán. These collections were cited by Hemsley in the original description, but they are at present unavailable for examination. However, Hemsley's excellent plate of *Uroskinnera hirtiflora* (in Godman &

Salvin Biol. Centr.-Am. 5 (1882) t.64) leaves no doubt that the collections which I have been able to examine are referable to this species.

Inasmuch as no description of the habit of *Uroskinnera hirtiflora* in the wild state has been published, the following notes may be of interest. Unlike the two Guatemalan species, *U. hirtiflora* is a silvicolous shrub, inhabiting the deepest, darkest parts of the rain-forests on steep mountains. The plant, standing six to eight feet high, is completely sheltered by the tall trees so that little direct sunlight reaches it. Nevertheless, its leaves are very heavily villous-sericeous above and below. It exhibits a predilection for well-drained, calcareous terrain which is not overgrown with the usual tangle of vines and herbaceous elements. It is usually not present in abundance.

The flowers of *Uroskinnera hirtiflora* are rose-purple in all their parts. There is no white on the corolla as reported for *U. spectabilis* and *U. Watsonii*.

In the original description of *Uroskinnera hirtiflora*, Hemsley did not comment upon the habit of the plant, but in an extended description (Biol. Centr.-Am., l.c.), he stated that the genus *Uroskinnera* consisted of "two herbaceous species". This is erroneous. The plants from which my four collections of *U. hirtiflora* were taken were large, rather woody shrubs ranging in height from six to eight feet. Furthermore, Hemsley's figure of *U. hirtiflora* indicates by the thickness of the terminal branches and the stoutness of the petioles and size of the leaves that the specimens which he studied were portions of a shrub.

Probably because of Hemsley's statement that the plant was herbaceous, Standley did not include *Uroskinnera hirtiflora* in his *Trees and shrubs of Mexico* (Contrib. U.S. Nat. Herb. 23 (1920-1926) ). Furthermore, in their *Flora sinóptica Mexicana* (ed. 2 (1910) 161),

Conzatti and Smith made the statement that *Uroskinnera* consists of two stout herbs ("hierbas gruesas"). This error is probably also due to the earlier statement by Hemsley, for Professor Conzatti has informed me that he has never had an opportunity of seeing *Uroskinnera hirtiflora* in its natural state.

Specimens of *Uroskinnera hirtiflora*, collected in 1939, have been distributed among several institutions in North America and apparently represent the only material of this species in American herbaria. Specimens are to be found in the Econ. Herb. Oakes Ames; Herb. Gray; U.S. Nat. Herb.; Herb. Field Mus. Nat. Hist.; Herb. Phil. Acad. Nat. Sci.; and Herb. Inst. Biología (Mexico). A sample of the wood of *Uroskinnera hirtiflora* has been deposited in the Wood Collection of the Biological Laboratories of Harvard University.

*Uroskinnera hirtiflora* appears to be related to the Tabascan *U. flavida* more closely than to the Guatemalan *U. spectabilis* and *U. Watsonii*, even though the relationship with the Tabascan species is not close. In habit, *Uroskinnera hirtiflora* is similar to *U. spectabilis*; both are stout shrubs, five to six feet high, with large, elliptic-ovate, chartaceous, sericeous leaves, large rose-purple flowers with hirsute calyces, and staminodia which are shorter than the fertile stamens. However, *Uroskinnera hirtiflora* is more like *U. Watsonii* in the density of the indument of the leaves. *Uroskinnera hirtiflora* differs from the other species of the genus in having a 5-dentate (instead of a 4-dentate) calyx. It has the shortest staminodium of the genus. Its staminodium is one half the size of that of *U. Watsonii*, one fourth that of *U. spectabilis*, and one seventh that of *U. flavida*. A striking and unique characteristic of *U. hirtiflora* is the densely hirsute condition of the interior of the corolla tube at the insertion of the stamens.

***Uroskinnera spectabilis* Lindley** in Gard. Chron. (1857) 36—Hooker in Bot. Mag. 83 (1857) t. 5009—Morren Belg. Hort. 7 (1857) 238—Lemaire Ill. Hort. 5 (1858) 3—Galeotti in Journ. Hort. Prat., n.s. 1 (1857) 77, 244—Lemaire in Rev. Hort. (1858) 35—Lemaire in Fl. Serres, ser. 2, 4 (1861) t. 1433—Bois Dict. Hort. 2 (1893-99) 1182—Nieuwenhuis in Ann. Jard. Bot. Buitenzorg 21 (1907) t. 29, f. 75.

Stout shrub up to five feet in height. Leaves long-petiolate, elliptic-ovate, dentate, the teeth not apiculate, subacute, cuneate at the base, chartaceous, hispidulous and dark green above, sericeous and grey-green beneath, 6-16 (mostly 12-16) cm. long, 4-10 (mostly 6-10) cm. wide. Petioles densely hirsute, 1.5-5 (mostly 3-5) cm. long. Inflorescence a short, dense, many-flowered raceme about 6 cm. long. Pedicels 1-2 mm. long, very densely white villous-hirsute. Bracts linear, very hairy, 1-3 mm. long. Flowers up to 4 cm. long, 1.5-2 cm. wide at the tip when expanded. Calyx 4-dentate, cup-shaped; the cup 4.5 mm. long, densely white-hirsute, the hairs about 0.8 mm. long; the teeth linear, 1.8-2 mm. long. Corolla violet-purple, infundibuliform, glabrous externally, 5-lobate, 2-lipped; the lobes triangular, subacute, subequal, sparsely glandular-lepidote within. Fertile stamens four, glabrous; the longer two about 1.7 cm. in length, inserted 15 mm. from the base of the corolla tube; the shorter two about 1.2 cm. long; locules of the anthers divergent; staminodium terete, clavate, glandular-lepidote, 1.2 cm. long, inserted 9 mm. from the base of the corolla tube, not equaling the stamens. Style elongate, flattened, linear-clavate in outline, abruptly rounded at the apex, glabrous, 2.6 cm. long, persisting in fruit; stigma deeply bifid, the two lobes horn-like, strongly divergent. Ovary glabrous, subglobose, measuring about 1.5

and 2 mm. in its diameters. Seeds numerous, small, scrobiculate.

SPECIMENS EXAMINED:

(Cultivated) BRITISH GUIANA: Botanic Gardens, Georgetown, *L. H. Bailey s.n.*, 1922 (Bailey Hort.); *ibid*, *E. B. Martyn*, May, 1940 (Econ. Herb. Oakes Ames No. 1577; Herb. Field Mus.); *ibid*, *coll. unknown*, summer, 1940 (Econ. Herb. Oakes Ames. No. 8473; Herb. Gray; Herb. Univ. Michigan).

(Wild) GUATEMALA: dry pine slope, Dept. Izabál, between Milla 49.5 and ridge 6 miles from Izabál, Montaña del Mico, alt. 65-600 m., April 1, 1940, *Julian A. Steyermark 38571* (Herb. Field Mus. Nos. 1035324 and 1035325).

*Uroskinnera spectabilis* was described from two collections from Guatemala (*Skinner s.n.* and *Wendland s.n.*), the exact localities of which were not given. These collections are preserved in the Herbarium at Kew. According to Hemsley (in Godman & Salvin, Biol. Centr.-Am., Bot. 2 (1881-82) 447), who presumably examined the Skinner and Wendland material when he drew up the description of *Uroskinnera hirtiflora*, *U. spectabilis* is "not uncommon near Quirigua in the valley of the Montagua, Guatemala." This locality is in the east-central part of Guatemala where Steyermark rediscovered and collected the plant in 1940; Steyermark's collection was made in the Departamento de Izabál. Apparently *Uroskinnera spectabilis* is a localized endemic of this part of Guatemala.

According to the field notes which accompany *Steyermark 38571*, *Uroskinnera spectabilis* inhabits "dry, pine slopes" and is a "shrub 5 feet tall." These notes indicate a different habitat than that of *Uroskinnera hirtiflora* which exhibits a predilection for the damp, shady rainforests of Oaxaca. *Uroskinnera Watsonii* grows together with *U. spectabilis* in dry situations; thus, there appears to be a fundamental ecological difference between the

Oaxacan and the Guatemalan species. Concerning the flower of *U. spectabilis*, Steyermark states: "Corolla whitish at base, lavender-orchid in upper half."

Introduced into the horticultural world in 1857, *Uroskinnera spectabilis* immediately attracted wide interest in Europe. The plant was grown in a number of horticultural centres, if we are to judge from the numerous references to it and the illustrations in horticultural publications of the latter half of the 19th Century. It is probable that collections from cultivated material have been preserved in various European herbaria, but the present European hostilities have precluded the possibility of studying them.

Through the kindness of Mr. Charles A. Weatherby and Professor L. H. Bailey, I learned that *Uroskinnera spectabilis* is still cultivated in the Botanic Gardens at Georgetown, British Guiana. In 1922, Professor Bailey collected a specimen from these Gardens; I was fortunate in being able to examine this specimen which is preserved in the Bailey Hortorium. Through the kindness of Dr. E. B. Martyn, Director of the Georgetown Gardens, a number of additional specimens of *Uroskinnera spectabilis* have recently been procured for study.

An examination of these specimens and a comparison of them with the type description and with Steyermark's wild material of this species from Guatemala indicates that the leaves tend to become smaller and thinner in cultivation. Aberrations in the flowers of the cultivated plants are also frequent. A flower taken from one of the Georgetown specimens (Econ. Herb. Oakes Ames No. 8473) had a six-toothed instead of four-toothed calyx, a trifold instead of a bifid stigma, and five fertile stamens without a staminodium instead of four fertile stamens with one staminodium.

*Uroskinnera spectabilis* is most closely allied to *U.*

*Watsonii*, although it superficially resembles *U. hirtiflora* in habit. A consideration of the relationship of *U. spectabilis* and *U. Watsonii* will be deferred until after the description of *U. Watsonii*.

***Uroskinnera Watsonii* R. E. Schultes sp. nov.**

Frutex. Folia elliptico-lanceolata, serrata, basi cuneata, chartacea, supra densissime hispidulosa, infra dense villososericea, 4–8 cm. longa, 2.5–3.5 cm. lata. Inflorescentia racemosa, densissima, brevis. Pedicelli brevissimi, densissime villosohirsuti. Calyx quattuor-dentatus, accrescens. Corolla purpurea, infundibuliformis, usque ad 3 cm. longa, quinquelobata, lobis rotundatis, extus glabris, intus glanduloso-lepidotis. Stamina quattuor, glabra; staminodium lineari-clavatum, glanduloso-lepidotum, quam stamina brevius. Stylus elongatus; stigma profunde bifidum, lobis vix divergentibus. Ovarium glabrum.

Shrub about 3 feet tall. Young branches densely sericeous, in age glabrescent, grey-brown. Leaves elliptic-lanceolate, serrate, acute at the tip, cuneate at the base, chartaceous, densely hispidulous and dark green above, densely velvety villous-sericeous and grey-green beneath, 4–8 cm. long, 2.5–3.5 cm. wide. Petioles densely villous-hirsute, 1 to rarely 2 cm. long. Inflorescence a short, very dense, many-flowered raceme, 3–3.5 cm. long. Pedicels up to 2 mm. long but usually much shorter so that the flowers appear sessile, very densely villous-hirsute. Bracts filiform-linear, very hairy, about 2.5–3 mm. long. Calyx 4-dentate, cup-shaped, accrescent; the cup 2 mm. long, densely white-hirsute, the hairs nearly 1 mm. long; the teeth linear, 4–4.5 mm. long. Corolla violet-purple, very narrowly infundibuliform, glabrous without, 2.2–3 cm. long, 5-lobate, 2-lipped; the lobes rounded, subequal, glandular-lepidote within. Stamens four, glabrous; the shorter two 9–14 mm. long; the longer two about

EXPLANATION OF THE ILLUSTRATION

UROSKINNERA WATSONII *R. E. Schultes*. 1, habit, one half natural size. 2, flower (spread open), natural size. 3, dissected calyx and pistillate organs, natural size.

UROSKINNERA FLAVIDA *Lundell*. 4, habit, one half natural size. 5, flower (spread open), natural size. 6, dissected calyx and pistillate organs, natural size.

UROSKINNERA SPECTABILIS *Lindley*. 7, flower (spread open), natural size.

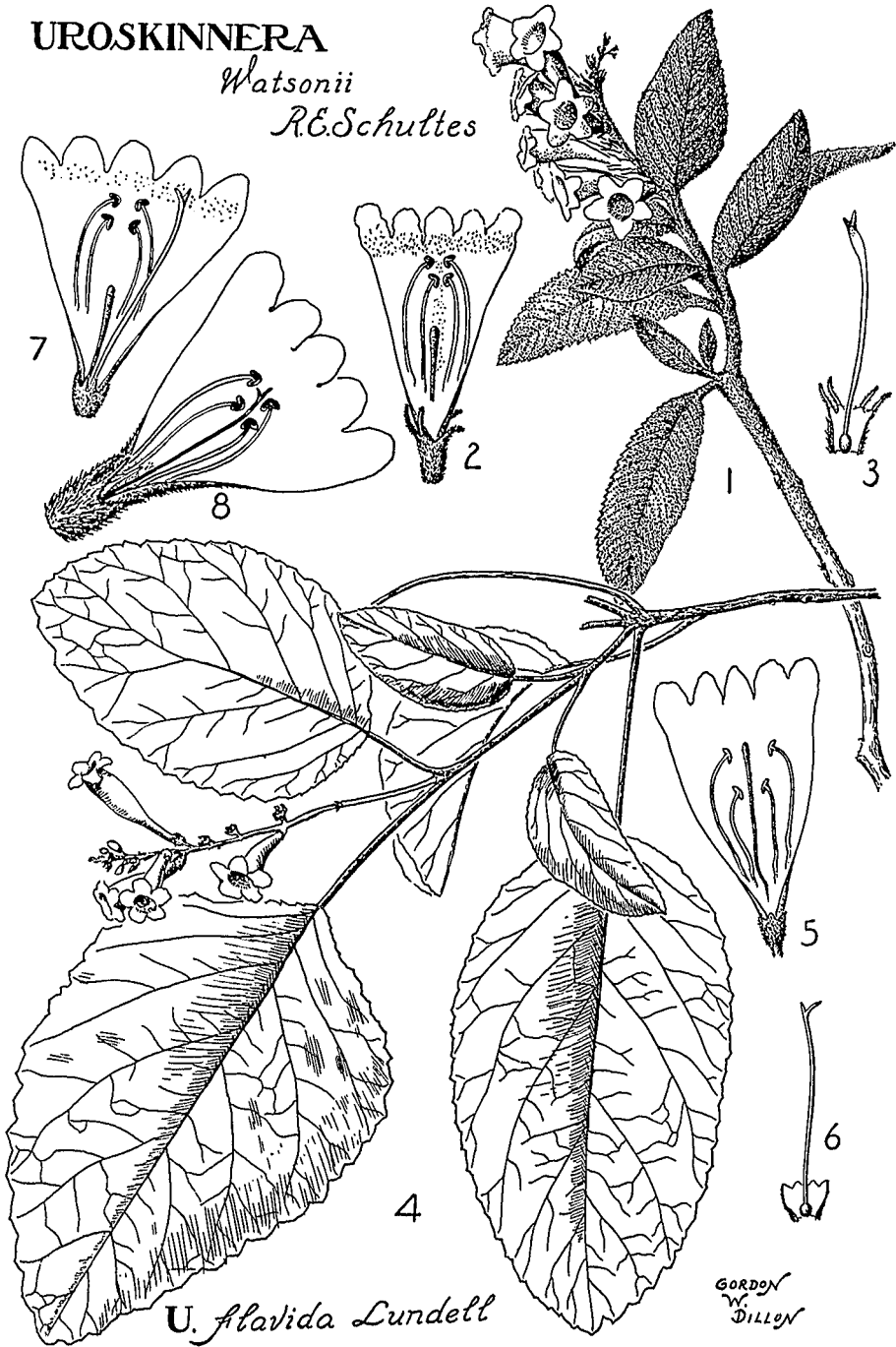
UROSKINNERA HIRTIFLORA *Hemsley*. 8, flower (spread open), natural size.

*Drawn by G. W. DILLON*

UROSKINNERA

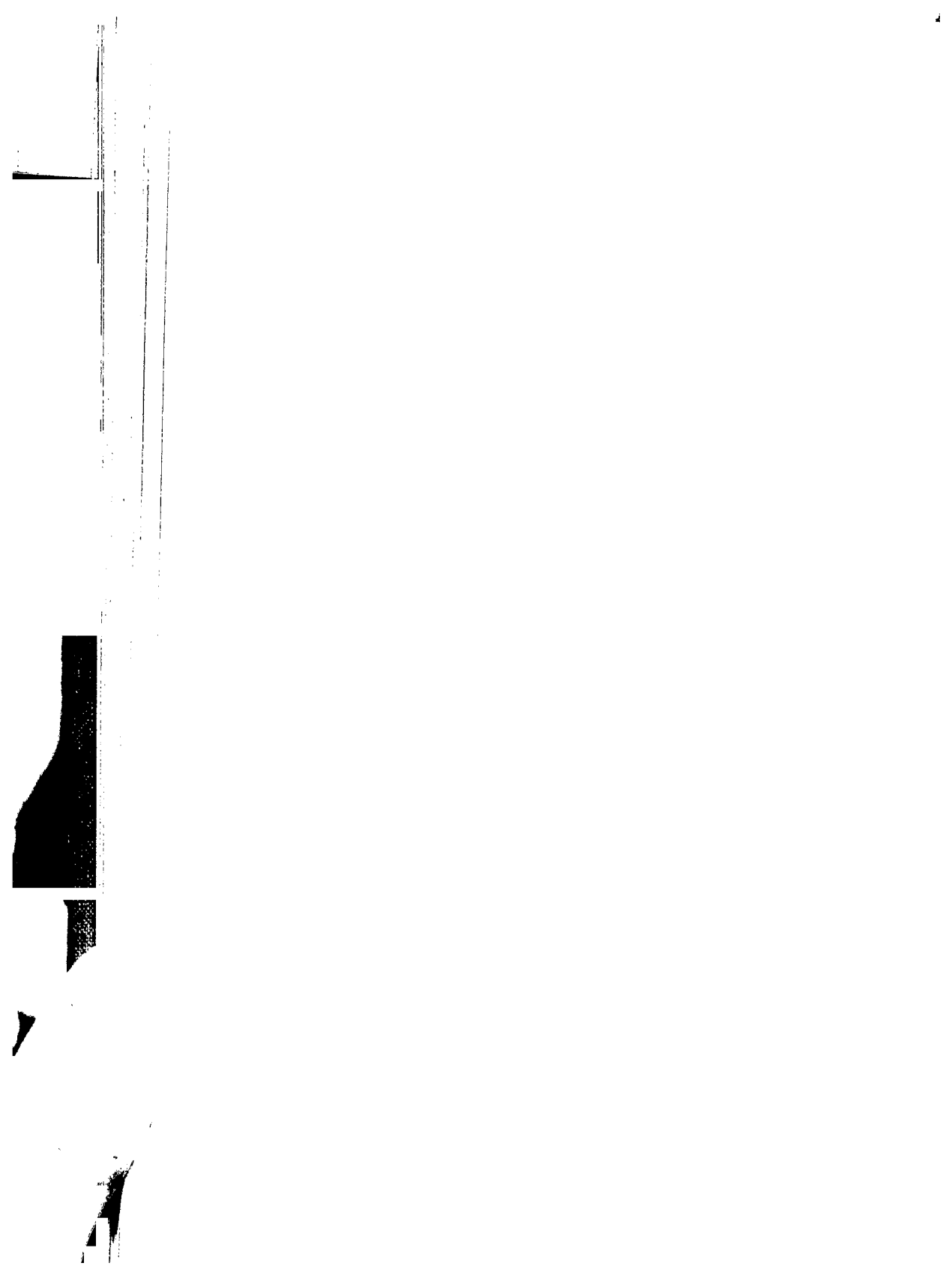
*Watsonii*

R.E. Schultes



*U. flavida* Lundell

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15 mm. long; staminodium linear-clavate, glandular-lepidote, 6-8 mm. long. Style elongate, about 2.8 cm. long; stigma deeply bifid, the lobes unequal, strongly diverging. Ovary subglobose, glabrous. Ovules numerous, very small.

SPECIMENS EXAMINED:

GUATEMALA: Eastern portion of Vera Paz and Chiquimula, 1885, *Sereno Watson 474c* (TYPE in Herb. Gray); "Dept. Izabál, between Milla 49.5 and ridge 6 miles from Izabál, Montaña del Mico, alt. 65-600 m.," April 1, 1940, *Julian R. Steyermark 38541* (COTYPES in Herb. Field Mus. No. 1035330; Econ. Herb. Oakes Ames No. 1581).

*Uroskinnera Watsonii*, according to field notes accompanying *Steyermark 38541*, grows in "grassy places on dry slopes". It inhabits the same kind of land as *Uroskinnera spectabilis* with which it is often found.

Steyermark's field notes further state of *Uroskinnera Watsonii* that it is a "shrub 2-3 ft. tall. Leaves thickish, soft, membranaceous, rich light green above, pale greenish-white beneath. Corolla lilac to deep-orchid, the ventral half white."

There is a very striking agreement in size and in diagnostic characters between Watson's type collection (from the eastern part of Vera Paz or Chiquimula) and Steyermark's cotype collection (from Izabál).

On account of its smaller size and its narrower leaves, *Uroskinnera Watsonii* is vegetatively the most distinctive species of the genus.

*Uroskinnera Watsonii* is most closely related to *U. spectabilis*. These two species are similar in having chartaceous leaves which are hispidulous above and sericeous below, in having a short crowded inflorescence of rose-purple flowers, the corollas of which are externally glabrous and internally glandular-lepidote on the lobes; in having a 4-dentate, hirsute calyx; in having a glandular-lepidote staminodium and in having a deeply bifid stigma.

*Uroskinnera Watsonii* differs from *U. spectabilis* in possessing small elliptic-lanceolate (instead of large elliptic-ovate) leaves, smaller flowers, a staminodium of 6–8 mm. (instead of 12 mm.) in length, and a subterete (instead of conspicuously flattened) style.

COMPARATIVE SUMMARY OF THE CRITICAL CHARACTERS OF THE SPECIES OF UROSKINNERA

|                        | <i>U. spectabilis</i>  | <i>U. Watsonii</i>   | <i>U. flavida</i>  | <i>U. hirtiflora</i>   |
|------------------------|--|--|--|--|
| <i>Habit</i>           | shrub  | shrub  | shrub  | shrub  |
| <i>Leaf</i>            | elliptic-ovate<br>6-16 × 4-10 cm.<br>chartaceous<br>hispidulose above<br>sericeous beneath | elliptic-lanceolate<br>4-8 × 2.5-3.5 cm.<br>chartaceous<br>densely hispidulose above<br>densely villous-sericeous<br>beneath | elliptic-ovate<br>5-13.5 × 3-9.5 cm.<br>membranaceous<br>sparsely pubescent above<br>pubescent beneath | elliptic-ovate<br>7-12 × 4.5-7.5 cm.<br>chartaceous<br>densely villous-sericeous above<br>densely villous-sericeous<br>beneath |
| <i>Inflorescence</i>   | short, compact   | short, compact   | long, lax  | long, lax  |
| <i>Flowers</i>         | rose-purple (with a white stripe)  | rose-purple (with a white stripe)  | yellow   | rose-purple (with no white stripe)   |
| <i>Bracts</i>          | 1-3 mm.<br>villous-hirsute<br>up to 4 cm.  | 2.5-3 mm.<br>villous-hirsute<br>2.2-3 cm.  | 1.3 mm.<br>puberulent<br>up to 3.8 cm.   | up to 5 mm.<br>villous-hirsute<br>2.5-3 cm.  |
| <i>Corolla</i>         | externally glabrous<br>internally glandular-lepidote<br>on lobes                           | externally glabrous<br>internally glandular-lepidote<br>on lobes   | ext. sparsely glandular-lepidote<br>internally sparsely glandular                                      | externally hirsute<br>internally hirsute at insertion<br>of stamens  |
| <i>Calyx</i>           | 4-dentate<br>hirsute<br>teeth 1.8-2 mm.  | 4-dentate<br>hirsute<br>teeth 4-4.5 mm.  | 4-dentate<br>puberulent and glandular-pilose<br>teeth 1 mm. or less                                    | 5-dentate<br>hirsute<br>teeth 5-6 mm.  |
| <i>Fertile Stamens</i> | glabrous<br>about 1.2 cm.<br>about 1.7 cm.   | glabrous<br>0.9-1.4 cm.<br>about 1.5 cm.   | glabrous<br>about 1.3 cm.<br>about 1.7 cm.   | glabrous<br>1.1-1.5 cm.<br>1.7-1.9 cm.   |
| <i>Staminodium</i>     | 1.2 cm.<br>glandular-lepidote  | 0.6-0.8 cm.<br>glandular-lepidote  | about 2.1 cm.<br>glandular-lepidote  | about 0.3 cm.<br>not glandular   |
| <i>Style</i>           | somewhat flattened<br>2.6 cm.  | somewhat flattened<br>2.8 cm.  | subterete<br>2.6 cm.   | subterete<br>2.2 cm.   |

