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REVISION OF THE SOUTH AMERICAN SPECIES OF CUSCUTA

II

T. G. YUNCKER

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Section CLISTOGRAMMICA Engelmänn

KEY TO THE SUBSECTIONS

- Flowers not subtended by bracts; calyx segments more or less united PLATYCARPAE.
Flowers subtended by numerous bracts; calyx segments mostly free (no
members of this subsection have been found from South America) LEPIDANCHE.

Subsection PLATYCARPAE Engelmänn

KEY TO THE SPECIES

- Calyx lobes obtuse (acutish in *C. gymnocarpa*, *C. suaveolens*, and *C. parviflora*).
Calyx lobes mostly not overlapping, or but slightly so, mostly smooth.
Styles becoming subulate and divaricate in fruit 25. *C. obtusiflora*.
Styles not becoming noticeably subulate in fruit (subulate in *C. pentagona subulata*).
Flowers mostly more than 2 mm. long.
Scales prominent, withered corolla about the capsule or at its base.
Corolla lobes acute.
Calyx nearly as long as the corolla, lobes ovate, may be slightly overlapping, corolla lobes upright or reflexed.
Corolla lobes spreading or reflexed, tips inflexed. 26. *C. pentagona*.
Corolla lobes upright 27. *C. gymnocarpa*.
Calyx much shorter than the corolla, lobes triangular, not at all overlapping, corolla lobes upright, tips inflexed 28. *C. suaveolens*.
Corolla lobes mostly obtuse.
Calyx lobes not overlapping 29. *C. racemosa*.
Calyx lobes more or less overlapping 30. *C. platyloba*.

[The **Journal** for December (9: 535-581) was issued Jan. 10, 1923.]

- Scales narrow, not prominent, withered corolla capping
the capsule.....31. *C. stenolepis*.
- Flowers mostly less than 2 mm. long.....32. *C. parviflora*.
- Calyx lobes broadly overlapping, frequently keeled.....33. *C. cristata*.
- Calyx lobes acute.
- Flowers fleshy, corolla lobes more or less papillate, tips mostly in-
flexed.....34. *C. indecora*.
- Flowers not fleshy, corolla lobes not inflexed at the tips.
- Infrastamineal scales present.
- Pedicels mostly longer than the flowers, calyx lobes triangular.
.....35. *C. globosa*.
- Pedicels no longer than the flowers (mostly shorter), calyx
lobes ovate.
- Corolla lobes mostly shorter than the tube.....36. *C. micrantha*.
- Corolla lobes mostly equal to or longer than the tube.....37. *C. acuta*.
- Infrastamineal scales lacking.....38. *C. insquamata*.

25. *Cuscuta obtusiflora* Humboldt, Bonpland, & Kunth
(Pl. V, fig. 29, A-E)

Cuscuta obtusiflora Humboldt, Bonpland, & Kunth, Nova gen. et spec. pl. 3: 122 (96 in folio edition). 1818.—Engelmann, Trans. Acad. Sci. St. Louis 1: 492. 1859.—Progel in Martius, Flora Brasiliensis 7: 380, Pl. 127, fig. 1. 1871.

Cuscuta inodora Willdenow, in herb., ex Engelmann, Trans. Acad. Sci. St. Louis 1: 492. 1859; in synonym.

Stems medium. Flowers 2–2.5 mm. long, subsessile in dense glomerulate clusters, more or less glandulous; calyx scarcely as long as the corolla; lobes unequal, ovate, obtuse, not overlapping; corolla campanulate; lobes about equal to the tube, ovate, obtuse or more rarely acutish, upright, becoming reflexed in fruit; stamens shorter than or nearly equaling the lobes and commonly placed directly in the sinuses, stout, subulate filaments longer than the oval anthers; scales spatulate, fringed about the top, mostly not reaching the stamens, bridged below the middle; styles about as long as the globose ovary, becoming subulate. Capsule depressed-globose, exposed, with the withered corolla about it towards the base, intrastylar aperture large, styles becoming subulate and divergent; seeds globose, compressed, slightly rostrate, 1.25–1.5 mm. long; hilum linear, perpendicular.

All the specimens from South America belong to Engelmann's variety *vera*. The above description was drawn from Humboldt's type specimen.

Type locality: In the Peruvian Andes. *Distribution*: Colombia, Brazil, and southward to Peru and in Paraguay and Uruguay.

Specimens examined: BRAZIL: Matto Grosso, Corumba (Hoehne 4016).

COLOMBIA: (Triana, without date or number); Medellin (Triana 2178, and in 1851–57).

PARAGUAY: River Ypacarai (Hassler 3918).

PERU: (Humboldt, the type, a fragment in the Engelmann herbarium).

URUGUAY: (Lorentz 64).

26. *Cuscuta pentagona* Engelm.

For the synonymy, description, and illustration of this species see Yuncker, Ill. Biol. Monogr. 6: 140. 1921.

KEY TO THE SOUTH AMERICAN VARIETIES

Styles slender, not becoming subulate in fruit.

Calyx lobes overlapping, forming angles at the sinuses; flowers relatively small.

typica.

Calyx lobes not at all, or but slightly, overlapping and not forming angles at the sinuses; flowers usually larger.....

calycina.

Styles becoming subulate in fruit, intrastylar opening large.....

subulata.

Cuscuta pentagona typica

Specimens examined: ARGENTINA: Buenos Aires (Venturi 100).

URUGUAY: Montevideo (Fruchard in 1871, and in 1875; Courbon 146).

Cuscuta pentagona calycina Engelm.

Specimen examined: BRAZIL: Itajahy (Ule 487).

Cuscuta pentagona subulata n. var.

Styles becoming subulate, capsule and intrastylar aperture large, scales scarcely reaching, or reaching, the stamens.

Type locality: Maraham, Brazil. *Distribution*: Brazil and Ecuador.

Specimens examined: BRAZIL: (Glaziou 19677 in part); Maraham (Gardner 6068 in part, the type, a fragment in the Engelm. herbarium); Prov. São Paulo (St. Hilaire C¹ 1271); Prov. Santa Catharina (Pabst 565).

ECUADOR: Guayaquil (Jameson 542).

27. *Cuscuta gymnocarpa* Engelm.

(Pl. IV, fig. 22, A-E)

Cuscuta gymnocarpa Engelm., Trans. Acad. Sci. St. Louis 1: 496. 1859.

Stems slender to medium. Flowers about 2 mm. long, becoming 2.5–3 mm. long in fruit with the enlarged capsule, on pedicels about as long as the flowers, in few-flowered, globose, umbellate clusters; calyx slightly shorter than the corolla tube, lobes ovate, obtuse or slightly acutish, not overlapping; corolla campanulate, thin, lobes triangular, acute, upright, with tips frequently inflexed, shorter than the tube; scales reaching the stamens, ovate, fringed with moderate processes, bridged below the middle; stamens shorter than the lobes, anthers oval, about equal to the stout subulate filaments; styles about equal to, or shorter than, the globose ovary. Capsule globose or slightly depressed-globose, the withered corolla remaining at the base, not circumscissile. Seeds two to four in each capsule, about 1.5 mm. long, oval, hilum prominent, oblique or perpendicular.

This species differs from *C. pentagona* in having shorter, upright corolla lobes, shorter filaments, and more globose capsules. It differs from *C. acuta* in having the corolla at the base of the protruding capsule, shorter corolla lobes and styles, and obtuse calyx lobes.

Type locality: "James Island of the Galapagos Group." *Distribution*: Galapagos Islands.

Specimens examined: GALAPAGOS ISLANDS: Albemarle Island, Tagus Cove (Stewart 3092), Cowley Bay (Bauer 205).

28. *Cuscuta suaveolens* Seringe

Cuscuta suaveolens Seringe, Ann. Sci. Phys. Nat. Lyon 3: 519. 1840.—Gay, Hist. de Chile 4: 448. 1849.

Cuscuta corymbosa Choisy, Mém. Soc. Phys. Hist. Nat. Genève 9: 276. 1841; and in De Candolle, Prodrômus 9: 456. 1845. Not Ruiz & Pavon.

Cuscuta Hassiaca Pfeiffer, Bot. Zeit. 1: 705. 1843.

Engelmannia migrans Pfeiffer, Bot. Zeit. 3: 674. 1845.

Engelmannia suaveolens Pfeiffer, Bot. Zeit. 4: 21. 1846.

Cuscuta diaphana Wenderoth, Fl. Hassiaca, p. 346. 1846.

Pfeifferia suaveolens Buchinger, Ann. Sci. Nat. Bot. III, 5: 88. 1846.

Cassutha suaveolens Des Moulins, Études organiques sur les Cuscutées, p. 66. 1853.

Cuscuta popayanensis Poeppig in herb., ex Engelmann, Trans. Acad. Sci. St. Louis 1: 505. 1859. Not H. B. K.

Cuscuta chilensis Bertero in sched., ex Engelmann, Trans. Acad. Sci. St. Louis 1: 505. 1859. Not Ker-Gawler.

Cuscuta racemosa chiliana Engelmann, Trans. Acad. Sci. St. Louis 1: 505. 1859.—Yuncker, Ill. Biol. Monogr. 6: 144, figs. 36 and 94. 1921.

? *Cuscuta floribunda* Philippi, Fl. Atac., p. 37. 1860. Not H. B. K.

? *Cuscuta andina* Philippi, Anal. Univ. Chile 90: 225. 1895.

? *Cuscuta racemosa floribunda* Reiche, Anal. Univ. Chile 120: 819. 1907.

? *Cuscuta racemosa andina* Reiche, Anal. Univ. Chile 120: 819. 1907.

Stems slender to medium. Flowers 3–4 mm. long, more or less glandular, membranous, on pedicels mostly shorter than the flowers, in racemose clusters; calyx lobes shorter than the corolla tube, triangular-ovate, acutish, not overlapping, sinuses more or less rounded, edges sometimes revolute; corolla campanulate or funnel-form, becoming globular about the developing capsule; lobes ovate-triangular, upright, with acute, inflexed tips, somewhat shorter than the tube; anthers shorter than the lobes, filaments subulate, about equal to the oval anthers; scales not reaching the stamens (infrequently barely reaching them), oblong-ovate or triangular, fringed with medium processes, bridged below the middle; ovary globose, styles slender, about equal to the ovary. Capsule globose, with the withered corolla about it, not circumscissile, two- to four-seeded, seeds 1.5–2 mm. long, roundish, hilum oblong, perpendicular.

Most of the writers have followed the example of Engelmann in considering this a variety of *C. racemosa* Mart. It is undoubtedly closely related to that species, but it is believed that it exhibits characters that warrant its being segregated as a separate species. It is easily distinguished by its large flowers which are light-colored, and also by the rounded sinuses of the calyx.

Type locality: Lyons, France, where it grew from seeds imported from Chile. *Distribution*: Chile, Paraguay, and Uruguay.

Specimens examined: CHILE: (Bertero 201 and 940; Poeppig, probably the type of *C. popayanensis* [not H. B. K.]); St. Jago (Gay 449); Rancagua (Bertero 205, taken to

represent the type of Choisy's *C. corymbosa*); St. Augustin de Tango (Reed in 1867); Valparaiso (Rusby 2000); Valdivia (Lechler 479); Prov. Santiago (Philippi in 1861 and in 1862).

PARAGUAY: Montevideo (Fruchard).

URUGUAY: Salto (Osten 3324).

29. *Cuscuta racemosa* Martius

Cuscuta racemosa Martius in Spix and Martius, Reise Bras. 1: 286. 1823.—Choisy, Mém. Soc. Phys. Hist. Nat. Genève 9: 277, Pl. 3, fig. 1. 1841; and in De Candolle, Prodr. mus 9: 456. 1845.

Cuscuta racemosa brasiliensis Engelm., Trans. Acad. Sci. St. Louis 1: 505. 1859.—Progel in Martius, Flora Brasiliensis 7: 384, Pl. 125. 1871.

Stems slender, smooth or rarely papillate. Flowers 2.5–4 mm. long, more or less glandular, on pedicels mostly about as long as the flowers, in loose, racemose clusters, membranous or somewhat fleshy, straw-colored to deep red; calyx shorter than the tube, or equaling it in one variety; lobes ovate, obtuse or rarely somewhat acutish; corolla campanulate, lobes ovate, obtuse or rarely slightly acutish, tips inflexed or straight; stamens shorter than the lobes, the oval anthers about equal to the stoutish, subulate filaments; scales mostly about reaching the stamens, oblong, copiously fringed particularly about the upper half, bridged below the middle; stigmas ordinarily large and frequently flattened, styles stoutish and not infrequently more or less subulate, equal to, or longer than, the globose or obovate ovary which is thickened at the top. Capsule globose, carrying the withered corolla about it or toward its base; seeds one to four in each capsule, oval, about 2 mm. long, hilum short, perpendicular or oblique.

KEY TO THE VARIETIES

Calyx lobes ordinarily not overlapping, longer than broad, mostly reaching beyond the middle of the corolla tube.

Capsule covered or surrounded by the withered corolla, not becoming markedly exserted.....*typica*.

Capsule becoming exserted and not covered by the withered corolla.....*nuda*.

Calyx lobes commonly more or less overlapping, about as broad as long, ordinarily not reaching the middle of the tube and frequently papillate.....*miniata*.

Cuscuta racemosa typica

(Pl. IV, fig. 23, A–E)

Flowers about 3 mm. long; calyx shorter than the corolla tube, lobes ordinarily not overlapping, longer than broad; corolla lobes shorter than the tube, obtuse, tips commonly inflexed.

Type locality: Province Rio de Janeiro, Brazil. *Distribution:* Central and southern Brazil.

Specimens examined: BRAZIL: (Riedel; Booz; Ule 321; Pohl 5100); Prov. Rio de Janeiro (Graham; Riedel 695; Martius in 1817, taken to represent the type, a fragment in the Engelm. herbarium; Rudio; Capt. Wilkes; Burchell 2739; Gardner 5555; Martius 941; Gaudichaud 507); Petropolis (Ball in 1882); Prov. Parana (Dusén 4006, 7987, 10005, 11349); Prov. Minas Geraes (Lindberg 167; Hillosen 4484; Gaudichaud 52; St. Hilaire D. 557; Weddell); Caldas (Hoehne 2774); Prov. São Paulo (Brade 6026; Glaziou 19677 in part; Gaudichaud 345); Mboi (Gehrt 3351); Prov. Santa Catharina (Ule 1848);

Ilha do Governador, Rio de Janeiro Bay (Miers 3430); Isl. Paqueta, Rio de Janeiro Bay (Rose and Russell 20287); Tropical Brazil (Burchell 667A).

Cuscuta racemosa nuda Engelmänn

Cuscuta racemosa nuda Engelmänn, Trans. Acad. Sci. St. Louis 1: 505. 1859.—Progel in Martius, Flora Brasiliensis 7: 384, Pl. 128, fig. 3. 1871.

? *Cuscuta citricola* Schlechtendal, Linnaea 22: 808. 1849.

Cuscuta racemosa Regnelliana Progel in Martius, Flora Brasiliensis 7: 384. 1871.

Calyx lobes ovate, not overlapping, nearly as long as the corolla tube; corolla lobes reflexed and about equal to the tube. Capsule depressed-globose, exserted, intrastylar aperture large; scales oblong. This variety when not in fruit looks very much like variety *brasiliiana*.

Type locality: "Near Rio, Brazil." *Distribution*: Southern Brazil.

Specimens examined: BRAZIL: (Sellow, taken to represent the type, a fragment in the Engelmänn herbarium); Prov. Minas Geraes (Regnell III 308; two collections of this number were examined, one collected Dec. 26, 1864, and the other Feb. 7, 1866. This is the type number of variety *Regnelliana*; Widgren in 1845).

Cuscuta racemosa miniata Engelmänn

(Pl. IV, fig. 23, F)

Cuscuta racemosa miniata Engelmänn, Trans. Acad. Sci. St. Louis 1: 505. 1859.—Progel in Martius, Flora Brasiliensis 7: 384. 1871.

Cuscuta miniata Martius in Spix and Martius, Reise Bras. 1: 286. 1823.

Cuscuta racemosa minuta Choisy, Mém. Soc. Phys. Hist. Nat. Genève 9: 277. 1841; and in De Candolle, Prodromus 9: 456. 1845.

Cuscuta tenuicaulis Glaziou, Mém. Soc. Bot. France 3: 491. 1911.

Stems smooth or frequently papillate, the papillations extending part way on to the calyx in some specimens; calyx very short, the lobes commonly broader than long, overlapping; flowers fleshier in texture than those of the other varieties, and reddish.

Type locality: Brazil. *Distribution*: Central and southern Brazil.

Specimens examined: BRAZIL: (Martius 1292, taken to represent the type, a fragment in the Engelmänn herbarium; Ackermann in 1832); Prov. Minas Geraes (Vauthier 252; Schwacke 8208; Glaziou 19676, the type number of *C. tenuicaulis*; St. Hilaire B¹ 2085; Langsdorff); Prov. São Paulo (St. Hilaire C² 1488; Prov. Goyaz (Glaziou 20422); Prov. Matto Grosso, Cuyabá (Riedel 846 in part, mixed with *C. partita*).

30. *Cuscuta platyloba* Progel

(Pl. V, fig. 27, A-E)

Cuscuta platyloba Progel in Martius, Flora Brasiliensis 7: 381, Pl. 127, fig. 3. 1871.

Cuscuta racemosa calycina Engelmänn, Trans. Acad. Sci. St. Louis 1: 505. 1859.

Stems slender. Flowers 2-4 mm. long, on pedicels shorter than the flowers, in few- to many-flowered paniculate or racemose cymes; calyx about equal to the corolla tube; lobes ovate, obtuse, overlapping, entire or irregular, sometimes slightly carinate; corolla campanulate, lobes ovate, obtuse, overlapping, about equal to the tube, upright or becoming reflexed; stamens shorter than the lobes, anthers oval, about equal to, or shorter

than, the subulate filaments; scales reaching the stamens, ovate, fringed with moderate processes, bridged at about the middle or somewhat below; ovary globose, styles slender and shorter than, or becoming longer than, the ovary, stigmas medium or infrequently large and convoluted. Capsule globose, with the withered corolla about it; styles becoming stoutish and sometimes slightly subulate, not circumscissile, thin towards the base; seeds two to four in each capsule, about 1.5 mm. long; hilum oblong, oblique.

It is believed that what Progel described as *C. platyloba* is a smaller form of Engelmann's *C. racemosa calycina*. The specimens here considered closely approach *C. racemosa*, but it is believed that they show characters that will allow of their being maintained as a distinct species.

Type locality: "Montevideo." *Distribution*: Southern Brazil and Uruguay.

Specimens examined: BRAZIL: Prov. Goyaz (Glaziou 21808); Prov. Rio de Janeiro (Ule 3565; Glaziou 11279; Hillosen 2538); Prov. Santa Catharina (Pabst 89); Central Brazil (Weddell 2124, probably the type of *C. racemosa calycina*); southern Brazil (Sellow); Minas, Serra da Piedade (Hoehne 6187).

URUGUAY: Montevideo (Sellow 30, taken to represent the type, in the U. S. National Herbarium; Fruchard in 1874 and in 1875).

31. *Cuscuta stenolepis* Engelmann

(Pl. V, fig. 31, A-E)

Cuscuta stenolepis Engelmann, Trans. Acad. Sci. St. Louis 1: 503. 1859.

Stems slender, densely matted. Flowers few and scattering, about 2.5 mm. long, on pedicels as long as, or shorter than, the yellowish or infrequently reddish, glandular flowers, in scattered, few-flowered, paniculate or cymose clusters; calyx deeply divided, reaching the middle of the corolla tube or nearly to the sinuses in some flowers, lobes ovate, obtuse; corolla subcylindrical, lobes about half as long as the tube, oblong-ovate, obtuse, reflexed, with inflexed tips; stamens shorter than the lobes, filaments equal to, or shorter than, the oval anthers; scales about reaching the stamens, bridged at a third or a quarter of their height, narrow, sparingly fringed with a few scattered processes; styles slender, about equal to the globose, apiculate ovary. Capsule globose or conic, with the withered corolla about the apex like a hood; seeds subglobose, about 1.5 mm. long.

Type locality: Andes of Quito, Ecuador. *Distribution*: Known only from Ecuador.

Specimens examined: ECUADOR: Quito (Hall, the type, a fragment in the Engelmann herbarium; Couthouy; E. W. D. and Mary M. Holway Aug. 21, 1920); Otavalo (Holmgren 908).

32. *Cuscuta parviflora* Engelmann

Cuscuta parviflora Engelmann, Trans. Acad. Sci. St. Louis 1: 506. 1859.—Progel in Martius, Flora Brasiliensis 7: 385, Pl. 128, fig. 5. 1871. Not Nuttall nor Willdenow.

Cuscuta micrantha Martius in herb., ex Engelmann, Trans. Acad. Sci. St. Louis 1: 506. 1859. Not Choisy.

Stems slender, matted. Flowers 1-2 mm. long, on pedicels mostly much

longer than the flowers, in loose, few-flowered, cymose clusters; calyx shorter than, or about equaling, the corolla tube; lobes ovate to triangular-ovate, obtuse or slightly acutish, slightly, if at all, overlapping; corolla widely campanulate, lobes longer than the tube, spreading or upright with inflexed tips, ovate or lanceolate, obtuse to acute; stamens shorter than the lobes or rarely longer than the lobes; oval anthers about equal to, or shorter than, the slender filaments; scales reaching the stamens, ovate, fimbriate, bridged below the middle; styles about equal to the globose ovary; capsules depressed-globose, much larger than the flower, exserted, withered corolla persistent at the base, intrastylar aperture large, not circumscissile; seeds 1–1.25 mm. long, globose, hilum oblong, perpendicular.

This is the smallest of the species seen from South America and seems to produce capsules sparingly. Only two or three mature fruits were seen in the several specimens examined.

Cuscuta parviflora typica

(Pl. V, fig. 25, A–E)

Flowers 1.5–2 mm. long. Corolla lobes ovate, obtuse or only slightly acutish, stamens shorter than the corolla lobes.

Type locality: Villa Rica, Brazil. *Distribution:* Southern Brazil.

Specimens examined: BRAZIL: (St. Hilaire); Villa Rica (Pohl 5726, taken to represent the type of this, a fragment in the Engelmann herbarium); Prov. Minas Geraes, Ouro Preto (Schwacke 7560; Ule 2652; E. W. D. and Mary M. Holway 1374).

Cuscuta parviflora elongata Engelm.

(Pl. V, fig. 25, F)

Cuscuta parviflora elongata Engelm., Trans. Acad. Sci. St. Louis 1: 506. 1859.—Progel in Martius, Flora Brasiliensis 7: 386. 1871.

Flowers 1–1.5 mm. long. Calyx lobes acutish; corolla lobes triangular or lanceolate, acute, stamens equal to or exceeding the corolla lobes.

Type locality: Minas Geraes, Brazil (?). *Distribution:* Central and southern Brazil.

Specimens examined: BRAZIL: Goyaz (Weddell 2125); São Paulo (St. Hilaire C¹ 665).

33. *Cuscuta cristata* Engelm.

(Pl. V, fig. 28, A–E)

Cuscuta cristata Engelm., Trans. Acad. Sci. St. Louis 1: 507. 1859.

Stems medium. Flowers 2.5–3 mm. long, slightly fleshy and glandular, subsessile on short, stout pedicels in few- to many-flowered, lateral, cymose clusters, perianth segments frequently uneven; calyx as long as the corolla tube; lobes broadly ovate, obtuse, frequently with an uneven, cristate carina which may extend down on to the pedicel, overlapping; corolla widely campanulate, early becoming somewhat globular about the developing capsule; lobes slightly shorter than the tube, ovate, obtuse, spreading, becoming reflexed in fruit; stamens shorter than the lobes, the oval anthers

about equal to the stout, subulate filaments; scales reaching the stamens or shorter, bridged below the middle, slightly spatulate, sparingly fringed with medium-length processes, particularly about the upper half; styles stoutish, much shorter than the large, globose ovary which is thickened at the top, stigmas very small. Capsule depressed-globose, thin towards the base where it may break away when pulled, carrying the withered corolla about it or toward the base, styles becoming divaricate, intrastylar aperture large and rhomboid; seeds about 1.5 mm. long, oblique, rostrate.

This species is distinguished mainly by the shape of its capsule and the size of the stigmas.

Type locality: "Province of St. Jago de Tucuman, La Plata," Argentina.

Distribution: Central Argentina.

Specimens examined: ARGENTINA: La Plata (Tweedie 1191, the type, a fragment in the Engelmann herbarium); Buenos Aires (Beltfreund and Koester 342); Cordoba (Gallander; Lorentz 90); Parana (Gilbert 78); Prov. La Rioja (Hieronymus and Niederlein 745, 846).

34. *Cuscuta indecora* Choisy

For the synonymy and description of this species and its varieties see Yuncker, Ill. Biol. Monogr. 6: 147. 1921; also Progel in Martius, Flora Brasiliensis 7: 382, Pl. 127, fig. 6. 1871.

KEY TO THE VARIETIES

Scales ovate, prominently fringed.

Calyx lobes ovate, obtuse or acutish, not exceeding the corolla.

Styles as long as the ovary, not divaricate.

Flowers 2-3 mm. long, papillose-hispid (no specimens of this have been seen from South America).....*hispidula*.

Flowers usually larger, not papillose-hispid.....*neuropetala*.

Styles short, becoming divaricate in fruit.....*subnuda*.

Calyx lobes lanceolate, acute, usually exceeding the corolla.....*longisepala*.

Scales triangular, shallowly fringed.....*integriscula*.

Scales bifid, rudimentary.....*bifida*.

Cuscuta indecora neuropetala (Choisy) Hitchcock

Distribution in South America: Venezuela, Brazil, and Paraguay.

Specimens examined: BRAZIL: Maranhão (Gardner 6068 in part).

PARAGUAY: Asunción (Lindman A 2325).

VENEZUELA: Ciudad Bolívar (L. H. and Ethel Zoe Bailey 1255).

Cuscuta indecora subnuda Engelmann

Cuscuta indecora subnuda Engelmann, Trans. Acad. Sci. St. Louis 1: 502. 1859.

Engelmann characterizes this variety as having an exerted capsule and short, divaricate styles. I did not see the type specimen nor any other that would seem to belong here. It is apparently a rare form.

Cuscuta indecora longisepala Yuncker

Distribution in South America: Through central part of the continent.

Specimens examined: BOLIVIA: Gran Chaco (Fries 1629).

PARAGUAY: (Balansa 2062; Morong 259).

PERU: Piura (Spruce); Pacasmayo (Mr. and Mrs. J. N. Rose 18517).

Cuscuta indecora integriuscula Engelmänn

Cuscuta indecora integriuscula Engelmänn, Trans. Acad. Sci. St. Louis 1: 502. 1859.

Scales shallowly fringed, triangular, reaching the stamens, bridged at about the middle; styles very slender, shorter than the ovary; calyx lobes triangular, acute, and about equal to the corolla tube.

Type locality: Mendoza, Argentina. *Distribution:* Known only from the type locality.

Specimens examined: ARGENTINA: Mendoza (Gillies, the type, a fragment in the Engelmänn herbarium).

Cuscuta indecora bifida Yuncker

Distribution in South America: Brazil.

Specimen examined: BRAZIL: Minas Geraes (Gardner 5036. This specimen has lanceolate calyx lobes characteristic of variety *longisepala* and the bifid scales of this).

35. *Cuscuta globosa* Ridley

(Pl. V, fig. 26, A-E)

Cuscuta globosa Ridley, Journ. Linn. Soc. 27: 48. 1890.

Stems slender. Flowers 1.5–2 mm. long, on pedicels mostly exceeding the length of the flowers; calyx about as deep as the corolla, lobes triangular, acute, frequently unequal; corolla campanulate; lobes triangular, acute, upright, about equal to the tube; stamens about equaling the lobes, slenderly subulate filaments much longer than the oval anthers; scales reaching the stamens, ovate, moderately fringed with short processes, bridged below the middle; styles longer than the globose ovary. Capsule depressed-globose, thin, not circumscissile; seeds commonly two in each capsule, about 1–1.25 mm. long, subglobose, flattened on one side, hilum small, withered corolla about the capsule towards its base, the capsule much exerted.

This species seems to be closely related to both *C. acuta* and *C. micrantha*, but differs from both of these species in the possession of pedicels mostly longer than the flowers, in its smaller flowers, and longer stamens. Also, the withered corolla is retained towards the base of the capsule.

Type locality: Island of Fernando de Noronha, Brazil. *Distribution:* Known only from the type locality.

Specimens examined: BRAZIL: Fernando de Noronha, summit of Morro Branco, and near Tangle Bay (Ridley, Lea, and Ramage 72, taken to represent the type, in the Royal Botanical Museum, Kew).

36. *Cuscuta micrantha* Choisy

Cuscuta micrantha Choisy, Mém. Soc. Phys. Hist. Nat. Genève 9: 271, Pl. 1, fig. 3. 1841; and in De Candolle, Prodrômus 9: 453. 1845.—Gay, Fl. Chile 4: 446. 1849.—Engelmann, Trans. Acad. Sci. St. Louis 1: 500. 1859.—Reiche, Fl. Chile 5: 171. 1910.

Cuscuta popayanensis Poeppig, ex Engelmann, Trans. Acad. Sci. St. Louis 1: 500. 1859. ? *Cuscuta pauciflora* Philippi, Linnaea 33: 185. 1864.

Cuscuta sparsiflora Philippi in sched. ex Reiche, Fl. Chile 5: 171. 1910.

Stems slender. Flowers about 2–3 mm. long, on pedicels shorter than the flowers in rather dense, compact clusters, or looser in the second variety; calyx about as long as the corolla tube; lobes ovate, acute; corolla campanulate, lobes ovate, acute, upright or slightly spreading, shorter than, or (in the second variety) about equaling, the tube; scales narrow, oblong, quite firmly attached for nearly their whole length, sparingly fringed about the top with few processes, bridged at about a quarter of their height, or the scales larger and more prominently fringed and with the bridges somewhat higher, about reaching the stamens; stamens shorter than the lobes, filaments shorter than or exceeding the length of the ovate-cordate to oval anthers, slender or slightly subulate; styles slender and shorter than, or about equal to, the ovoid ovary. Capsule ovoid, or globose and somewhat depressed, hilum small, about 1 mm. long.

Cuscuta micrantha typica

(Pl. I, fig. 2, A–E)

Flower clusters small, compact; corolla lobes shorter than the tube, scales narrow, sparingly fringed about the upper portion only, flowers about 2 mm. long, anthers small, ovate-cordate, ovary and capsule ovoid, stigmas small.

Type locality: Prov. Coquimbo, Chile. *Distribution:* Central Chile.

Specimens examined: CHILE: Prov. Coquimbo (Gay 538, the type, a fragment in the Engelmann herbarium); Santiago (Philippi; Reiche III-99); Cerro Blanco (Hastings 154). This specimen shows characters of this and also of the next variety).

Cuscuta micrantha latiflora Engelmann

(Pl. I, fig. 2, F, G)

Cuscuta micrantha latiflora Engelmann, Trans. Acad. Sci. St. Louis 1: 500. 1859.—Gay, Fl. Chile 4: 446. 1849.

Cuscuta pusilla Philippi, in herb.

Flowers 2.5–3 mm. long, corolla lobes about equal to the tube, anthers oval and larger than in the preceding variety; scales larger and more prominently fringed. Capsule globose and somewhat depressed, three- or four-seeded.

Type locality: Concon, Chile. *Distribution:* Chile.

Specimens examined: CHILE: (v. Better 142; this specimen approaches the typica variety; Reed); Concon (Poeppig, taken to represent the type, a fragment in the Engelmann herbarium); Valparaiso (Brenning 91); Panamavida, Linares (E. W. D. and Mary M. Holway Dec. 17, 1919); Desert of Atacama (Morong 1163); Sans Jago (Hohenacker 489).

37. *Cuscuta acuta* Engelm.

(Pl. II, fig. 8, A-E)

Cuscuta acuta Engelm., Trans. Acad. Sci. St. Louis 1: 497. 1859.

Stems slender. Flowers 2-3 mm. long, on pedicels about as long as the flowers, thin and membranous, in umbellate clusters; calyx campanulate, lobes triangular-ovate, acute to acuminate or somewhat cuspidate, or obtusish, as long as, or exceeding, the corolla tube; corolla campanulate, lobes lanceolate, acute to acuminate, upright or somewhat spreading in fruit, as long as, or longer than, the tube, stamens about three fourths as long as the corolla lobes; filaments stout, subulate, about equal in length to, or much longer than, the oval anthers; scales reaching the stamens, thin, bridged below the middle, closely adherent to the tube, fringed about the upper half; styles about equal to the globose ovary, slightly subulate. Capsule not circumscissile though very easily breaking away at the base, carrying the withered corolla about it, very thin and almost transparent in some specimens so that the seeds are visible in it, depressed-globose, intrastylar aperture comparatively large, styles upright or more often becoming divergent; seeds about 1 mm. long, ovate, hilum short, oblong.

This species differs from *C. pentagona*, which it resembles somewhat, in the shapes of the filaments, calyx and corolla lobes, and the divergent styles.

Type locality: "Chatham Island of the Galapagos group." *Distribution*: Galapagos Islands.

Specimens examined: GALAPAGOS ISLANDS: Chatham Island (Andersson, the type, a fragment in the Engelm. herbarium); South Marborough Island (Snodgrass and Heller 318); Bindloe Island (Snodgrass and Heller 769).

38. *Cuscuta insquamata* n. sp.

(Pl. V, fig. 30, A-D)

Stems slender. Flowers 1.5-2 mm. long, delicate, 4- or 5-parted, on pedicels shorter than or longer than the flowers in dense cymose clusters, membranous with a few scattering yellow, pellucid glands; calyx longer than the corolla tube, lobes triangular, acuminate; corolla shallowly campanulate, lobes upright, triangular, acuminate, about as long as the tube; stamens shorter than the lobes, ovate anthers about equal to the stout, subulate filaments; scales lacking; slender styles shorter than, or equaling, the globose, somewhat pointed ovary, which is thickened at the apex. Capsule carrying the corolla about it towards the base, depressed-globose, with a fleshy collar about the intrastylar aperture, evidently not circumscissile although a few capsules seemed to have a weaker zone towards the base where they break loose when pulled; seeds four in each capsule, roundish, hilum small.

Type locality: Bolivia. *Distribution*: Known only from the type locality.

Specimens examined: BOLIVIA: (Fiebrig 3045, the type, in the Museum of Natural History, Asunción, Paraguay, a fragment in the author's herbarium).

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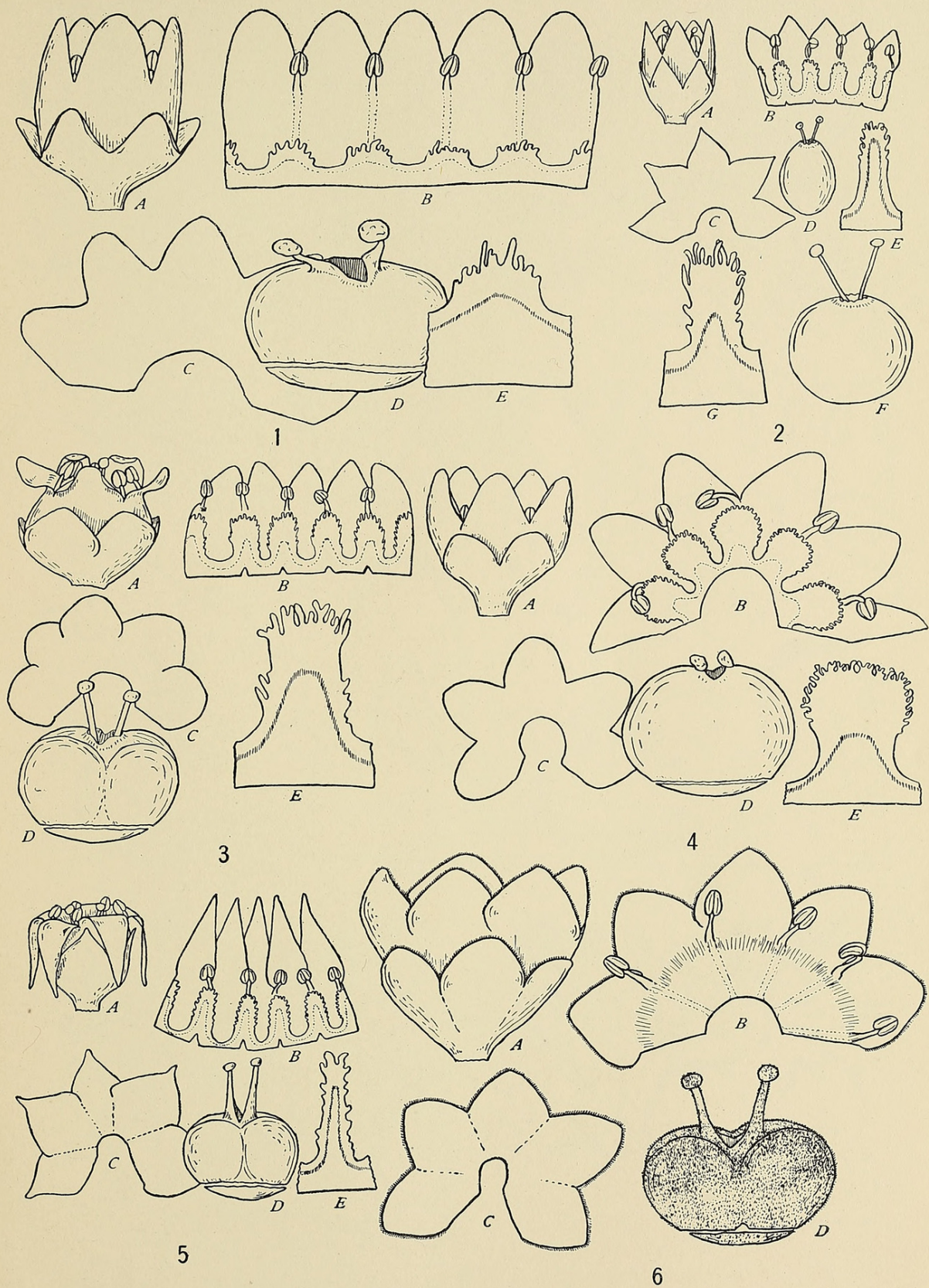
- RUDIO
— . *C. racemosa typica*
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— . *C. odorata typica*
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(1851-57). *C. grandiflora*
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2208; 2298. *C. americana congesta*
3483; 3611. *C. partita*
4518; 4768. *C. grandiflora*
4693. *C. odorata typica*
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— . *C. racemosa typica*
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EXPLANATION OF PLATES

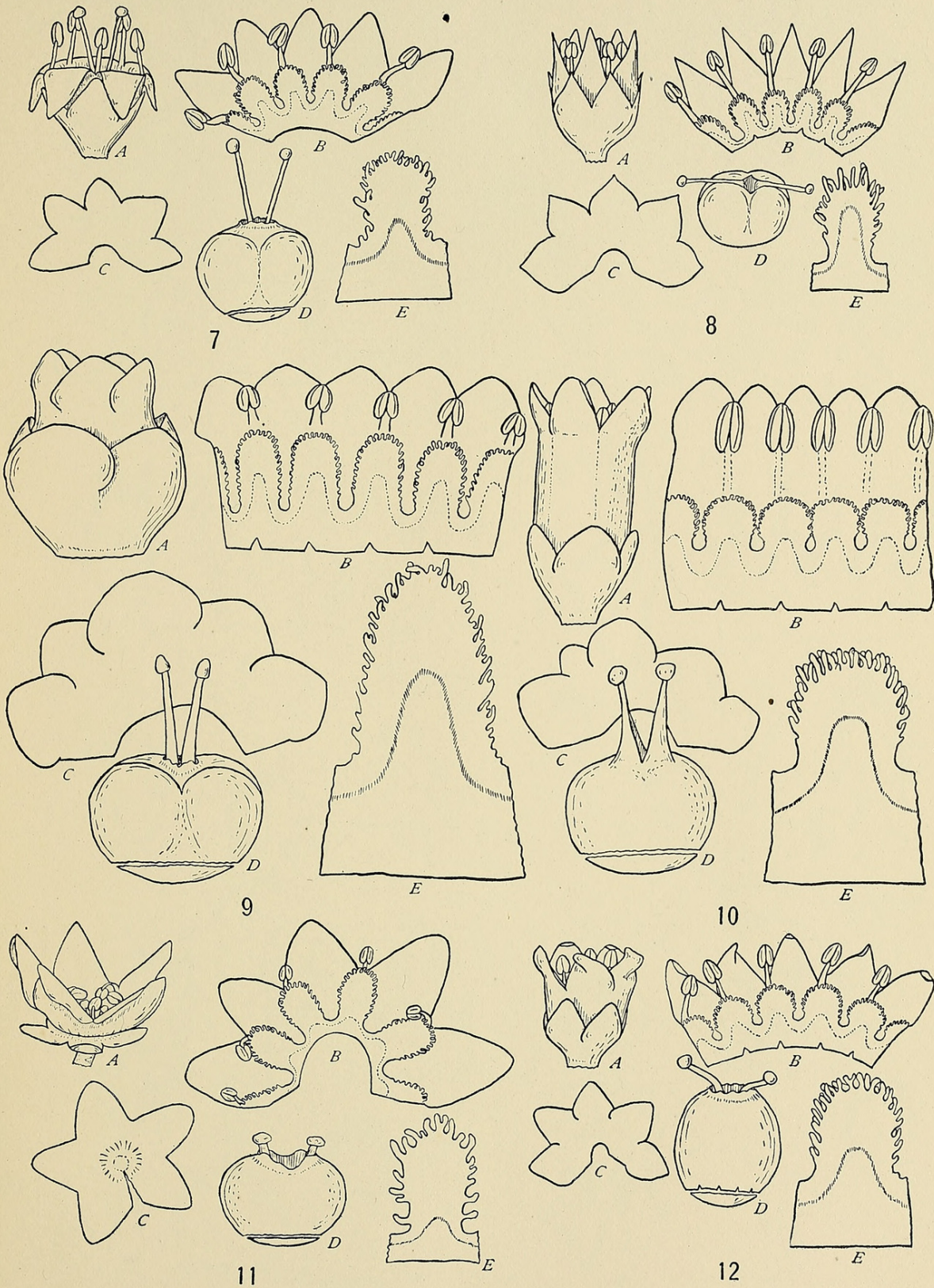
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PLATE I

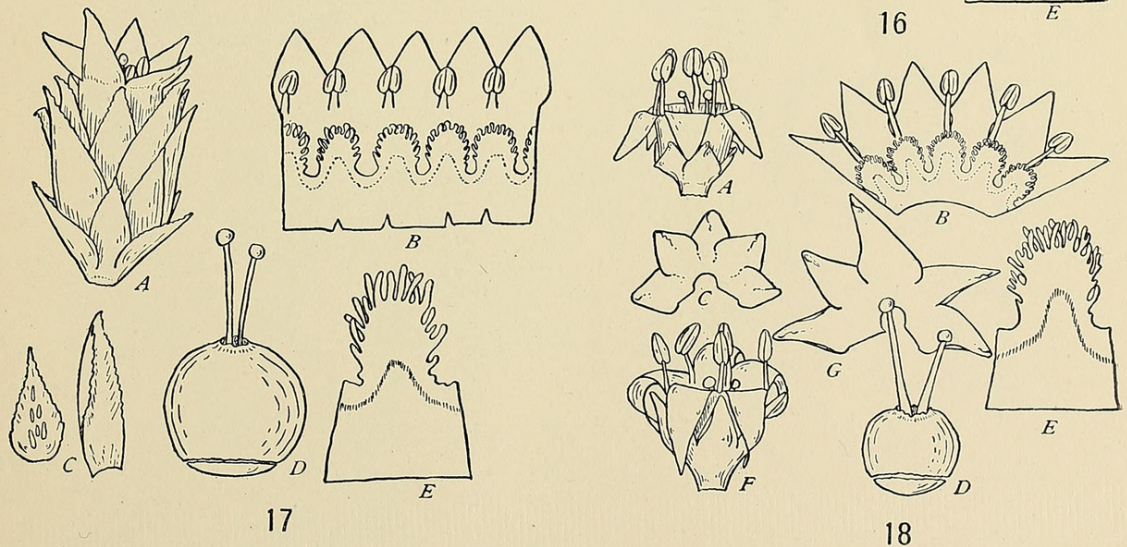
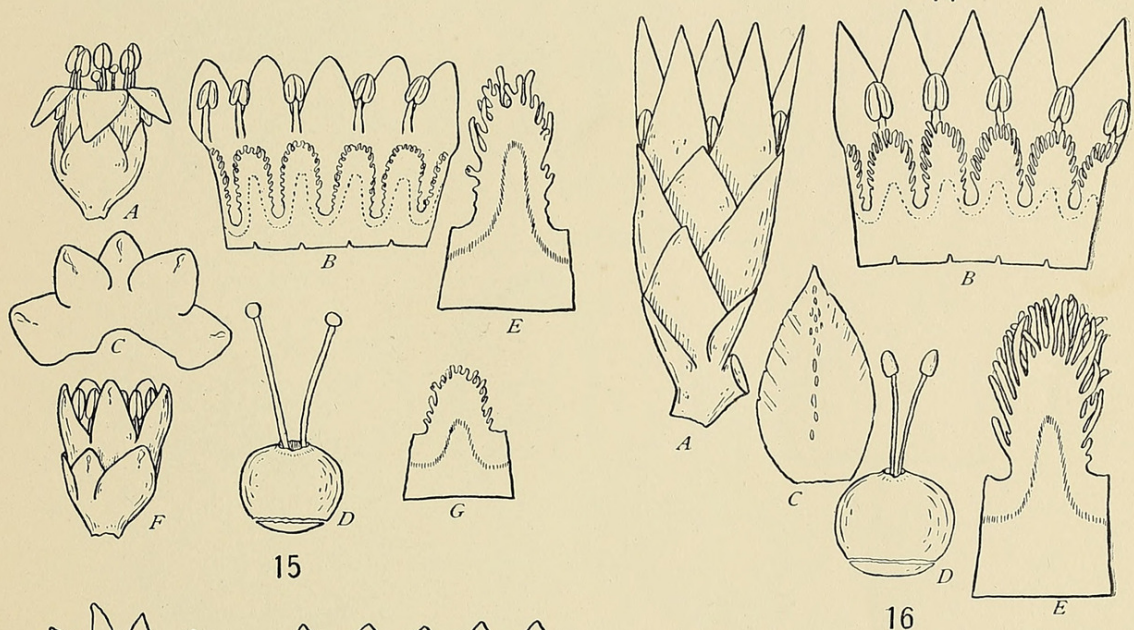
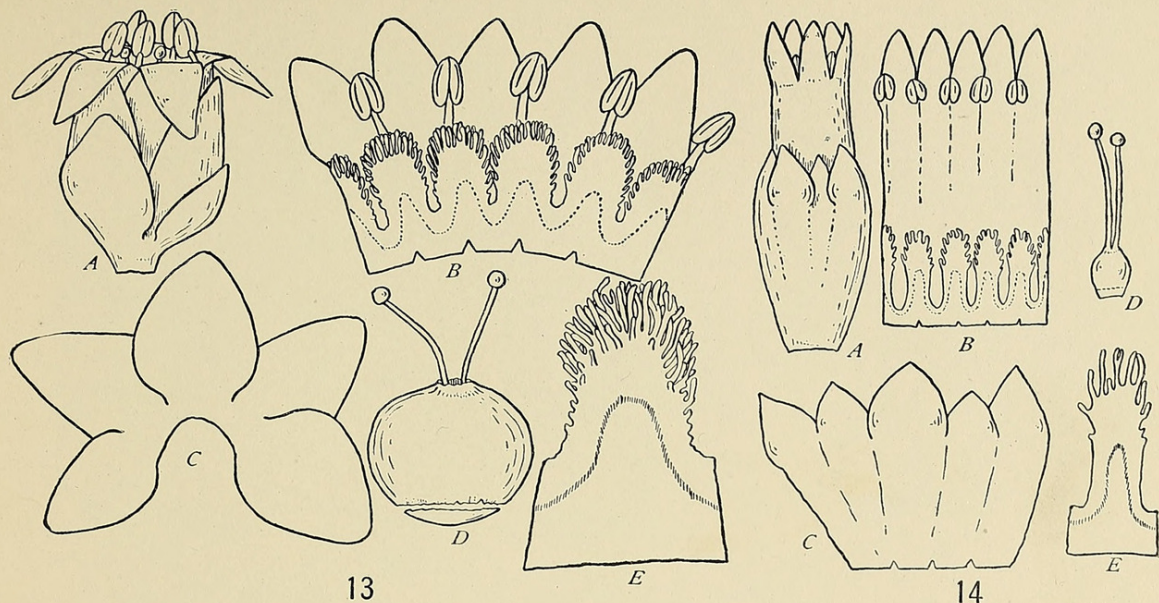
- FIG. 1, A-E. *Cuscuta brevisquamata*, the type collection.
- FIG. 2. *Cuscuta micrantha*: A-E, var. *typica*, the type collection; F, G, var. *latiflora*.
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- FIG. 5, A-E. *Cuscuta acutiloba*.
- FIG. 6, A-D. *Cuscuta grandiflora*.

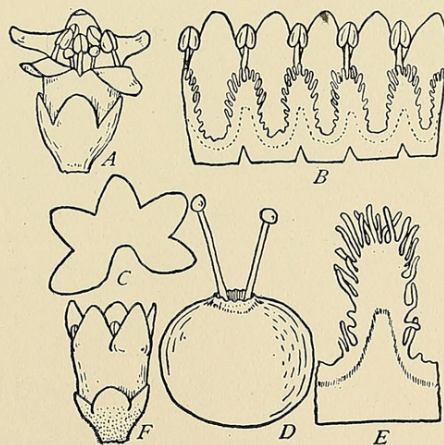
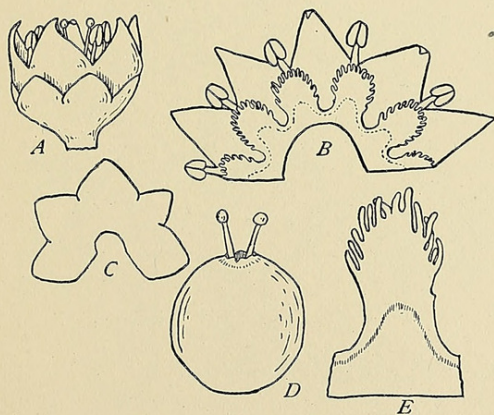
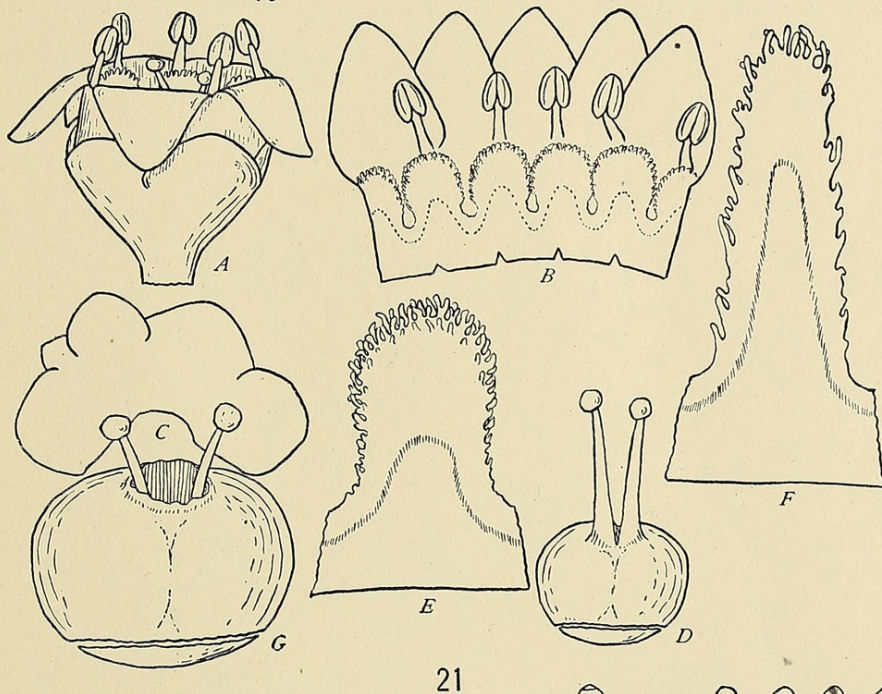
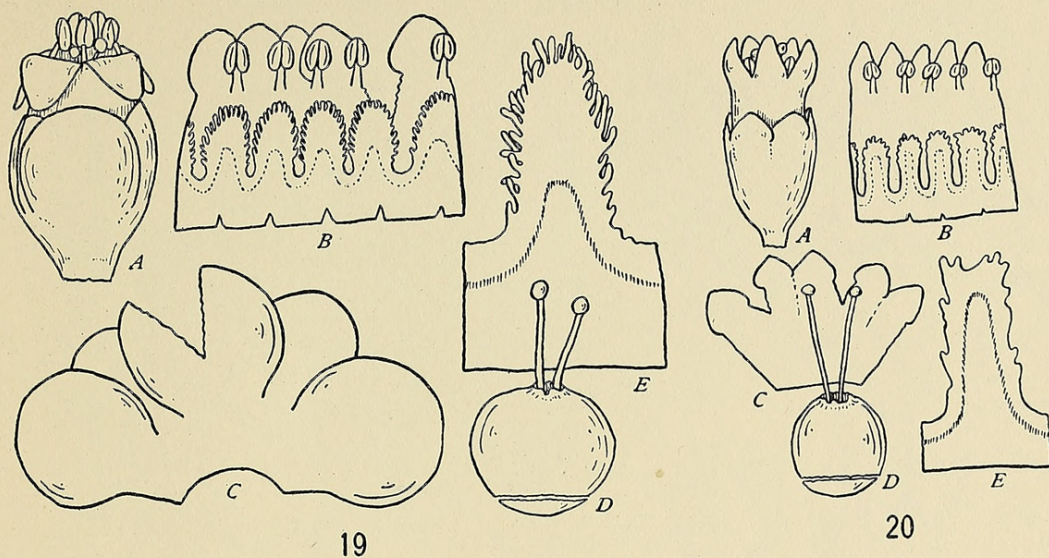


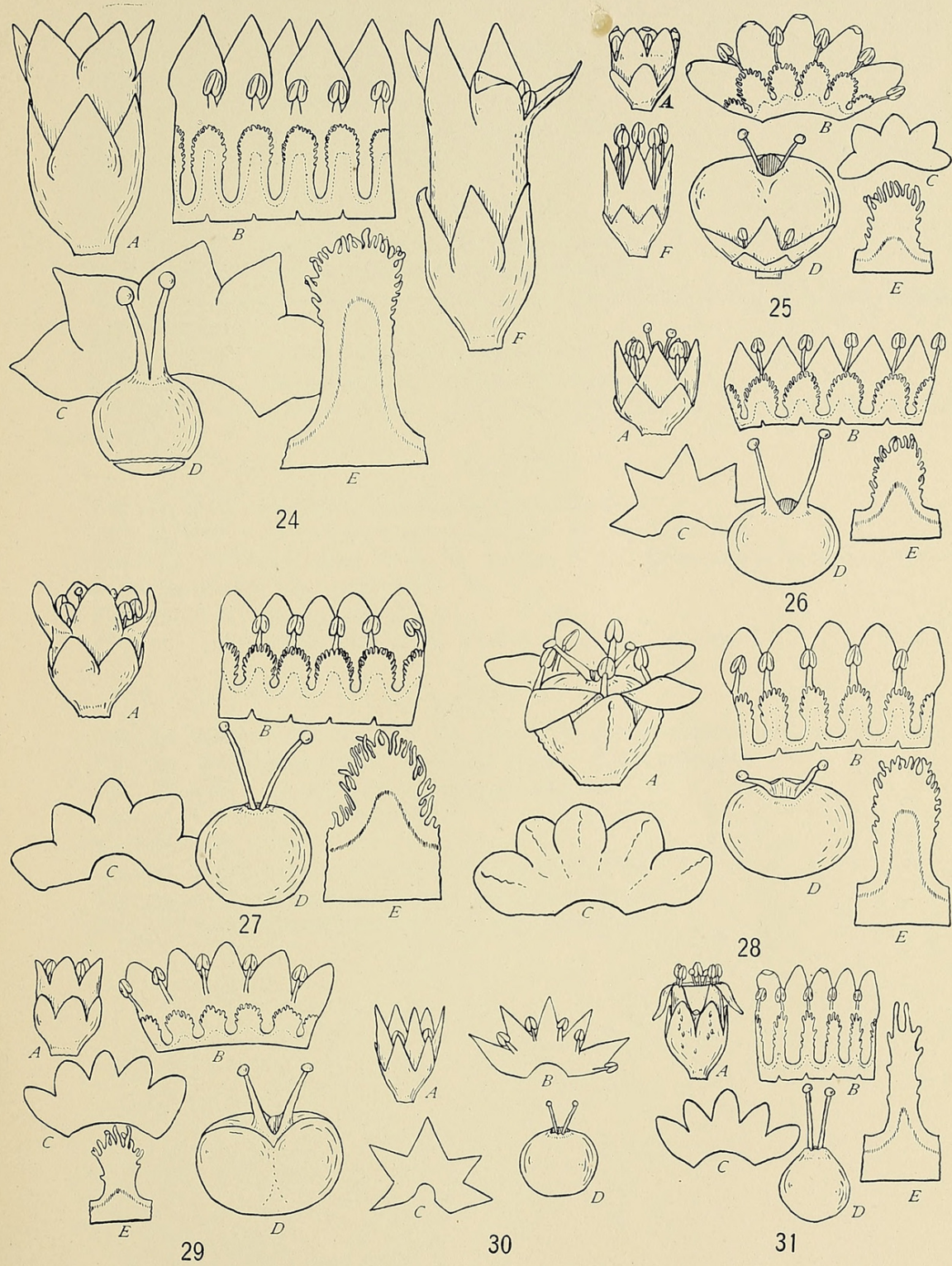
YUNCKER: SOUTH AMERICAN SPECIES OF CUSCUTA



YUNCKER: SOUTH AMERICAN SPECIES OF CUSCUTA







YUNCKER: SOUTH AMERICAN SPECIES OF CUSCUTA

PLATE II

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Yuncker, T. G. 1923. "Revision of the South American species of *Cuscuta* II." *American journal of botany* 10(1), 1-17.

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