SMITHSONIAN INSTITUTION

UNITED STATES NATIONAL MUSEUM

CONTRIBUTIONS

FROM THE

UNITED STATES NATIONAL HERBARIUM

VOLUME VIII, PART 1

STUDIES OF MEXICAN AND CENTRAL AMERICAN PLANTS—No. 3

By J. N. ROSE

WASHINGTON

GOVERNMENT PRINTING OFFICE

1903

NOTE.

ISSUED JUNE 16, 1903.

PREFACE.

In the act of Congress making appropriation for the Department of Agriculture for the fiscal year ending June 30, 1889, provision was made for botanical exploration and the collecting of plants in little-known districts of America. In the following year began the publication of reports on this work, under the general title, Contributions from the U. S. National Herbarium. From 1890 to 1902 seven volumes were published. The present paper, the first to be issued since the transfer of the Contributions from the Department of Agriculture to the United States National Museum, is a continuation of Dr. J. N. Rose's researches on the flora of Mexico, the earlier parts of which appeared in the fifth volume of the Contributions. Dr. Rose began his work on Mexican plants in 1889, and, besides examining several collections made by others, he has himself made three journeys to Mexico, which have enabled him to supplement his critical herbarium studies by valuable field observations. All the types and a full set of the other specimens on which the paper is based are deposited in the U. S. National Herbarium, now a part of the collections of the U. S. National Museum.

FREDERICK V. COVILLE,
Curator of Botany.

CONTENTS.

	Page.
Introductory note	1
Commelinaceae	5
Neotreleasea	5
Amaryllidaceae	8
Revision of Polianthes with new species	8
Prochnyanthes and its species	13
Manfreda and its species	15
Aristolochiaceae	23
New name for an Aristolochia	23
Papaveraceae	23
The Mexican species of Argemone	23
Ranunculaceae	27
New species of Thalictrum	27
Brassicaceae	28
New species of Draba	28
Rosaceae	30
Two new species of Potentilla	30
Mimosaceae	31
New species of Acacia, Mimosa, and Pithecolobium	31
Viciaceae	34
Synopsis of the species of Cologania	34
List of the species of Harpalyce with two new descriptions	42
Climacorachis, a new genus	43
Ramirezella, a new genus	44
A new species of Bradburya with revision of two names	45
New species of several genera	46
Malpighiaceae	49
New species of three genera	49
Meliaceae	50
A new Trichilia	50
Rhamnaceae	50
A new Colubrina	50
New species of Rhamnus	50
Vitaceae	51
A new Ampelopsis	51
Theaceae	52
New species of Saurauja	52
Cornaceae	53
The Mexican species of Cornus	53
A new Garrya	55
Cucurbitaceae	55
A new Schizocarpum	55

ILLUSTRATIONS.

PLATES.

		Facing page.
PLATE I.	*Malvaviscus lanceolatus*	1
II.	*Neotreleasea brevifolia*	6
III.	*Potentilla madrensis*	30
IV.	*Potentilla rydbergiana*	30
V.	*Cologania capitata*	41
VI.	*Crotalaria viminalis*	47
VII.	*Indigofera platycarpa*	47
VIII.	*Lupinus submontanus*	47
IX.	*Phaseolus oaxacanus*	48
X.	*Phaseolus pedatus*	48
XI.	*Colubrina megacarpa*	48
XII.	*Saurauja pringlei*	48

TEXT FIGURES.

		Page.
FIG. 1.	Flowers of *Polianthes palustris*	9
2.	Flowers of *Polianthes durangensis*	9
3.	Flowers of *Polianthes tuberosa*	10
4.	Flowers of *Polianthes geminiflora*	12
5.	Flowers of *Prochnyanthes viridescens*	14
6.	Flower of *Manfreda virginica*	15
7.	Pods of *Acacia ambigua*	31
8.	Pod of *Acacia unijuga*	32
9.	Pod of *Mimosa hemiendyta*	32
10.	*Mimosa hemiendyta*	33
11.	Fruit of *Aspicarpa lanata*	49

STUDIES OF MEXICAN AND CENTRAL AMERICAN PLANTS—NO. 3.

By J. N. Rose.

INTRODUCTORY NOTE.

These studies are a continuation of those published in the fifth volume of these Contributions and are based chiefly on the collections there referred to.

It embraces also a part of the results of the writer's second and third journeys in Mexico. My second journey was made in company with Dr. Walter Hough, of the United States National Museum, and extended over a period of more than two months (May 9 to July 15, 1899). At this time collections were made in the States of Chihuahua, Aguas Calientes, Mexico, Jalisco, Puebla, Vera Cruz, Hidalgo, and Oaxaca.

The third journey was made in company with Robert Hay, then of this Division, and extended over a period of two months (June 26 to August 31, 1901). Collections were made in most of the same States as were visited on the second journey. Mount Orizaba and Popocatepetl were both visited and extensive collections made on them. None of the plants from these mountains are mentioned herein, as it is intended to present them in a paper on the high-mountain flora of Mexico.

The herbarium material collected during the second and third journeys embraces more than 2,200 numbers (Nos. 4201–6416).

Besides the herbarium specimens many consignments of bulbs, roots, and seeds were sent to Washington, some going to the National Botanic Garden, and others to the Department of Agriculture.

Most of these have lived and a considerable number have flowered, as will be seen from the accompanying table.

Mr. Rose's plants which have flowered in Washington.

Name.	Date of flowering.	Catalogue number.
Argemone platyceras Link & Otto	July 6, 1900	4730
Argemone ochroleuca Sweet	1900	4552
Argemone grandiflora Sweet	Aug. 15, 1900	4884
Begonia gracilis H. B. K	Oct. 15, 1901	6397
Bomaria orata Mirbel	Dec., 1899	4607
Crinum sp. nov	Aug., 1900 and 1902.	5209

Mr. Rose's plants which have flowered in Washington—Continued.

Name.	Date of flowering.	Catalogue number.
Cotyledon parviflora Hemsl	Aug., 1902	5209
Cotyledon (?) sp	Dec., 1902	6417
Cotyledon (?) sp. nov	1902	5608
Cotyledon (?) *batesii* Hemsl	1902	6413
Echeveria glauca Baker	Sept. 7, 1899	6390
Echeveria racemosa Cham. & Schlecht	Sept. 7, 1902	6124
Echeveria-like plant	1902	6073
Echeveria sp. nov	Feb., 1902	6393
Echeveria sp. nov	Sept. 7, 1899	6391
Echeveria sp. nov	June 15, 1899, and Feb. 7, 1901.	4994
Echeveria sp. nov	June 15, 1902	6412
Epidendrum vitellinum Lindl	June 15, 1901	6193
Hymenocallis sp	Apr., 1900	4640
Mamillaria carnea Zucc	Apr. 19, 1900	4993
Mamillaria sp	Sept. 27, 1899	68
Mamillaria sp	Apr., 1902	101
Mamillaria sp	1902	100
Mamillaria sp	1902	108
Mamillaria sp	1902	284
Manfreda jaliscana Rose, sp. nov	Apr., 1900	109
Oxalis sp. nov	Aug. and Oct. 15, 1900.	1508
Oxalis tetraphylla Cav. (?)	May 21, 1900, and Sept., 1899.	4401
Polianthes platyphylla Rose, sp. nov	Aug. and Oct., 1899.	2598
Sedum sp. nov	July 3, 1900	4996
Sedum sp. nov	Dec. 1, 1901	6395
Sedum ebracteatum DC	Nov. 4, 1901	6396
Talinum crassifolium Willd	Sept. 9, 1899	76
Talinopsis frutescens Gray	Nov., 1901	6378
Tillandsia fasciculata Swartz	Oct. 15, 1901	6122
Tillandsia restita Cham. & Schlecht	1901	6398
Tillandsia sp. nov	June 2, 1900	4995
Tillandsia sp	May, 1901	3015
Tradescantia crassifolia Cav	Oct. 22, 1900	4782
Tradescantia sp	1900	4681
Zephyranthes carinata Herb	Apr., 1900	4247

NOTE.—In this table all the low numbers (under 200) refer to greenhouse tags. In these cases no herbarium specimens have yet been made.

My collections, while rich in new species and typonyms, contain also considerable material of horticultural interest.

Among the new species which deserve special mention in this connection are the following:

(1) A large white-flowered Crinum found in a swamp near Cuernavaca. This species was collected in 1899 and has flowered three times in the National Botanic Garden. One fine bulb has been sent to Kew.

(2) Two species of Polianthes. These were both collected in the market place at Guadalajara where they are brought in by the Indians and sold under the name of "nardo." One has long slender flowers, much longer than those of its relative the well-known tuberose, while the other has small flowers but produced in dense clusters. Both species deserve a place in every first-class bulb collection. They will be found described elsewhere in this paper.

(3) Several species of Echeveria. Although many species of this genus have been introduced into cultivation from Mexico several choice ones still remain. Two of those which I brought back are very promising. These will be described in a succeeding paper.

Scarcely less interesting than the new species are several rediscoveries of horticultural plants.

(1) First that of *Heeria elegans*. This is a dainty little trailer forming a dense carpet and it may perhaps be profitably employed in this manner. Living material was sent to the Garden at Museo Nacional, city of Mexico, and to the Department of Agriculture, Washington, D. C. The latter material has not flowered or flourished very well, but it is hoped that better results will be obtained next year. This species is very unlike the various species of Heeria now in cultivation and in the writer's opinion is probably not congeneric with them.

(2) Four species of Argemone. The most interesting of these is *A. platyceras*. As is shown elsewhere, this is not the so-called *Argemone platyceras* of the United States, but probably the true form. The plant grows in mountainous regions and will probably live throughout the year in our Northern States. The plant seeds freely and young self-sown plantlets in Washington were still alive at Christmas time, although growing in the open. *Argemone grandiflora*, although well known in cultivation, is rare in collections. Mr. Prain, who has examined all the larger herbaria of Europe, states that he found but a single specimen which was not from cultivated material. I found this species very common in the State of San Luis Potosi, where it was seen along the Tampico branch of the Mexican Central Railway for a stretch of 50 miles. *A. mexicana* and *A. ochroleuca* have both been flowered in the Botanic Garden.

(3) Various species of Lupinus. A great many kinds of lupine were collected in central Mexico, but the season was not the proper one to gather seed. I expect to collect seed of several of these spe-

cies for distribution on my next visit to that region. Among the most promising are *mexicanus*, *montanus*, *vaginatus*, *elegans*, and *bakeri*.

(4) Several species of Cotyledon or better Echeveria. *Echeveria glauca* and *E. secunda* were collected wild. These two are certainly specifically distinct. *E. racemosa* (*E. lurida*) was obtained at its type locality. This species has not recently been in cultivation. It forms dense rosettes of bronzed leaves and may prove a valuable bedding plant. *Cotyledon parviflora* and several closely related species were collected. These are too insignificant to be of much horticultural interest. They are, however, so very different both from Echeveria and Cotyledon that no one who has seen them growing would protest against their separation as a new generic type.

(5) *Ampelocissus acapulcensis*. This plant, first described by Kunth as a true Vitis, is known to the Mexican to-day under the popular name of uva or grape. It differs strikingly from all our true grapes in having a herbaceous stem which dies down to the ground each year. It must possess an enormous root, as it produces vines of great length. In my plants, grown from seed, a cluster of fleshy roots somewhat similar to sweet potatoes is formed at the end of the first year. The fruit is borne in large bunches sometimes a foot long. The individual grapes, wine-colored when ripe, are about the size of the common fox grape of the Eastern United States, sometimes larger, even three-fourths of an inch in diameter. Seeds were sent to Washington and turned over to Mr. George W. Oliver of the Department of Agriculture, who now has a number of plants. He has also made some successful grafts upon *Vitis vinifera*, but it is too early to predict any definite results. The Mexicans about Yautepec, State of Morelos, bring the fruit into the market places during May, June, and July, selling it under the name of "uva sylvestra." From it a kind of "dulce" is made. Mr. C. G. Pringle called my attention to this vine, and it was through his assistance that I was able to procure material.

In the first of these Studies I published a description of *Malvaviscus lanceolatus*, calling attention to the fact that we had living plants in the greenhouse of the Department of Agriculture. From one of these plants a colored drawing has been made, which forms the frontispiece of this report. Numerous cuttings have been made, and that Department will be able to furnish a limited number of plants to botanical gardens which apply for them. In Washington this species begins to flower about the 1st of January and soon afterwards is covered with a mass of flowers.

It is often desirable to know the exact specimens from which an illustration has been made. For this reason I have compiled here all necessary information in this regard for the illustrations used in this report.

Data concerning specimens used for illustrations.

Name of species.	Locality.	Collector.	Nos.	Date.	Herbarium No.
Pl. I. *Malvariscus lanceolatus*	Chicharras	Nelson	3807	1896	.....
II. *Neotreleasea brevifolia*	.....	.....	.....	.....	.....
III. *Potentilla rydbergiana*	Mountains near Pachuca.	Pringle	7646	1898	371990
IV. *Potentilla madrensis*	Mountains of Tepic.	Rose	2096	1897	300996
V. *Cologania capitata*	.....do	....do	3459	1897	302438
VI. *Crotalaria riminalis*	Cuernavaca	....do	4341	1899	346293
VII. *Lupinus submontanus*	Mount Orizaba	....do	5673	1901	395448
VIII. *Indigofera platycarpa*	Near Iguala	Pringle	8399	1900	396660
IX. *Phaseolus oaxacanus*	On Sierra de San Felipe.	....do	5814a	1894	372011
X. *Phaseolus pedatus*	Near Iguala	....do	8367	1900	371916
XI. *Calubrina megacarpa*	Near Tehuacan	Rose	5852	1901	395639
XII. *Surauja pringlei*	Sierra de San Felipe.	Pringle	4668	1894	253033
Fig. 1. *Polianthes tuberosa*	In cultivation	Rose	4114	1898	399945
2. *Polianthes palustris*	Foothills of Tepic	....do	1943	1897	300835
3. *Polianthes durangensis*	Sierra Madre of Durango.	....do	3515	1897	302492
4. *Polianthes geminiflora*	In cultivation	....do	3761	1898	399944
5. *Acacia ambigua*	Matamoras	Rose	4698	1899	366681
8. *Acacia unijuga*	Tampico	Pringle	6989	.....	396667
11. *Aspicarpa lanata*	Guadalajara	....do	4422	1893	301158

The types of all the new species described in the following pages are in the National Herbarium unless otherwise stated. Where more than two collections or specimens are cited, the type is indicated usually by the word type following the number cited.

The drawings from which these illustrations have been made are the work of Mr. Frederick A. Walpole and Miss Anna Snyder.

COMMELINACEAE.

NEOTRELEASEA.

Since the publication of my genus Treleasea, it has come to light[a] that the name then given is a homonym of Treleasia Spegazzand.[b] A change being thus necessitated and Treleasiella having also been

[a] I am under obligations to Mr. Ernst A. Bessey, of the United States Department of Agriculture, for calling my attention to this fact.

[b] Revista de la Facultad de Agronomia y Veterinaria La Plata 2: 235. 1896.

published in the same work, I have adopted Neotreleasea as differing sufficiently from these names and still carrying out my wish to honor Dr. William Trelease. It seemed desirable to republish with some slight changes the descriptions and synonymy along with the new names.

Neotreleasea Rose, nom. nov.

TRELEASEA Rose, Contr. Nat. Herb. **5**: 207. 1899, not Treleasia Spegaz. Revist. Agron. y Vet. La Plata **2**: 235. 1896.

Type species, *Neotreleasea brevifolia* Rose.

Sepals distinct, concave, subequal, greenish or scarious. Petals distinct, tapering at base into a slender claw, cohering and forming a slender tube. Stamens 6, all perfect, subequal, more or less hairy, borne on the petals. Style slender, 3-lobed. Capsule stipitate, 3-celled. Cells dehiscent, 2-seeded. Perennial herbs from tuberous roots. Cymes sessile, many-flowered, in either terminal or axillary clusters.

This genus differs from Tradescantia, especially in the corolla and the position of the stamens. Tradescantia has always an open flower spreading from the base, with petals broad at base, while Neotreleasea has the petals tapering into a claw, forming a tube and only spreading toward the top. The stamens, too, are always free in Tradescantia, while in Neotreleasea they are borne on the petals.

The genus seems nearer Cyanotis than Tradescantia, but differs from that in its stipitate fruit, concave sepals, etc. It is perhaps nearest Zebrina, differing chiefly in the fact that the petals are not united into a tube, but merely cohere at the edges.

I have long been dissatisfied with the reference of the species *brevifolia* to Tradescantia, having had the plant under cultivation since 1895. While in Mexico in 1897 I found another plant of similar habit with the same flower structure, showing that this is a good generic type. *T. leiandra*, although the flower structure is doubtful, possesses the stipitate fruit and otherwise suggests that it belongs here also.

The genus, as I now understand it, consists of the following species:

Neotreleasea brevifolia (Torr.) Rose. PLATE II.

Tradescantia (?) *brevifolia* Rose, Contr. Nat. Herb. **3**: 323. *pl. 16.* 1895.

Tradescantia leiandra brevifolia Torr. Bot. Mex. Bound. 225. 1859.

Tradescantia speciosa Buckley, Proc. Acad. Phila. **1862**: 9. 1863, not L. nor H. B. K.

Zebrina (?) *leiandra* Clark, in DC. Monogr. Phan. **3**: 318. 1881.

Tradescantia leiandra Wats. Proc. Am. Acad. **18**: 167. 1883, not Torr.

Tradescantia leiandra ovata Coulter, Contr. Nat. Herb. **1**: 50. 1890.

Treleasea brevifolia Rose, Contr. Nat. Herb. **5**: 207. 1899.

Stems prostrate, leafy to the top; leaves approximate, ovate, 2.5 to 7.5 cm. long, 2.5 cm. wide, thickish, glaucous, glabrous except the ciliate-scabrous margins, acute; margin of sheath ciliate; involucral leaves 2, like the lower leaves, but smaller; umbel sessile, many-flowered; corolla white, petals ovate, obtuse, somewhat spreading, tapering at base into a slender claw, stamens erect, longer than the petals, hairy near the middle, attached to the petals; ovary hairy near the top.

For a number of years this species was cultivated in Washington, both in the greenhouses and in the gardens. In the greenhouses it grew luxuriantly under the benches. The foliage is of a glossy bright green, and in all cases the flowers have been white, usually appearing singly.[a]

EXPLANATION OF PLATE II.—Fig. *a*, plant; *b*, margin of leaf; *c*, two views of sepals; *d*, petals; *e*, stamens and base of petal; *f*, back of anther; *g*, style. Fig. *a*, natural size; *b*, scale of 10; *c* and *d*, scale of 2; *e*, *f*, and *g*, scale of 4.

[a] For a full discussion of this species and its relationships with *T. leiandra* see Rose in the third volume of this publication, pages 322, 323.

Neotreleasea leiandra (Torr.) Rose.

Tradescantia leiandra Torr. Bot. Mex. Bound. 224. 1859.

Treleasea leiandra Rose, Contr. Nat. Herb. **5**: 208. 1899.

Roots slender, fibrous-thickened; stems erect, somewhat branching, slender, glabrous, somewhat naked above; leaves distinct, narrowly lanceolate, 7.5 to 12.5 (perhaps more) cm. long, 12 mm. wide, sharply acute, with margins not scabrous; margin of sheath glabrous or nearly so; involucral leaves 2, ovate, acuminate, 2.5 to 3.5 cm. long, very unlike the lower leaves; umbel sessile, many-flowered; pedicels and sepals densely villose; filaments smooth; capsule oval, somewhat 3-lobed, stipitate; cells 3, 2-seeded; seeds 1 mm. in diameter, slightly rugose.

Collected by Bigelow on mountains and in moist rocky places at Puerto de Paysano, Tex., September 18, 1854 (?) (no. 1500), and by V. Havard at Capote Creek, Texas, September, 1883 (no. 79).

Neotreleasea tumida (Lindley) Rose.

Tradescantia tumida Lindley, Bot. Reg. **26**: *pl. 42.* 1840.

Tradescantia virginiana tumida Clark, in DC. Monogr. Phan. **3**: 291. 1881.

Treleasea tumida Rose, Contr. Nat. Herb. **5**: 208. 1899.

The figure cited above, although very unsatisfactory, seems to represent the same species as I collected on the western border of the Mexican table-lands. It has the same reddish flowers borne in dense axillary clusters, and the petals taper down into claws (here represented as united). The leaves are also described as purple beneath. This illustration of Lindley's was made from a plant which flowered in the garden of the Horticultural Society in 1839.

Nothing more of the history of the plant is given than that it came from Mexico. It is not unlikely that this plant was sent in by Hartweg from the same region from which mine came. In 1836 and 1838 he visited Bolaños and the neighboring region and was sending many plants home to the Horticultural Society, by which he had been sent to Mexico. I should state, however, that I have looked through Hartweg's lists of plants, which he said were growing in the gardens, without finding any mention of a Tradescantia.

The following redescription of this species is based upon my own specimens, both herbarium and living:

Stem from tuberous-thickened roots, rather low, very succulent, the clumps often very compact; leaves oblong, 12 to 18 cm. long, acute, more or less pubescent; flowers borne in dense axillary and terminal clusters; pedicels about 10 mm. long, glabrous; sepals glabrous or nearly so, oblong, 8 mm. long; petals pink; stamens slightly hairy; capsule stipitate, reflexed; hairy at tip.

This species seems to be common in damp, sheltered places in the western table-land regions of Mexico, especially in canyons and along cliffs. It was first brought in by Mr. Goldman, and afterwards collected by myself.

Collected by J. N. Rose at San Juan Capistrano, Zacatecas, August 23, 1897 (no. 2486); near Monte Escobedo, Zacatecas, August 27 (no. 2660), and at Bolaños, September 10 to 19 (no. 2890).

Specimens were formerly grown in the Botanical Garden at Washington. This species is so common in the table-land region of Mexico that it seems strange that it is not in the recent collections from Mexico.

Clark's reference of this species as a variety of *Tradescantia virginiana* and statement that it can hardly be distinguished from var. *flexuosa* (*T. pilosa*) can not be entertained.

UNCERTAIN SPECIES.

Treleasea pumila Greene, Pittonia **4**: 225. 1900.

Zebrina pumila Greene, op. cit. **1**: 157. 1888.

While this paper was in proof the type specimens of *Zebrina pumila*, which have long been lost, came to light, and through the kindness of Dr. E. L. Greene I have

been permitted to see them. They show clearly that *Z. pumila* is not congeneric with the type species of Neotreleasea, but that its relationships are more nearly with true Zebrina. The two have in common a terminal cluster of flowers subtended by a two-leaved spathe, a narrow tubular corolla, and widely separated anther cells, etc.

AMARYLLIDACEAE.

REVISION OF POLIANTHES WITH NEW SPECIES.[a]

Polianthes tuberosa has been cultivated for more than four hundred years, but its real home is unknown. It has been assigned both to Asia and America. Its allies are all Mexican, although it does not seem to have had its origin in any of the wild species known to the writer, unless it be *P. gracilis*. It has been reported from the higher Andes of South America, and if really not Mexican is probably of South American origin.

Bravoa geminiflora is quite unlike *P. tuberosa* in its short, red, cylindrical perianth tube, and were these species the only ones to be considered, Bravoa might well be kept distinct from Polianthes. With the material on hand I can not find any character or group of characters which will justify doing this. The best character which I find to base a separation of these supposed genera upon is the elongation and bending of the tube, but this would throw *P. tuberosa* and *P. geminiflora* into the same group. While I have been very reluctant to combine these two genera, whose distinctness so far as I am aware has never yet been questioned, I think that their separation hitherto has been partly due to lack of knowledge of the so-called species of Bravoa. Even Dr. J. G. Baker, whose excellent handbook is indispensable to every student of this group, has not clearly distinguished Bravoa.

He describes 4 species which now belong to 3 genera, but which, if Bravoa is retained, must be distributed among as many genera as species. As I understand the genus Polianthes it is composed of 11 or 12 species.

KEY TO SPECIES.

Perianth tube elongated (3 to 6 cm. long), bent near the middle.
Mouth of tube regular; lobes nearly equal.
Leaves broad, 10 to 15 mm. long; perianth 5 cm. or more broad.....1. *P. palustris.*
Leaves narrow, 3 to 5 mm. broad; perianth tube 3 to 4.5 cm. long.
Bracts broadly ovate, acute or shortly acuminate; stigmas included.
Flowers longer than the next, becoming purplish.....2. *P. durangensis.*
Flowers larger than the last, white.....3. *P. sessiliflora.*
Bracts narrowly ovate, long-acuminate; stigmas exserted.....4. *P. nelsoni.*
Mouth of tube irregular; lobes unequal.
Perianth 6 to 10 cm. long; anthers sessile.....5. *P. longiflora.*
Perianth 5 cm. or less long; anthers not sessile.....6. *P. pringlei.*

---

[a] **Polianthes** L. Sp. Pl. **1**: 316. 1753.
Bravoa Lex. in Llave. & Lex. Nov. Veg. Desc. **1**: 6. 1824.
Type of Polianthes, *P. tuberosa* L. loc. cit.; of Bravoa, *B. geminiflora* Lex. loc. cit.

Perianth tube usually shorter than in the last, bent near the base.
Perianth lobes somewhat elongated and spreading.
Stout; leaves broad ..... 7. *P. tuberosa.*
More slender; leaves narrower ..... 8. *P. gracilis.*
Perianth lobes short and erect or slightly spreading.
Flowers white ..... 9. *P. montana.*
Flowers red or orange.
Stamens inserted near the top of the tube ..... 10. *P. platyphylla.*
Stamens inserted near the base of the tube.
Plant pubescent below; leaves grass-like ..... 11. *P. graminifolia.*
Plant glaucous; leaves broad ..... 12. *P. geminiflora.*

1. **Polianthes palustris** Rose, sp. nov. FIGURE 1.

Bulbs oval to oblong, 2 to 3 cm. long; stems about 4 dm. high, erect, glabrous throughout; basal leaves several, 2 to 3 dm. long, 12 to 15 mm. broad, narrowed to a more or less distinct petiole, parallel veins prominent, glabrous; stem leaves 3 or 4, becoming much reduced above; flowers 3 to 5 pairs, the lower shortly pediceled, the upper nearly sessile; perianth 3 to 6 cm. long, curved just below the middle, white; segments short (5 to 6 mm. long), broad, rounded at apex, somewhat spreading; filaments short, inserted near the top of the tube; anthers not exserted; ovary free at tip.

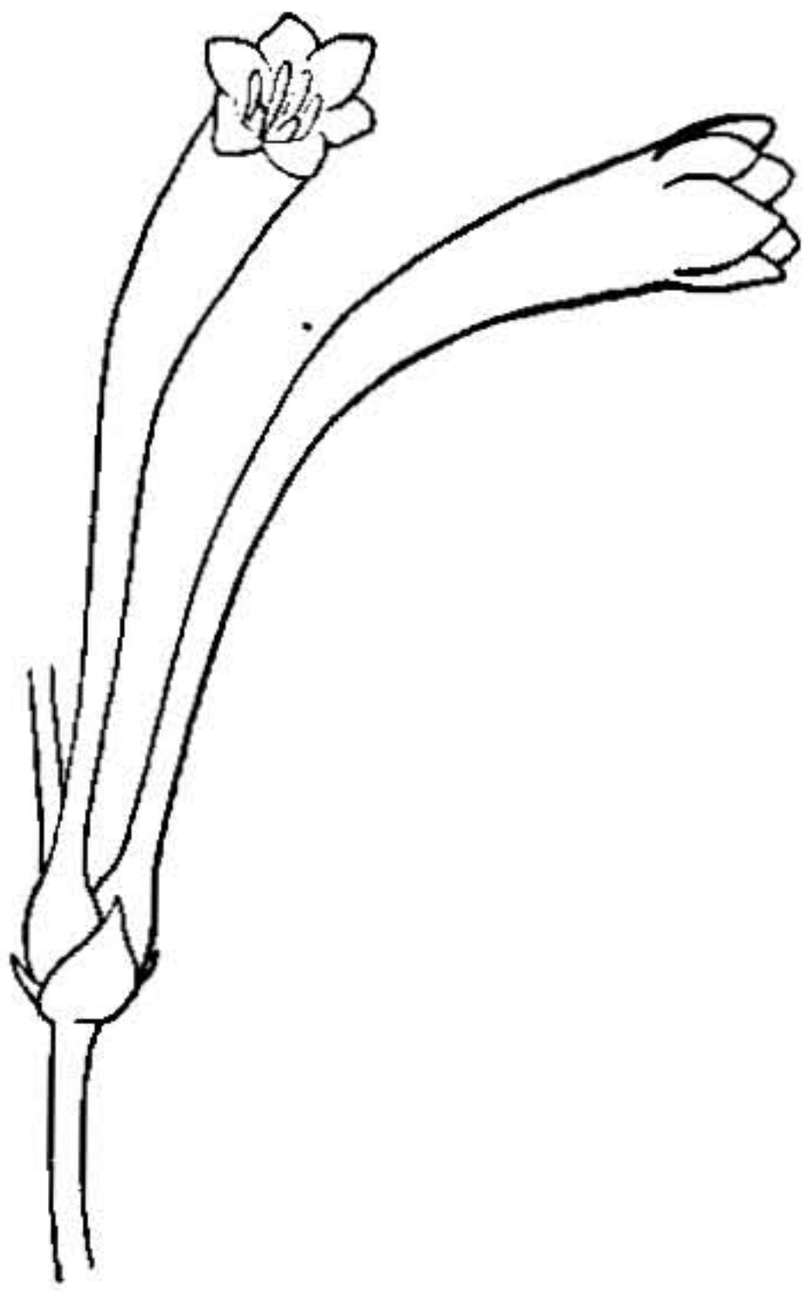


FIG. 1.—Flowers of *Polianthes palustris*, natural size.

Collected by J. N. Rose in swamps on the western foothills of the Sierra Madre, between Acaponeta and Pedro Paulo, Territorio de Tepic, August 2, 1897 (no. 1943).

The flowering specimens of this plant gave off the delightful odor of the common cultivated tuberose.

2. **Polianthes durangensis** Rose, sp. nov. FIGURE 2.

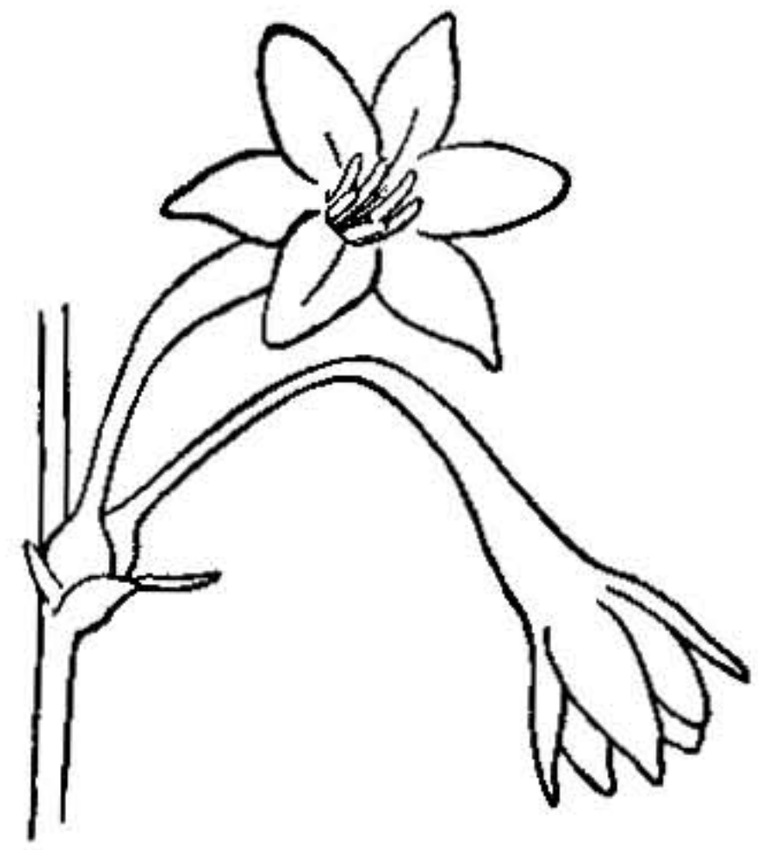


FIG. 2.—Flowers of *Polianthes durangensis*, natural size.

Bulbs small, 2 cm. long; stems 3 to 6 dm. high, erect, glabrous throughout; basal leaves several, 1 to 2.5 dm. long, erect, linear, 3 to 5 mm. broad, with prominent parallel veins, glabrous; stem leaves about 3, the upper much reduced; flowers 1 to 6 pairs, all sessile; perianth 4 to 5 cm. long, at first nearly erect, becoming curved (in age strongly so) near the middle, nearly white but drying purplish; segments spreading, 8 mm. long, rounded at apex; stamens inserted near the top of the perianth tube; filaments short; anthers not exserted; ovary free at tip.

Collected by J. N. Rose on the west slope of the east range of the Sierra Madre in the State of Durango, August 16, 1897 (no. 3515, type); also (probably this) near Santa Teresa, Territorio de Tepic, August 11, 1897.

3. **Polianthes sessiliflora** (Hemsl.) Rose.

Bravoa sessiliflora Hemsl. Diag. Pl. Nov. **3**: 54. 1880.

We have a duplicate type of this species in the National Herbarium. It is only known from the type collection made by Parry & Palmer in 1878.

4. **Polianthes nelsoni** Rose, sp. nov.

Bulbs oblong; bulb coats thin, sparingly nodose; stems about 4 dm. high, erect, glabrous; basal leaves several, linear, serrulate on the margins; stem leaves much reduced; flowers (in specimens seen) 2 to 5 pairs, sessile; bract subtending each pair of flowers narrowly ovate, long-acuminate; perianth tube about 5 cm. long, strongly curved downward near the middle, very slender below, white; lobes short and rounded at apex; filament 3 mm. long, about one-half as long as the anthers, attached near the top of the tube; stigmas exserted.

Specimens examined:

Durango: Near Durango City, E. W. Nelson, August 1, 1898 (no. 4630, type); on road between Guadalupe y Calvo and Paral, E. W. Nelson, September 11, 1898 (no. 4972).

5. **Polianthes longiflora** Rose, sp. nov.

A tall plant, glabrous; flowers in 3 to 5 distant pairs; perianth 6 to 10 cm. long, rather slender below, white or tinged with purple, curved above the middle, the mouth somewhat irregular; segments broad, oblong, 2 cm. long, obtuse; anthers slender, 10 to 12 mm. long, sessile.

This species was found in great abundance during the later part of August, 1901, in the market at Guadalajara (Rose, no. 6290). It is brought in by the Indians from a great distance, and sold as "nardo," the Spanish name for the common tuberose.

6. **Polianthes pringlei** Rose, sp. nov.

Bulbs small, 2 cm. long; stems 2 to 3 dm. high, erect, glabrous throughout; basal leaves about 6, linear, erect, 1 to 3 mm. wide; stem leaves 3, the upper ones much reduced; flowers (in specimens seen) 3 to 4 pairs, all sessile; perianth 4.5 to 6 cm. long, becoming curved near the middle, white, sometimes drying purplish; segments linear, the lower one more deeply cut, 10 to 15 mm. long, rounded at apex; filaments short, inserted near the top of the tube.

Collected by Mr. C. G. Pringle on moist hills near Guadalajara, August 23, 1893 (no. 5438, type), and obtained in the market place of Guadalajara, August 24, 1901 (no. 6291).

This is one of the species brought in by the Indians for sale under the name of "nardo." The flowers are very fragrant. The species ought to be introduced into cultivation.

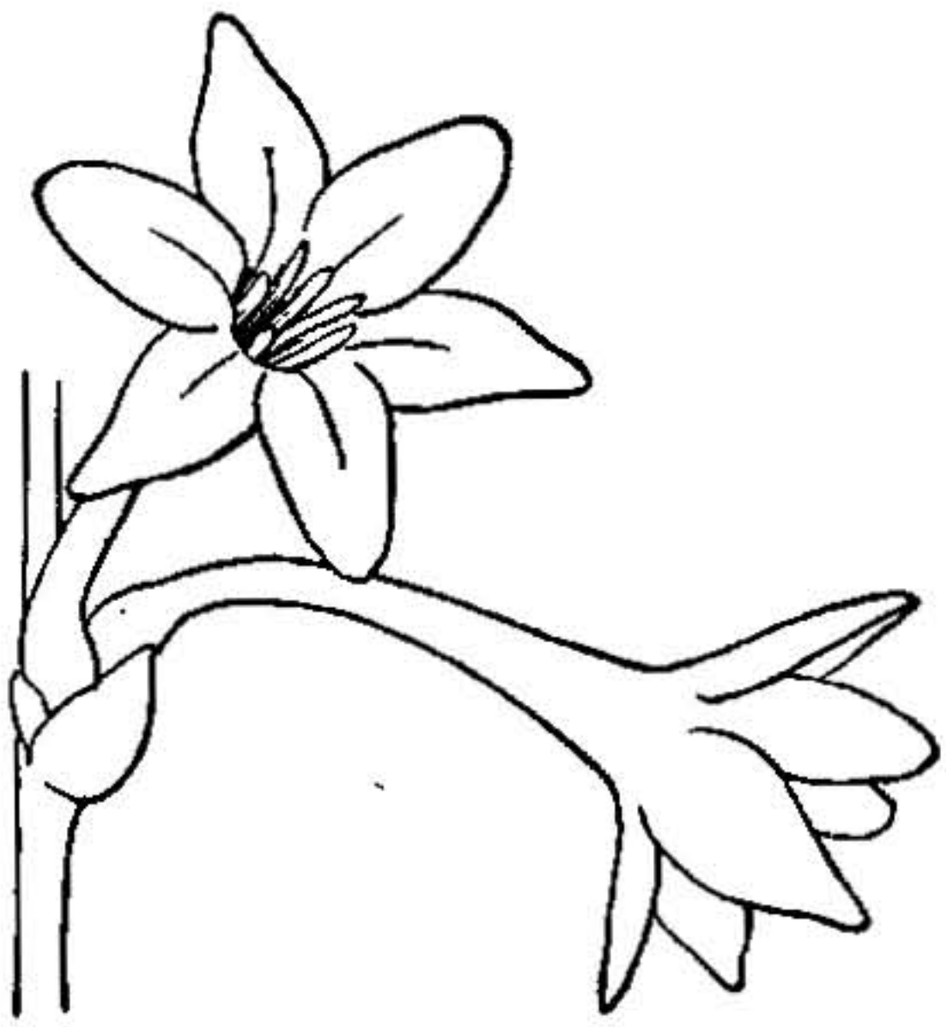


FIG. 3.—Flowers of *Polianthes tuberosa*, natural size.

7. **Polianthes tuberosa** L. Sp. Pl. **1**: 316. 1753. FIGURE 3.

Stems in clusters, 10 dm. high; basal leaves several, 3 to 5 dm. long, 6 to 15 mm. broad, bright green, reddish near the base; inflorescence a lax spike; corolla pure waxy white; tube 3 cm. long, bent only near the base; lobes oblong, 15 mm. long, obtuse; filaments inserted on the upper part of the corolla; tube shorter than lower part of the anthers.

Description drawn from cultivated specimens.

8. **Polianthes gracilis** Link & Otto, Enum. Pl. Hort. Berl. **1**: 331. 1821.

P. tuberosa gracilis Baker, Handbook Amaryl. 159. 1888.

Link & Otto, as well as Kunth, say that this species is from Brazil, but Baker and others refer it to Mexico. The original illustration suggests a species very near the true *P. tuberosa*.

I have not seen this species. It is said to have flowered at Kew in 1880.

While I question very much the wisdom of retaining *gracilis* as a good species, I have refrained from merging it with *tuberosa* simply because I know scarcely anything of it. Mr. Baker is probably right in thinking it not a distinct species, but I should be inclined to go a step farther and treat *P. gracilis* as the form from which *P. tuberosa* has sprung.

9. **Polianthes montana** Rose, sp. nov.

Bulbs oblong; stems slender, 12 dm. high, erect, glabrous and more or less glaucous; basal leaves several, 2 to 3 dm. long, 5 to 8 mm. broad; stem leaves about 6, distant, much reduced above; flowers about 12 pairs (in my single specimen), all more or less pediceled; perianth 16 to 20 mm. long, slightly curved near the base, white; lobes small, erect, rounded at apex; stamens inserted much below the middle; filaments longer than the anthers, the latter included; ovary free at tip.

Collected by J. N. Rose in a deep canyon near Santa Teresa, in the Sierra Madre, August 11, 1897 (no. 2178).

10. **Polianthes platyphylla** Rose, sp. nov.

Rootstock short and thick, giving off a number of thickened roots; rootstock crowned by an oblong bulb about 2.5 cm. in diameter; basal leaves 3 or more, lying flat upon the ground, oblong, 7.5 to 12.5 cm. long, 12 to 30 mm. broad, tapering at base into a short petiole, acute, glabrous; stem leaves 2 to 4, small and bract-like; peduncle 3 to 4 cm. long; inflorescence a very open spike; bracts ovate, acute; flowers in 4 to 7 pairs, whitish or red; perianth tube about 16 mm. long, at first erect, but becoming curved or bent near the base; lobes rounded, 2 mm. long, spreading; stamens shorter than the anthers, inserted near the top of the perianth tube, included; style tips exserted; fruit nearly orbicular, or somewhat 3-lobed, about 10 mm. in diameter.

Rather common on the northern border of Jalisco, along with *P. graminifolia*, but much less frequent, and also on the slopes of the Sierra Madre, in the State of Durango.

Specimens examined:

Durango: In Sierra Madre, J. N. Rose, August 16, 1897 (no. 2324).

Jalisco and Zacatecas: On the table-lands, both sides of boundary, J. N. Rose, August 26, 1897 (no. 2598, type).

The few specimens seen in Durango had white flowers, but in other respects did not seem to differ from the table-land specimens.

Bulbs were brought home to Washington in 1897 which flowered in the Botanical Garden in 1899. These specimens had the flowers nearly white, tinged with red.

11. **Polianthes graminifolia** Rose, sp. nov.

Bulbs oblong, the coats thin, sparingly nodose; stem slender, 2 to 3 dm. long, densely pubernlent below, glabrous above; basal leaves elongated, grass-like, 3 to 6 dm. long, densely puberulent beneath, glabrous above; flowers in 8 to 15 pairs, the lower ones often on peduncles 1 cm. long; pedicels 3 to 10 mm. long; flowers about 2.5 cm. long, bent downward near the base, dark red in color; filaments slender, attached low down in the tube.

Near *P. geminiflora*, but with the leaves and lower part of the stem covered with a short, stiff pubescence, with deeper red flowers, etc.

The plant is very common in meadows on the Mexican table-land along the bound-

ary line between the States of Jalisco and Zacatecas. It was first observed by the writer south of Huajuquilla, and later in suitable localities southward nearly to Guadalajara.

Specimens examined:

Jalisco: On the road between Huajuquilla and Mesquitec, J. N. Rose, August 25, 1897 (no. 2571, type); bulbs from near Monte Escabedo, August, 1897, and between Bolaños and Guadalajara, September 21, 1897 (no. 3088); also about Guadalajara, Dr. Edward Palmer, 1896 (nos. 345 and 346); same locality, C. G. Pringle, 1889.

A goodly quantity of bulbs was sent to Washington, but they have not been properly cared for.

12. **Polianthes geminiflora** (Lex.) Rose. FIGURE 4.

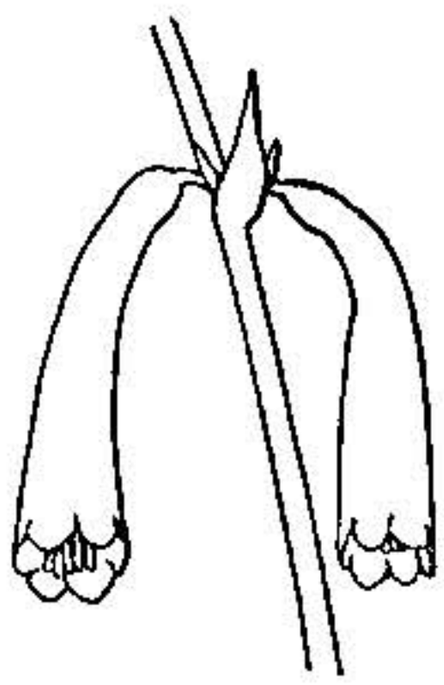


FIG. 4.—Flowers of *Polianthes geminiflora*, natural size.

Bravoa geminiflora Lex. in Llave & Lex. Nov. Veg. Desc. **1**: 6. 1824.

Bravoa coetocapnia Roem. Syn. Monogr. **4**: 245. 1847.

Coetocapnia geminiflora Link & Otto, Ic. Pl. Rar. Hort. Berol. 35. 1828.

Zetocapnia geminiflora Link & Otto, loc. cit. *pl. 18*. 1828.

Bravoa graminiflora Hemsl. Biol. Centr. Am. **3**: 338. 1884. (The species name evidently an error.)

Bulbs rather shallow, giving off several thickened roots; stem 4 to 7 dm. tall, perfectly glabrous throughout; basal leaves several, 3 to 5 dm. long, 10 to 13 mm. broad; stem leaves 3 or 4, becoming successively shorter; racemes 2 to 4 dm. long; flowers in a few (6 or more) distant pairs; pedicels slender, 6 to 10 mm. long; perianth rather pale red or orange-colored, about 2 cm. long, strongly bent downward near the base; lobes short and broad, rounded at tip and slightly puberulent just below the tip.

Specimens examined:

England: Cultivated specimens taken from garden in London.

State of Mexico: Meadow swells, valley of Toluca, C. G. Pringle, August 19, 1892 (no. 4215), and also from low meadows at Flor Maria, July 28, 1890 (no. 3633); near Tultenango, J. N. Rose, July 13, 1901 (no. 5420).

Type locality: "In montibus Micciacanis, et prope Vallisoletum," or, as Hooker translates,[a] "Mountains of Valladolid and Micciacan." Valladolid (now Morelia) is a town in the State of Michoacan. Although discovered more than seventy-five years ago, and in cultivation since 1838, it has very rarely been collected. It is native of the high mountain valleys of cenral Mexico, the type coming from the eastern part of the State of Michoacan. The material collected by the writer in 1901, though from the State of Mexico, was from its extreme northern part and very near the eastern line of Michoacan. It agrees also closely with the cultivated material which may have been derived from the early supplies of this species. This being true, the way is cleared for separating (as *graminifolia*) the material from the State of Jalisco which has been distributed as *Bravoa geminiflora*.

My cultivated material was kindly sent me by Mr. E. G. Baker of the British Museum. The bulbs have flowered and I have had a good colored drawing made.

Illustrations:

Herbert, Amaryl. *pl. 12, figs. 5 and 6.*

Bot. Mag. **79**: *pl. 4741.*

Fl. Ser. **5**: *pl. 520.*

Link & Otto, Ic. Pl. Rar. Berol. *pl. 18*, under Coetocapnia (not seen).

Hooker has figured in Botanical Magazine[a] as *Bravoa geminiflora* a plant which seems to differ from my material as follows: The basal leaves are more numerous and

[a] Vol. 79, plate 4741.

of a dark bluish green color, the flowers longer and broader, of a much deeper red color, with a more gradually curved perianth tube, and a longer-exserted style. If these characters, drawn from Hooker's illustration, should be confirmed by the specimen, I should have little hesitation in separating it specifically from *geminiflora*. But until the original material has been examined, or more collected at Real del Monte, the source of Hooker's specimens, no further note need be taken of it.

SPECIES EXCLUDED.

P. maculata Mart. = *Manfreda* sp.
P. mexicana Link. = *Prochnyanthes* sp.

SPECIES OF BRAVOA EXCLUDED FROM POLIANTHES.

B. singuliflora Watson = *Manfreda* sp.
B. densiflora Robinson & Seaton = *Pseudobravoa densiflora* Rose.
Bravoa bulliana Baker = *Prochnyanthes bulliana* Baker.

PROCHNYANTHES AND ITS SPECIES.[a]

The genus Prochnyanthes seems to be well marked, but close to Polianthes, distinguished chiefly by its perianth. The writer is undecided whether there is but one or several species. From his observations on material referred to one of the so-called species, he is inclined to the opinion that there is only one somewhat variable species. Three, however, have been described, and under as many generic names. The first was described in 1837 as *Polianthes mexicana*, and afterwards referred to *Polianthes tuberosa*. If there is but a single species, the name *Prochnyanthes mexicana* must stand. The second was described as *Bravoa bulliana*, but has been more recently referred to Prochnyanthes. The third was described as the type of Prochnyanthes.

This genus was established by Dr. Sereno Watson in 1887 upon plants brought back by Dr. Edward Palmer from near Guadalajara. It has been supposed to be known only from this region. The writer found the type species to be very common in the Sierra Madre, and specimens were brought back from the Territorio de Tepic and the States of Durango, Zacatecas, and Jalisco, of western Mexico. These specimens show considerable variation from the type, but I have been compelled to consider them forms of a widely varying species.

Living specimens were brought home, and these are the first which have been reported in cultivation. The underground portion of the plant has been wrongly characterized, and as my specimens show some deviations from the type, I have thought best to recharacterize the species, drawing largely from notes taken in Mexico with the living plant in hand.

---

[a] **Prochnyanthes** Wats. Proc. Am. Acad. **23**: 457. 1887.
Type species, *P. viridescens* Wats. loc. cit.

Prochnyanthes viridescens Watson, loc. cit. FIGURE 5.

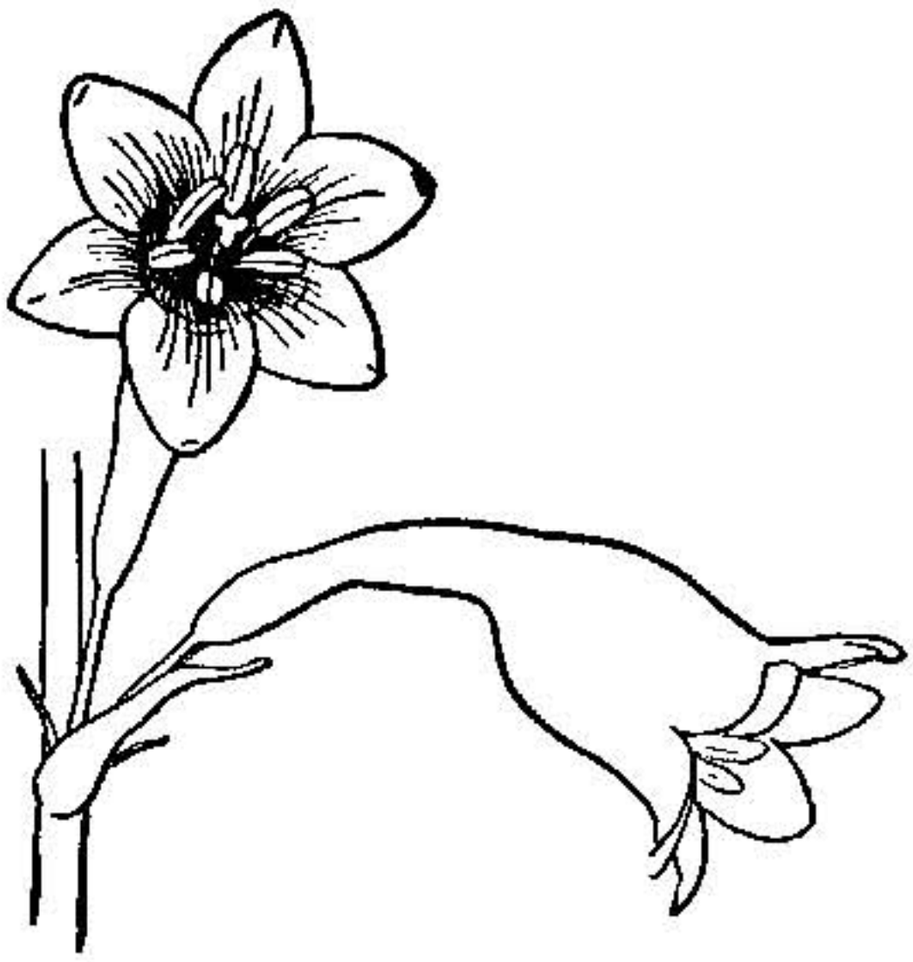


FIG. 5.—Flowers of *Prochnyanthes viridescens*, natural size.

Rootstock thick, sending off many thickened roots, crowned with a bulb 5 cm. or more long, this clothed with the fibrous remains of old leaves; stem erect, 18 dm. high; leaves few, becoming bracteate above, glabrous and somewhat glaucous; basal leaves numerous, 3 to 5 dm. long, 4 to 5 cm. broad, mostly erect; inflorescence a lax raceme of 5 to 30 pairs of flowers; pedicels 4 cm. long to nearly wanting; perianth from greenish to brown; the lower part of the tube cylindrical, ascending, and just below the middle abruptly swollen and bent, the upper part somewhat pendant and bell-shaped; lobes broadly ovate, 6 to 8 mm. long; stamens inserted below the bend in the perianth; filaments slender; capsule orbicular, 10 to 15 mm. in diameter.

Specimens examined:

Jalisco: Cool grassy slopes of rocky hills near Guadalajara, C. G. Pringle, August 18, 1893 (no. 4505); Rio Blanco, Dr. Edward Palmer, June to October, 1886 (no. 9, type); near Colotlan, J. N. Rose, August 28, 1897 (no. 2679); on road between Bolaños and Guadalajara, J. N. Rose, September 22, 1897 (no. 3098); Sierra Madre, west of Bolaños, J. N. Rose, September 17, 1897 (no. 3724).

Zacatecas: Near Monte Escobedo, J. N. Rose, August 26, 1897 (no. 2628).

Durango: Vicinity of city of Durango, Dr. Edward Palmer, April to November, 1896 (no. 558a); J. N. Rose, August to September, 1897 (no. 3750).

Territorio de Tepic: Between Dolores and Santa Gertrudis, J. N. Rose, August 7 and 10, 1897 (no. 2045).

Prochnyanthes bulliana Baker, Bot. Mag. **121**: *pl. 7427*. 1895.

Braroa bulliana Baker, Gard. Chron. **22**: 328. 1884.

P. bulliana hardly differs from *P. viridescens*, but it is described as having large flowers, which are sessile instead of having long pedicels.

Another distinction pointed out by Baker seems not to hold. He states in the Botanical Magazine that *P. viridescens* has long pedicels, articulated near the middle. It seems true that the pedicels are usually long, though they are sometimes nearly wanting; but they are always jointed just at the base of the flower. While *P. bulliana* is figured and described with sessile flowers, yet it was originally described as having the flowers shortly pediceled.

Prochnyanthes mexicana (Zucc.) Rose.

Polianthes mexicana Zucc. Abhandl. Akad. Muench. **2**: 319. 1837.

I have not seen specimens of this plant. It certainly is not an Agave, as suggested by Kunth, nor is it *Polianthes tuberosa*, to which species it is referred by the Kew Index. From the description I can not separate it from *Brarca bulliana* Baker, possessing as it does flowers of the same size, form of perianth tube, color, and insertion of stamens. It should, therefore, be taken up as *Prochnyanthes mexicana*.

MANFREDA AND ITS SPECIES.[a]

In a former paper in the Contributions from the U. S. National Herbarium[b] I called attention to the desirability of restoring Manfreda to generic rank, or, perhaps better, of separating the herbaceous-leaved Agaves and using for them Salisbury's name, Manfreda, which he had applied only to *Agave virginica*.

Since that paper was prepared for publication I have twice visited Mexico, where I gave especial attention to the Agaves and their allies. I am now more strongly convinced than ever that Manfreda is generically distinct from Agave proper. It differs from Agave in its habit, in its manner of growth, in its foliage, in its inflorescence, etc.

In Manfreda true bulbs are formed, from which annually appear stems that flower and die down to the ground. The leaves are comparatively thin and are neither spiny-edged nor spiny-pointed. The inflorescence is a simple lax raceme or spike and the flowers are borne singly.

In Agave proper no bulbs are formed and the plants persist for years, some species flowering frequently, but many only once; the leaves are mostly fleshy, rigid, usually spiny-pointed, and generally horny or spiny-edged. The inflorescence is an open paniele or a dense spike, with the flowers in pairs.

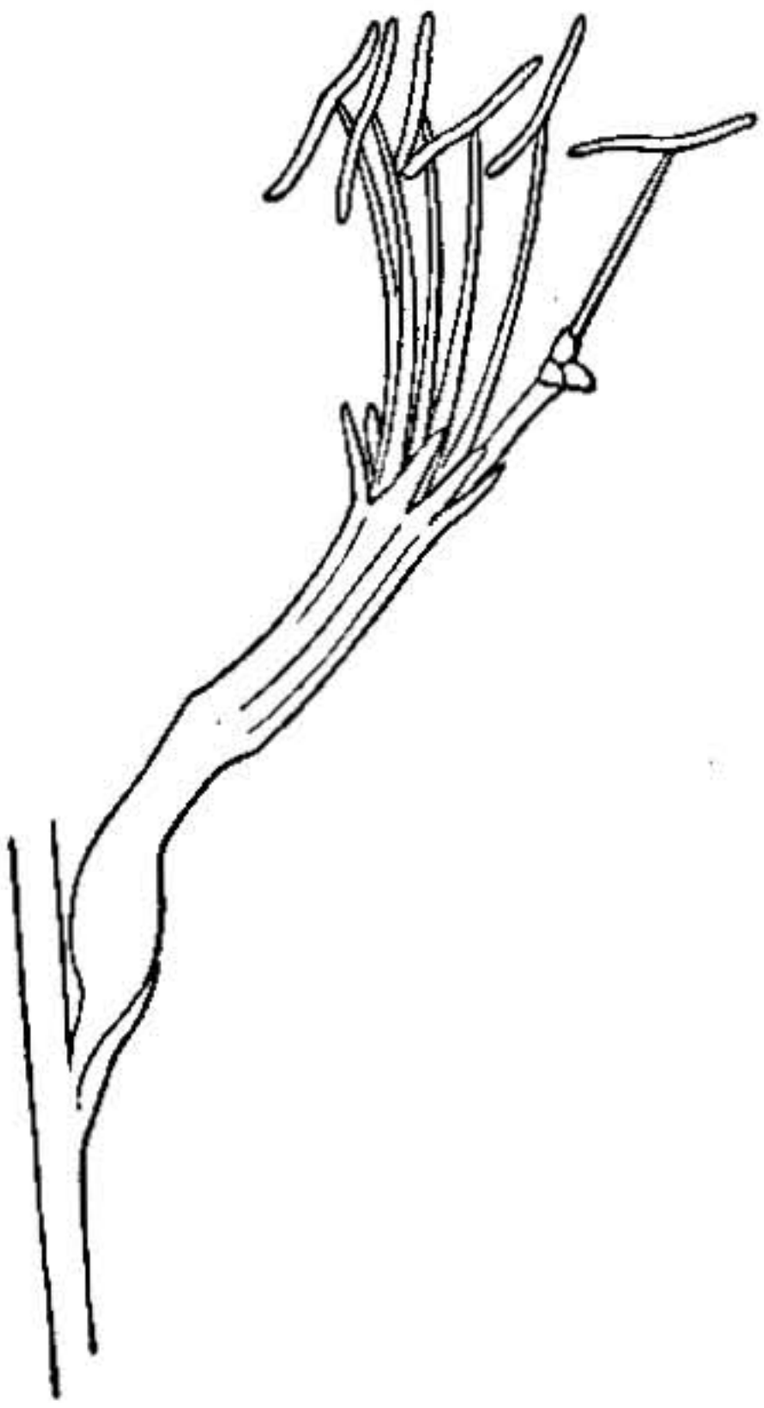


FIG. 6.—Flower of *Manfreda virginica*.

Both Agave and Manfreda reach their greatest development in Central Mexico, and both have considerable economic importance. The Agave species called maguey, as is well known, furnish pulque, mescal (now generally called tequila), and

---

[a] **Manfreda** Salisb. Gen. Pl. Frag. 78. 1866.

DELPINOA Ross, Boll. Orto Bot. Palermo **1**: 117. 1887.

LEICHTLINIA Ross, Del. Sem. Hort. Bot. Panorm. 48. 1893.

ALLIBERTIA Marion, Rev. Hort. Bouch. Rhone. 1882.

Type species:

Of Manfreda, *Agave virginica* L.

Of Delpinoa, *D. gracillima* Ross.

Of Leichtlinia, *Agave protuberans* Engelm.

Of Allibertia, *A. intermedia* Marion.

The further bibliography (Ross) of Leichtlinia is as follows:

Boll. Soc. Sci. Nat. Palermo [reprint, p. 2].

Ic. Descr. Pl. Nov. Rar. *pl. 3.* 1896.

Bot. Central. **74**: 217. 1898.

[b] Vol. 5, p. 155.

fiber, and have numerous other uses. The Manfredas called "amole" are one of the commonest soap plants of the country. The root is always to be found in great quantities in every Mexican market.

KEY TO SPECIES.

Perianth tube strongly curved ..... 1. *M. singuliflora.*
Perianth tube slightly if at all curved.
Filaments about the length of the tube ..... 2. *M. maculosa.*
Filaments much longer than the tube.
Filaments of two lengths ..... 3. *M. potosina.*
Filaments of equal lengths.
Leaves pubescent ..... 4. *M. maculata.*
Leaves not pubescent.
Segments of the perianth much shorter than the tube.
Leaves spotted ..... 5. *M. pringlei.*
Leaves not spotted.
Margin of leaf armed with "hooked spines" ..... 6. *M. brunnea.*
Margin of leaf entire or nearly so.
Stamens inserted near the base of the perianth tube ..... 7. *M. virginica.*
Stamens inserted near the top of the perianth tube... 8. *M. brachystachys.*
Segments of the perianth equal to or longer than the tube.
Segments about equal to the tube.
Leaves spotted ..... 9. *M. variegata.*
Leaves not spotted.
Perianth brownish ..... 10. *M. elongata.*
Perianth yellow or greenish.
Flowers in a dense spike ..... 11. *M. revoluta.*
Flowers in a lax spike..... 12. *M. oliverana.*
Segments much longer than the tube.
Leaves spotted ..... 13. *M. guttata.*
Leaves not spotted.
Leaves short and broad..... 14. *M. planifolia.*
Leaves narrow and elongated.
Leaves 3 cm. broad..... 15. *M. undulata.*
Leaves 1 cm. or less broad.
Stamens 3 to 4 cm. long..... 16. *M. rubescens.*
Stamens 6 to 7 cm. long ..... 17. *M. jaliscana.*

1. Manfreda singuliflora (Wats.) Rose.

Bravoa singuliflora Wats. Proc. Am. Acad. **22**: 479. 1887.

Stems slender, 6 to 9 dm. long, glabrous, somewhat glaucous; basal leaves 8 to 10, 3 dm. long, 4 to 6 mm. wide, acute, with a scarious undulate margin; stem leaves few and much reduced above; inflorescence a very lax raceme of 8 to 12 solitary flowers; pedicels of flowers 2 to 3 mm. long, of fruit sometimes no longer, sometimes becoming 15 mm. long; perianth 3 dm. long (including the ovary), more or less curved downward, somewhat purplish; lobes spreading, oblong, 6 to 8 mm. long, bearing a tuft of hair at apex; filament but shortly exserted; style exserted; carpels globular to oblong, about 15 mm. long.

Type locality: "Mountains near Chihuahua."

Specimens examined:

Chihuahua: On cool hillside near Chihuahua City, C. G. Pringle, August 19, 1897 (no. 1381); in southwest Chihuahua, E. W. Nelson, August 21, 1898 (no. 4814); near Batopilas, E. A. Goldman, October 4 and 5, 1898 (no. 207); near Colonia Garcia, E. H. T. Townsend and E. M. Barber, July 11, 1899 (no. 120).

This species is certainly congeneric with the other species referred to Manfreda, having the same habit and inflorescence, and differing only in its peculiarly curved perianth tube and its short stamens.

In its curved tube it approaches Polianthes, but it has single flowers and exserted stamens. *Agave saponaria* (*M. brachystachys*) is figured and described as having a curved tube, although this is not so strongly bent as in the above species. In its short stamens it is unlike all the Manfredas except *M. maculosa*, which has stamens shorter than the lobes of the perianth.

This species may be considered a good generic type by some.

2. **Manfreda maculosa** (Hook.) Rose.

Agave maculosa, Hook. Bot. Mag. **85**: *pl. 5122*. 1859.

Agave maculata, Engelm. Bot. Mex. Bound. 214. 1859, not Regel, 1856.

Basal leaves 6 to 10, blotched with brown or sometimes with green, the margins serrulate; scape 3 to 6 dm. long, with about 6 small bracts, purplish; flowers 10 to 25, nearly sessile, almost 5 cm. long (including ovary); tube narrowly funnel-shaped, a little longer than the purplish or greenish white, somewhat spreading lobes; filaments a little shorter than the perianth lobes; anther cells exserted, brownish; stigmas 3-lobed.

This species has repeatedly flowered in the National Botanic Garden. Specimens prepared by J. N. Rose are in the National Herbarium (nos. 4055, 4076).

Baker in his Handbook of Amaryllideae takes up *A. maculosa* Regel for this plant; but according to Regel's description his species has long-exserted stamens, and it is more than likely to be one of the several spotted-leaved species of central Mexico.

The type of Regel's plant was grown from seed sent by Karwinski from Mexico. Karwinski collected largely if not entirely in south Mexico, especially in the State of Oaxaca. In 1840 to 1843 he collected for the Russian Government, at which time he probably obtained the seed of this plant.

Dr. Engelmann was of the opinion that this plant was not the *maculata* of Regel, and in his revision of the Agaves he employed Hooker's specific name, *maculosa*. Miss Mulford, however, in her revision of the North American Agaves hesitatingly adopts Regel's name, but points out clearly that it possesses characters which show it to be specifically distinct.

As Miss Mulford states, the species is rather variable and I am not inclined to recognize as a variety *Agave maculosa brevituba* Engelm. (*A. maculata brevituba* Mulford).

This species is confined entirely to Texas.

The following paragraph was drawn up from a Texas specimen which flowered in Washington several years ago:

A form having the leaves spotted with green was sent in along with the purple spotted leaved form; corolla tube shorter than the lobes and the lobes very spreading; filaments apparently longer than in other forms, but scarcely longer than the segments; segments at first greenish yellow but in age becoming a dark pink; stamens rounded, not emarginate. This appears to be the *A. maculosa brevituba* of Engelmann. Here also seems to belong *A. maculosa* as figured by Hooker in Curtis's Botanical Magazine, vol. 85, *pl. 5122*, for it has the same spotted leaves, the short perianth tubes tinged with yellow, and the round stigmas.

For a number of years I had growing in one of the greenhouses roots of the so-called *Agave maculata* from Texas. In the summer of 1898 I transplanted this pot to my yard and in June it flowered, having sent up two flowering stalks. These had peduncles 6 dm. long, more or less purplish and glaucous, bearing 9 and 10 leaves or leaf-like bracts, and each had about 25 flowers. The flowers when they first opened had nearly white filaments, style, and segments, the latter being somewhat purplish without, but in age all became dark reddish rose, the segments becoming strongly reflexed.

3. **Manfreda potosina** (Robinson & Greenman) Rose.

Agave potosina Robinson & Greenman, Proc. Am. Acad. **29**: 393. 1894.

Delpinoa gracillima Ross, Boll. Orto Bot. Palermo **1**: 117. 1897.

Stems slender, 3 to 6 dm. high; basal leaves 4 to 6, 1 to 1.5 cm. long, 10 mm. broad, acute, the margin with short linear teeth, sometimes irregularly tipped, rather conspicuous for the genus; flowers 10 to 15, solitary (rarely in pairs) in the axils of bracts, short-pediceled; perianth tube 6 mm. long, very narrow; lobes 9-nerved, equal to the tube; stamens long-exserted, of two lengths; capsule glaucous, 10 to 12 mm. in diameter.

Type locality: "Los Charcos," San Luis Potosi, Mexico.

Only known from Mr. Pringle's specimens (no. 3745).

Delpinoa gracillima is undoubtedly the same as *Agave potosina* and is probably from the same collection, namely, from specimens gathered by Mr. Pringle in 1891 in the State of San Luis Potosi.

I have seen specimens of the latter and it possesses all the characters except the paired flowers. Ross describes (and a photograph of his in the Gray Herbarium also shows it) the upper flowers as solitary while the lower ones are paired, one being sessile while the other is slender-pediceled! This of course is a very remarkable character, but the same is occasionally met with among the allied species. Engelmann cites a case in which a plant of *A. virginica* year after year produced a second flower (sometimes a third one) from the bract; peculiar variations in the inflorescence have been noted in *Polianthes tuberosa* and *P. geminiflora*. This leads me to believe that the inflorescence is abnormal. All of Mr. Pringle's herbarium plants have single flowers on short pedicels. *Agave potosina* also has (in agreement with the description of Delpinoa) the stamens in two lengths, the tube slightly constricted at base, the style wholly included, and the segments short. Ross states in substance that Delpinoa differs from all known Agaveae in having three long and three short stamens and in having the flowers in the lower part of the inflorescence paired, while above they are solitary. The very unequal stamens in this species seem to be unusual, although they are found in some other species, but in other respects it comes very close to *M. virginica*.

A photograph in the herbarium of the Missouri Botanical Garden of a specimen which flowered there has the spike with single flowers in the axils of each bract, except in one case.

4. **Manfreda maculata** (Mart.) Rose.

Polianthes maculata Mart. Amoen. Bot. Mon. 19. *pl. 13.* 1831 (?), not *Agave maculata* Regel (1856) nor Engelmann (1859).

Agave pubescens Regel & Ortgies, Gartenfl. **23:** 227. *pl. 804.* 1874.

Basal leaves (in herbarium specimens) 4, somewhat lanceolate, narrowed at base, acuminate, 2.5 cm. or more wide at widest point, 3 dm. long, dull green, with large brown spots, pubescent on both sides, paler beneath; stem, including inflorescence, less than a meter high; stem leaves 3 or 4, bractlike; flowers rather few, the lower ones 2.5 cm. apart, sessile or nearly so, subtended by a narrow bract; perianth tubes 12 to 16 mm. long, purplish; perianth lobes somewhat shorter; stamens much exserted; capsule oblong, 2 cm. long, smooth.

The above description is drawn from flowering specimens of Mr. Nelson's and fruiting specimens of the writer's. The two specimens come from widely separated localities, and it is possible they may represent different forms, but as one is in fruit and the other is in flower they can not well be compared. They agree in having broad, tapering, pubescent and spotted leaves, a combination which is found in no other species known to the writer.

Specimens examined:

Chiapas: On ridge near Tonala, E. W. Nelson, August 10, 1894 (no. 2877).

Morelos: In mountain forests above Cuernavaca, J. N. Rose, May 27 to 30, 1899 (no. 4402).

The plant here characterized departs in some particulars from Baker's description of *A. pubescens*, especially in the length and color of the perianth lobes, and may yet prove to be different. This is, however, the only species which is known to have pubescent leaves.

Mr. J. M. Greenman, in a letter dated November 29, 1898, says:

"I believe you are right in considering *Polianthes maculata* and *Agave pubescens* to be one and the same. I have just compared the illustrations and read over the descriptions, and they seem to me to be the same."

5. **Manfreda pringlei** Rose, sp. nov.

Stems slender, 9 to 10 dm. high, glabrous; leaves linear-lanceolate, about 3 dm. long, 15 to 20 mm. broad, green with brown spots; flowers in a short compact raceme or spike, perhaps becoming more open in age; ovary 10 mm. long; perianth tube 8 to 12 mm. long; lobes purplish, 8 mm. long; stamens inserted near the middle of the tube, long-exserted, 5 cm. long; fruit orbicular, 15 mm. in diameter.

Collected by Mr. C. G. Pringle on San Felipe in 1894 (no. 4745), and distributed as *Agave guttata*, from which it differs.

Perhaps nearest *M. brachystachys*, but with smaller flowers and with different insertion of the stamens.

6. **Manfreda brunnea** (Wats.) Rose.

Agave brunnea Wats. Proc. Am. Acad. **26**: 156. 1891.

Leaves few, thickish, 1 dm. long, 12 to 20 mm. broad near the middle; flowering stem 6 dm. long, about 6-flowered; flowers sessile; ovary 12 mm. long; perianth 3 to 3.5 cm. long, the lobes about half as long as the narrow tube; stamens and style long-exserted.

Collected by Mr C. G. Pringle on the battlefield of Buena Vista, Tamaulipas, Mexico, July, 1888 (no. 2218).

7. **Manfreda virginica** (L.) Salisb. Gen. Pl. Frag. 78. 1866.

Agave virginica L. Sp. Pl. **1**: 323. 1753.

Leaves all from the base, about 10, at first erect, then spreading, nearly flat, about 2 dm. long, 3 cm. wide at about two-thirds of the distance from the base, then gradually tapering downward to the narrow base and upward more abruptly into a slender acumination with a weak point, green, but somewhat mealy, not at all spotted; margins slightly serrulate; scape 7 to 8 dm. long, about 7-bracteate, glaucous; spike about 6 dm. long, about 30-flowered; flowers solitary and distant, the lower on pedicels 6 to 8 mm. long, the upper short-pedicelled; ovary 14 mm. long, somewhat constricted above; perianth greenish, less than 2.5 cm. long; segements 8 mm. long, erect, margins involute, hairy at tip; stamens shortly exserted; filaments dark purple, inserted near the base of the tube; anthers whitish, spotted with brown; style shorter than the stamens; capsule globose, 14 to 20 mm. in diameter.

The writer has collected this species on the Kentucky River, near Lexington, and flowered it in the National Botanic Garden.

Distribution: Maryland to southern Indiana and Missouri and to eastern Texas and Florida.

I have not been able from the description to separate *Agave aliberti* Baker (*Alliberta intermedia* Marion) from the above. Indeed, it was originally distributed as *Agave virginica* by Haage & Schmidt.

Manfreda virginica tigrina (Engelm.) Rose.

Agave virginiana tigrina Engelm. Trans. St. Louis Acad. **3**: 302. 1875.

A spotted-leaved form first found in Bluffton, South Carolina, and recently reported by Dr. Trelease from Missouri. I have seen the type specimen in the Missouri Botanical Garden.

8. **Manfreda brachystachys** (Cav.) Rose.

Agave brachystachys Cav. Descr. 453. 1802.

Agave polyanthoides Cham. & Schlecht. Linnæa **6**: 55. 1831.

Agave saponaria Lindl. Bot. Reg. **24**.: misc. no. 141. 1838.

Basal leaves several, spreading, green, glabrous, not spotted, somewhat reddish at base; peduncle rather stout, many-flowered, the subtending bract as long as the ovary, acuminate; ovary sessile, 1 to 1.4 cm. long; perianth tube 2 to 2.4 cm. long, more or less curved, especially in age; lobes oblong, 1.4 to 1.6 cm. long; stamens inserted 4 to 6 mm. below the top of the perianth tube, long-exserted, reddish especially below the filaments, ribbon-like in herbarium specimens; capsule oblong, 2 to 2.4 cm. long, abruptly constricted at base (in my specimen). This seems to be a widely distributed species extending from northern Mexico to Guatemala. I would refer here the following collections:

Coahuila: Saltillo, Dr. E. Palmer, 1880 (no. 1307).

Jalisco: Between Huejuquilla and Mesquitec, J. N. Rose, August 25, 1897 (no. 2592); near Guadalajara, J. N. Rose, September 22, 1897 (no. 3097).

Federal District: Pedregal, Valley of Mexico, C. G. Pringle, 1896 (no. 6587).

Chiapas: About Ocuilapa, E. W. Nelson, August 21, 1895 (no. 1057).

Guatemala: Near Santa Rosa, Heyde & Lux, November, 1892 (no. 4292).

Baker and others have regarded the species as really Mexican. I collected specimens on the table-lands of Mexico which answer Lindley's description and figure in every detail. It occurred to me that Hartweg might have collected the plant in this same region, and, on referring to his paper relating to his visit to Mexico, I find that he mentions *Agave saponaria* as seen by him, and that on another page it is listed among the plants sent by him, which either had flowered or were growing in the gardens of the Horticulture Society of London.

Hartweg's plants were collected in 1838 (probably early in the year) and Lindley's description was published in October of the same year.

Lindley says of the habitat of this species in connection with the original description:

"For this new species of Agave I am indebted to James Bateman, esq., who received it from his friend, Mr. Skinner. The latter gentleman, traveling in Peru, found it growing on a sandy plain, and learned that it is used as a soap plant."

Elsewhere he says, "It seems to be Mexican."

Very near the above species must be *Agave sessiliflora* Hems.[a] The description is based upon two specimens of Bourgeau's, one from the Orizaba region (no. 3003) and the other from "Barranca de Pedregal." From the latter place Mr. Pringle has collected specimens (no. 6587) which he has distributed under the above name. In the latter specimens the leaves are sometimes 4.3 cm. wide, the flowers including the ovary and stamens are 7.5 to 8.7 cm. long, while the perianth itself is 3.7 cm. long, the lobes being shorter than the tube. These specimens of Mr. Pringle's seem very near *A. brachystachys*.

The species is figured in the Biologia Centrali-Americana, *pl. 88B*.

9. **Manfreda variegata** (Jacobi) Rose.

Agave variegata Jacobi, Hamb. Gartenz. **21**: 459. 1865.

Leaves said to be 3 to 4 dm. long, 2.5 to 5 cm. wide, deeply channeled, spotted; perianth glaucous without, the tube broadly funnel-shaped, 8 to 10 mm. long, the lobes oblong, 12 mm. long; stamens inserted near the top of the tube; ovary including slender beak 4 mm. long.

Southeastern Texas and northern Mexico.

The flowers here described were collected near Brownsville, Texas, October, 1895 (no. 73), by C. H. Tyler Townsend. The plant is called "huaco," and is supposed to be a remedy for snake bites.

---

[a] Diag. Pl. Nov. **3**. 55. 1880.

Although probably common both in Texas and Mexico in the valley of the Lower Rio Grande, yet it has rarely been collected. Townsend's plant is the only specimen we have in the National Herbarium. The only other recorded collection is that of Dr. J. Gregg near Matamoras in 1847.

There is still some doubt as to what is the *A. variegata* of Jacobi, but I have followed Engelmann and Baker in referring the specimen of the Rio Grande there. Be this as it may, *Agave variegata* must be a Manfreda. A species of Central Mexico has been referred to *variegata* by Dr. Watson, which should not be confused with the above. An excellent colored figure of this plant is furnished by Saunders.[a]

10. **Manfreda elongata** Rose, sp. nov.

Stems 9 to 12 dm. high, glabrous throughout; leaves strongly recurved, deeply channeled, 3 dm. or more long, 5 cm. broad, green, the margin entire; flowers rather thickly set; ovary 10 to 12 mm. long; perianth tube cylindrical, 12 to 14 mm. long, brownish; lobes linear, as long as or slightly longer than the tube; stamens about 2.5 cm. long, shorter than the style, inserted just below the top of the perianth tube.

Collected by J. N. Rose in a narrow valley on the west side of the east range of the Sierra Madre in southern Durango, August 16, 1897 (no. 2341).

11. **Manfreda revoluta** (Klotzsch) Rose.

Agave revoluta Klotzsch, Otto & Dietr. Allg. Gartenz. **8**: 274. 1840.

Apparently described from specimens which flowered in the Berlin Botanical Garden in 1840. Described by Baker as having the leaves green, falcate, channeled down the face, and entire on the margin; perianth 3.1 to 3.6 cm. long, the tube equaling the length of the segments. Our labeled specimens, collected by Dr. Palmer at Saltillo, which have been referred here by Dr. Watson, seem to belong rather to *M. brachystachys*.

12. **Manfreda oliverana** Rose, sp. nov.

Leaves about 6, 5 dm. long, at first erect, becoming somewhat bent in age, strongly channeled for two-thirds the length below, flat above, 3.1 cm. broad, acute, the margin entire and smooth to the touch, purplish at base, elsewhere bright green; peduncle, including the spike of flowers, 1.8 m. high, 6 or 8 bracteate below, the lower bracts leaflike, glaucous; flowers (in one specimen) 23, greenish yellow, solitary, sessile; ovary 1.8 cm. long, glaucous; tube 1.6 to 1.8 cm. long, funnel-shaped; segments glaucous without, 1.8 to 2 cm. long, at first, strongly recurved, but in a few days becoming nearly erect, the inner ones toothed on each side near the base; stamens erect, attached one-third the length of the tube from the top, 3.7 cm. long; anthers pale yellow, 1.8 cm. long, style at first protruding from the side of the flowers.

Rootstocks of this Manfreda were collected by J. N. Rose along the road between Colotlan and Bolaños, in the State of Jalisco, September 8, 1897, and were flowered by Mr. George W. Oliver in the Botanic Garden at Washington, August, 1898 (no. 3765).

I have named this species in honor of Mr. Oliver, who has taken great pains and interest in flowering many of my plants.

13. **Manfreda guttata** (Jacobi & Bouché) Rose.

Agave guttata Jacobi & Bouché, Hamb. Gartenz. **21**: 190. 1865.

Agave protuberans Engelm. in Baker, Handbook Amaryl. 197. 1888.

Leichtlinia protuberans Ross, Del. Sem. Hort. Bot. Panorm. 48. 1893.

Leichtlinia commutata Ross, Ic. Descr. Pl. Nov. Rar. 10. 1896.

Leaves 3 to 4 dm. long, spreading, linear to lanceolate, 1.6 to 5 cm. wide, with nearly entire or denticulate margins, dull green with brown spots (not always shown in dried specimens); perianth tube funnelshaped, very short, 6 to 8 mm. long;

[a] Refugium Botanicum **5**: *t. 326.*

segments purplish, linear, twice as long as the tube; stamens inserted at the top of the perianth tube, 5 cm. long or less; ovary free at the tip; capsule oblong to obovate, less than 2.5 cm. long.

This species, as I have characterized it above, is perhaps the commonest Manfreda in Mexico, except *M. brachystachys*, and seems to be frequent over much of the table-land region. It has been, however, one of the most difficult species for me to make out, and even Mr. Baker only cites a single cultivated specimen. Jacobi (at least I infer so from Engelmann's manuscript) described the flowers incorrectly, for he states that the stamens are inserted at the base of the perianth tube. This seems to have led Engelmann and Baker to separate *A. protuberans*. Hemsley, in the Biologia and elsewhere, and Watson (in Herb.) referred the specimen so separated to *A. guttata*, in which opinion I am inclined to concur.

14. **Manfreda planifolia** (Wats.) Rose.

Agave planifolia Wats. Proc. Am. Acad. **22**: 479. 1887.

Perianth 1.8 cm. long; segments 3 or 4 times as long as the tube; stamens long-exserted. This is one of the broadest-leaved species which I know. Here also has been referred Pringle's No. 2265 from the Sierra Madre near Monterey, State of Nuevo Leon.

Type collected by Mr. C. G. Pringle, "Mapula Mountains, Chihuahua," in 1886 (No. 1141).

15. **Manfreda undulata** (Klotzsch) Rose.

Agave undulata Klotzsch, in Otto & Dietr. All. Gartenz. **8**: 274. 1840.

Leaves 4.5 dm. long, 3 cm. wide, channeled down the face, not spotted, glaucous green, perianth tube 8 mm. long; segments 16 mm. long; insertion of the stamens not given.

This species seems to be known only from plants which flowered in Berlin in 1869.

16. **Manfreda rubescens** Rose, sp. nov.

Bulbs oblong, covered with a dense mass of brown fibers; basal leaves linear-lanceolate, erect, 2 to 2.5 dm. long, 8 to 10 mm. wide, acute, glabrous, green, not spotted; stem leaves 4 to 6, bractlike; peduncle 6 to 9 dm. high; flowers few (5 to 8), alternate, sessile, dark purple, 3.2 to 3.6 cm. long, including the ovary and stamens; ovary smooth, 8 to 10 mm. long; perianth tube very short, 2 to 4 mm. long; segments 1.2 cm. long; stamens 2.5 cm. long, inserted at the top of the tube; ovary free at tip.

Only a few specimens seen in one locality, a small grassy opening along a little stream in the western foothills of the Sierra Madre near Pedro Paulo, Territorio de Tepic, August 4, 1897 (no. 1994).

This species is perhaps nearest *M. guttata* (*A. protuberans*), but has fewer and smaller flowers, and very different leaves.

17. **Manfreda jaliscana** Rose, sp. nov.

Leaves almost 6 dm. long, 1 cm. wide; perianth tube, 4 to 8 mm. long; lobes oblong, 12 to 14 mm. long, 3 mm. wide, purplish; stamens, 7.5 cm. long, inserted near or at the top of the tube, purplish; anthers, 12 mm. long; ovary slightly glaucous; capsule oblong, 3 cm. high, constricted at base into a short stipe, apiculate at tip.

Collected by Mr. C. G. Pringle near Guadalajara, December, 1889 (no. 1850), and distributed as *A. variegata*, but very different from that species, at least as understood by Baker, Engelmann, and others. I have not seen Jacobi's original description, but from notes left by Engelmann, which are apparently copied from Jacobi, I am inclined to think that the Texas plant, which goes under the name of *A. variegata*, is properly so referred. Also collected by E. W. Nelson, west Mexico, 1903 (no. 6872).

In 1899 I found bulbs of this same species very common in the market at Guadalajara, and a small quantity were obtained and sent home. One of these flowered in April, 1900 (no. 109).

SPECIES IN CULTIVATION.

The following species of Manfreda have been reported, under the name Agave, as in cultivation, and as having been introduced at the dates appended:

aliberti, 1882.
brachystachys, 1820.
conduplicata, ——.
maculata, 1859.
maculata minor, 1869.
maculosa, 1856?.
revoluta, 1840.
undulata, 1840.
variegata, 1865.
virginica, 1765.

ARISTOLOCHIACEAE.

NEW NAME FOR AN ARISTOLOCHIA.

Aristolochia pringlei Rose, nom. nov.

Aristolochia longecaudata Wats. Proc. Am. Acad. **22**: 447. 1887, not Masters, 1875.

The writer collected in 1899, about the little town of Tequila, an Aristolochia which proved to be *A. longecaudata* Watson, a species only known heretofore from the plains near Guadalajara, where it was first obtained by Palmer and afterwards by Pringle. Mr. Pringle has recently called my attention to the fact that there is an *Aristolochia longecaudata* of Masters. As the name was not found in the Kew Index, the first impression was that Masters's name must be later, but it really has a precedence of some twelve years.

Specimens examined:

Jalisco: Near Guadalajara, Dr. E. Palmer, 1886 (no. 287); same station, C. G. Pringle, 1893 (no. 4425); near Tequila, J. N. Rose and Walter Hough, 1899 (no. 4764).

PAPAVERACEAE.

THE MEXICAN SPECIES OF ARGEMONE.[a]

Linnæus, in the first edition of the Species Plantarum, assigned three species to the genus Argemone. Only one of these, *A. mexicana*, remains in the genus as we understand it to-day, and this is clearly the historical type. The genus dates back to Tournefort, who only knew one species, that now called *A. mexicana*.

Hemsley, in the Biologia, assigns five species to Mexico, but two of these (*A. grandiflora* and *A. ochroleuca*) he thought were probably varieties of *A. mexicana*.

Prain, in an exhaustive and scholarly review of the genus, has brought together the results of much bibliographical study, but in his

---

[a] **Argemone** L. Sp. Pl. **1**: 508. 1753.
ENOMEGRA A. Nelson, Analyt. Key Pl. Rocky Mts. 27. 1902.
Type species of Argemone, *A. mexicana* L.; of Enomegra, *A. hispida* Gray.

treatment of the species is not very satisfactory. He recognizes but six species belonging to this genus, five of which are credited to Mexico.

The writer has seen at least eleven species of Argemone from Mexico and nearly all of them he has actually collected. Several other species have been described by various writers, but these are not easily made out. They have all gone into synonymy, where perhaps they should remain. All of the species are common and the genus has a wide distribution, both laterally and altitudinally. The various species seem to prefer cultivated ground to the unbroken soil and are therefore most commonly found in neglected fields and along railroad tracks.

If Mr. A. Nelson's genus Enomegra based on *Argemone hispida* possesses no other characters than those cited in the original place of publication, viz, thick milky-white sap and densely bristly stems and leaves, it can hardly be taken seriously.

KEY TO SPECIES.

Flowers yellow.
- *Stems woody* ..... 1. *A. fruticosa.*
- *Stems herbaceous.*
  - *Styles none; flowers bright yellow* ..... 2. *A. mexicana.*
  - *Style evident; flowers pale yellow* ..... 3. *A. ochroleuca.*

Flowers not yellow (mostly white).
- *Back of sepals not prickly; fruit nearly smooth* ..... 4. *A. grandiflora.*
- *Back of sepals more or less prickly; fruit prickly.*
  - *Flowers pinkish or purple* ..... 5. *A. sanguinea.*
  - *Flowers white.*
    - *Stems and leaves setose as well as densely prickly* ..... 6. *A. hispida.*
    - *Stem and leaves not setose and less densely prickly.*
      - *Filaments purple.*
        - *Style slender* ..... 7. *A. arida.*
        - *Style wanting* ..... 8. *A. platyceras.*
      - *Filaments yellow.*
        - *Petals small and narrow* ..... 9. *A. stenopetala.*
        - *Petals large and broad.*
          - *Stems stout, very prickly* ..... 10. *A. munita.*
          - *Stems weak, much less prickly* ..... 11. *A. gracilenta.*

1. **Argemone fruticosa** Thurber; Gray, Mem. Am. Acad. II. 5 : 306. 1854.

Specimen examined:

Coahuila: At San Lorenzo de Laguna, E. Palmer 21, 1880

Type locality: "In the mountain pass of La Pena, Coahuila."

2. **Argemone mexicana** L. Sp. Pl. **1** : 508. 1753.

Type locality: "Mexico, etc."

The writer, who has traveled extensively over Mexico and has looked expressly for this species, has never seen it in all the western or central part of the country. Indeed, he has only once collected it and then about Oaxaca City, where it could easily have been introduced. These observations are in line with Prain, who states that the species is found in Mexico only as an introduced plant, generally in the neighborhood of seaport towns.

All herbarium material seen is from Guatemala and extreme south Mexico.

3. **Argemone ochroleuca** Sweet, Brit. Fl. Gard. 3 : *pl. 242.* 1828.

Argemone mexicana ochroleuca Lindl. Bot. Reg. 16 : *pl. 1343.* 1830.

This species is common all down the west coast of Mexico, and was the only species of the genus seen by the writer south of Guaymas. In the interior it was seen from Chihuahua City to Oaxaca City and it is the most common argemony of Mexico. It is usually seen about houses and towns growing in waste places. The flowers are always a very pale lemon yellow. The fresh flowers sometimes appear nearly white, but the yellow color comes out more strongly in drying.

Prain, in his monograph of this genus, keeps *ochroleuca* as a variety of *mexicana*, although with some misgivings. It seems to the writer that the two forms should be kept distinct, for besides the differences cited by Prain our own material of *ochroleuca* shows somewhat thicker leaves, with stouter, more spinescent teeth. The color of the flowers is pale lemon, while that of *mexicana* is always orange yellow.

Type locality: Original description drawn from specimens grown from Mexican seed.

The following specimens have been collected by J. N. Rose:

Sonora: Between Nogales and Guaymas, June 4, 1897 (no. 1297); near Guaymas, June 5 to 11, 1897 (no. 1252).

Tepic: Near Acaponeta, July 30, 1897 (no. 3286).

Chihuahua: Near Chihuahua City, May 11, 1899 (no. 4207).

Federal District: Hill near Guadalupe, Valley of Mexico, June 10, 1899 (no. 4542).

4. **Argemone grandiflora** Sweet, Brit. Fl. Gard. **3**: *pl. 226.* 1827.

Stems with very few prickles and glaucous; leaves somewhat prickly on the margins and midrib. Sepals 3, broadly ovate, tapering into a long acumination tipped with a weak prickle; flowers white, 10 cm. broad; stamens numerous, yellow; ovary blush, slightly prickly; style short but evident.

Collected by Rose and Hough at Cardenas, San Luis Potosi, July 15, 1899 (No. 4884) and seen for a stretch of perhaps 50 miles between this place and the city of San Luis Potosi.

This must be the true *A. grandiflora*, now common in gardens, but according to Dr. Prain, represented in herbaria by only a single specimen in the Paris herbarium, collected by Ghiesbrecht in the State of Oaxaca.

Besides several good herbarium specimens, a small quantity of seed was obtained. The above description is drawn from my own specimens, which seem to accord with the illustrations in the Botanical Register[a] and the Botanical Magazine.[b] This species was introduced into cultivation in 1827.

5. **Argemone sanguinea** Greene, Pittonia **4**: 68. 1899.

Argemone mexicana rosea Greene, loc. cit. as syn.

Argemone platyceras rosea Coulter, Contr. Nat. Herb. **1**: 30. 1890, not *A. rosea* Hook. 1831.

Stems slender, very prickly and glaucous, leaves pale, pinnately lobed; the lobes with broad spiny-tipped teeth; flowers on short peduncles, pinkish to deep purple, 6 to 10 cm. broad; sepals broad, 18 mm. long, tipped with a long spine; fruit linear-oblong, 3 to 5 cm. long; style almost wanting.

Type locality: "Corpus Christi, Texas," collected by G. C. Nealley.

Specimens examined:

Texas: Eagle Pass, V. Havard, April, 1883; same station, C. G. Pringle, 1900 (no. 8277).

Coahuila: Saltillo, Dr. Palmer, 1880 (no. 20) and 1898 (no. 325), and near Parras, 1898 (no. 442).

---

[a] Pl. 1264. [b] Pl. 3073.

6. **Argemone hispida** Gray, Pl. Fendl. 5. 1849.

Described as perennial, stout; stems very pale and of a glaucous cast, densely setose-prickly as well as setose; leaves setose and prickly; flowers large, white, nearly sessile; capsule pale, rather narrow, oblong, prickly and setose like the stem; style short but distinct.

The following material from Mexico seems to belong here:

Coahuila: At Saltillo, Dr. E. Palmer, 1880 (no. 19) and 1898 (no. 208).

Type locality: "Around Santa Fe," New Mexico.

Miss Eastwood[a] has called attention to the distinctness of this species from the so-called *A. platyceras* of the United States. As is shown elsewhere in this paper, the true *platyceras* is not to be expected in the United States.

To *A. hispida* I am inclined to refer *A. squarrosa* Greene,[b] which came also from New Mexico.

7. **Argemone arida** Rose, sp. nov.

Stems branching, pale and somewhat glaucous, with scattered prickles, but not hispid; leaves pinnately lobed, the lobes with spiny-tipped teeth; flowers subsessile, 7 to 8 cm. broad, white; sepals with scattered prickles, the horns narrow, ending in a long prickle; petals rather broad at base; stamens numerous, purplish; ovary and capsule very prickly, somewhat glaucous, narrowly oblong, the walls rather firm; style very distinct, at least 2 to 3 mm. long.

Collected by J. N. Rose and Walter Hough on the arid plains about San Luis Potosi, Mexico, July 13, 1899 (no. 4864).

This species is very different from the one described below as *A. platyceras*, especially in its capsule, style, etc.

8. **Argemone platyceras** Link & Otto, Ic. Plant. Rar. Hort. Berol. **1**: 85. *pl. 43.* 1831 (?).

Stems 5 to 8 dm. high, somewhat diffuse, prickly; leaves pinnately lobed, the lobes strongly toothed and spiny-tipped; flower buds in clusters; peduncles even in fruit very short; flowers very large, 7 to 15 cm. broad, white, sometimes drying yellowish; sepals bristly, broad, the flat acumination also bristly and ending in a spine (not shown in original drawing); stamens purple; fruit ovate-oblong, 3.5 to 4 cm. long, thin-walled, very prickly; stigmas large, sessile; seeds with coarser reticulations than in *A. mexicana*.

Specimens examined:

Puebla: Between Tepeaca and Santa Rosa, J. N. Rose, June 27, 1899 (no. 4730).

Mexico: Near Ozumba, J. N. Rose, July 6, 1901 (no. 5355).

Federal District: At Ajusco, July 4, 1901 (no. 5306).

Vera Cruz: Las Vegas, J. N. Rose, May 17 to 22, 1899 (no. 4288).

Seeds of this species were brought home from Mexico in 1899 (Rose no. 4730), and these flowered in July, 1900, and the following notes were made at that time: Stems 4 dm. high, erect and simple, only slightly prickly, a little glaucous; the 3 inner petals much smaller than the outer; stamens reddish; stigmas 4, sessile.

The type of this species is said to grow "in Cofre de Perote prope Hacienda de la Laguna." Just what is meant by this statement is not clear. The "Hacienda de la Laguna" is near Jalapa, Vera Cruz. A more accurate statement would probably be "above Hacienda de la Laguna toward the Cofre de Perote." Mr. Pringle and the writer collected on the mountains above Jalapa, and consequently near the type locality, a plant which seems to answer in all essential particulars to Link and Otto's figure.

A. platyceras is certainly to be kept distinct from our United States and northern Mexican forms.

---

[a] Zoe **4**: 4.

[b] Pittonia **4**: 68.

9. **Argemone stenopetala** (Prain) Rose.

Argemone intermedia stenopetala Prain, Journ. Bot. **33**: 364. 1895.

Stems apparently annual, glaucous, and with scattered weak prickles, flowers subsessile, very small, white; petals lanceolate, 1.5 to 2 mm. long; fruit ovate-oblong, 2.5 to 3 cm. long, prickly; style short.

Specimens examined:

Chihuahua: In valley near Chihuahua City, C. G. Pringle, 1885 (no. 43); same locality, J. N. Rose, 1899 (no. 4206).

The writer found this species growing associated with *A. ochroleuca*, from which it is difficult to distinguish it except by the color of the flowers.

Type locality: "Chihuahua City."

10. **Argemone munita** Dur. & Hilg. Pac. R. Rep. **5**[3]: 6. *pl. 1.* 1855.

Type locality: "Williamson Pass," California.

The writer has not examined the type of *A. munita* and the following specimens may belong elsewhere. They are quite different, however, from all our other Mexican material.

Specimens examined:

Sonora: Between Nogales and Guaymas, J. N. Rose, June 4, 1897 (no. 1299).

Chihuahua: St. Diego, C. V. Hartman, May 8, 1891 (no. 673); Casas Grandes, E. A. Goldman, May 29, 1899 (no. 416).

The writer found this species very common along the railroad running between Nogales and Guaymas. The large pure white flowers are often 8.5 cm. in diameter.

11. **Argemone gracilenta** Greene, Pittonia **3**: 346. 1898.

A slender plant; branches pale, armed with scattered long slender prickles; leaves slightly lobed, very prickly; flowers sessile or nearly so; sepals broad, prickly on the back and terminating in a long prickle; petals white, 3 cm. long; fruit seen immature, oblong, prickly; style very short.

Only known from Dr. E. Palmer's plant from Lower California, collected in 1887.

Type locality: "Muleje, Lower California."

Professor Greene says it is a "species of well-defined aspect and indisputable characters."

RANUNCULACEAE.

NEW SPECIES OF THALICTRUM.

Since my notes on some Mexican species of Thalictrum were published in volume 5 of the Contributions, I have given further attention to the genus, both in the field and in the study. Although considerable work must yet be done on our Mexican species, the following do not seem to be involved in the confusion and their publication need not be delayed longer.

Thalictrum obliquum Rose, sp. nov.

Stems slender, much branched above, glaucous, glabrous throughout, including the leaflets; leaves 3 or 4 times ternate, broad in outline; leaflets small, nearly orbicular or ovate, few-toothed or lacerate above, obliquely truncate, sometimes cuneate, the terminal ones sometimes cordate at base; inflorescence a narrow panicle; stamens shortly apiculate; akenes strongly reticulate-nerved, glabrous.

Collected by C. G. Pringle on bluffs at Amozoc, Puebla, September 10, 1901 (no. 9541).

I should assign this species to a position near *T. gilbosum*, but the leaflets are more deeply cleft and greener beneath, and the anthers distinctly but shortly apiculate.

Thalictrum peninsulare (Brandegee) Rose.

Thalictrum resiculosum peninsulare Brandegee, Zoe 4: 399. 1894.

Mr. Brandegee describes it as follows:

"*Thalictrum resiculosum* Lec. var. *peninsulare*. Plants about 1 m. high, glabrous throughout, excepting a minute glandular pubescence on the margins of the sheaths, somewhat glaucous; stems striate; leaves tripinnate, distant; leaflets slender-petiolate, thin, sometimes 3 cm., but ordinarily less than 2 cm. long, green above, glaucous below, spatulate, ovate or obovate, 3 to 6, commonly, 3-lobed at apex, the lobes entire; paniele loose and spreading somewhat leafy; pedicels elongated, filiform; flowers usually hermaphrodite; sepals 4, 2 mm. long, oblong-elliptic or oval, purplish, with conspicuous parallel veins; filaments filiform, flexuous, more or less dilated toward the top, in full development exceeding the linear 4 to 5 mm. long, mucronate anthers, ovaries about 5, stipitate; style filiform 6 to 8 mm. long, strongly papillose on the back, tapering to the extremity, stigmatic nearly the whole length, the thin margin rolled in; heads nodding in fruit, akenes 5 to 6 mm. long, usually concave on the inner angle, stipitate, tipped by more or less of the base of the style, the flattened sides and back strongly veined and nodulose.—Common at middle elevations in the mountains of the Cape Region.

"This plant is geographically so far removed from the South American type that comparison of specimens may show them to be specifically distinct."

Thalictrum jalapense Rose, sp. nov.

Stems 9 to 10 dm. high, glaucous; leaves 3 or 4 ternate; leaflets small, nearly orbicular, 1 to 1.5 cm. in diameter, glabrous above, pubescent by short papillose hairs beneath, few-toothed, strongly cordate at base; inflorescence paniculate; sepals purplish, somewhat glandular; stamens long, mucronate-tipped; akenes small, strongly reticulate-nerved.

Collected by J. N. Rose near Jalapa, August 17, 1901 (no. 6188).

This species comes near *T. strigulosum* Hemsley, but has smaller leaflets and these glabrous above, glandular sepals, etc. It is also found at much lower altitudes.

Thalictrum stipitatum Rose, sp. nov.

Stems 18 to 30 cm. high and closely resembling *T. obliquum*, except that the leaflets are even smaller and often entire, at most with a single tooth on a side, and the akenes more tapering at base, forming a very decided stipe.

Collected by C. G. Pringle in a wet barranca above Cuernavaca, altitude 1,950 meters, September 21, 1896 (no. 6511), and distributed as *T. gibbosum*.

Thalictrum subpubescens Rose, sp. nov.

Rather stout, 9 to 15 dm. high, with glabrous or glabrate stems; leaves large, broad in outline, 3 or 4 times ternate, the rachis and under surface of leaflets softly pubescent; leaflets orbicular, rather large, 2 to 3 cm. in diameter, with a few rounded teeth, glabrous above; inflorescence paniculate; anthers long-apiculate; akenes strongly reticulated.

Collected by C. G. Pringle on moist banks in Sierra de las Cruces, altitude 3,000 meters, August 14, 1896 (no. 6414).

Perhaps nearest *T. tomentellum* Rob. & Sea., but stouter, with larger leaflets, these glabrous above, etc.

BRASSICACEAE.

NEW SPECIES OF DRABA.

Heretofore only four species of Draba have been known from Central Mexico. The five new species here proposed have been repeatedly compared with the descriptions of these old ones. Several

of the new descriptions have been in manuscript for seven or eight years. Two of the old species, viz: *D. myosotioides* and *D. popocatepetlensis*, have been collected by the writer at their type localities in great abundance. The other two (*D. jorullensis* and *D. toluccnsis*), although known from descriptions only, seem to be quite distinct from any of these.

Draba confusa Rose, sp. nov.

Annual or perhaps biennial, erect, 3 dm. or so high, somewhat stellate-pilosecent, basal leaves oblong-linear, 4 to 5 cm. long, obtuse; stem leaves similar, subentire; inflorescence strict, 1 to 2 dm. long; pedicels spreading 3 to 10 mm. long; petals yellow, longer than the sepals; pods ovate-oblong, 10 to 12 mm. long, pubescent; style prominent, less than 1 mm. long; stigma broad; cells each 4 to 6 seeded.

Collected by C. G. Pringle under cold cliffs of Sierra de las Cruces, altitude 3,600 meters, October 7, 1895 (no. 5260).

This was distributed as *D. myosotoides*, from which it is abundantly distinct in its pods, style, etc.

Draba mexicana Rose, sp. nov.

Biennial or perhaps perennial, more or less branching, more or less stellate-pubescent; basal leaves not seen; stem leaves scattered, oblong or the upper ones linear, obtuse, few-toothed, nearly glabrous; inflorescence open, elongated, 1 dm. long; pedicels 5 to 7 mm. long; sepals orbicular, tinged with purple, glabrous; petals longer than the sepals, pale yellow; pods ovate, 5 mm. long, slightly pubescent; cells about 4-seeded; style distinct, less than 1 mm. long.

Collected by C. G. Pringle on Sierra de Ajusco, Federal district, altitude 3,000 meters, August 8, 1896 (no. 7385).

This was distributed as *D. myosotoides*, but differs from it in its longer style, and in its foliage, etc.

Draba nivicola Rose, sp. nov.

Low perennial growing 2.5 to 5 cm. high with a thick caudex densely covered with bases of the old leaves; root thick, branching below, about 5 dm. long; stems arising from the caudex numerous; leaves very many, spatulate, 10 to 14 mm. long, obtuse, entire, densely stellate-pubescent on both sides or becoming glabrate above; flowers bright yellow; sepals glabrous, oval, obtuse; petals a little longer than the sepals, obtuse, tapering at the base into a claw, 2 mm. long; pod ovate, nearly glabrous, 6 mm. long.

Collected by E. W. Nelson on Mount Orizaba, April 22, 1893 (no. 4) and 1894 (no. 280), and on Cofre de Perote, May, 1893; also by J. N. Rose on Mount Orizaba, July 26, 1901 (no. 5766, type).

It is very near *D. orbiculata* in habit and foliage, but very different in the shape of the pod, while the leaves are a little shorter and of different shape.

Draba orbiculata Rose, sp. nov.

In habit, foliage, and pubescence this species is strikingly similar to *D. nivicola*, but the fruit is so very different that I feel no hesitancy in describing it as also new.

Pedicels rather stout, 5 mm. long, spreading; fruit orbicular, 2 mm. in diameter, glabrous; style thick, 0.5 mm. long, seeds 2 to each cell, attached near the top of cell; flowers not seen.

Only known from specimens collected in porphyritic gravel of the crater of Nevado de Toluca by C. G. Pringle, September 2, 1892 (no. 4234). This was distributed as "*Draba toluccnsis* H. B. K. ?" I feel convinced that *D. toluccnsis* must be quite distinct from the above.

Draba pringlei Rose, sp. nov.

Perennial from a much-branched caudex, the lower parts covered with old leaf bases; basal leaves thin, 2 cm. long, spatulate, tapering at base into a broad petiole, the margin ciliate, the two surfaces smooth or with a few hairs either simple or stellate; branches about 1 dm. high, nearly naked below, somewhat subdivided above; spikes short and compact; pedicels spreading, 5 mm. long, stellate-pubescent; petals (at least in old specimens) white; pods ovate, of a deep bluish-green color, 4 mm. long; style very short; ovules about 6 in each cell.

Collected by C. G. Pringle on the colder slopes within the crater of the Nevado de Toluca, altitude 4,080 meters, September 1, 1892 (no. 4248). It was distributed as "*Draba jorullensis* var.," but it hardly answers to that species. Here also seems to belong the plant described by Mr. Hemsley in the Biologia[a] as *D. toluccnsis*, as it agrees with mine in color of flowers, and in its short style, hairy pods, etc.

The true *D. toluccnsis* was found on the low hills about Toluca (altitude 2,400 meters) and must be very different from this species, which comes from the top of Nevado de Toluca.

ROSACEAE.

TWO NEW SPECIES OF POTENTILLA.

Potentilla madrensis Rose, sp. nov. PLATE III.

Stems from a thick root, branching at base, ascending 2 to 4 dm. long, glabrous below, somewhat villous and glandular-pubescent above, leaves mostly basal and long-petioled; stipules small; leaflets 3, glabrous and green on both sides, rounded at apex, crenately toothed, 20 to 25 mm. long, obovate to oblong; sepals ovate, acute; bracts linear; petals purplish, longer than the sepals.

Collected by J. N. Rose near Santa Gertrudis, Tepic, August 8, 1897 (no. 2096).

Nearest *P. thurberi*, but very different in habit, number of leaflets, etc.

EXPLANATION OF PLATE III.—Plant, natural size.

Potentilla rydbergiana Rose, sp. nov. PLATE IV.

Stems from a thick, much-branched caudex, villous-pubescent, the parts above ground usually simple and bearing a single terminal flower; basal leaves digitately foliate; leaflets 5, obovate, 1 to 2 cm. long, with a few coarse obtuse serrations, glabrous above, with a few long hairs beneath; stipules lanceolate, entire; petiole as long as or longer than the leaflets; flowering stems slender, ascending, 1 dm. or less long, bearing 1 to 4 much reduced leaves; calyx lobes ovate and acute; bractlets somewhat shorter and broader with the apex rounded; petals bright yellow, 1 cm. long, retuse.

Common on rocks on the high mountains above Pachuca, Hidalgo.

Collected by C. G. Pringle, August 3, 1898 (no. 7646, type), and July 21, 1901 (no. 8549), and by J. N. Rose, July 21, 1901 (no. 5607).

This species has much the habit of *P. ranunculoides*, but has fewer and different flowers.

The specific name is given in honor of Dr. P. A. Rydberg, who has monographed the genus.

EXPLANATION OF PLATE IV.—Plant, natural size.

---

[a] Biologia Centrali-Americana 2: 34.

POTENTILLA MADRENSIS ROSE.

POTENTILLA RYDBERGIANA ROSE.

MIMOSACEAE.

NEW SPECIES OF ACACIA, MIMOSA, AND PITHECOLOBIUM.

Acacia ambigua Rose, sp. nov. FIGURE 7.

Low, somewhat diffuse shrubs, 12 to 20 dm. high, pubescent (even on the old wood and thorns), infrastipular spines long and slender; compound leaves much reduced, subsessile; pinnæ 1 pair; leaflets 1 pair, 8 mm. long, oblong, obtuse, slightly pubescent; flowers in slender spikes; legumes linear, 7 to 8 cm. long, densely silky pubescent.

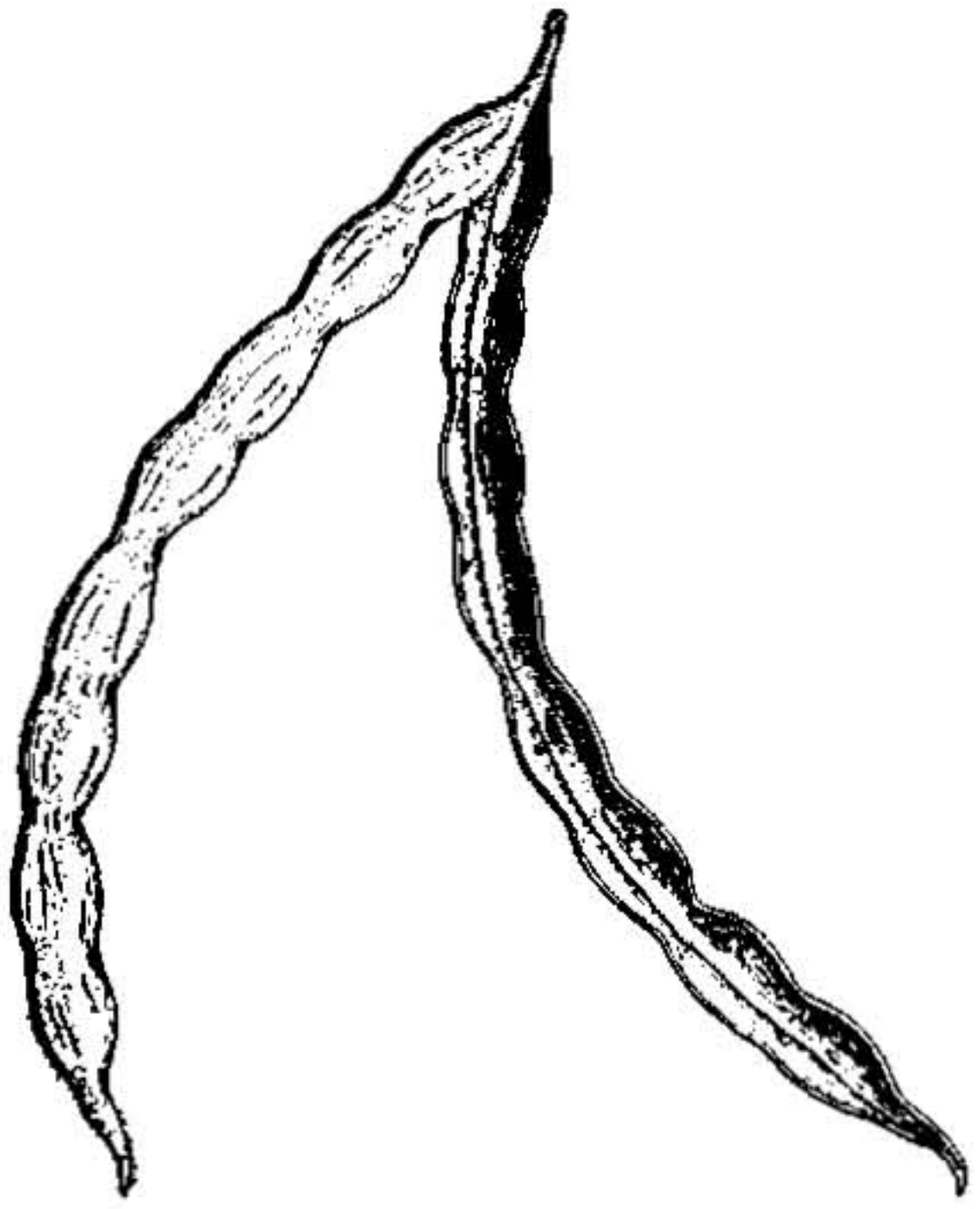


FIG. 7.—Pods of *Acacia ambigua*.

Collected on the hills about Matamoras, Puebla, where it is common, by J. N. Rose and Walter Hough, June 26, 1899 (no. 4698, type), and near Yautepec, Morelos, by J. N. Rose, July 5, 1901 (no. 5342).

This species belongs to the *amentacea* group but differs from all the related species in its silky pods, etc.

Acacia compacta Rose, sp. nov.

A large, round bush 2 to 3 meters high; old branches shining, reddish brown; young branches grayish pubescent; leaves rather small; rachis and under surface of leaflets somewhat silky pubescent; pinnæ 2 to 5 pairs, 8 to 12 mm. long; leaflets 12 to 15 pairs, narrowly oblong, 1 to 1.5 mm. long, obtuse; flowers yellow in dense spikes 2.5 to 3 cm. long; spikes solitary or in pairs forming short naked racemes; calyx minute, silky; corolla twice as long as calyx; stamens numerous, distinct; legume oblong, flat and thin, 1 dm. long, 16 mm. broad, acute at apex, shortly stipitate.

Collected by J. N. Rose and Walter Hough in Tomellin Canyon, Oaxaca, June 24, 1899 (no. 4680).

No fruit could be found on the plant, but a single pod, as above described, was picked up under the bush. It appeared to belong to it, but I realize that there is always more or less risk in collecting and describing detached fruit of any of the Mimosæ. It is a rule of the writer always to take fruit and flowers when possible from the same shrub. This species seems to be related to *A. acatlensis* Benth., but differs in several important respects. It seems best to describe the plant as new.

Acacia sonorensis Rose, sp. nov.

Shrubs; branches pubescent; pinnæ 1 pair; petiole (very short) and rachis pubescent; leaflets 2 or 3 pairs, oblong, obtuse, slightly pubescent, 6 to 12 mm. long; spikes slender, with very hairy rachis, 2.5 to 3 cm. long; legume (immature) linear, becoming glabrate.

Collected by J. N. Rose, near Guaymas, Sonora, June 5 to 11, 1897 (no. 1247). Similar to *A. amentacea* but of different range, with pubescent leaves, etc.

Acacia macilenta Rose, sp. nov.

A handsome tree, 6 meters high; the trunk 7.5 to 12.5 cm. in diameter; leaves large, often with 25 pairs of pinnæ; petioles short, bearing a large oblong gland; spikes 10 to 12 cm. long, in pairs, often forming terminal racemes 2.5 dm. long; flowers sweet-scented; legume with thin valves covered with a close tomentum.

Collected by Dr. E. Palmer on river bottoms and mountain sides near Colima, January 9 to February 6, 1891 (no. 1209).

In reporting upon Dr. Palmer's Colima plants the writer referred this species to *A. coulteri*. Since then abundant material of the true *coulteri* has been collected by Mr. Nelson which shows this to be quite distinct.

Acacia occidentalis Rose, sp. nov.

A small tree or shrub, pubescent; petiole pubescent, bearing a gland above the middle; pinnæ, 2 to 4 pairs; leaflets, 5 to 13 pairs, linear, 3 to 5 mm. long, at first puberulent, becoming glabrate in age, midvein near the upper margin; flowers in heads, often 4 or more together, from the axils of the leaves; pods 7 cm. or less long, 2 cm. broad, stipitate, thin, glabrous.

Only known from Sonora.

Collected a[illegible]ng railroad between Nogales and Guaymas by J. N. Rose, June 4, 1897 (no. 1294, type); near Altar, C. G. Pringle, April, 1884; Alamos, Dr. E. Palmer, 1890 (no. 315). This species has been distributed as a variety of *A. malacophylla*, but under a name which can not properly be used. It is clearly not that species, differing especially in the size and veining of leaflets, texture of pods, etc.

The species is very common on the dry plains of central Sonora. Here it appears as a low shrub, but doubtless because the largest plants have been cut away. Dr. Palmer states that about Alamos it sometimes appears as a small tree, and that it is there much used as fuel.

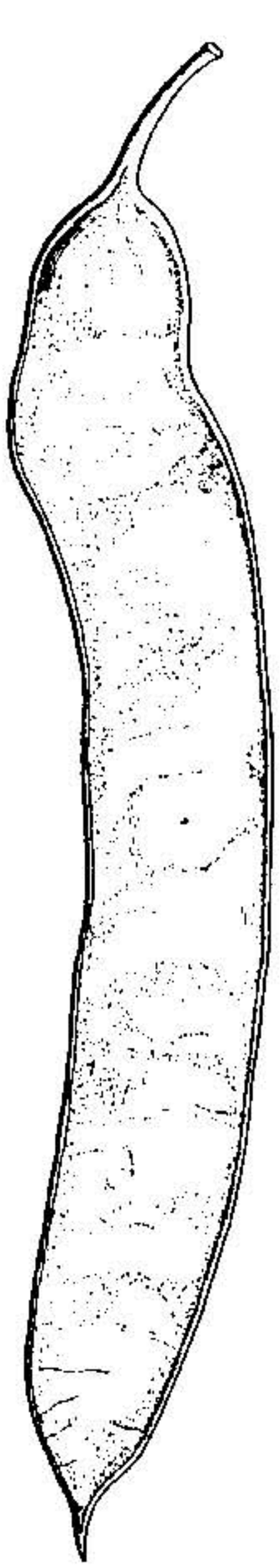


FIG. 8.—Pod of *Acacia unijuga*.

Acacia unijuga Rose, sp. nov. FIGURE 8.

A large tree with the wood white and very hard and durable; old branches grayish and glabrous; new branches pubescent; stipules spinescent, small in specimens seen; common petiole short, 2 cm. or less long; pinnæ 1 pair; leaflets 2 pairs, oblong to orbicular, 2 to 4 cm. long, rounded at apex sometimes mucronulate, glabrous, midrib somewhat to one side; secondary rhachis narrowly winged; flowers small, yellow, in slender spikes (2½ to 3 cm. long), borne in clusters in the old leaf axils, peduncle bracteate at base; legume narrowly oblong, about 12 cm. long, 1.8 to 2.5 wide, acute at apex, stipitate at base, flat and thin.

Collected by Mr. C. G. Pringle in the lowlands near Tampico in 1899 (no. 6989). One of the most common trees in the lowland forests from the Gulf coast to the edge of the table-land.

Mr. Pringle states that this is a very useful wood and is much used for railroad ties above Tampico.

FIG. 9.—Pod of *Mimosa hemiendyta*.

Mimosa hemiendyta Rose & Robinson, sp. nov. FIGS. 9 AND 10.

Shrub 3 to 6 meters high, with stiff, subflexuous, divaricate, terete branches, armed at the nodes with pairs of short, conical, reddish, scarcely recurved thorns, and covered on one side by a short, dense, rufous tomentum, on the other side by a finer, less copious, at length obsolete, gray tomentum; petioles 3 to 10 mm. long, with similar bichromatic pubescence; leaf rachis 1.2 to 1.8 cm. long; pinnæ 4 pairs, 1.5 to 2.5 cm. long; leaflets about 7 pairs, oblong, subtruncate at both ends, bright

green and glabrate above, pubescent and slightly paler beneath, 7 mm. long, 3 mm. broad; flowers in globose heads; pedunceles (in fruit) 1.2 cm. long, tomentose; corolla glabrous, 4 or 5 toothed; the teeth ovate, acutish; stamens, twice as many; pods narrowly oblong, thin, flat, rufous-tomentulose, 4.5 cm. long, 1.2 cm. broad, slender-stiped, about 8-seeded, divided into as many nearly quadrate segments, and bordered by a thin, erose, purplish wing.

Collected by E. A. Goldman, at Apagote, near Yohaltun, State of Campeche, December 31, 1900 (no. 513). Type in U. S. National Herbarium; fragment in herb. Gray. Related to *M. galeottii* and *M. mollis*, but with the very peculiar pods of Mr. Rose's recent species *M. lacerata*.

FIG. 10.—*Mimosa hemiendyta* Rose & Robinson.

Pithecolobium compactum Rose, sp. nov.

A low spreading compact bush, hardly rising above 3 to 5 dm. in height; branches usually stunted and short bearing short straight stipular spines, the old branches light gray, the young ones pubescent; leaves small and much reduced; pinnæ one pair, 8 to 15 mm. long; petiole very short (1 to 4 mm. long), pubescent, bearing a small gland at the top; leaflets 5 to 7 pairs; oblong to almost orbicular, rounded at apex, 2 to 4 mm. long, thickish, glabrous and shining above, dull and glabrous

beneath except for some crisped hairs on or near the margin; heads solitary, in the axils of leaves, 5 mm. long; calyx minute, 0.5 mm. or less long; corolla much longer (3.5 mm. long), glabrous, the margins of the lobes reddish; stamens yellowish, numerous, united below into a slender tube 4 mm. long; anthers minute, reddish; pods shortly stipitate, strongly curved, forming a half circle or even more strongly curved, 10 to 12 mm. broad, about 8 cm. long, when green rather turgid, but the valves after breaking apart flat, covered with a fine pubescence; seeds black, somewhat flattened, circular or somewhat angled, 1 cm. broad, attached to the pod by a long funiculus.

Collected by J. N. Rose on the flat plain west of Tehuacan, Puebla, August 1, 1901 (no. 5840).

In the field this species resembled very closely *P. palmeri*, but it differs in so many details that I feel justified in treating it as I have.

VICIACEAE.

SYNOPSIS OF THE SPECIES OF COLOGANIA.

The genus Cologania is entirely American and is restricted almost wholly to Mexico. Four species are found in the United States, but they belong to the border country and all probably extend into Mexico. About three species are found in Central America, one at least extending into Mexico. Three species have been described from South America, two of which have been reported from Mexico, although perhaps only one really extends so far.

This genus was established by Kunth in 1823 and was based on the two species *C. procumbens* and *C. angustifolia*. Bentham and Hooker in the Genera Plantarum state that there are four or five species, while the Kew Index recognizes thirteen, all but one being assigned to North America. A careful study of much Mexican material indicates that the number of species is much larger than was supposed. Some twenty-six species are here recognized from Mexico alone.

The genus is a very consistent one, being readily distinguished from related genera by its slender tubular calyx. The species are rather difficult to distinguish, the best characters being in the habit and foliage and in the pubescence of the leaflets and calyx. There are probably good characters in the pods, but very few specimens have been collected in fruit. There is a great display of species in the mountains and table-land region of Mexico. The writer has collected twenty-nine numbers representing some ten species.

The four United States species have not been frequently collected, although three of them have been in our large herbaria for more than fifty years. Two of these were taken for species of Humboldt collected by him in the mountains of central Mexico, but a careful study of the original descriptions seems to justify their separation.

The United States species are easily distinguished by the subjoined key.

KEY TO UNITED STATES SPECIES.

Stems procumbent; leaflets broad, suborbicular ..... 1. *C. lemmoni.*
Stems suberect or twining; leaflets usually narrow, linear to lanceolate.
Leaflets lanceolate ..... 2. *C. pallida.*
Leaflets linear.
Leaflets glabrous above, pods straight, elongated ..... 3. *C. longifolia.*
Leaflets hairy above; pods falcate ..... 4. *C. confusa.*

From Central America have been reported *Cologania pulchella* and *C. procumbens*. The former species is to be excluded from that region, but I here add *C. pallida* and *C. rufescens*, and there are probably still others to be found there.

C. procumbens, *C. ovalifolia*, and *C. australis* have been described from South American specimens. *C. procumbens* seems to extend into southern Mexico; *C. ovalifolia* has been credited to Mexico by several writers, but is probably to be excluded.

Only a few species have ever been in cultivation and these usually in botanic gardens. Bailey does not include the genus in the Cyclopedia of American Horticulture, while Nicholson only enumerates four in his Dictionary of Gardening. The most ornamental ones, such as *grandiflora*, *hirta*, *capitata*, etc., have never been cultivated, although they seem worthy of a trial. The species are all perennial, growing at considerable elevations, in dry situations and usually in the open.

The following are the species which have been reported in cultivation, with the year of their introduction:

Cologania biloba, 1827.
Cologania broussonetii, 1813, 1827.
Cologania pulchella, 1837.
Cologania augustifolia, 1827.

The following key is intended as merely suggestive and will probably require much modification when more material is brought to light.

KEY TO THE NORTH AMERICAN SPECIES.

Leaflets one.
Corolla 2 cm. or more long ..... 1. *C. procumbens.*
Corolla less than 2 cm. long ..... 2. *C. erecta.*
Leaflets, more than one, usually three.
Leaflets linear to narrowly oblong.
Leaflets glabrous or nearly so above.
Pubescence on calyx appressed; pods 3 cm. or less long ..... 3. *C. intermedia.*
Pubescence on calyx spreading; pods 5 cm. or more long, narrower than the last. 4. *C. longifolia.*
Leaflets pubescent above.
Leaflets green ..... 5. *C. angustifolia.*
Leaflets very pale ..... 6. *C. confusa.*

Leaflets oblong.
Flowers axillary, solitary or in pairs.
Stems climbing.
Leaflets green above.
Leaflets thickish.
Flowers in small umbels ..... 7. *C. deamii.*
Flowers in pairs.
Hairs on calyx appressed ..... 8. *C. scandens.*
Hairs on calyx spreading ..... 9. *C. rufescens.*
Leaflets thin ..... 10. *C. glabrior.*
Leaflets pale on both sides.
Leaflets rounded at apex ..... 11. *C. jaliscana.*
Leaflets acute ..... 12. *C. pallida.*
Stems not climbing.
Leaflets glabrous or nearly so above.
Petioles slender, sometimes 4 cm. long ..... 13. *C. martia.*
Petioles very short or wanting.
Leaflets reticulate above, and with close appressed pubescence beneath. 14. *C. pringlei.*
Leaflets not reticulated above, and with somewhat spreading hairs beneath. 15. *C. houghii.*
Leaflets pubescent above.
Petioles short or wanting.
Pods short, turgid ..... 16. *C. lemmoni.*
Pods elongated, narrow ..... 17. *C. humifusa.* / 18. *C. oborata.*
Petioles elongated ..... 19. *C. humilis.*
Flowers racemose or capitate.
Flowers racemose.
Racemes elongated.
Leaflets elliptical, strongly reticulated above; bractlets minute... 20. *C. nelsoni.*
Leaflets ovate, not strongly reticulated above; bractlets linear.
Pubescence on pods and calyx appressed ..... 21. *C. racemosa.*
Pubescence on pods and calyx spreading ..... 22. *C. bilobæ.*
Racemes short ..... 23. *C. grandiflora.*
Flowers capitate.
Leaves narrow, acute; flowers many ..... 24. *C. capitata.*
Leaves broad and obtuse; flowers few ..... 25. *C. hirta.*

1. Cologania procumbens Kunth, Mimos. 205. *pl.* 57. 1819.

Type locality: "Prope Popoyan, alt. 912 hex," South America.

Without seeing the type it is difficult to decide whether the Mexican material is to be referred to *C. procumbens* or not. For the present, at least, it seems better not to make any change. The character of reflexed hairs on the stems seems variable in the Mexican material, for the writer collected both forms on San Felipe in 1899. The flowers are usually in pairs, but the earlier plants sometimes produce umbels of 3 or 4 flowers.

Specimens examined:

Guatemala: Station not given, Enrique Th. Heyde, 1892 (nos. 131 and 582); from Santa Rosa, H. von Tuerckheim 1888 (no. 1419); from Department of Guatemala, W. C. Shannon (no. 4705), all in John Donnell Smith's distributions, in which the last two were sent out as *Galactia marginalis*, determ. Micheli.

Oaxaca. Between Guichocovi and Lagunas, altitude 187 to 289 meters, E. W. Nelson, June 27, 1896 (no. 2750); San Felipe, J. N. Rose, June, 1899 (no. 4596).

2. **Cologania erecta** Rose, Contr. Nat. Herb. **5**: 136. 1897.

Stems from a woody base, erect, 7.5 to 15 cm. high, with rather close, erect pubescence; leaflets elongated, 10 to 15 cm. long, 4 to 8 mm. wide, rounded at base, somewhat tapering toward apex, but with obtuse apiculate tip; calyx 4 mm. long; pod 2.5 to 3.7 cm. long, 3 mm. wide, pubescent.

Type locality: "Near Guadalajara."

Collected by Mr. C. G. Pringle on rocky hills near Guadalajara, June 21, 1893 (no. 4401).

3. **Cologania intermedia** H. B. K. Nov. Gen. & Sp. **6**: 414. 1823.

Type locality: "Prope Real del Monte, Mexicanorum;" collected by Humboldt & Bonpland.

Specimens examined:

Federal District: Valley of Mexico near Tizapan, Bourgeau, 1865–66 (no. 328); same locality, C. G. Pringle, August, 1897 (no. 7480); near Tlalpam, J. N. Rose, June, 1899 (no. 4530); Santa Fé, May 24, 1899 (no. 4321); same locality, July 11, 1901 (no. 5359).

Jalisco: Road between Mesquitec and Monte Escobado, August, 1894 (no. 2610).

Very near to *C. angustifolia*, to which Mr. Hemsley referred Bourgeau's plant, but with the upper surface of the leaves glabrous.

4. **Cologania longifolia** Gray, Pl. Wright. **2**: 35. 1853.

Type locality: "Hills near the copper mines, New Mexico. . . . Mountain ravines, on the Sonvita, near Deserted Rancho, Sonora."

5. **Cologania angustifolia** Kunth, Mimos. 209. *pl. 58*. 1819.

Type locality: "Prope La Magdalena," between Real del Moran and Actopan, Hidalgo; type collected by Humboldt & Bonpland.

Described in part as follows: Stems climbing; leaflets 3, linear, obtuse, on both sides, strigose; calyx hispid-pilose.

Specimens of the writer's referred here have the leaflets sometimes 10 cm. long and 5 mm. broad, the calyx covered with upwardly turned appressed hairs, the upper lobe of the calyx varying from acute to retuse, and the pods somewhat falcate. They may, however, represent a different species.

Collected by J. N. Rose in foothills of the Sierra Madre, near Colomas, State of Sinaloa, July 14, 1897 (no. 1653); on Sierra Madre west of Bolaños, State of Jalisco, September 16, 1897 (no. 3720), and in State of Durango, August 13, 1897.

6. **Cologania confusa** Rose, sp. nov.

Low plant with slender stems either trailing or climbing; leaflets 3, linear, pubescent on both sides; calyx tube 6 mm. long, with spreading pubescence; pod falcate, about 3 cm. long.

Collected first by C. Wright in 1851 probably from near El Paso, Texas (no. 958, type), and more recently by Mr. G. C. Nealey in western Texas (no. 591a).

This species was taken for *C. angustifolia* Kunth by Dr. Gray and was reported by him in Plantæ Wrightianæ under this name, by which it has ever since gone. It differs from *C. angustifolia*, however, in its range, in its smaller flowers, and in the pubescence of the calyx. Dr. Gray states that he had not seen Kunth's illustration and description.

7. **Cologania deamii** Fernald, Proc. Am. Acad. **26**: 492. 1901.

Stems low and twining, pubescence reflexed; leaflets 3, broadly oblong, 2 to 3 cm. long, 1.2 to 1.5 cm. broad, apiculate, when young densely reddish-pubescent on both sides, the pubescence more scattered and appressed in age; flowers (at least the earlier ones) in umbels of two or four on peduncles sometimes 3 cm. long; pedicels 1 to 1.5 cm. long; bractlets filiform, usually borne some distance below the flowers;

calyx 5 to 7 mm. long with pubescence of spreading hairs; upper lobe retuse; corolla 2 cm. long, purplish; pods (immature) linear, 4 cm. long, pubescent.

Type locality: "Cuernavaca," Morelos.

Specimens examined:

Morelos: Near Cuernavaca, J. N. Rose, May 27 to 30, 1899 (no. 4360), and Charles C. Deam, July 7, 1901 (no. 40, type).

8. **Cologania scandens** Rose, sp. nov.

Stems climbing, pubescent; leaflets ovate, 3 to 8 cm. long, rounded at base, acute or obtuse and mucronate, appressed-pubescent on both sides, strongly nerved; perfect flowers in pairs; calyx tube about 6 mm. long clothed with whitish appressed hairs; flowers violet.

Collected by J. N. Rose on the road between Colotlan and Plateado, August 31, 1897 (no. 3613, type), and near Huejuquilla, August 25 (no. 3781). Perhaps nearest *C. pulchella*, but with rougher pubescence on the leaves, different pubescence on the calyx, etc.

9. **Cologania rufescens** Rose, sp. nov.

A slender climbing vine, covered with reddish and somewhat spreading hairs; leaflets 3, ovate, acute and apiculate or shortly acuminate, appressed brownish pubescent on both sides; calyx tube 10 mm. long, covered with spreading reddish hairs; lobes much as in *C. glabrior;* fruit not seen.

Collected by Heyde & Lux in Chiul, Department of Quiché, Guatemala, September, 1890, and distributed by John Donnell Smith (no. 4460).

This species was distributed as a variety of *C. pulchella* under a hitherto unpublished name, which is here adopted. It seems very distinct from true *pulchella*.

10. **Cologania glabrior** Rose, sp. nov.

Slender climbing vine; leaflets 2 to 6 cm. long, 1 to 4 mm. broad, ovate to oblong, very thin, greener and only slightly pubescent above, paler and appressed pubescent beneath, acute or sometimes obtuse at apex, rounded at base; flowers axillary, in pairs; buds long-acuminate; calyx tube 7 to 8 mm. long, covered with rather scanty appressed hairs; lateral lobes ovate and acuminate; dorsal lobe broader and acute; lower lobe linear.

Collected by Heyde & Lux, Lagrena de Ayarza, Department of Jalapa, Guatemala, September, 1892, and distributed by John Donnell Smith (no. 3743); perhaps from the same locality, Heyde, 1892 (no. 454, type).

Mr. Smith's specimen was labeled by Micheli with the trivial name adopted above, but simply as a form of *pulchella*. It must, however, be very different from that species, which comes from central Mexico.

11. **Cologania jaliscana** Wats. Proc. Am. Acad. **26:** 136. 1891.

C. pringlei Wats. Proc. Am. Acad. **25:** 147. 1890, not **23:** 271. 1888.

Type locality: Near Guadalajara "Jalisco;" type collected by Mr. C. G. Pringle (no. 2788).

12. **Cologania pallida** Rose, sp. nov.

Stems slender, climbing, pubescent; leaflets oblong to elliptical, usually acute, always apiculate, 2 to 3 cm. long, very pale and cinereous-pubescent on both sides; flowers solitary (in specimens seen) on slender peduncles 6 to 8 mm. long; bractlets subtending the calyx filiform; calyx tube 6 mm. long, with pubescence somewhat scattered, spreading and stiff; fruit not seen.

Collected by C. Wright in New Mexico in 1851 (no. 957, type) and by G. R. Vasey in the Organ Mountains of New Mexico in 1891. This plant was called *C. pulchella* by Dr. Gray, under which name it has since gone. Dr. Gray, however, seems to have been uncertain of its status, in one place stating that it perhaps was a different species and elsewhere that it was only a variety.

True *C. pulchella* is still very uncertain, a multitude of forms from a wide range of country having been referred to it, but it must be quite distinct from the above. According to the description it differs both in the color and the shape of the leaflets.

13. **Cologania martia** Wats. Proc. Am. Acad. **17**: 345. 1882.

Type locality: "Sandy places about San Luis Potosi."

Collected by J. N. Rose near Plateado, in the State of Zacatecas, September 3, 1897 (no. 2760).

Only collected in fruit and with fruits produced from imperfect flowers.

14. **Cologania pringlei** Wats. Proc. Am. Acad. **23**: 271. 1888.

Type locality: "On pine plains at the base of the Sierra Madre, Chihuahua."

15. **Cologania houghii** Rose, sp. nov.

A rather coarse trailing vine; branches densely covered with rough spreading hairs; leaves on very short petioles; leaflets 3, shortly oblong or nearly orbicular, 1.5 to 2.5 cm. long, rounded at apex, but often with a short mucro, becoming glabrate and shining above, appressed-pubescent beneath, densely ciliate; flowers usually in pairs, on peduncles 2 to 3 cm. long; bractlets linear, attached some distance below the calyx; calyx broadly tubular, 1.5 cm. long; pubescent with rather scanty spreading hairs; lower lobe linear; lateral ones ovate, acute; upper one very broad and obtuse; pods not seen.

Collected by J. N. Rose and Walter Hough along railroad between Tepeaca and Santa Rosa in the State and south of the city of Puebla, June 27, 1899 (no. 4737).

Resembling somewhat *C. humifusa*, but with different flowers, more glabrous leaflets, etc. This species is named for my friend, Dr. Walter Hough, who accompanied me on my second Mexican journey.

16. **Cologania lemmoni** Gray, Proc. Am. Acad. **19**: 74. 1883.

Type locality: "Arizona, on the high mesas of the Chiricahui Mountains, 1881, and the Huachuca, 1882;" collected by Lemmon.

The flowers of this species are still unknown, and only the pods produced from imperfect flowers have been collected. The following Mexican specimens have recently come to hand:

Chihuahua: Between Colonia Garcia and Platts Ranch, below Pacheco, E. W. Nelson, August, 1899 (no. 6269).

Durango: On road between San Julian and Cerro Prieto, September, 1898 (no. 4944).

17. **Cologania humifusa** Hemsl. Diag. Pl. Nov. **3**: 47. 1880.

Cologania humifusa is based upon three collections from widely different parts of Mexico. The first one mentioned, Parry & Palmer's no. 194, would naturally be taken as the type. Unfortunately, however, this number seems to cover two species. The one which I would designate as the type, supposing the Kew specimen agrees with mine, is that with elongated pods and leaflets hairy on both sides.

The second specimen mentioned, Coulter's, of Real del Monte, might well be *C. oborata* from the same locality. The third specimen, from the Valley of Mexico, I have left in *humifusa*, although it differs somewhat in pubescence on the pods, etc.

Type locality: "Mexico: in regione San Luis Potosi, alt. 6,000–8,000 ped. . . . ; Real del Monte . . . ; in convalle Mexici."

Specimens examined:

San Luis Potosi: Near San Luis Potosi, Parry & Palmer, 1878 (no. 194 in part). Coulter; Bourgeau (no. 330).

Federal District: Above Santa Fé, C. G. Pringle, September, 1889 (no. 8270); near same locality, J. N. Rose, July 11, 1901 (no. 5358).

Mexico: Near San Maria, J. N. Rose, July 12 and 13, 1901 (No. 5462).

18. **Cologania obovata** Schlecht. Linnæa **12**: 287. 1838.

This species was collected by C. Ehrenberg at "Mineral del Monte," perhaps better "Real del Monte."

Mr. Hemsley thinks this must be a variety of *C. pulchella*, but it is described as procumbent. I have seen no specimens.

This species should be compared with *C. humifusa* Hemsl.

19. **Cologania humilis** Rose, sp. nov.

Delicate herbs, somewhat branching at base, nearly erect, 8 to 12 cm. high, retrorsely pubescent; petioles 2 to 3.5 cm. long, usually longer than the leaflets; leaflets 3, elliptical to linear-oblong, obtuse or acute, appressed-pubescent on both sides, paler below, more or less articulated; calyx tube 6 mm. long, appressed-pubescent; corolla violet, 2 cm. long; pods not seen.

Collected by J. N. Rose, high up on the Sierra Madre, near Santa Gertrudis, August 7, 1897 (nos. 2042, type, and 3426).

20. **Cologania nelsoni** Rose, sp. nov.

A climbing vine, 9 to 24 dm. long, with scattered appressed pubescence; leaflets 3, elliptical, acute, 2.5 to 5 cm. long, above somewhat shining and strongly reticulated, beneath pale and reticulated, with scattered appressed hairs on both surfaces; racemes axillary, elongated, longer than the petioles, bearing 3 to 5 pairs of flowers; pedicels 8 mm. long; bractlets at base of flower short, minute; calyx tube 8 to 10 mm. long, bearing scattered appressed hairs; lower lobe lanceolate, acuminate; lateral lobes broadly ovate, acute; upper lobe obtuse; corolla pale violet, 2.5 to 2.8 cm. long; fruit not seen.

Collected by E. W. Nelson in mountains about Yalalag, Oaxaca, altitude 1,800 meters, August 1, 1894 (no. 976).

This species differs from *C. racemosa* in the thickness, venation, and shape of leaflets, the shape of the calyx lobes, larger flowers, etc.

21. **Cologania racemosa** (Robinson) Rose.

C. pulchella racemosa Robinson, Proc. Am. Acad. **29**: 315. 1894.

A climbing vine with pubescence dense and reflexed, but not closely appressed; leaflets 3, broadly ovate, 2 to 5 cm. long, 1.5 to 4 cm. broad, generally acute, but sometimes obtuse or even retuse, pubescent on both surfaces, not strongly reticulated above, green, paler beneath and somewhat reticulated; imperfect flowers (fertile) in pairs in the lower axils, nearly sessile; pods linear, flat, 3 cm. long; perfect flowers numerous, borne in elongated racemes 10 to 15 cm. long; buds acuminate; calyx, 5 to 6 mm. long; lobes narrow; corolla dark purple, 18 to 20 mm. long; fruit not seen.

Type locality: The variety was based upon two collections, Dr. E. Palmer's no. 379 "Tequila," and Mr. Pringle's no. 5164 "Guadalajara."

Specimens examined:

Jalisco: Only Palmer's and Pringle's plants referred to in original description, of which duplicates are in the National Herbarium.

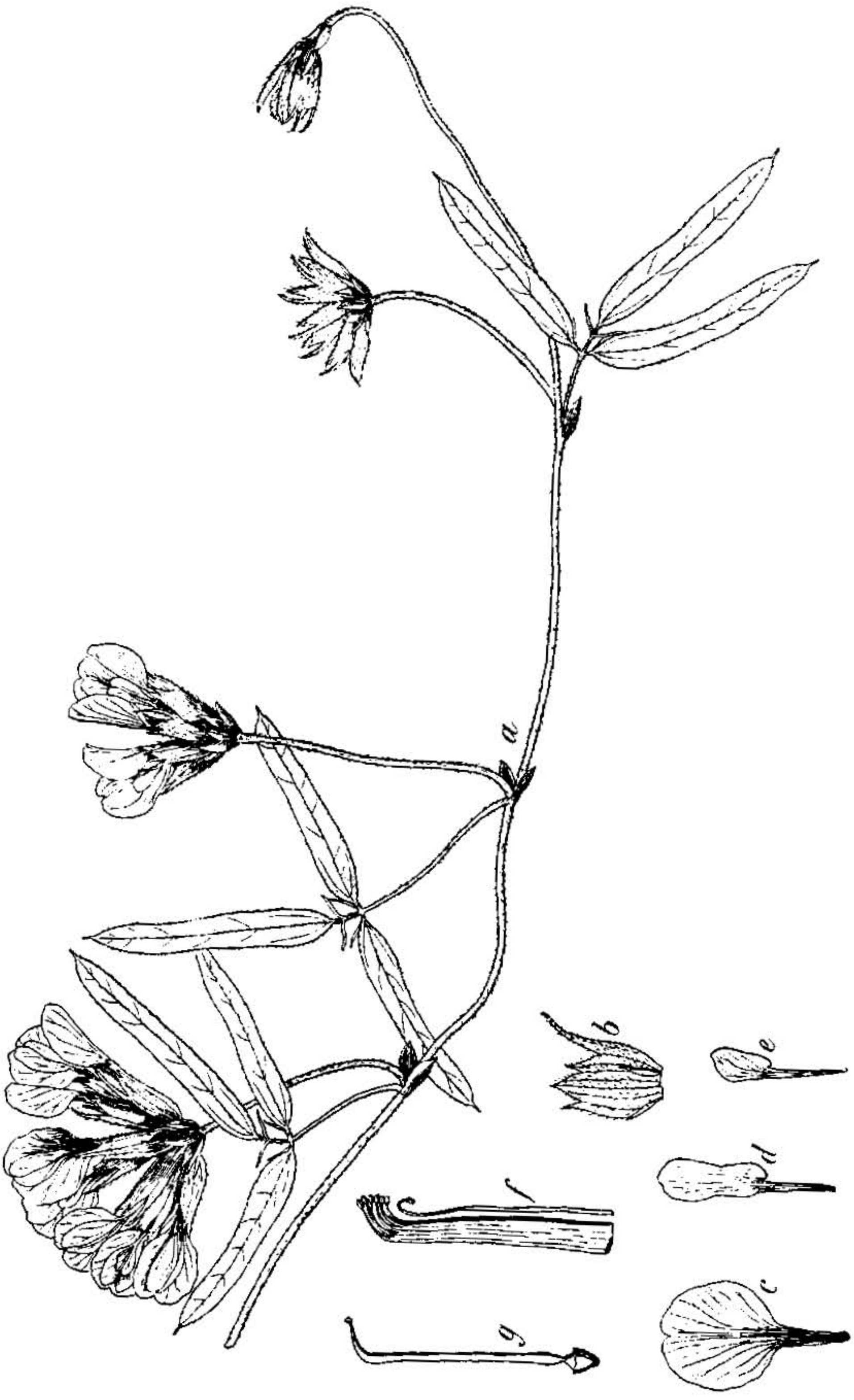
This form seems specifically distinct from *C. pulchella*. It differs in having its perfect flowers borne in elongated axillary racemes, in the size of the leaves, in the pubescence of the calyx, etc.

22. **Cologania biloba** (Lindl.) Nicholson, Dict. Gard. **1**: 363. 1884–1889.

Glycine biloba Lindl. Bot. Reg. **17**: *pl. 1418*. 1831.

This species was described from specimens which flowered in England in 1830. The seed is said to have been brought from Mexico by Mr. George Ackermann in 1827.

We have no named specimens of this species. Pringle's no. 6432, from the Pedregal, near the City of Mexico, must be near it. Bourgeau's no. 774, also from the Pedregal, belongs with Mr. Pringle's plant. The latter was referred by Mr. Hemsley to *C. pulchella*.



COLOGANIA CAPITATA Rose.

Robinson's *C. pulchella racemosa* has a similar inflorescence, but different pubescence.

23. **Cologania grandiflora** Rose, sp. nov.

Stems tall, climbing, retrorsely hairy; leaflets 3, ovate-oblong, large, 6 to 8 cm. long, 3 to 3.5 cm. wide, rounded or truncate at base, rounded at apex, apiculate, appressed-pubescent on both sides, paler beneath; petioles and petiolules reddish-pubescent, the former elongated and 4 to 6 cm. long; flowers 4 to 10, in a compact raceme, shorter than the petioles; calyx 9 to 10 mm. long, pale appressed-pubescent; lower lobe of sepal longer than the others; corolla purple, 2.5 cm. long; fruit not seen.

Collected by C. G. Pringle, Federal District, Valley of Mexico, August, 1896 (no. 7264).

Very near to this species are two specimens of Lucius C. Smith's from the State of Oaxaca (nos. 97 and 98).

This species resembles what I have called *C. biloba* in its foliage, but is very different in its pubescence.

24. **Cologania capitata** Rose, sp. nov. PLATE V.

A slender vine; leaves small; petioles about equal to the leaflets; stipules ovate-oblong, obtuse, 5 mm. long; leaflets 3, linear to linear-oblong, appressed-pubescent on both sides, paler beneath, 2 to 3.5 cm. long, rounded at apex, mucronate; flowers in a compact head surrounded by an involucre of bracts on an elongated peduncle as long as to much longer than the petioles; calyx purplish with scattered brownish hairs, the tube 8 mm. long; corolla purplish.

Collected by J. N. Rose near the top of the Sierra Madre, near Santa Teresa, August 13 (no. 3459, type) and August 9 (no. 2445).

EXPLANATION OF PLATE V.—Fig. *a*, plant; *b*, calyx; *c*, banner; *d*, wing; *e*, keel; *f*, stamens; *g*, style. Figs. *a–e*, natural size; *f* and *g*, scale of 2.

26. **Cologania hirta** (Mart. & Gal.) Rose, Contr. Nat. Herb. **3**: 315. 1895.

Galactia hirta Mart. & Gal. Bull. Acad. Brux. **10**²: 190. 1843.

Type locality: "Cerro de San Felipe," Oaxaca; type collected by Galeotti (no. 3204).

Twining 12 dm. high.

Re-collected by C. G. Pringle under oaks, Sierra de San Felipe, Oaxaca, altitude 2,400 meters, August 13, 1894 (no. 4793).

DOUBTFUL, UNCERTAIN, OR EXCLUDED SPECIES.

Galactia purpurea Mart. & Gal. Bull. Acad. Brux. **10**²: 191. 1843.

Type locality: "Dans les bois de Regla, près de Real del Monte, à 600 pieds." Collected by Galeotti (no. 3346).

This is referred to *C. pulchella* by Mr. Hemsley. The inflorescence is racemose.

To *C. pulchella* Mr. Hemsley also refers Ehrenberg's plant, likewise from Regla and Mineral del Monte. Ehrenberg's plant from this station was referred by Schlechtendal to the South American species *C. ovalifolia*.

Cologania broussonetii (Balb.) DC. Prod. **2**: 237. 1825.

Clitoria broussonetii Balbis, Cat. Taur. 26. 1813.

This species was described from cultivated specimens. I do not know it.

De Candolle says the native country is unknown, but the Kew Index refers it to Mexico.

Cologania pulchella H. B. K. Nov. Gen. & Sp. **6**: 413. 1823.

Type locality: "Prope Pa[t]zcuaro," Michoacan; type collected by Humboldt and Bonpland.

Although more material in herbaria has been referred to this species than to any

other, I have not yet seen any specimens which I am disposed to refer to it. Some Mexican collector should visit the type locality, which can now be easily reached, and obtain a supply of material.

Cologania? affinis Mart. & Gal. Bull. Acad. Brux. **10**[2]: 188. 1843.

Collected by Galeotti (no. 3283) in oak woods near "Mirador." Not since reported.

Described as climbing; retrorsely villous; leaflets ovate, obtuse, appressed-pubescent, glaucescent beneath; flowers axillary, some fasciculate; calyx pilose.

See Seaton's no. 326 and Pringle's no. 8603.

Cologania ovalifolia H. B. K. Nov. Gen. & Sp. **6**: 412 (royal ed. 233). 1823.

This is a South American species which was identified with a Mexican plant by Schlechtendal [a] but should probably be excluded from the Mexican flora.

Martia mexicana Zucc. Abhandl. Akad. Muench. **1**: 339. *pls. 14, 15.* 1832.

Type locality: "In imperii Mexicani regionibus calidioribus;" type collected by D. Keerl.

I have not been able to make out this species. It resembles very much Watson's *C. martia*, as well as specimens from the valley of Mexico which I have referred to *C. intermedia*.

LIST OF THE SPECIES OF HARPALYCE WITH TWO NEW DESCRIPTIONS.

The genus Harpalyce is very similar in foliage, habit, and pods to Brongniartia and the only reason that it is not more frequently misnamed in herbaria is that it has not often been collected. It is readily distinguished, however, by its having a remarkable two-lipped calyx, while Brongniartia has a nearly regular calyx. It can also be readily distinguished from Brongniartia without flowers by the leaflets which are thickly set with pellucid dots.

In publishing the two new species below I have taken occasion to list with them all the known, I might better say the little-known, Mexican species with the hope that Mexican collectors may furnish us with more material.

Harpalyce mexicana Rose, sp. nov.

A small tree; bark of old wood smooth, densely covered with small pale lenticels; young wood covered with a dense white pubescence; rachis very pubescent; leaflets 11 to 15, oblong, 3 to 6 cm. long, rounded at base, obtuse, apiculate, in age nearly smooth, beneath somewhat pubescent, thickish and reticulated; fruit oblong, 5 to 6 cm. long.

Collected by J. N. Rose, west of Bolaños, September 15 to 17, 1897 (no. 2944).

Harpalyce pringlei Rose, sp. nov.

A low shrub 3 to 18 dm. high; all parts very pubescent when young; leaves 1 to 2 dm. long; stipules minute, caducous; leaflets 7 to 11, oblong, 2 to 4 cm. long, 15 to 20 mm. broad, rounded at base, retuse, thickish, strongly veined, above nearly glabrate, beneath quite pubescent when young, becoming glabrate in age, with pellucid dots as in the genus; flowers in dense short clusters; sepals densely reddish-pubescent; petals bluish; legume glabrous, oblong, 8 cm. long, 2 to 2.5 cm. broad.

Collected by C. G. Pringle on the sides of a barranca above Cuernavaca, Morelos, 1898 (no. 6827, type), and at the same station by J. N. Rose, May, 1899 (no. 4392).

---

[a] Linnæa **6**: 286.

Harpalyce arborescens Gray, Proc. Am. Acad. 5: 178. 1861.

The type was based on Ervenberg's no. 18 from "near Tantoyuca," in northern Vera Cruz. Here, also, Dr. Gray referred T. Coulter's no. 556 from Zimapan, but it is doubtless to be placed elsewhere.

Leaflets 3 or 4 pairs, oblong, 3 to 5 cm. long, obtuse or hardly retuse, in age nearly glabrous above; calyx densely reddish-pubescent. Type in herb. Gray.

Harpalyce formosa DC. Prod. 2: 523. 1825.

The type of the genus. A Mexican species, only known from the tracings of Mociño & Sessé.

Harpalyce hidalgensis Taub. Bull. Herb. Bois. 3: 613. 1895.

The type was collected by Seler (no. 658) in the State of "Hidalgo, prope Huejutla."

The type locality of this species is very near that of *H. arborescens* Gray, with which it should be very carefully compared.

The plant of Coulter's referred to *H. arborescens* may belong here. The leaflets are 6 pairs.

Harpalyce loeseneriana Taub. Bull. Herb. Bois. 3: 612. 1895.

The type of this species came from "prope Mitla," State of Oaxaca, and was collected by Seler (no. 59).

Perhaps here should be placed Lucius C. Smith's no. 45.

Harpalyce retusa (Benth.) Rose.

Brongniartia retusa Benth. in Hemsl. Diag. Pl. Nov. 1: 8. 1878.

Fruit 4 cm. long, 18 mm. broad above the middle, cuneate at base; leaves thinner and pubescence of calyx whiter than in *H. arborescens*.

The type locality of this species was said to be "Tula," but there are three places in Mexico of this name, one in the State of Oaxaca, another in Hidalgo, and a third in Tamaulipas. It undoubtedly came from the latter State. The two numbers (nos. 759 and 2179) cited by Hemsley are in the Gray Herbarium, and the labels state that the plants were collected by Berlandier between Tula and Tampico, therefore in the State of Tamaulipas. Here Pringle collected his no. 7286 (1896), which agrees with these type sheets of *B. retusa*.

CLIMACORACHIS, A NEW GENUS.

Climacorachis Hemsl. & Rose, gen. nov.

Calyx strongly 2-parted; banner orbicular; keel considerably shorter than the wings, obtuse; stamens in 2 clusters of 5 each; ovary stipitate; pod oblong, obtuse, 2 to 4 seeded, not at all jointed or constricted between the seeds, probably dehiscent.

Low, wiry shrubs, with pinnate leaves, numerous small leaflets, peltate, striate stipules, and inflorescence consisting of a short zigzag, striate-bracted raceme. Flowers yellow, bibracteate at base.

Inflorescence and foliage resembling Aeschynomene, but the pods very different. It should probably be placed between that genus and Herminiera.

Native of the mountains of western Mexico.

Type species, *C. mexicana*.

Climacorachis mexicana, Hemsl. & Rose, sp. nov.

Much branched, 2 to 4 dm. high, glabrous throughout except in the inflorescence; branches slender and wiry; leaflets 9 to 12 pairs, linear, 4 to 5 mm. long, strongly 3-nerved below, mucronately tipped; inflorescence 2 to 4 flowered; pubescence on rachis, bracts, bractlets, pedicel, and calyx more or less setose, consisting of long yellowish hairs, with shorter, perhaps viscid, hairs intermixed; bractlets ovate, acute, 2 mm. long;

calyx 5 mm. long; the upper lobe broad, rounded at apex; corolla yellow, streaked with purple; pods 5 to 10 mm. long, 2 to 4 seeded.

Collected by J. N. Rose in the Sierra Madre west of Bolaños, State of Jalisco, September 15 to 17, 1897 (no. 2972).

Climacorachis fruticosa Hemsl. & Rose, sp. nov.

Taller and more frutescent than the last; branches as well as rachis of leaf and inflorescence pilose and with shorter glandular hairs; leaflets usually more numerous than in the last, sometimes 20 pairs, 7 mm. long, the venation not so strong and more frequently 4-nerved; stipules (not seen) caducous or deciduous; inflorescence strongly zigzag, about 12-flowered; bracts, bractlets, and calyx glabrous; ovary pubescent; pods not seen.

Similar to *C. mexicana* but more shrubby, with more numerous flowers, and with a different distribution of the pubescence.

Collected by E. W. Nelson on mountains near Talpa, Jalisco, altitude 1,320 to 1,500 meters, March 7, 1897 (no. 4038).

RAMIREZELLA, A NEW GENUS.

Ramirezella, gen. nov.

Calyx small, campanulate, colored; calyx teeth 5, about equal, short, obtuse or rounded. Corolla large and showy, purplish and white; standard orbicular with scale-like appendages at base; wings auriculate on the upper side; keel much elongated, at the base erect, but at the middle bent nearly to a right angle, and at the tip curved inward. Stamens 10, diadelphous. Style bearded near the end; stigma oblique. Pods straight, oblong in outline, turgid, dehiscing; seeds orbicular, embedded in a white spongy mass of cells.

Tall, twining woody vines. Leaves pinnate; leaflets 3. Inflorescence a dense axillary raceme, at first densely imbricated with large striate bracts; the bractlets at the base of the calyx small, ovate.

A very remarkable genus belonging to the Phaseoleae, the type species having been described as a Vigna. From this genus it is abundantly distinct in its habit, inflorescence, calyx, keel, fruit, etc. In this opinion Dr. B. L. Robinson, who described it as a new Vigna, acquiesces.

This genus is named for my friend, Dr. José Ramirez, of the Instituto Medico National de Mexico, who is one of the foremost men in natural history in that Republic, and who has done much to add to the pleasure and success of my various Mexican expeditions.

Four species are here described, *R. strobilophora* being the type.

Ramirezella strobilophora (Robinson) Rose.

Vigna strobilophora Robinson, Proc. Am. Acad. **27**: 167. 1892.

A twining, woody-stemmed vine 5 meters or more high, the young parts covered with a fine soft pubescence; leaflets ovate, acuminate, apiculate, about 8 cm. long by 3 to 4 cm. broad, slightly pubescent above, much paler and densely pubescent beneath; peduncles 7 to 9 cm. long; fully developed racemes 6 to 8 cm. long; pods glabrous, about 12 cm. long.

Collected by G. G. Pringle in a barranca near Guadalajara, September 12, 1891 (no. 5163), and also in August, 1893 (no. 4503).

Type locality: "Barranca near Guadalajara."

Some years ago this was figured in the Garden and Forest [a] and recommended as possessing cultural value. It was referred to as follows:

"*Vigna strobilophora*, Robinson, sp. nov. is a twining vine with a woody stem about an inch thick. It climbs into the tops of shrubs and low trees, and shows

[a] April 18, 1894, p. 153; fig. 30, p. 155.

abundant flowers which rival in beauty those of the cultivated Wistaria. The flowers are purple and white and are borne in dense racemes 2 or 3 inches long."

Ramirezella occidentalis Rose, sp. nov.

Resembling *R. strobilophora*, but leaves very broadly ovate, nearly glabrous on both sides, 10 cm. long, 7 to 8 cm. broad; inflorescence very slender, 3 to 4 dm. long, the flowers more numerous, somewhat smaller; pods 8 to 10 cm. long, glabrous.

Collected by Dr. Edward Palmer near Acapulco, Mexico, October, 1894, March, 1895 (no. 179).

Ramirezella pubescens Rose, sp. nov.

Resembling *R. strobilophora*, but with thicker, broader, more pubescent leaflets, the racemes stouter, calyx somewhat larger, its tube pubescent without, the ovary densely lanate, pods pubescent, etc.

Collected by E. W. Nelson on road between Tlapa and Tlaliscatilla, Guerrero, December 5, 1894 (no. 2046).

Ramirezella glabrata Rose, sp. nov.

A tall vine, stems glabrous or early glabrate; leaflets ovate, with slender acumination, 4 to 8 cm. long, very thin, nearly glabrous on both sides, hardly paler beneath; peduncles 6 to 15 cm. long; racemes becoming 12 to 15 cm. long; bracts glabrous except on the margins, simply acute, at least the lower ones; pods (immature) glabrous, with a long apiculation (10 to 15 mm. long).

Collected by J. N. Rose at Bolaños, Jalisco, August 25, 1897 (no. 2853, type), and on road between Huejuqilla and Mesquitec, Jalisco, August 25, 1897 (no. 2562).

Closely resembling *R. strobilophora*, but more glabrous throughout, with thinner leaflets and blunter bracts and with long apiculations to the pods.

A NEW SPECIES OF BRADBURYA WITH REVISION OF TWO NAMES.[a]

Before offering for publication the following description and new combinations much recent material and all the descriptions of the Mexican species of Bradburya have been passed in review several times. Upon them a synopsis of the Mexican species has been made, but it seems best for several reasons not to present it at this time. Our knowledge of the species is still meager, their number being manifestly greatly in excess of what has been supposed. Our commonest, or those supposed to be commonest, have not been well defined or restricted. For instance, *B. virginiana*, based upon plants from Virginia, has been reported from New Jersey southward throughout tropical America to Bolivia.

B. pubescens, based on material from a high mountain valley of central Mexico, has been assigned to many parts of tropical Mexico and South America.

Bradburya unifoliata Rose, sp. nov.

A delicate vine, 3 to 9 dm. long, glabrous or nearly so; leaflets single, linear to oblong or even orbicular, 2 to 9 cm. long, 3 to 12 mm. broad, obtuse, with or without a short apiculation, rounded at base, strongly reticulated on both sides; stipules ovate, striate; stipels linear; petioles 8 to 12 mm. long, usually 2-flowered; bracts

[a] **Bradburya** Raf. Fl. Ludov. 104. 1817.
Centrosema Benth. Ann. Wien. Mus. **2**: 117. 1838.

broadly ovate, striate, acute, 5 mm. long; pedicels about 5 mm. long; calyx tube broad, 2 mm. high; dorsal lobe 2-parted nearly to the base, linear, 4 mm. long; the three ventral lobes narrow and longer than the dorsal ones; banner broad, 12 mm. long, "dull lilac," slightly pubescent without; pods linear, 5 to 6 cm. long including the long apiculation (1 cm. long), glabrous.

Specimens examined:

Chiapas: Between San Richardo and Ocozucuantla, altitude 780 to 990 meters, E. W. Nelson, August 18, 1895 (no. 2977), and table-land about Ocuslapa, altitude 1,020 to 1,140 meters, E. W. Nelson, August 21, 1895 (no. 2996).

This species is very unlike any of the Mexican species heretofore described.

Bradburya sagittata (Humb. & Bonpl.) Rose.

Glycine sagittata Humb. & Bonpl. in Willd. Enum. Hort. Berol. 757. 1809.

Rudolphia dubia H. B. K. Nov. Gen. & Sp. **6**: 432. *pl. 591.* 1823.

Centrosema hastatum Benth. Ann. Wien. Mus. **2**: 120. 1838.

Centrosema dubium Hemsl. Biol. Centr. Am. **1**: 294. 1880.

Mexican specimens examined:

Colima: Near Manzanillo, Dr. Edward Palmer, March, 1891 (no. 1365).

Guerrero: Near Acapulco, Dr. Edward Palmer, 1894–95 (no. 620).

Bradburya schiedeana (Schlecht.) Rose.

Clitoria schiedeana Schlecht. Linnaea **12**: 284. 1838.

Type locality: "In dumetis pr. Jalapam" and "Hacienda de Laguna."

This species has heretofore been known only from the material collected by Schiede more than seventy-five years ago. In 1830 it was referred to Clitoria without specific name, but in 1838 it was named and described as *C. schiedeana*. Up to this time, however, Centrosema (now Bradburya) had been passing as a section of Clitoria. In August, 1901, the writer visited Jalapa, Mexico, the type locality of this species, where he found it growing in great abundance in the thickets and hedges in all directions from the town. It is a vigorous-growing vine, suggestive in its habit, foliage, and large flowers of Canavalia, one species of which is often associated with it.

Specimens examined:

Vera Cruz: Near Jalapa, J. N. Rose, August 13, 1901 (no. 6118).

NEW SPECIES OF SEVERAL GENERA.

Cracca submontana Rose, sp. nov.

Probably tall plant; branches densely reddish-pubescent; leaflets 6 to 8 pairs, oblong to lanceolate, 2 to 6 cm. long, acute, glabrous and somewhat shining above, densely reddish or silvery pubescent beneath; racemes axillary or terminal, elongated, 2 to 3 dm. long, many-flowered; calyx densely reddish-pubescent, the lower lobe linear, the lateral lobes shorter, ovate; banner very broad, 2.5 cm. long; young pods pubescent.

Collected by J. N. Rose between Pedro Paulo and San Blascito, Tepic, August 4, 1897 (no. 3336).

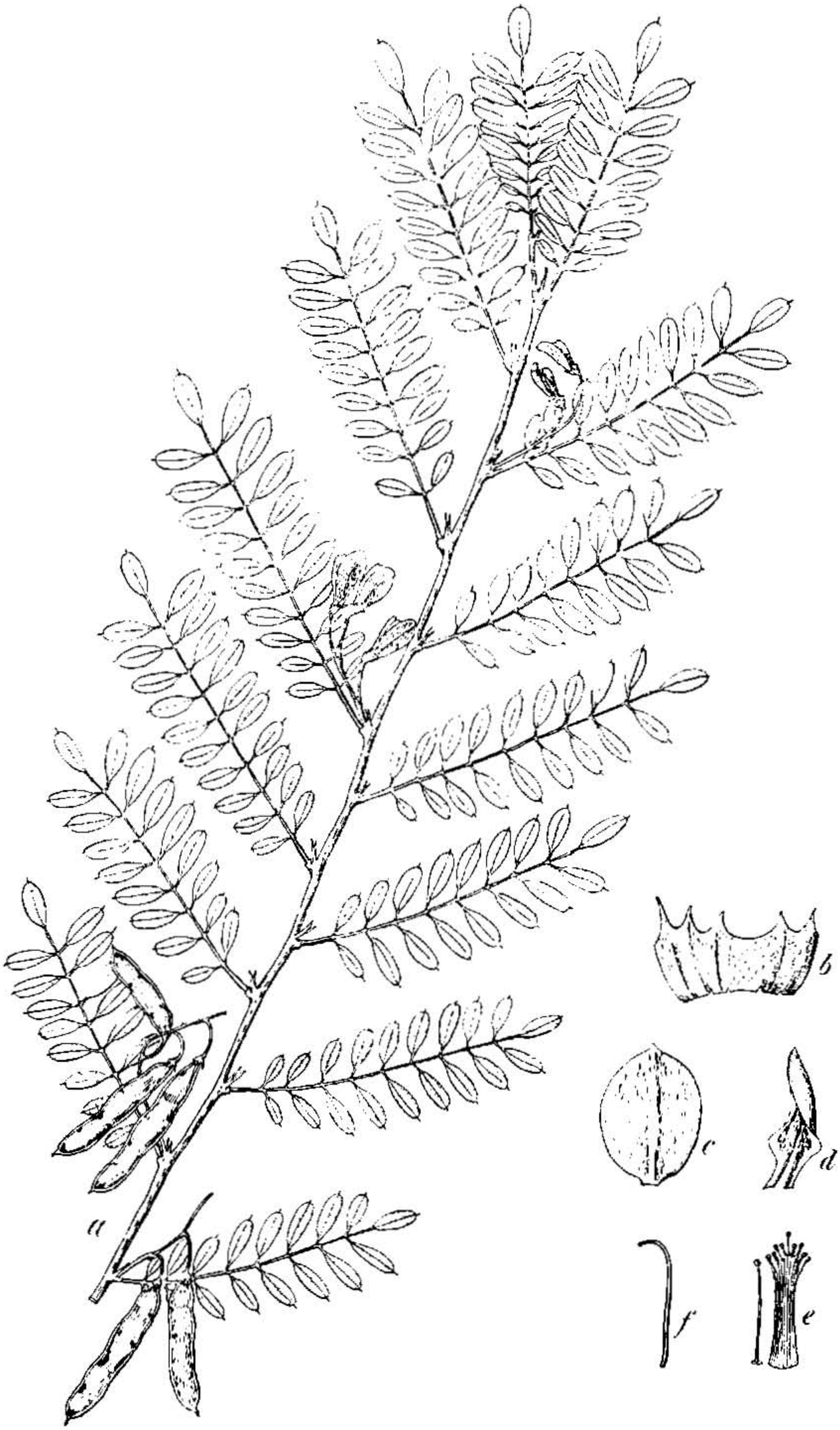
Crotalaria tenuissima Rose, sp. nov.

Perennials, much branched, 3 to 4 dm. high, somewhat pubescent; leaflets 3, very narrow, elongated, 3 to 10 cm. long, 3 to 5 mm. broad, pubescent beneath; stipules minute; racemes elongated, 2 cm. long, naked below; pedicels 6 mm. long; bractlets small, short; bractlets minute; calyx 8 mm. long, the lobes narrow and acute; banner 10 mm. long, broad; wings 5 mm. long, narrow; keel considerably exceeding the wings, strongly beaked; pods (immature) pubescent.

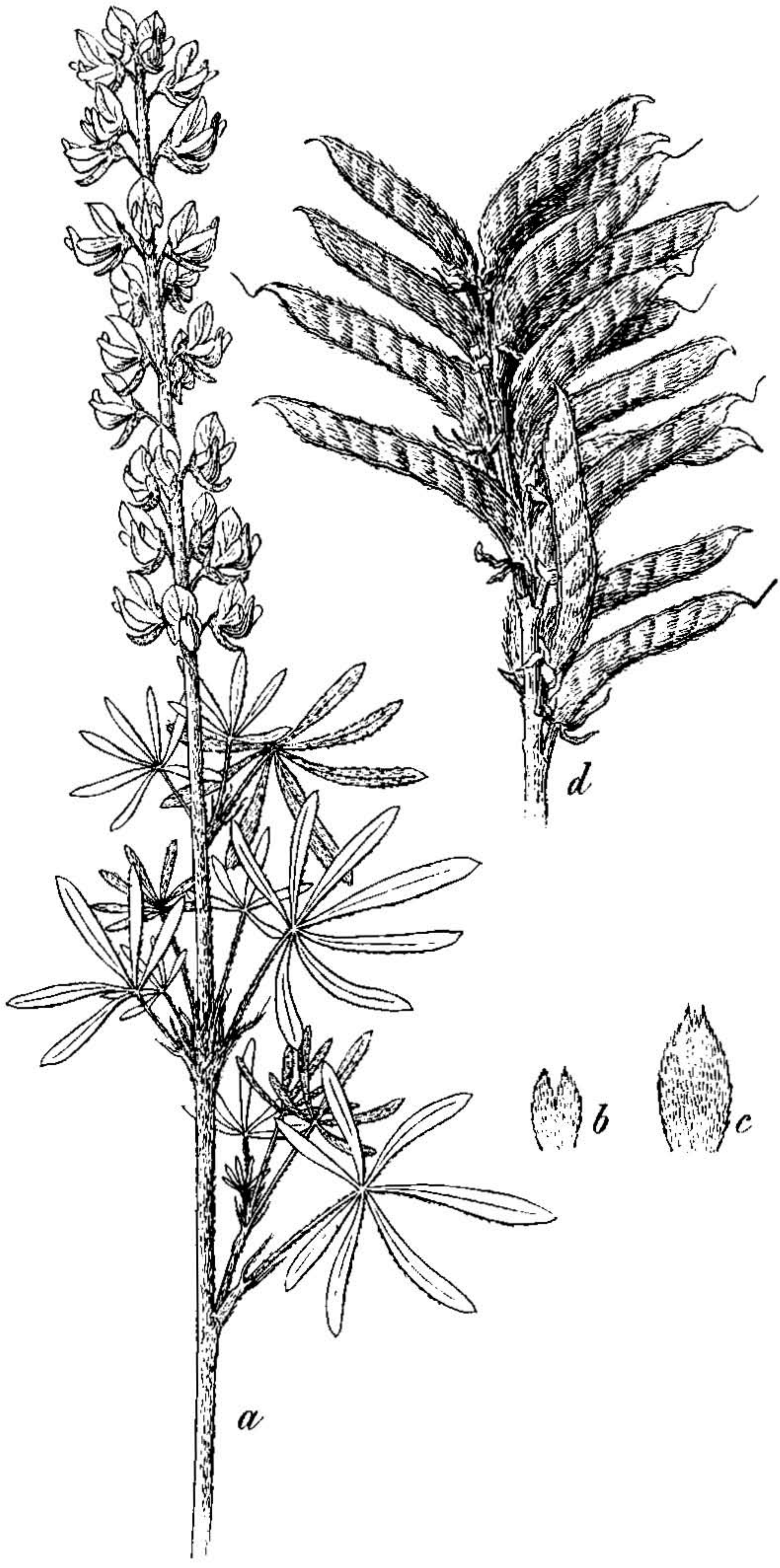
Collected by J. N. Rose between Pedro Paulo and San Blascito, Tepic, August 4, 1897 (no. 1981).

Very similar to *C. filifolia* in form of leaflets, but certainly a perennial, with larger and more numerous flowers, etc.

CROTALARIA VIMINALIS ROSE.



INDIGOFERA PLATYCARPA ROSE.



LUPINUS SUBMONTANUS ROSE.

Crotalaria viminalis Rose, sp. nov. PLATE VI.

A tall shrub, 1.8 to 3 meters high with long pendant branches giving the habit of a weeping willow, covered with white soft somewhat spreading pubescence; leaflets 3, oblong, rounded or somewhat narrowed at base, obtuse, glabrous or nearly so above, soft silky pubescent beneath, 2 to 4 cm. long; stipules minute; racemes elongated and hanging, 3 to 10 dm. long, naked toward the base, many-flowered; bracts subtending flowers linear; pedicels 5 to 6 mm. long; calyx 1 cm. long, the tube short, the lobes acuminate, silky; banner broad, about 15 mm. long; keel about 2 mm. long, bent at the middle nearly at right angles, ciliate on the upper and lower margins; wings much shorter; stamens glabrous; style slender, hairy below, glabrous near the middle, hairy on one side above; pods 3 cm. long, silky.

A common plant on the exposed lava beds near Cuernavaca, altitude 1,660 meters. The long pendent branches waving made it a most striking plant.

Collected by Mr. C. G. Pringle at Cuernavaca, September, 1896 (no. 6557), and same locality by J. N. Rose, May, 1899 (no. 4341, type).

The writer first took this species for the *C. eriocarpa* Bentham, but he has since collected, perhaps at the very type locality, the latter species. *C. eriocarpa* comes from a totally different floral zone, has short racemes and a yellowish pubescence, etc.

EXPLANATION OF PLATE VI.—Fig. *a*, branch; *b*, calyx; *c*, banner; *d*, keel; *e*, wing. Fig. *a*, scale of ½. *b*, *c*, *d* and *e*, natural size.

Indigofera platycarpa Rose, sp. nov. PLATE VII.

A shrub 3 to 5 m. high, much-branched; branches whitish-pubescent or in the younger parts reddish; leaflets mostly 17 to 21, opposite, petiolulate, oblong to obovate, rounded at base, rounded or retuse at apex and with a very decided apiculation, appressed-pubescent on both sides, 4 to 8 mm. long; racemes axillary, much shorter than the leaves, few-flowered; calyx very small (1 mm. high) cup-shaped; corolla 7 mm. long, rusty-pubescent; pod broad for the genus, flat, 2 to 3 cm. long, slightly pubescent; seeds few.

Collected by C. G. Pringle on mountains above Iguala, Guerrero, October 6, 1900 (no. 8399).

This species is characterized by its very broad pods.

EXPLANATION OF PLATE VII.—Fig. *a*, branch. *b*, calyx, *c*, banner, *d*, keel; *e*, stamens; *f*, style. Fig. *a*, natural size; *b*, scale of 4. *c*, *d*, *e*, and *f*, scale of 2.

Lupinus submontanus Rose, sp. nov. PLATE VIII.

Rather low plants, 3 to 6 dm. high, somewhat branching, glabrate below; leaflets 4 to 8, mostly 7 or 8, narrowly oblanceolate, 3 to 4 cm. long, obtuse, glabrous, slightly hairy beneath, longer than the slender petiole; stipules small, united for half their length to the petiole, free tips setaceous; bracts linear, 5 to 6 mm. long; flowers small, in a short (1 dm. long in type specimen) raceme, spike-like, pedicels 1 mm. long canescently pubescent as are also rachis and calyx; calyx 2-lipped; lower lip 5 mm. long, twice as long as upper, obtuse, perhaps sometimes 3-toothed; upper lip strongly 2-toothed; keel ciliate; fruit not seen.

Collected by C. G. Pringle on Mount Orizaba, August 26, 1901 (no. 8544), and by J. N. Rose and Robert Hay, same date and place (no. 5673, type).

This species is quite unlike any other known Mexican species. In the toothing of the lower lip it answers to the little known *L. mexicanus*, but in other respects differs. Of the three or four species which have been reported from Mount Orizaba it seems quite distinct. It might be suspected to be *L. glabratus* Mart. & Gal. from near the same station, but it certainly does not answer the description of that species.

EXPLANATION OF PLATE VIII.—Figs. *a* and *d*, flowering and fruiting branches; *b*, upper calyx lobe; *c*, lower calyx lobe. Figs *a* and *d*, natural size, *b* and *c* scale of 3.

Nissolia montana Rose, sp. nov.[a]

Stems climbing, puberulent; leaflets 5, orbicular to oblong, rounded at both ends, with slender apiculation, 2 to 4 cm. long, glabrous except in very young leaves; flowers numerous in the axils of the leaves, yellow or greenish; calyx glabrous, 3 to 4 mm. long, rather broad, glabrous without, green; tube truncate between the linear sepals (shorter than the tube); corolla pubescent without, 10 mm. long; immature pods acutish, pubescent.

Collected by C. G. Pringle on mountains near Iguala, Guerrero, October 24, 1900, (no. 9259).

This species is perhaps nearest *N. multiflora* Rose, but has different pubescence, larger and differently shaped leaflets, calyx, fruit, etc.

Phaseolus (Drepanosporon) oaxacanus Rose, sp. nov. PLATE IX.

A slender vine, glabrous or nearly so; stipules ovate, obtusish, striate; petioles slender; leaflets triangular, acute and apiculate, nearly truncate at base, thin, dark green above; petioles hairy; stipels acute; flowering peduncles 1.2 to 1.5 dm. long, much longer than the leaves; bracts ovate, acuminate and acute, either with a lateral tooth on either side or 3-lobed; flowering pedicels slender, 4 to 6 mm. long; bracts at base of calyx minute; calyx tube 2 mm. high, rather broad, glabrous or nearly so without; 3 lower lobes nearly equal, obtuse, small; upper lobe truncate; corolla purple (?), 6 mm. long.

Collected by Mr. C. G. Pringle on the Sierra de San Filipe, altitude 2,550 meters, August 24, 1894 (no. 5814 a).

EXPLANATION OF PLATE IX.—Fig. *a*, plant; *b*, calyx; *c*, banner; *d*, wing; *e*, keel; *f*, stamens; *g*, style. Fig. *a*, natural size; the others, scale of 2.

Phaseolus (Macroptilium) pedatus Rose sp. nov. PLATE X.

Stems 2 to 4 dm. long (?), from small oblong tubers (2 cm. long), slender and creeping, with spreading pubescence; leaflets 3, the lateral ones deeply parted, giving the leaf the appearance of having 5 linear leaflets, glabrous or with short appressed hairs above, the margins involute, midnerve prominent beneath and hairy; raceme including the peduncle filiform and elongated, 1 dm. or less long, few-flowered; flowers in pairs, subsessile; bractlets at base of calyx minute; sepals 5, nearly equal, ovate, acuminate, shorter than the calyx tube (1.5 mm. long), ciliate; corolla purplish; wings erect, much longer than the keel and banner, 8 to 9 mm. long, tapering at base into an elongated filiform claw; banner nearly obicular, 5 mm. in diameter; keel forming a single coil; free stamen thickened above the base; style flattened, hairy below the stigma; stigma capitate; disk at base of pistil toothed; ovary 1 or 2 ovuled; immature pods short, densely sericeous, 1 to 2 seeded.

Collected by C. G. Pringle, on damp sandy soil, Iguala, Guerrero, altitude 720 meters; October 25, 1900 (no. 8367).

This species, while clearly belonging to the section Macroptilium, is very unlike any species which I am familiar with.

EXPLANATION OF PLATE X.—Fig. *a*, plant; *b*, calyx; *c*, banner, *d*, wing; *e*, keel, *f* and *g*, stamens; *h*, ovary; *i*, seed. Fig. *a*, natural size; *b*, scale of 4; *c* and *d*, scale of 2, *e–i*, scale of 4.

Rhynchosia australis Rose, sp. nov.

Stems climbing; leaflets 3, ovate-lanceolate, acuminate and acute, sometimes 7 to 10 cm. long, thinnish in texture; racemes much longer than the leaves, 15 to 20 cm. long; corolla yellowish; calyx 14 to 15 mm. long; sepals slender, nearly equal; fruit not seen.

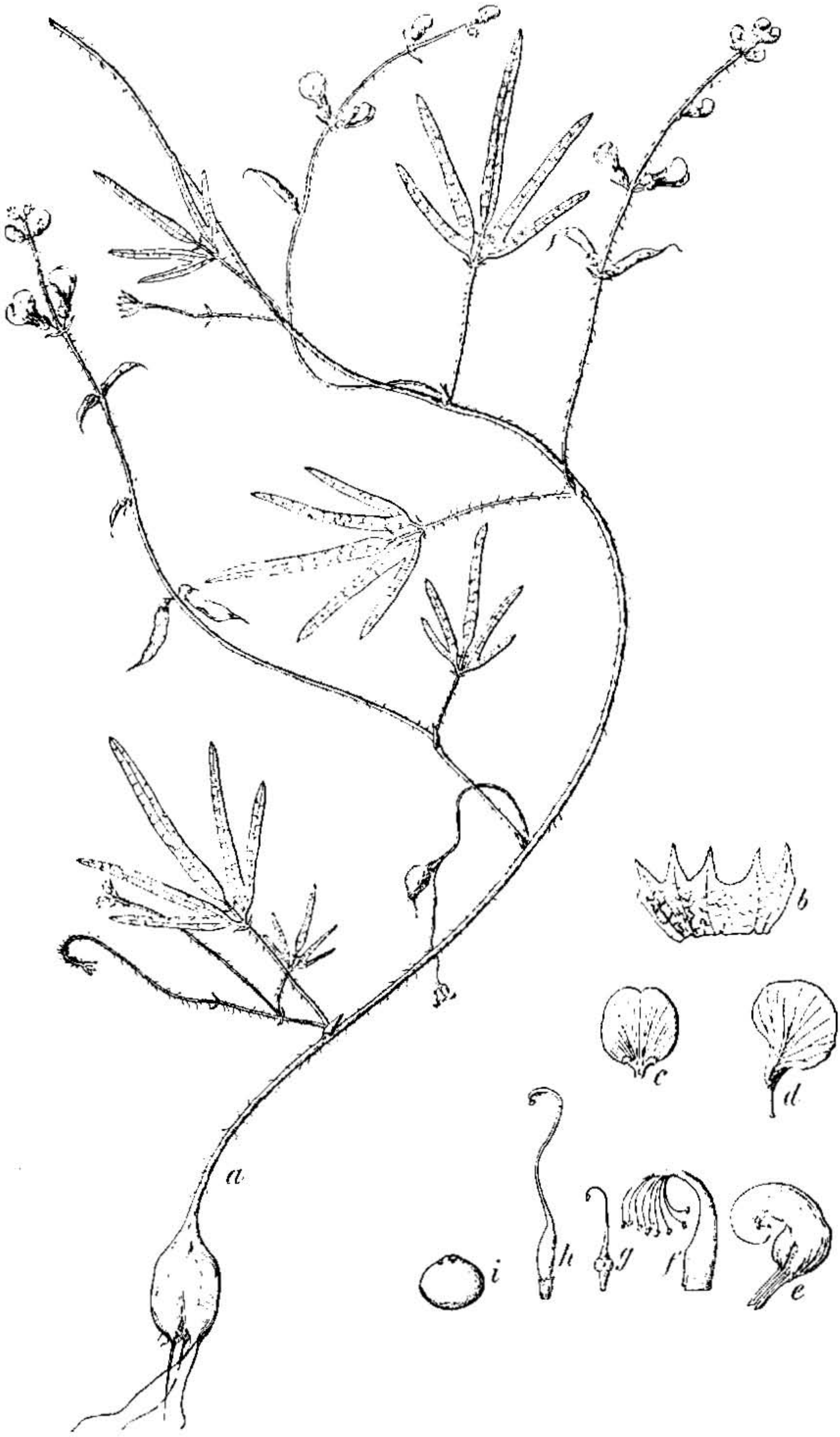
Collected by Mr. C. G. Pringle in a mountain canyon near Cuernavaca, Morelos, February 15, 1899 (No. 7863).

A species near *R. macrocarpa* Benth., but with thinner, less pubescent, and more acuminate leaflets, larger calyx, etc.

---

[a] For a synoptical treatment of the Mexican species of Nissolia, see Rose, Contr. Nat. Herb. vol. 5, p. 157.

PHASEOLUS OAXACANUS ROSE.



PHASEOLUS PEDATUS ROSE.

COLUBRINA MEGACARPA ROSE.

SAURAUJA PRINGLEI ROSE.

MALPIGHIACEAE.

NEW SPECIES OF THREE GENERA.

Aspicarpa lanata Rose, sp. nov. FIGURE 11.

Stems nearly simple, erect or somewhat spreading, 1 to 7 dm. high; young branches densely pubescent; leaves in verticels of three or opposite, broadly to narrowly oblong, apiculate, appressed-pubescent above, densely white-lanate beneath, short-petioled, 3 to 6 cm. long; calyx bearing eight glands; petals yellow, 6 mm. long; stamens 5, 3 fertile; style solitary; ovaries 3, 1 to 3 maturing into 3-angled pyramidal nutlets, 6 mm. long, the inner face angled above.

Specimens examined:

Jalisco: Near Guadalajara, Palmer, 1886 (no. 153), and Pringle, 1893 (no. 4222, type).

Durango: Near Huasemote, J. N. Rose, August 13, 1897 (no. 2214), and August 15 (nos. 3493 and 3501).

FIG. 11.—Fruit of *Aspicarpa lanata*.

Mr. Watson referred Palmer's plant to *Gaudichaudia mollis* Benth. and states that in respect to flowers and foliage it is identical with Hartweg's specimens. The fruit, however, is not that of Gaudichaudia, but rather that of Aspicarpa, with which it well agrees. Bentham's type (Hartweg's No. 14), a specimen of which is now in the Gray Herbarium, came from Zacatecas. This I have examined, and I am convinced that it is a totally different species.

Gaudichaudia subverticillata Rose, sp. nov.

Stems simple or somewhat branched, 5 to 8 dm. high, erect or nearly so, densely covered with a coarse appressed or spreading pubescence; leaves opposite or in verticels of 3, oblong, 5 to 10 cm. long, 1 to 3 cm. wide, apiculate, subsessile, rough-pubescent on both sides; inflorescence terminal, either strict or forming an open panicle; flowers usually in dense verticillate clusters; pedicels slender; calyx bearing 7 to 9 glands, 5-lobed; sepals 3 mm. long, oblong, obtuse, petals 5, 6 to 7 mm. long, yellow, with lacerate margin; stamens 5, all perfect; styles 3; samarae 3, each surrounded by a thin marginal wing, 10 to 12 mm. in diameter, hardly if at all winged on the back, more or less pubescent.

Collected by J. N. Rose on the road between Huejuquilla and Mesquitec, Jalisco, August 25, 1897 (no. 2558, type), in the same State near San Juan Capistrano, August 23 (no. 2501) and near Huasemote, August 15 (no. 3492).

This species differs from all the other Gaudichaudia species in having three styles. The stamens are also all perfect. The fruit, however, is so clearly of this genus that I do not hesitate to refer it as above.

Hiraea parviflora Rose, sp. nov.

Shrub, 15 to 24 dm. high; young branches densely tomentose, the older brownish, becoming glabrate; leaves small, less than 2.5 cm. long, oblong, acute, rounded at base, densely tomentose on both sides, shortly petiolate; umbels 2-flowered, short-peduncled; pedicels slender, 12 mm. long, bibracteate some distance below the middle; calyx villose, 8-glandular; petals glabrous, orbicular, small, 4 mm. long, tapering at base into a slender claw, violet; stamens 10, glabrous, free nearly to the base; samaræ 3, villose, 14 mm. in diameter, the lateral wings giving a circular outline; dorsal wing very small.

Collected by Mr. C. G. Pringle on dry hills near Tehuacan, altitude 1,650 meters, November 27, 1895 (no. 6274).

MELIACEAE.

A NEW TRICHILIA.

Trichilia pringlei Rose, sp. nov.

A shrub, 4 to 9 meters high; branches gray, at first a little pubescent; leaves 2 to 3 dm. long; leaflets about 7 pairs, at first densely whitish-pubescent on both sides, in age much less pubescent, lanceolate, 2 to 7 cm. long, acuminate, but with obtuse apex, strongly oblique at base, entire; flowers in numerous panicles, clustered at the top, much shorter than the leaves; calyx 5-lobed; sepals obtuse, the margins ciliate, otherwise glabrous; petals 5, oblong, 8 to 10 mm. long, obtuse, glabrous; stamens 9, united nearly to the middle, nearly glabrous; style glabrous; ovary densely pubescent, 3 or 4 celled; cells 2-ovuled, one ovule above the other; capsule globular, 15 mm. in diameter, densely reddish-pubescent.

Collected near Cuernavaca, Morelos, on lava beds by C. G. Pringle. July 24, 1896 (no. 6394, type), and on the side of a barranca by J. N. Rose, May, 1899 (no. 4433).

This species does not belong to any of DeCandolle's sections, for it has the ovules of the *mollis* section and the petals of the *rubra* section.

RHAMNACEAE.

A NEW COLUBRINA.

Colubrina megacarpa Rose, sp. nov. PLATE XI.

Low shrubs, 10 to 15 dm. high; young branches rusty-pubescent, becoming glabrate; leaves attenuate, on the sterile branches much larger, orbicular to oblong, 4 to 7 cm. long, 2 to 6 cm. broad, rounded at base and apex, crenately toothed, somewhat pubescent above, densely lanate-pubescent beneath, 3 to 5 nerved at base; petioles very short (3 to 10 mm. long); flowers not seen, but evidently borne in small clusters on short peduncles; pedicels 5 mm. long; fruit pendent, very large for the genus, 1 cm. in diameter, at first fleshy, but becoming dry, dehiscing as in the genus; seeds brown, flattened, 6 mm. long.

Collected by C G. Pringle near Tehuacan, Puebla (no. 6761), and at the same locality by J. N. Rose, August 1 and 2, 1901 (no. 5852, type).

EXPLANATION OF PLATE XI.—Figs. *a* and *b*, leafy and fruiting branches, natural size.

NEW SPECIES OF RHAMNUS.

The following new species of Rhamnus are presented only after the most careful study of the descriptions and specimens of the Mexican species of this genus. The National Herbarium contains nearly all the reported species, but the number of specimens of each is limited to one or two sheets and therefore either flowers or fruit are often lacking. For this reason, in part, it is not practicable to publish a revision at this time. Another reason is that the generic position of several of the old species is in doubt, and therefore the types themselves should be restudied or fresh material should be collected from the type locality.

Rhamnus nelsoni Rose, sp. nov.

Shrub 12 to 24 cm. high; branches a reddish brown; leaves narrowly oblong, 5 to 7 cm. long, finely serrate, glabrous above, somewhat tomentose beneath; flowers not

seen; fruits 2 or 3 in the axils on short peduncles, 4 to 6 mm. long, obovate in outline, 3-celled.

Collected by E. W. Nelson, between San Cristobal and Teopisca, Chiapas, December 4, 1895 (no. 3450).

Rhamnus obliqua Rose, sp. nov.

A small tree; branches long and slender with black bark; young branches, petioles, pedicels, stipules, and buds densely pubescent, usually with brownish spreading hairs; leaves lanceolate, 4 to 6 cm. long, shortly acuminate, rounded or somewhat narrowed at base, often oblique, dark green above, paler beneath, glabrous on both sides except along the midvein, the margin bluntly toothed; flowers in axils, probably few together; fruits (immature) one or two, rarely three, glabrous, globular; pedicels 3 to 5 mm. long.

On the Sacred Hill at Amacamaca, State of Mexico, collected by J. N. Rose, July 16, 1901 (no. 5498).

Somewhat resembling *R. serrata*, but with darker green leaves, different pubescence, stipules, serrations, etc.

Rhamnus revoluta Rose, sp. nov.

Young branches somewhat tomentose; leaves oblong, 5 to 7 cm. long, 2 to 3 cm. broad, obtuse at apex, generally rounded at base, finely serrate, the margin somewhat revolute, nearly glabrous above, at first almost tomentose, but in age the pubescence more scattered; umbels subsessile or distinctly peduncled, 6 to 8 flowered; pedicels 4 to 6 mm. long; calyx 3 mm. long, only slightly pubescent; petals small, broad, strongly retuse at apex; fruit not seen.

Collected by Mr. C. G. Pringle in the Sierra Madre near Monterey, Mexico, May 29, 1889 (no. 2539).

Rhamnus pringlei Rose, sp. nov.

A shrub 9 to 18 dm. high; young branches, foliage, peduncles (pedicels), etc., tomentose; leaves broadly oblong, 2 cm. long, obtuse or even retuse at apex, thin, rounded at base, serrate, on very short petioles; umbel sessile, few-flowered; pedicels 6 mm. long; calyx small, villous; petals broad, strongly emarginate.

Collected by C. G. Pringle near Oaxaca, Mexico, 1894 (no. 4662).

This species is nearest *R. palmeri*, but has much smaller, thinner, and less tomentose leaves, different petals, etc.

Rhamnus discolor (Donnell-Smith) Rose.

Rhamnus caprecefolia discolor Donnell-Smith, Bot. Gaz. **20**: 200. 1893.

This is a good species differing from *R. caprecefolia* in its pubescence, larger and paler leaves, usually peduncled umbels, etc.

Type locality "Coban," Guatemala.

VITACEAE.

A NEW AMPELOPSIS.

Ampelopsis mexicana Rose, sp. nov.

A high-climbing vine; branches long and slender, more or less brownish, glabrous and somewhat glaucous; tendrils branched; leaves 2 or 3 ternate; leaflets ovate, 3 to 5 cm. long, rounded or somewhat cuneate at base, shortly acuminate, serrate, somewhat pubescent; peduncles slender; secondary branches spreading, often nearly at right angles; calyx very small; petals 5 (?), spreading, less than 2 mm. long; style slender, short; fruit white, more or less inflated, becoming dry in age, 2 or 3 seeded; seed broader than long.

Collected by J. N. Rose near Acaponeta, Tepic, June 23, 1897 (no. 1455, type), and near Rosario, Sinaloa, July 8 (no. 1579).

This species comes nearer the United States species, *A. bipinnatus*, than any other I have seen, but has very different foliage. This seems to be the only representative of this genus in Mexico.

THEACEAE.

NEW SPECIES OF SAURAUJA.

Saurauja pauciflora Rose, sp. nov.

A low shrub; branches, leaves, peduncles, calyx, etc., covered with coarse, stiff, reddish hairs; leaves short-petioled, rounded at base, acuminate, sharply serrate, hairy above and on the midrib and veins below, also somewhat stellate beneath, 10 to 16 cm. long, 2 to 5 cm. broad; peduncles elongated, few-flowered; sepals orbicular, the inner ones less setose; corolla white.

Collected by E. W. Nelson near San Cristobal, Chiapas, altitude 2,100 to 2,640 meters, September 18, 1895 (no. 3206).

Saurauja nelsoni Rose, sp. nov.

Shrub; branches covered with coarse reddish hairs; leaves oblong, rounded at base and at apex, scabrous above, soft velvety-stellate beneath, 1 to 2 dm. long, 7 to 8 cm. broad, margin wavy, minutely toothed; inflorescence elongated, nearly as long as the leaves; sepals orbicular, 6 mm. in diameter, covered with short paleaceous hairs; petals orbicular, "pink," 10 mm. in diameter.

Collected by E. W. Nelson, near Totontepec, Oaxaca, altitude 1,122 to 1,670 meters, July 15 to 28, 1894 (no. 800).

Saurauja pringlei Rose, sp. nov. PLATE XII.

A small tree or shrub 18 to 30 dm. high; branches covered with appressed scaly hairs; leaves oblanceolate, wedge-shaped at base, abruptly acuminate, sharply serrate, roughly pubescent above, densely white-stellate beneath, 7 to 25 cm. long, 2 to 7 cm. broad; inflorescence much shorter than the leaves, open; sepals at first somewhat stellate, but becoming glabrate except the ciliate margin, two of them much constricted near the base, all rounded at the apex; petals white.

Specimens examined:

Oaxaca: Sierra San Felipe, altitude 2,550 meters, C. G. Pringle June, 1894 (no. 4668, type); west slope of Zempoaltepec, altitude 2,210 to 2,400 meters, E. W. Nelson, July 5 to 13, 1894 (no. 606).

EXPLANATION OF PLATE XII.—Fig. *a*, branch; *b*, calyx; *c*, petal and stamens. Fig. *a*, scale of ½; *b* and *c*, scale of 2.

Saurauja reticulata Rose, sp. nov.

A shrub or small tree; branches scurfy-pubescent, somewhat pilose at the nodes; leaves short-petioled, oblong or oblanceolate, rounded at the apex, when mature nearly glabrous except for patches of wool in the axils of veins, 1 to 2.5 dm. long, 5 to 10 cm. broad, finely serrate, the teeth tipped with a deciduous bristle, strongly reticulate beneath; peduncles elongated; sepals orbicular, covered with small paleaceous hairs, ciliate on the margin; petals white.

Collected by C. G. Pringle near Cuernavaca, February 15, 1899 (no. 7862).

This species is nearest *S. serrata*, but has different leaves, is pubescent on the sepals, grows at a much higher altitude, etc.

CORNACEAE.

THE MEXICAN SPECIES OF CORNUS.

Hemsley cites five species of Cornus from Mexico. Of these the two United States species, *florida* and *stricta*, are probably to be excluded. *C. excelsa* and *C. toluccnsis* are very similar to each other and difficult to distinguish. *Cornus disciflora* embraces two species, one with leaves very pale beneath and with appressed hairs, answering to *C. grandis*, and a second with woolly pubescence, which may or may not be *C. disciflora*. I have also distinguished below a beautiful species of the *C. florida* type. A species from north Mexico collected by E. W. Nelson I have also described as new. The following key is simply suggestive:

KEY TO SPECIES.

Flowers in dense head-like clusters.
Bracts of involucre very large, petal-like ..... 1. *C. urbiniana.*
Bracts of involucre small.
Pubescence on under surface of leaves woolly ..... 2. *C. disciflora.*
Pubescence on under surface of leaves not woolly ..... 3. *C. grandis.*
Flowers in more or less open cymes.
Leaf margins undulate; lateral veins 5 or 6 pairs..... 4. *C. nelsoni.*
Leaf margins entire; lateral veins 2 or 4 pairs.
Pubescence on under surface of leaves soft and somewhat spreading and woolly.
5. *C. excelsa.*
Pubescence on under surface of leaves harsh and closely appressed.
Leaves narrowly lanceolate..... 6. *C. toluccnsis.*
Leaves broadly lanceolate ..... 7. *C. lanceolata.*

1. Cornus urbiniana Rose, sp. nov.

Branches glabrous; leaves lanceolate, narrowed at base, acuminate, densely strigose on both sides, sometimes almost lanate beneath; involucral bracts pinkish, 5 cm. long, 2 cm. or more broad, tapering at base.

Collected by Dr. Manuel Urbina on Cerro de San Cristobal near Orizaba, April, 1891. Type specimen in National Herbarium, duplicate in herbarium Museo Nacional, City of Mexico.

This species is of the *florida* type, but has much larger and comparatively narrow bracts, etc. Here probably belongs the *Cornus florida* referred to by Mr. Hemsley in the Biologia.

This beautiful species is named for my good friend Dr. Urbina, acting director of the National Museum of Mexico, by whom it was collected, and to whom I am under many obligations.

2. Cornus disciflora DC. Prod. **4**: 273. 1830.

I have not been able to distinguish by the descriptions *C. disciflora* from *C. grandis*. Both were described in 1830, and so far I have not been able to make out which name should be given the preference. While it is very likely that the two descriptions refer to the same species, as Mr. Hemsley believed, yet I find two species in our so-called *C. disciflora*, the name usually adopted for this group. *C. grandis* has been fully characterized, and this name can be satisfactorily given to one of these species, and will be retained for it in case *C. disciflora* is not an older name or in case it belongs to a different species. *C. disciflora* is not so easily made out, as it is based

on a tracing of Moçino and Sessé's and a specimen of Berlandier's, for neither of which we have a definite locality given. From what we know of Berlandier's field of exploration it seems probable he would have collected what is here called *C. grandis.* The species, however, is to be based upon the tracing, but in what part of Mexico the material was found from which it was made no one can tell. On account, therefore, of the uncertainty as to what the true *C. disciflora* is, it seems best to retain the name for the species which remains after the segregation of *C. grandis.*

This species differs from *C. grandis* in the peculiar woolly pubescence on the under surface of the leaves.

Common in deep canyons along streams on the top of the Sierra Madre.

Collected by J. N. Rose, near Santa Teresa, August 10, 1897 (no. 2176), and in the State of Durango, August 18 (no. 2371); at San Nicholas, Valley of Mexico, 1865–66 (no. 998).

This species was also collected by Seemann, in the Sierra Madre, the exact locality not given, but probably near the first of the stations mentioned above.

3. **Cornus grandis** Cham. & Schlecht. Linnæa **5**: 171. 1830.

Type locality: "In sylvis prope Jalapam."

No material has been seen from the type region of this species. The writer has collected at Cuernavaca specimens which seem to belong here, although they come from a somewhat higher elevation. If this material is properly referred the species has a pretty wide distribution extending from the State of Michoacan to Oaxaca, and is generally found in collections labeled *C. disciflora.*

4. **Cornus nelsoni** Rose, sp. nov.

Shrub, 12 to 24 dm. high; branches dark red, nearly smooth; leaves opposite, lanceolate, acute, rounded or sometimes slightly tapering or often oblique at base, 6 to 10 cm. long, 2 to 3 cm. broad, dark green and slightly pubescent above, whitish and with appressed malpighiaceous hairs (as well as simple hairs in the axils of the veins) beneath; inflorescence an open cyme; flowers not seen; fruit white, very fleshy; stone slightly longer than broad (6 by 5 mm.), flattened, furrowed on the margin and with 3 fainter lines on each side.

Collected by E. W. Nelson on road between San Julian and Guadalupa y Calva, altitude 2,100 to 2,400 meters, September 7, 1898 (no. 4927).

Very unlike all the species of Cornus heretofore reported from Mexico.

5. **Cornus excelsa** H. B. K. Nov. Gen. & Sp. **3**: 430. 1818.

Type locality: "Inter Chalco et Urbem Mexici."

I have not examined the type of this species, but have collected in the Valley of Mexico near Humboldt's station material which answers his description. This species is closely related to *C. tolucensis;* my material shows difference in pubescence and has broader and more ovate leaves and more spreading inflorescence.

Specimens examined:

Federal District: On the Pedregal in the Valley of Mexico, Bourgeau, 1865–66 (no. 55); also in the same region, C. G. Pringle, June, 1896 (no. 6305); in hedge near Tlalpam, J. N. Rose, July 18, 1901 (no. 5541).

6. **Cornus tolucensis** H. B. K. Nov. Gen. & Sp. **3**: 430. 1818.

Type locality: "Juxta urbem Toluca."

I have not examined the type of *Cornus tolucensis* nor have I seen material from the type locality, but I have collected material both to the north and south of Humboldt's station, which is near the city of Toluca at an altitude of 2,800 meters. My specimens have narrow leaves, 6 to 25 mm. broad, gradually tapering into an acumination and with appressed pubescence; inflorescence very compact, in flower almost head-like.

Collected by J. N Rose near Santa Fe, Federal District, in Valley of Mexico, July 11, 1901 (no. 5370), and near Tlapujahua, Michoacan, July 12, 1901 (no. 5402.)

7. Cornus lanceolata Rose, sp. nov.

A small tree, 4 to 6 meters high; branches slender, brownish; leaves broadly lanceolate, 5 to 10 cm. long, 2.5 to 6 cm. broad, abruptly long-acuminate, rounded or somewhat tapering at base, pubescent on both surfaces with rather scanty appressed malpighiaceous hairs, with usually 4 pairs of rather prominent lateral veins; inflorescence a densely flowered terminal cyme, becoming in fruit 5 to 6 cm. broad, more or less pubescent with blackish hairs; buds usually densely cinereous, the lower part or calyx more decidedly so; calyx teeth minute, ovate, acute; petals 5 mm. long; anthers nearly as long as the petals; anthers bluish; styles slender, thickened at apex, slightly pubescent.

Specimens examined:

Vera Cruz: near Jalapa, J. N. Rose and Walter Hough, May 17, 1899 (no. 4240); same locality and date, C. G. Pringle (no. 8199); Orizaba City, Botteri (no. 262).

Morelos: near Cuernavaca, Rose and Hough, May 27–30 (no. 4422). Type, Rose and Hough's no. 8199.

This species has heretofore been passing as *C. toluccnsis*, but seems to be distinguished by its much broader and larger leaves, larger cymes, and darker branches. It grows at lower altitudes and in a more humid zone. Other characters are to be looked for in the fruit, but as yet neither species has been collected with mature fruit. Schlechtendal first studied this species and doubtfully referred it to *C. toluccnsis*.

A NEW GARRYA.

Garrya longifolia Rose, sp. nov.

A small tree; branches pubescent; leaves oblong-elliptical, obtuse, sometimes apiculate, 8 to 15 cm. long, 1.5 to 3.5 cm. wide, when mature nearly glabrous and reticulated above, lanate beneath; fruit orbicular, pubescent, the lower ones short-pedicelled, the upper ones subsessile, bracts linear, elongated.

Collected on the Sierra de Topoxtlan, altitude 2,250 meters, by C. G. Pringle, March 15, 1899 (no. 6988).

Although the Mexican species of this genus are difficult to characterize, this one is very different in its appearance from all the others.

CUCURBITACEAE.

A NEW SCHIZOCARPUM.

Schizocarpum reflexum Rose, sp. nov.

Stems angled, climbing, with pubescence of two kinds, namely, of scattered coarse, jointed hairs and of short, dense, glandular hairs; tendrils 2-branched, one branch much longer than the other; petioles a little shorter than the blades, with pubescence like that of stem; leaves ovate, 5-lobed, the terminal lobe more elongated, ovate, acute, and apiculate, the others short and rounded, with minute teeth, somewhat glaucous and glabrous above, except near the margin, and except on the slightly roughened midrib, densely appressed-pubescent beneath; sinus broad and rounded, the lateral lobes almost meeting; flowers solitary in the axils; peduncles 5 to 8 cm. long; peduncles (as also sepals and petals in bud) with pubescence like stems; sepals ovate, linear, very early reflexed in the bud; corolla yellow, 5 to 6 cm. long; lobes ovate, acute, erect.

Collected by C. G. Pringle on mountains near Iguala, September 27, 1900 (no. 9252).