

RHYNCHOSPORA, SECTION EURHYNCHOSPORA, IN CANADA, THE UNITED STATES AND THE WEST INDIES

SHIRLEY GALE

(Continued from page 134)

KEY TO SPECIES IN SERIES CHAPMANIAE

- a. Surface of achene pricked by tiny dark pits with the exception of the smooth region of the disc, or, if the pits are obscured, the 3-4 bristles equalling the tubercle....b.
- b. Basal leaves 4-6 mm. wide, obtusely tipped, short, forming a rosette; distal portion of the midribs of at least the lower floral scales conspicuously and upwardly ciliate 13. *R. ciliaris*.
- b. Basal leaves 2.5-3 mm. wide, acute, elongate, erect; floral scales not ciliate....c.
- c. Bristles 3-4, equalling the tubercle.....14. *R. solitaria*.
- c. Bristles 2-3, rudimentary.....15. *R. sola*.
- a. Surface of achene polished or minutely striate as the result of the crowding of small inconspicuous oblong alveoli; bristles absent or rudimentary....d.
- d. Fascicles 1-3, mostly ovoid; tubercle triangular-subulate; scales acute to aristulate.....16. *R. brachychaeta*.
- d. Fascicles solitary, corymbiform; tubercle triangular to triangular-apiculate; scales with aristate tips at least 0.3 mm. long....e.
- e. Bases typically bulbous, sheathed by short fibrous acute ovate scales; floral scales silvery to reddish.....17. *R. pallida*.
- e. Bases not enlarged; scales yellowish-brown to chestnut...f.
- f. Achenes homogeneously pale, not lustrous, 1.2-1.3 mm. wide, 1.5 mm. long; fascicles exceeded by 1-2 short, stiff bracts.....18. *R. nuda*.
- f. Achenes pale except for a conspicuous dark patch at the base and apex, glossy, 0.8-1 mm. wide, 1-1.2 mm. long; fascicles exceeded by long setaceous bracts which are often somewhat circinate....19. *R. Chapmanii*.

13. *R. CILIARIS* (Michx.) Mohr. Coarsely tufted: basal leaves short, suggesting a rosette, flat, 4-6 mm. wide, their margins and narrow keels silvery-ciliate; median and costal veins conspicuous; tips characteristically obtuse: culms terete or nearly so, stiffly erect, smooth or minutely hirsute, 3.3-8.9 dm. tall: inflorescence usually a single corymbiform to hemispherical fascicle, 1.2-2.1 cm. wide, rufous-brown, rarely accompanied by a smaller lateral fascicle on an included peduncle: spikelets ovoid, sessile, 3-flowered, 1-2-fruited, 4.5-6 mm. long: ultimate floral bracts and distal portions of the midribs of the lower scales upwardly ciliate: stamens 1-2: bristles 6, brittle, not exceeding $\frac{1}{2}$ the achene in length, often rudimentary, upwardly serrulate: achene broadly elliptic, strongly lenticular, 1.5-1.6 mm. wide, 1.6-1.8 mm. long; the surface pricked by minute pits and dark

brown except for the smooth pale central disc: tubercle broadly deltoid, compressed, 0.4–0.6 mm. high, usually wrinkled and slightly encrusted by the summit of the achene. PLATE 822, FIGS. 2A and 2B; MAP 17.—Contrib. U. S. Nat. Herb. vi. 408 (1901); Small, Man. 183 (1933). *Schoenus ciliaris* Michaux, Fl. Bor.-Am. i. 36 (1803). *R. ciliata* Vahl, Enum. ii. 235 (1806); Gray, Ann. Lyc. N. Y. iii. 209, pl. 6, fig. 19¹ (1835); Chapman, Fl. So. U. S. 526 (1860); Small, Fl. 196 (1903); Britton, Trans. N. Y. Acad. Sci. xi. 90 (1892). *R. Rappiana* Small, Man. 179, 1503 (1933). *Phaeocephalum ciliatum* House, Am. Midland Nat. vi. 201 (1920).—Boggy savannas and low pinelands of the Coastal Plain from North Carolina southward throughout the peninsula of Florida and west to eastern Louisiana. NORTH CAROLINA: savanna at Newport, Carteret Co., Godfrey, no. 5772 (G); moist black soil, low ground, Dixon, Onslow Co., Randolph & Randolph, no. 954 (G); pineland near Carolina Beach, New Hanover Co., Godfrey, no. 4699 (G); Supply Road, Southport, Brunswick Co., Blomquist, no. 5653 (D); pineland at Hallsboro, Columbus Co., Godfrey, no. 6252 (G, NC). SOUTH CAROLINA: grass-sedge bog or savanna, 12 miles northwest of Georgetown, Georgetown Co., Godfrey & Tryon, no. 747 (D, G, NY, P); grass-sedge bog or savanna, 3 miles southwest of Manning, Clarendon Co., Godfrey & Tryon, no. 924 (G, NY); Sumter, Sumter Co., Bartram, no. 3288 (P). GEORGIA: rather dry pine barrens, Coffee Co., Harper, no. 701 (G, US); intermediate pine barrens, Suwannee Lake, Ware Co., J. S. Harper, no. 84 (D, P); rather dry pine barrens south of Empress, Brooks Co., Harper, no. 1630 (G, NY, US); dry soil, Valdosta, Lowndes Co., May 27, 1940, Sargent (Sargent Herb.); moist pine barrens, Bullock Co., Harper, no. 887 (G, NY, US); pine barrens, Bethesda Church, Effingham Co., Eyles, no. 6106 (CU); in meadow, New England Camp, 8 miles north of Brunswick, Glynn Co., Moldenke, no. 5207 (NY); piney woods, Billy Island, Charleton Co., July 7, 1912, Bradley (P). FLORIDA: moist pine barrens near Jacksonville, Duval Co., Curtiss, no. 3146 (CU, D, G, P, US); Hibernia, Clay Co., March, 1869, Canby (G, US); left side Palatka Road about 1 mile from florist's, Gainesville, Alachua Co., West & Arnold, no. 7 (CU); low pineland near swamp on road between Deland and New Smyrna, Volusia Co., Sept. 11, 1926, Dr. Ball² (NY, type of *R. Rappiana*); juxta Tomoko Creek, Volusia Co., Michaux Herb. (G, TYPE-PHOTO of *Schoenus ciliaris*; NY, fragment from Michx. Herb.); low pineland, vicinity of Eustis, Lake Co., Nash, no.

¹ Figures 18 and 19 were apparently reversed in the printing. *R. ciliata* is fig. 19, not 18 as listed.

² The type of *R. Rappiana*, although undoubtedly sent to Small by Rapp, and, a year later, followed up by a collection made by Rapp himself, was actually collected by Dr. Ball as stated on the memorandum attached to the sheet.

534 (CU, G, NY, P, US); in sandy field about 3 miles west of Bithlo, Orange Co., *Moldenke*, no. 201 (D, NY); low pine barren, Okeechobee region, Brevard Co., *Fredholm*, no. 5177 (G, US); on the prairie, Kissimmee Park, Osceola Co., *O'Neill*, no. 6234 (CU); flatwood east of Loughman, Polk Co., *McFarlin*, no. 4282 (CU); Tampa, Hillsborough Co., Oct., 1877, *Garber* (G, P); in water's edge, near St. Petersburg, Pinellas Co., *Deam*, no. 2904 (G); Braidenton (? Bradenton), Manatee Co., *Tracy*, no. 7126 (G, NY, US); Istokpoga Prairie between Lake Istokpoga and Kissimmee River, Highlands Co., *Small & DeWinkler*, no. 9056 (NY); in a low pineland 11 miles east of Okeechobee City, Okeechobee Co., *O'Neill*, no. 7678 (CU); Dade Co., Nov.-Dec., 1903, *Eaton* (NY); wet pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 862a (G, NY, US). ALABAMA: swamp, Elberta, Baldwin Co., Aug. 21, 1926, *Wolf* (StB); common in swamp, Spring Hill, Mobile Co., *Bush*, no. 295 (NC, NY, US). MISSISSIPPI: Ocean Springs, Jackson Co., *Skehan*, no. 22632 (G); Biloxi, Harrison Co., *Tracy*, no. 6999 (G); Bay of St. Louis, Hancock Co., July 20, 1883, *Langlois* (US). LOUISIANA: in pine barrens, St. Tammany Parish, Sept. 14, 1892, *Langlois* (US).

Small compared his species, *R. Rappiana*, with *R. pallida* Curtis, but did not mention any possible relationship with *R. ciliaris*. However, Small's species has the short, blunt-tipped tuft of basal leaves with their silvery cilia, the ciliate bracts and scales, and the pitted, strongly lenticular achene of *R. ciliaris*. I cannot help but think that Small neglected to compare his material with the older species, as the two are unquestionably identical.

14. *R. SOLITARIA* Harper. Sparingly caespitose or solitary: leaves linear, erect, flat, 2.5–3 mm. wide, smooth with blunt tips: culms terete or nearly so, slender, erect, smooth, 5.2–6.4 dm. high: inflorescence a single turbinate to subhemispherical fascicle, 1.5 cm. wide: spikelets lanceolate to fusiform, 6–7 mm. long, acuminate, sessile, 1-flowered, split open by the maturing achene: scales chestnut, with an aristate tip 0.6–0.8 mm. long: stamens 2: bristles 3–4, extremely fragile, upwardly serrulate, equalling the tubercle: achene obovate, lenticular, 1.3 mm. wide, 1.4 mm. long; the surface, with the exception of a pale smooth disc, brown and pitted: tubercle triangular-apiculate, compressed, 0.6 mm. long. PLATE 822, FIGS 4A and 4B; MAP 22.—Bull. Torr. Bot. Cl. xxviii. 468 (1901); Small, Fl. 193 (1903) and Man. 182 (1933). *Phaeocephalum solitare* House, Am. Midland Nat. vi. 202 (1920).—Southern Georgia. GEORGIA: moist pine bar-

rens, Tifton, Berrien Co., Harper, no. 668 (NY, TYPE; G, ISOTYPE) and no. 1677 (G, US).

At first glance *R. solitaria* appears very similar to *R. pallida* M. A. Curtis, but its details—the simple non-tuberos bases, blunt-tipped leaves, terete culm, chestnut spikelets, aristate scales, well developed bristles and pricked surface of the achene—indicate that it is clearly a distinct species which, so far as I am aware, is known only from collections made in the type-locality.

15. *R. sola*, sp. nov. Planta laxa caespitosa: foliis erectis valde involutis saltem siccatis 1.0–1.5 mm. latis; apicibus obtusis: culmis subteretibus, tenuibus, erectis, saepe flexilibus, 3.2–5.7 dm. altis; inflorescentia ex fasciculo uno parvo compacto turbinato vel hemisphaerico 0.8–1 cm. lato constata; bracteis obscuris fasciculum non superantibus: spiculis lanceolatis, confertis, sessilibus 2-floris, monocarpis, 5 mm. longis: squamis mucronatis, dense imbricatis castaneis: setis 2–3, rudimentariis, antrorse serrulatis: achaenio valde lenticulari-obovoideo 1.1–1.2 mm. lato 1.2–1.6 mm. longo foveolato fusco; disco medio pallido: tuberculo compresso-deltaideo. PLATE 820, FIGS. 1A and 1B; MAP 21.—*R. fascicularis* sensu C. Wright in Sauvalle, Anal. Acad. Ci. Habana, viii. 84 (1871) and Fl. Cub. 180 (1873), in part; non (Michx.) Vahl. *R. distans* sensu Grisebach, Cat. Pl. Cub. 243 (1866), non (Michx.) Vahl.—Low pinelands of western Cuba. CUBA: pinales, Hato Quemado, Pinar del Rio, Nov. 20, 1862?,¹ and San Juan-Guanes, Wright, no. 3397, sheet labeled B (G, in part); Wright, no. 3397, sheet labeled A (G, TYPE); Wright, no. 3399 sheet labeled A (NY, in part)²; Wright, no. 3397, in Herb. Canby, no. 396 (US, in part); low savannas, Chirigota, Pinar del Rio, Oct. 26, 1863?,³ Wright, no. 3399 (US, in part); Sabana de la Maguina, south of Pinar del Rio City, Pinar del Rio, November 28, 1940, Léon & Alain, no. 19422 (G).

With the exception of the Léon & Alain collection, no. 19422, *R. sola* is known only from specimens collected by Charles Wright and distributed as *R. distans* no. 3397 and *R. deflexa* Gris. no. 3399. I have seen 3 sheets of no. 3397; of the two located at the Gray Herbarium, one contains specimens of *R. sola* exclusively; this I am designating as the TYPE. The other sheet is mixed, containing on the left a specimen of *R. fascicularis* (Michx.) Vahl, var. *typica*. Sheet no. 3397 from the Canby

¹ See Underwood, Bull. Torr. Bot. Cl. xxxii. 297 (1905). Underwood misread "Quemado" as "Queniando."

² See footnote to Wright, no. 3399 under *R. fascicularis* (Michx.) Vahl.

³ See Underwood, Bull. Torr. Bot. Cl. xxxii. 297 (1905).

Herbarium, now at the National Museum, is even more confusing. The specimen on the left is *R. sola*, that in the center, accompanied by two inflorescences, is *R. fascicularis* and that on the far right, *R. Wrightiana* Boeckl. A single sheet, no. 3399, from the Herbarium of the New York Botanic Garden contains a specimen of *R. sola*, located centrally and accompanied, right and left, by specimens of *R. fascicularis* to which the label *R. deflexa* pertains.

Although it is evident that the original distributor failed to distinguish between *R. sola* and *R. fascicularis*, these two species are not of the same series, and, once several important details have been observed, can be rather easily distinguished. As stated in the description, the leaves of *R. sola* end in a relatively abrupt blunt tip; and the slender culm bears, without exception, a single terminal fascicle which is subtended by inconspicuous bracts not exceeding the fascicle in height. The leaf-tips of *R. fascicularis* are triquetrous and attenuated; the culm usually bears one or more distant lateral fascicles, and the terminal fascicle is exceeded by a bract approximating twice the height of the fascicle. Occasionally young or reduced plants of *R. fascicularis* bear but a solitary terminal fascicle, but in all cases the spikelets remain divergent and ovoid in shape, not mainly ascending and ovate-lanceolate as those of *R. sola*.

Less obvious differences between the species are supplied by the details of the achenes. That of *R. sola* is obovoid, extremely lenticular, with a punctulate surface, and accompanied by 2–3 rudimentary bristles. The achene of *R. fascicularis*, on the contrary, is subelliptic to suborbicular, markedly biconvex, with a smooth surface, and accompanied by six bristles varying in height from $\frac{1}{2}$ the achene to exceeding the tubercle.

The natural affinities of *R. sola* lie, not with *R. fascicularis*, but with the very rare continental species, *R. solitaria* Harper, which is known only from its type-locality in Berrien County, Georgia. Although larger in all its parts than *R. sola*, this species also has obtusely tipped (but wider) leaves, a slender culm, and a single terminal fascicle. However, the lanceolate-acuminate to fusiform spikelets of *R. solitaria*, measuring 6–7 mm. long, are easily distinguished from the ovate-lanceolate (4–5 mm. long) spikelets of *R. sola*. The achenes again emphasize the close

relationship existing between the two species, for they are identical in both shape and surface-sculpturing, differing only in size, color, and the relative development of bristles.

The name, *R. sola*, has been selected because this species is closely related to *R. solitaria* and shares its characteristic feature of bearing only one fascicle.

16. *R. BRACHYCHAETA* (by error appearing as *brachychata*) C. Wright. Caespitose: leaves filiform, promptly involute, ascending, smooth except for the sparingly serrulate upper margins: culm terete or nearly so, filiform, wiry, flexuous, smooth, 3.5–5.2 dm. high: inflorescence of 1–3 remote fascicles, 0.6–1.2 cm. wide, usually oblong in outline to approaching corymbiform: spikelets fusiform and sterile, or ovoid, acute and fertile, 1-flowered, 3 mm. long: scales acute to aristulate, drab-chestnut: bristles 1–2, rudimentary: achene broadly obovoid, with a pale central disc, smooth or faintly cancellate, 0.9–1.1 mm. wide, 1.2 mm. long: tubercle subulate, 0.4 mm. long, with a broad base. PLATE 822, FIGS. 1A and 1B; MAP 20.—C. Wright in Sauvalle, Anal. Acad. Ci. Habana, viii. 85 (1871) and Fl. Cub. 180 (1873), as "*brachychata*"; Britton, Trans. N. Y. Acad. xi. 90 (1892), in part. *R. pallida* sensu Clarke in Urban, Symb. Ant. ii. 126 (1900), in part, non M. A. Curtis; sensu Kükenthal, Fedde, Rep. Spec. Nov. xxiii. 209 (1926), in part, non M. A. Curtis. *R. Chapmanii* sensu Britton, Mem. Soc. Cubana Hist. Nat. ii. 194 (1916), non M. A. Curtis. *R. Blauneri* Britton, Bull. Torr. Bot. Cl. 1. 56 (1923). *Phaeocephalum brachychaetum* House, Am. Midland Nat. vi. 201 (1920).—Fresh-water shallows of western Cuba, Dominican Republic and eastern Puerto Rico. CUBA: in occasionally flooded places in pinelands south of railroad, Herradura, Pinar del Rio, *Ekman*, no. 17737 (G); "en sabanas bajas y a arillas de lagunas, jurisdiccion de Pinar del Rio,"¹ *Wright*, no. 3782 (G, TYPE; NY, US, probable ISOTYPES). HISPANIOLA: hard soil, shallow water, Laguna Ahoga-los-perros, Sabana Guabatico, prov. Santo Domingo, Llano Costero, Dominican Republic, *Ekman*, no. 13309 (US). PUERTO RICO: Sierra Luquillo, *Blauner*, no. 247 (NY, type of *R. Blauneri* Britton).

In his list of North American Rhynchospora, published in 1892, Britton recognized *R. brachychaeta* C. Wright, attributing it to Sauvalle. However, that Britton's conception of this species was at best uncertain is seen in his synonyms "*R. gracillima* Sauv." and "*R. fascicularis* var. *stenophylla* Chapm. mss." *R. gracillima* Wright in Sauvalle, I am recognizing under its

¹ Wright in Sauvalle, Fl. Cub. 181 (1873).

legitimate name, *R. Wrightiana* Boeckl.; *R. fascicularis* var. *stenophylla* was later authentically published by Chapman as *R. stenophylla* and has been maintained as such. Keeping this confusion of 3 species in mind, one is not surprised to find that Britton, in 1916, revised his earlier opinion, this time referring *R. brachychaeta* to *R. Chapmanii* Curtis.

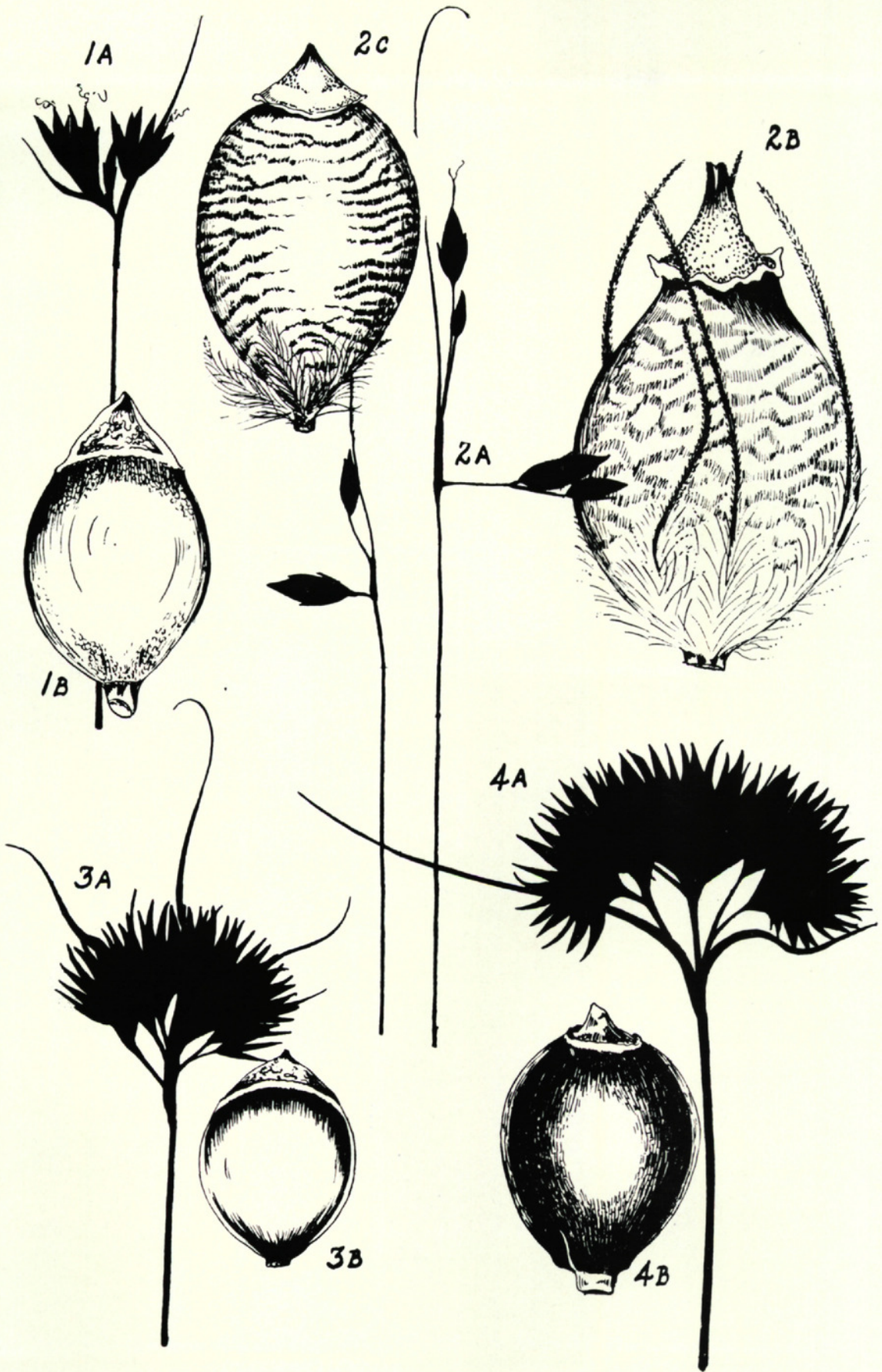
Superficially *R. brachychaeta* and *R. Chapmanii* have much in common. The former is readily distinguished, however, by its acute, not long-aristate, spikelets, and its inflorescence consisting of 1-3 remote narrowly elliptic fascicles in contrast to the single terminal corymbs of *R. Chapmanii*. Close observation by means of a lens enables one to distinguish the two species on a basis of their achenes as well. The achene of *R. brachychaeta* is obovate, dull, with a pale central disc, with a subulate tubercle and with rudimentary bristles. The achene of *R. Chapmanii*, on the contrary, is subelliptic, the disc so enlarged as to cover the entire surface with the exception of a small dark patch at the base and the apex. The surface is glossy, the tubercle deltoid-apiculate, and the bristles are lacking. Clarke, on the other hand, lists *R. brachychaeta* in the synonymy of *R. pallida* M. A. Curtis; but Blauner no. 247 bears Clark's annotation "*Rynchospora divergens* Curtis!"

In 1922, Britton, studying the same specimen, Blauner no. 247, realized that it was a good species wrongly annotated by Clarke; but, failing to see its connection with Wright's *R. brachychaeta*, set it up as a new species, *R. Blauneri*.

The confusion of *R. brachychaeta* with *R. pallida*, initiated by Clarke, was furthered by Kükenthal who, in 1926, assigned Wright, nos. 3782 and 3397 to the latter species. No. 3397 at the Gray Herbarium is a mixed sheet, containing on the left a specimen of *R. fascicularis* (Michx.) Vahl, and it suggests the possibility that the sheets seen by Kükenthal are also mixed. However, even if this were so, it is quite improbable that the specimens of either sheet are *R. pallida*, since this species, unmistakable in its larger achene, pale corymb and tuberous bases, has not been reported south of the Carolinas.

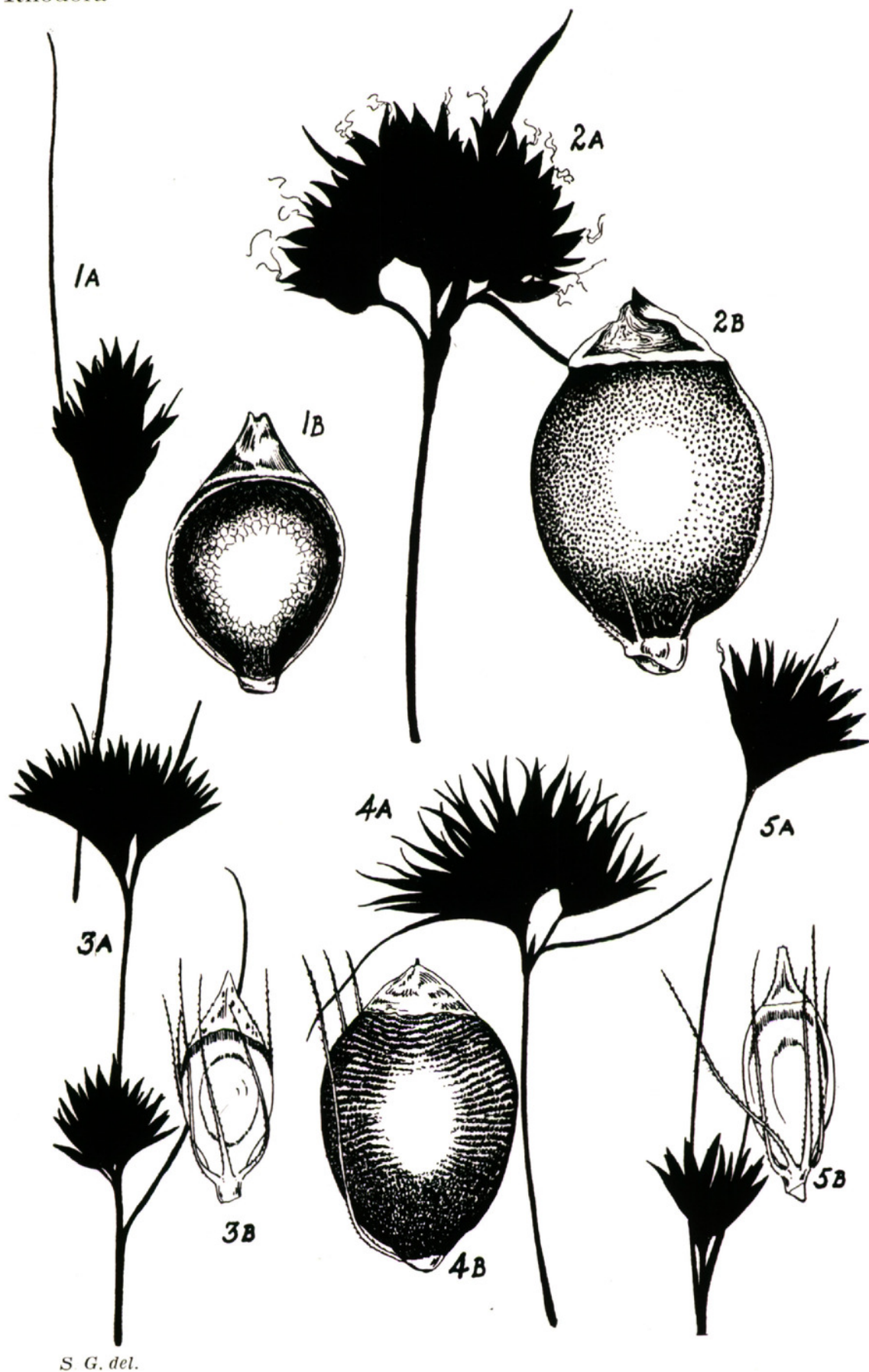
I have corrected the original spelling of this name, following the precedent of authors since Wright.

17. *R. PALLIDA* M. A. Curtis. Caespitose with short stolons; base bulbous, sheathed by fibrous, acute, ovate scales: leaves long, narrowly linear, 1–3 mm. wide, erect, flat with the exception of the triquetrous tip; upper margins upwardly scabrous: culms acutely trigonous, slender, flexuous, 4.4–9.4 dm. tall, upper angles sparingly serrulate: inflorescence a single turbinate to hemispherical fascicle, 1.4–2.6 cm. wide: spikelets ovoid-attenuate, 4.5–5 mm. long, sessile, 1-flowered: scales forced apart by the developing achene, with aristate tips 0.3–0.4 mm. long, silvery, pale to reddish: stamens 2: bristles obsolete or 1–3 rudimentary stubs 0.2 mm. long: achene obovate to broadly elliptic in outline, strongly lenticular, the surface finely striate, the umbo light and the marginal regions chestnut-brown, 1.2–1.5 mm. wide, 1.4–1.8 mm. long: tubercle compressed, deltoid-apiculate, 0.2–0.4 mm. high. PLATE 821, FIGS. 4A and 4B; MAP 18.—Am. Journ. Sci. ser. 2. vii. 409 (1849), non (Nees) Steud.; Chapman, Fl. So. U. S. 527 (1860); Gray, Man. ed. 5: 568 (1867); Britton & Brown, Ill. Fl. i. 277, fig. 649 (1896); Britton, Man. 184 (1901); Small, Fl. 194 (1903) and Man. 179 (1933); Robinson & Fernald in Gray, Man. ed. 7: 200, fig. 322 (1908); Fernald, RHODORA, xlii. 378, map 14, and 381 (1940). *R. Curtisii* Steudel, Cyp. 141 (1855); Boeckeler, Linnaea, xxxvii. 564 (1873); non Britton ex Small. *Phaeocephalum pallidum* House, Am. Midland Nat. vi. 202 (1920).—Open bogs and wet depressions, often in pineland, Long Island, New York, south through North Carolina. NEW YORK: pine-barren swamp, Central Islip, Suffolk Co., *Ferguson*, no. 515 (G, NY). NEW JERSEY: near P. R. R. 1½ miles northwest of Allaire, Monmouth Co., *Van Pelt & Brown*, no. 244 (P); Lawrence Station, Mercer Co., Aug. 6, 1885, *Peters* (P); growing in dense tufts, Tom's River, Ocean Co., *Parker* (G); sandy peaty edge of cedar swamp, Roberts Branch, Batsto River, Hampton Gate, Burlington Co., *Fogg*, no. 4795 (CU, NY, P); swamp near Merchantville, Camden Co., Sept. 9, 1866, *Parker* (G, P); Woodbury, Gloucester Co., *Herb. C. E. Smith* (P); Mays Landing, Atlantic Co., *Pennell*, no. 8166 (NY); northwest along Port Norris Trolley, Dividing Creek, Cumberland Co., *Long*, no. 4835 (P); boggy meadow, Swain, Cape May Co., Aug. 8, 1925, *Stone* (G). DELAWARE: pine-barren bogs near Laurel, Sussex Co., Aug. 19, 1880, *Commons* (NY, P). MARYLAND: swamps, Eastern Shore, near Salisbury, Wicomico Co., Sept., *Canby* (US). VIRGINIA: sphagnous savanna-like swale east of Cherry Grove, south of South Quay, Nansemond Co., *Fernald & Long*, no. 10550 (CU, G, P, NY). NORTH CAROLINA: wet depression, pineland, beside railroad, 1 mile east of Bailey, Nash Co., *Oosting*, no. 1677 (CU); damp or peaty sandy soil, 3 miles west of Sims, Wilson Co., *Wiegand & Manning*, no. 613 (G); savanna 8 miles southwest of Washington, Beaufort Co.,



S. G. del.

RHYNCHOSPORA NUDA: FIG. 1A, inflorescence, $\times 2$; FIG. 1B, achene, $\times 20$.
 R. OLIGANTHA, var. TYPICA: FIG. 2A, inflorescence, $\times 2$; FIG. 2B, achene, $\times 20$.
 R. OLIGANTHA, var. BREVISETA: FIG. 2C, achene, $\times 20$.
 R. CHAPMANII: FIG. 3A, inflorescence, $\times 2$; FIG. 3B, achene, $\times 20$.
 R. PALLIDA: FIG. 4A, inflorescence, $\times 2$; FIG. 4B, achene, $\times 20$.



S. G. del.

RHYNCHOSPORA BRACHYCHAETA: FIG. 1A, portion of inflorescence, $\times 2$; FIG. 1B, achene, $\times 20$.

R. CILIARIS: FIG. 2A, inflorescence, $\times 2$; FIG. 2B, achene, $\times 20$.

R. FILIFOLIA: FIG. 3A, inflorescence, $\times 2$; FIG. 3B, achene, $\times 20$.

R. SOLITARIA: FIG. 4A, inflorescence, $\times 2$; FIG. 4B, achene, $\times 20$.

R. FUSCOIDES: FIG. 5A, inflorescence, $\times 2$; FIG. 5B, achene, $\times 20$.

Godfrey, no. 4393 (G); wet soil, open pinelands, Newport, Carteret Co., *Randolph & Randolph*, no. 925 (G); moist sandy soil, Fayetteville, Cumberland Co., Biltmore Herb., no. 4472c (US); low pineland, 15 miles north of Laurenborg, Scotland Co., *Godfrey*, no. 5055 (G); wet sandy soil, north side, White Lake, Bladen Co., *Blomquist*, no. 10862 (D); Burgaw, Pender Co., Aug. 1879, *Hyams* (US); low grounds near Wilmington, New Hanover Co., *Biltmore Herb.*, no. 4472 (NC).

18. *R. nuda*, sp. nov. Planta caespitosa: foliis filiformibus vel 1.5 mm. latis, planis, saepissime laevibus, laxae ascendentibus: culmis subtriquetris gracilibus ascendentibus, apicem versus flexilibus vel laxis, 3–4.3 dm. altis: fasciculo solitario, compacto subhemisphaerico vel turbinato, 0.5–1 cm. lato: bracteis setaceis quam fasciculo paullo longioribus: spiculis fertilibus lanceo-ovoideis 4 mm. longis: spiculis sterilibus fusiformibus et numerosis, confertis ascendentibus sessilibus: squamis dense imbricatis, pallidis; mucrone prominente 0.4 mm. longo: setis nullis vel rare 1 rudimentaria antrorse serrulata: achaenio obovoideo lenticulari leviter biconvexo 1.2–1.3 mm. lato 1.5 mm. longo, laevi pallido opaco: tuberculo compresso-deltaideo, apiculato 0.4 mm. alto. PLATE 821, FIGS. 1A and 1B; MAP 23.—Moist sand, Isle of Pines. CUBA: moist white sand, vicinity of Los Indios, Isle of Pines, Feb. 13, 1916, *Britton, Britton & Wilson*, no. 15809 (NY, TYPE) and no. 14177 (NY); in a wet palm grove of *Colpothrinax Wrightii*, between Nueva Gerona and McKinley, Isle of Pines, Feb. 23, 1939, *León, Victorin & Carabia*, no. 18770 (CU); sandy savanna between Nueva Gerona and McKinley, Isle of Pines, Feb. 23, 1939, *León, Victorin & Carabia*, no. 18757 (CU, in part).

This West Indian species is known to me only from three specimens collected on the Isle of Pines. It is similar to *R. Chapmanii* M. A. Curtis both in the slender habit and details of the inflorescence—the numerous fusiform sterile spikelets, strongly awned scales, ovoid, lenticular, bristleless achenes. It differs from the latter in having stiffly erect, not circinate bracts and larger fertile spikelets which are not forced open by the growing achene and which are few in number so that the resultant fascicles are smaller and less corymbiform than those of *R. Chapmanii*.

R. nuda also differs from *R. Chapmanii* in details of the achene. That of the latter measures 0.8–1 mm. wide, 1–1.2 mm. long, is typically lustrous, pale, with dark brown patch at the base and apex. The achene of the Cuban species, on the other hand, is 1.2–1.3 mm. wide, 1.5 mm. long, with a uniformly pale dull surface.

The only close relative of *R. nuda* on the islands is *R. brachychaeta* Wright. However, the terminal fascicles of the latter, although similarly characterized by sterile fusiform spikelets, are occasionally accompanied by 1 or 2 smaller lateral fascicles. Moreover, the scales of *R. brachychaeta* are acute, or, at the most, aristulate, in contrast with the strongly aristate scales of *R. nuda*; and the achenes of the former are smaller (0.9–1.1 mm. wide, 1.2 mm. long), dark brown relieved by a large pale disc and usually accompanied by 1–2 rudimentary bristles.

The specific name has been chosen with reference to the almost complete failure of the bristles, an uncommon condition in the Section *Eurhynchospora*.

19. *R. CHAPMANII* M. A. Curtis. Densely caespitose: leaves capillary to 1 mm. wide, flat, becoming involute on drying; upper margins finely serrulate: culms obtusely trigonous, slender, wiry, erect, smooth, 3–5.1 dm. high: inflorescence a single terminal corymbiform fascicle, 0.5–1.7 cm. wide, closely compacted, less often slightly exceeded by a smaller secondary fascicle: bracts several, filiform, exceeding the fascicles, erect or slightly circinate: fertile spikelets slenderly ovoid-aristate, mostly ascending, closely approximate, 1-flowered, split apart by the maturing achene, 2.5–3 mm. long; sterile spikelets fusiform: scales with aristate tips 0.4–0.6 mm. long, pale chestnut-brown: stamens 1–2: bristles none: achene subelliptic in outline, strongly lenticular, 0.8–1 mm. wide, 1–1.2 mm. long, pale except for the dark brown patch at base and apex; surface obscurely rugulose to smooth, glossy: tubercle deltoid-apiculate with a broad base, compressed, 0.2–0.3 mm. high. PLATE 821, FIGS. 3A and 3B; MAP 19.—Am. Journ. Sci. ser. 2. vii. 409 (1849); Chapman, Fl. So. U. S. 528 (1860); Small, Fl. 194 (1903) and Man. 179 (1933). *R. conferta* Chapman ex M. A. Curtis, Am. Journ. Sci. ser. 2. vii. 409 (1849), in syn. of *R. Chapmanii*. *R. Grayana* Chapman ex M. A. Curtis, Am. Journ. Sci. ser. 2. vii. 409 (1849), pub. in syn. of *R. Chapmanii*. *Phaeocephalum Chapmanii* House, Am. Midland Nat. vi. 201 (1920).—Low, sandy pineland of the Coastal Plain of North Carolina to Florida and west to eastern Louisiana. NORTH CAROLINA: wet sandy soil, waste ground, Beaufort, Carteret Co., *Randolph & Randolph*, no. 795 (G); savanna, 8 miles south of Jacksonville, Onslow Co., *Godfrey*, no. 6472 (G); 7 miles southwest of Wilmington, Brunswick Co., *Godfrey*, no. 6220 (G); moist place, Pireway, Columbus Co., *Schallert*, no. 3973 (US); low pineland near White Lake, Bladen Co., *Blomquist*, no. 5617 (D); pineland at Delway, Sampson Co., *Godfrey*, no. 6170 (D, G); low pineland at Dunn, Harnett Co., *Godfrey*,

no. 6139 (D, G). SOUTH CAROLINA: grass-sedge bog or savanna, 18 miles north of Georgetown, Georgetown Co., *Godfrey & Tryon*, no. 1609 (D, G, NY); damp pine levee, Santee Canal, Berkeley Co., *Ravenel*, no. 25 (G); grass-sedge bog or savanna 14 miles south of Monks Corner, Berkeley Co., *Godfrey & Tryon*, no. 1432 (G, NY); pineland pool, 5 miles south of Hardeeville, Beaufort Co., *Eyles*, no. 4378 (CU). GEORGIA: moist pine barren near Monteith, Chatham Co., *Eyles*, no. 6455 (CU); sandy borders of pine-barren stream, Fitzgerald, Ben Hill Co., *Harper*, no. 1420 (G, NY, US); moist pine barrens, Sweet-water Creek, Clinch Co., *Eyles*, no. 244 (D). FLORIDA: moist pine barrens near Jacksonville, Duval Co., *Curtiss*, no. 5015 (G, NY, US); Tocai, St. Johns Co., *Palmer*, no. 605 (G); Tampa, Hillsborough Co., Oct., 1877, *Garber* (G, P); prairie, 18 miles east of Okeechobee City, St. Lucie Co., *Small et al.*, no. 9300 (NY); edge of dried-up pool in low pineland, vicinity of Eustis, Lake Co., *Nash*, no. 1396 (NY); turfy, boggy, sandy meadow, 7 miles west of Sneads, Jackson Co., *Wiegand & Manning*, no. 589 (G); sloping moist pine barrens about 5 miles south of Bristol, Liberty Co., *Harper*, no. 47 (G, NY, P); flat pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 201a (G, NY, US); low open places, Lynn Haven, Bay Co., Oct. 12, 1921, *Billington* (US). ALABAMA: low pineland about Mifflin Creek, Elberta, Baldwin Co., July 9, 1926, *Wolf* (StB); sandy pineland, Theodore, Mobile Co., *Pennell*, no. 4446 (NY). MISSISSIPPI: Ocean Springs, Jackson Co., *Seymour*, no. 15 (CU, D, NY, US); Biloxi, Harrison Co., *Tracy*, no. 4888 (US). LOUISIANA: open pineland, 1 mile north of Abita Springs, St. Tammany Parish, *Pennell*, no. 4167 (NY).

Series 4. **Fuscae** (Clarke), stat. nov. et emend. Represented in the peat bogs of the northeast by the common *R. fusca*, also infrequent species in low places and pond-margins of the Coastal Plain and Cuba. Habit solitary to caespitose: leaves filiform to 2 mm. wide: culms filiform to slender: inflorescence 2–4 turbinate to hemispherical fascicles: spikelets maturing several achenes: scales loosely imbricate, castaneous to fuscous: bristles upwardly serrulate, well developed: achenes pyriform, slenderly elliptic, often strongly biconvex, smooth to glossy (minutely granular in *R. fuscoides*): tubercle triangular, compressed, thickly setose.—*Rhynchospora* Series B. *Diplostyleae* Sect. 4. *Fuscae* Clarke in Urban, Symb. Ant. ii. 105 (1900), in part. *Rhynchospora* V. *Glomeratae* Small, Man. 175 (1933), in small part.

KEY TO SPECIES IN SERIES FUSCAE

- a. Fascicles 1–3, turbinate or ovoid, the relatively few spikelets strongly ascending; leaves filiform to 1.5 mm. wide, erect.... b.
- b. Slenderly stoloniferous; fascicles exceeded by 1–2 long bracts; bristles naked at their bases..... 20. *R. fusca*.

- b. Caespitose; bracts shorter than or barely exceeding the fascicles; bristles sparsely hairy at their bases. . . . c.
- c. Achenes plumply ovoid, homogeneously brown, 1-1.1 mm. long. . . . 21. *R. pleiantha*.
- c. Achenes slenderly elliptic, with a pale oval disc, 1.3-1.5 mm. long. . . . 22. *R. Curtissii*.
- a. Fascicles corymbose to hemispherical, composed of many erect to divaricate spikelets, or, if fascicles more or less turbinate, then 4-5 in number, with many spikelets and the leaves 2 mm. wide or wider and languidly ascending. . . . d.
- d. Corymbs 2, rarely 3, the terminal internode strongly arched; bracts foliaceous. . . . 23. *R. Harperi*
- d. Corymbs 2-5, the terminal internode erect or flexuous; bracts setaceous. . . . e.
- e. Achenes borne on a persistent basal stipe which is 6 mm. in length and covered with a tangle of white hairs; habit weak; leaves 2 mm. wide or wider; corymbs 4-5 . . . 24. *R. crinipes*.
- e. Achene without a conspicuous basal stipe; stipe, if present, not hairy; habit wiry, erect; leaves filiform to 1.5 mm. wide; corymbs 2-4. . . . f.
- f. Surface of achenes glassy, with a white lustrous disc; leaves filiform, rarely 2 mm. wide; Coastal Plain, and western and central Cuba. . . . 25. *R. filifolia*.
- f. Surface of achene tending to become granular or somewhat polished, cinnamon-brown with a paler central disc; leaves 1-1.5 mm. wide; range limited to western Cuba. . . . 26. *R. fuscoides*.

20. *R. FUSCA* (L.) Ait. f. Slenderly stoloniferous: leaves promptly involute, filiform to 1.5 mm. wide, ascending: culms slender, erect, terete, 0.8-4.6 dm. high: terminal fascicle often compounded of 2-3 closely approximated secondary fascicles, turbinate or ovoid, 0.3-2 cm. wide, exceeded by the 1 or 2 long circinate or erect bracts; lateral fascicles 1-2, on exserted peduncles: spikelets narrowly ellipsoid, 2-3-flowered, 2-3-fruited, loose, sessile, strongly ascending, 4-6 mm. long: scales aristate, castaneous, sometimes blackened: bristles 5-6, 3 always as long as or longer than the tubercle, 2-3 often shorter than the achene, delicate, tenuous, upwardly serrulate, sinuously ascending: achene pyriform, lenticular but plump, obscurely marginate, smooth, lustrous, light brown, occasionally marked with a faint reticulate pattern, 1-1.1 mm. wide, 1.2-1.3 mm. long: tubercle attenuate-subulate, usually greenish; the lower margins conspicuously serrulate. PLATE 824, FIGS. 2A and 2B; MAP 24.—Hort. Kew. ed. 2: i. 127 (1810); Gray, Ann. Lyc. N. Y. iii. 215, pl. 6, fig. 26 (1835); Torrey, Ann. Lyc. N. Y. iii. 366 (1836); Britton & Brown, Ill. Fl. i. 279, fig. 656 (1896); Britton, Man. 185 (1901); Small, Fl. 1321 (1903) and Man. 181 (1933); Robinson & Fernald in Gray, Man. ed. 7: 200, fig. 319 (1908); Victorin, Fl. Laurent. 689, fig. 248 (1935). *Schoenus fuscus* Linnaeus, Sp. Pl. ed. 2: ii. 1664 (1763). *R. alba* β. *fusca* Vahl, Enum. ii. 236 (1806). *Phaeocephalum fuscum* House, Am. Midland Nat. vi. 202 (1920).

—Peat bogs and sandy or peaty pond-shores, Newfoundland, eastern New Brunswick, Nova Scotia and southern portions of Maine, New Hampshire and Vermont; general over the other New England states; southward along the coast to Maryland; inland in central New York State with scattered stations on the shores of Lakes Superior, Michigan and Huron; also in Europe. The characters of *R. fusca* are sufficiently distinct to make the citation of representative specimens unnecessary.

21. *R. pleiantha* (Kük.), stat. nov. Caespitose: leaves filiform to 1 mm. wide, flat, setaceous, ascending: culms obtusely trigonous, filiform to slender, erect, exceeding the radical leaves, 2.5–4 dm. tall: terminal fascicle corymbiform, composed of not more than 15 spikelets; lateral fascicles 1–2, smaller, on exserted erect peduncles: spikelets oblong-ovate, sessile, erect to spreading, approximately 6-flowered, 2-fruited, 6 mm. in length: fertile scales lanceolate-aristate, loosely imbricate, greatly exceeding the achene in length: bristles 6, variable, the tallest barely exceeding to twice the height of the tubercle, upwardly serrulate, with a few short white hairs at their bases: achene ovate, lenticular, bi-convex, with depressed margins, 0.7–0.8 mm. wide, 1–1.1 mm. long; surface smooth, dark shining brown at maturity, with an indefinite paler disc: tubercle triangular, attenuate, flat, pale; margins sparingly serrulate or smooth, 0.6–0.8 mm. long. PLATE 823, FIGS. 4A and 4B; MAP 25.—*R. filifolia* Torrey var. *pleiantha* Kükenthal, Fedde Rep. Spec. Nov. xxiii. 208 (1926). *R. fusca* sensu Harper, Bull. Torr. Bot. Cl. xxx. 324 (1903), non (L.) Ait. f.—Infrequent, shores of ponds and lakes in southeastern North Carolina, southwestern Georgia, central Florida, and western Cuba. NORTH CAROLINA: shore of Silver Lake near Wilmington, New Hanover Co., July 5, 1938, *Godfrey*, no. 4846 (G); shallow pond near Carolina Beach, New Hanover Co., July 2, 1938, *Godfrey*, no. 4827 (G); moist sandy soil, Orton, Brunswick Co., Aug. 18, 1930, *Blomquist* (D.) GEORGIA: margin of pine-barren pond near Rift, Lee Co., July 13, 1901, *Harper*, no. 1067 (G, NY). FLORIDA: sandy shore of Lake Juana, Eustis, Lake Co., July 16–31, 1894, *Nash*, no. 1321 (G, NY, P, US). CUBA: on moist white sand on shore of the laguna, Laguna Santa Maria, Pinar del Rio, Aug. 22, 1923, *Ekman*, no. 17242a (NY, US, immature. This number cited by Kükenthal in original description of var. *pleiantha*) and no. 17242b (G. This number cited by Kükenthal in original description of var. *pleiantha*).

Specimens of *R. pleiantha* have generally been identified as either *R. Curtissii* Britt. ex Small or *R. fusca* (L.) Ait. f. The confusion with *R. Curtissii* obviously results from a similarity in habit, but the most superficial examination of the achenes enables one to separate these species. Those of *R. pleiantha* are

pyriform, dark brown, not exceeding 1 mm. in length; those of *R. Curtissii*, on the other hand, are narrowly ellipsoidal, 1.3–1.5 mm. long and light brown, with a pale conspicuous oval disc.

The confusion of *R. pleiantha* with *R. fusca*, however, is due to a likeness which extends to details, not only of the habit and spikelet, but to the achene as well. Nevertheless, specimens of *R. pleiantha* can rather easily be separated from those of *R. fusca*, for the fascicles of the latter are exceeded by a long setaceous bract which is often circinate at its tip; whereas those of the southern species are subtended by a short stiff bract which is at the most only twice the height of its fascicle.

The specific distinction of the one from the other species rests, however, on the more technical differences of the achene. That of *R. pleiantha* is 0.7–0.8 mm. wide and 1 mm. long; in color it is a dark mahogany-brown, and the bristles are sparsely plumose at their bases. The achene of *R. fusca*, by contrast, is larger, 1–1.1 mm. wide and 1.2–1.3 mm. long, consistently light brown in color, with the bases of the bristles naked.

23. *R. CURTISSII* Britt. ex Small. Caespitose: leaves filiform to 1 mm. wide, wiry, involute with the exception of the flattened tip 0.6–1.4 mm. long: culms filiform, loosely ascending, 1.5–3 dm. high: fascicles 1–2, turbinate, 4–8 mm. wide, composed of less than 10 spikelets; lateral fascicle borne on an included peduncle: spikelets ovoid-elliptic to fusiform, similar to those of *R. fusca*, 2–3-flowered, 2–3-fruited, strongly ascending, 4–6 mm. long: scales mucronulate, ovate-oblong, rather loose, castaneous: bristles 6, erect, delicate, tenuous, scarcely equalling to well exceeding the tubercle, antrorsely hispidulous, sparingly plumose at the base: achene narrowly ellipsoid, lenticular, smooth, often lustrous, light brown, with a pale elliptic disc, marginate, 0.6–0.7 mm. wide, 1.3–1.5 mm. long: tubercle deltoid, sometimes subulate, compressed, with conspicuous upward serrulations, 0.8–1.2 mm. long. PLATE 823, FIGS. 3A and 3B, MAP 26.—Fl. 195, 1327 (1903) and Man. 181 (1933). *R. fusca* sensu Fernald, Bot. Gaz. xxiv. 433 (1897), non (L.) Ait. f. *Phaeocephalum Curtissii* House, Am. Midland Nat. vi. 201 (1920).—Low places, coastal counties of Northwestern Florida, Alabama, and Mississippi. FLORIDA: moist roadside, Milton, Santa Rosa Co., *Curtiss*, no. 5929 (NY, TYPE; G, NC, US, ISOTYPES); moist pine barrens about 1½ miles northeast of Milton, Santa Rosa Co., *Harper*, no. 46 (G, NY, US). ALABAMA: swamp, Elberta, Baldwin Co., Aug. 21, 1926, *Wolf* (StB, in part *R. filifolia* Gray in Torr.). MISSISSIPPI: Ocean Springs, Jackson Co., *Tracy*, no. 4891 (G, NC, NY, US).

23. *R. HARPERI* Small. Solitary: radical leaves filiform, few, short; cauline leaves 1–1.5 mm. wide, long-attenuate, erect, canaliculate, smooth: culm obtusely trigonous, slender, 6–7.3 dm. tall; the terminal internode strongly arched: fascicles 1–2, rarely 3, corymbiform, 1.1–1.5 cm. wide, separated by the arching internode; occasionally a third fascicle distant and smaller: bracts foliaceous: spikelets ovoid, loosely imbricate, 5-flowered, 4-fruited, 5–5.6 mm. long: scales aristulate, margins free, castaneous: bristles 6, slender, upwardly hispidulous, falling short of the tubercle: achene obovate to pyriform, strongly umbonate, brown, with a slightly paler disc, smooth, 1–1.1 mm. wide, 1.3–1.4 mm. long: tubercle subulate, pale, 0.6–0.9 mm. high, its margins thickly hispidulous. PLATE 823, FIGS. 1A and 1B; MAP 27.—Man. 182, 1503 (1933). *R. leptorhyncha* sensu Small, Fl. 195 (1903), non *R. leptorhyncha* C. Wright.—Infrequent on borders of ponds and in low places in the pine barrens of the Coastal Plain of Georgia, Florida, and Alabama. GEORGIA: edge of pond, just north of Ludowici, Long Co., *Eyles*, no. 6527 (CU); wet pine barrens about 3 miles east of Hawkinsville, Pulaski Co., *Harper*, no. 1377 (NY, TYPE; US, ISOTYPE); wet pine barrens, Sumter Co., *Harper*, no. 467 (G, US). FLORIDA: Tampa, Hillsborough Co., May, 1876, *Garber* (NY, US). ALABAMA: border of pond, Elberta, Baldwin Co., July 15, 1926, *Wolf* (StB).

Prior to 1933, *R. Harperi* was identified as *R. leptorhyncha* Wright, the type-specimen of *R. Harperi* being originally so determined by Britton. However, the two species can be readily distinguished from one another. Of the two, *R. leptorhyncha* has the much stiffer habit, an inflorescence exceeded by a tall upright bract, and tightly involute floral scales. *R. Harperi*, on the contrary, has the culm arched to nodding, a short bract subtending the fascicle, and loose floral scales. Nor is there any close resemblance in the achenes. Those of *R. leptorhyncha* are of the *fascicularis*-type—large, dark, dull, and broadly ovate. The achenes of *R. Harperi*, on the other hand, are pyriform, light brown, resembling, but surpassing in size, those of *R. filifolia* Gray.

24. *R. crinipes*, sp. nov. Planta caespitosa: foliis 2 mm. latis planis lineari-elongatis, debilibus, apicem versus triquetris et sparse serrulatis: culmis gracilibus subtriquetris, 6.9–7.4 dm. altis, laxe ascendentibus: fasciculis 4–5 compactis 1–2 cm. latis turbinatis lobatisque vel corymbosis; pedunculis fasciculorum lateralium subexsertis: bracteis setaceis parvis ornatis: spiculis lanceolatis 5 mm. longis confertis, ascendentibus vel patentibus

3-floris sed quarto terminali rudimentario, 2-carpis: squamis lanceolatis, aristulatis, laxe imbricatis, mox caducis chartaceis pallide castaneis: setis 6 rigide erectis, tuberculo approximate aequalibus: achaenio pyriformi 1.4 mm. longo 1 mm. lato, biconvexo laevi, marginem versus leviter depresso; umbone candido, conspicuo; stipa tereti persistente 6 mm. longa villis longis albis irregularibus ascendentibus vestita: tuberculo compresso-triangularo 0.8 mm. alto, margine hispido-scabrato. PLATE 823, FIGS. 2A and 2B; MAP 28.—Coastal Alabama. ALABAMA: dry places, roadsides (exsiccated), Mobile, Mobile Co., June, 1868, *Mohr* (US); ditches, border of ponds, Mobile, Mobile Co., June 18, 1868, *Mohr* (US, TYPE).

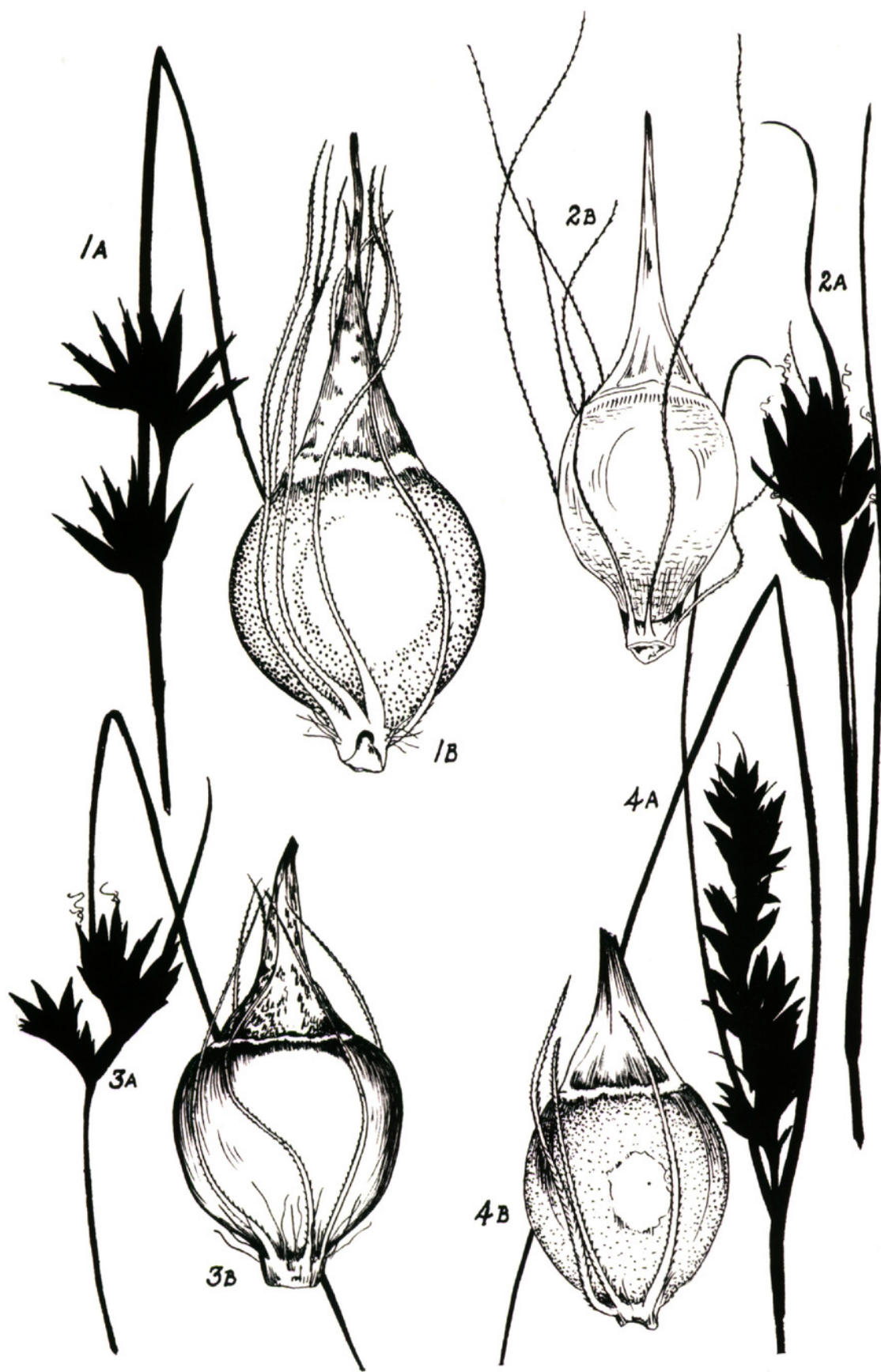
This species, represented by two specimens collected by *Mohr* in the vicinity of Mobile, Alabama, is closely related to *R. filifolia* Gray. It differs from the latter in its generally larger habit with wider leaves, coarser culms, and in its languid habit and looser, more numerous and more irregular fascicles. Both species have, however, the pyriform achene, with its glossy surface picked out by a prominent pale disc, the six stiffly erect bristles and the deltoid, compressed and marginally hispid tubercle. The signal character which distinguishes *R. crinipes* from *R. filifolia* is the unique basal stipe of the former, which is 0.6 mm. long, remains attached to the achene, and is clothed with a tangle of white, ascending hairs.

25. *R. FILIFOLIA* Gray. Densely caespitose: basal leaves filiform, flexuous; cauline leaves filiform to rarely 2 mm. wide, flat, upper margins minutely serrulate: culms terete, slender, typically flexuous, 3.3–6.5 dm. high: fascicles 2–3, turbinate to corymbiform, 0.9–1.5 mm. wide; terminal fascicle at least twice exceeded by a wiry undulant bract: spikelets long-ovoid, 3–4 mm. long, closely approximate, 3–6-flowered, maturing 1–4 achenes: scales mucronulate, ferruginous, loose, caducous so that at maturity the lower part of the rachis is exposed: bristles 6, upwardly serrulate, stiffly erect, equalling to slightly overtopping the tubercle: achene pyriform, 0.6–0.8 mm. wide, 0.9–1 mm. long, lenticular, biconvex, marginate, caducous, the face glassy with a white lustrous disc: tubercle deltoid-compressed, 0.4–0.6 mm. high, pale, with the margin hispid-scabrous. PLATE 822, FIGS. 3A and 3B; MAP 35.—Gray in Torrey, Ann. Lyc. N. Y. iii. 366 (1836); Chapman, Fl. So. U. S. 527 (1860); Britton, Mem. Soc. Cubana Hist. Nat. ii. 195 (1916); Small, Fl. 195 (1903) and Man. 181 (1933). *Phaeocephalum filifolium* House, Am. Midland Nat. vi. 202 (1920).—Margins of ponds or damp pockets in pinelands on the Coastal Plain of New Jersey, south to Florida, and west



S. G. del.

RHYNCHOSPORA HARPERI: FIG. 1A, inflorescence, $\times 2$; FIG. 1B, achene, $\times 20$.
 R. CRINIPES: FIG. 2A, portion of inflorescence, $\times 2$; FIG. 2B, achene, $\times 20$.
 R. CURTISSII: FIG. 3A, inflorescence, $\times 2$; FIG. 3B, achene, $\times 20$.
 R. PLEIANTHA: FIG. 4A, portion of inflorescence, $\times 2$; FIG. 4B, achene, $\times 20$.



S. G. del.

RHYNCHOSPORA LEPTORHYNCHA: FIG. 1A, inflorescence, $\times 2$; FIG. 1B, achene, $\times 20$.
 R. FUSCA: FIG. 2A, portion of inflorescence, $\times 2$; FIG. 2B, achene, $\times 20$.
 R. GAGERI: FIG. 3A, inflorescence, $\times 2$; FIG. 3B, achene, $\times 20$.
 R. JOVEROENSIS: FIG. 4A, portion of inflorescence, $\times 2$; FIG. 4B, achene, $\times 20$.

to eastern Texas; also in central and eastern Cuba. NEW JERSEY: sandy and peaty pond-hole ca. 1 mile west of Bennett, Cape May Co., *Long*, no. 13625 (G). DELAWARE: Queen Anne Road, east of Ellendale, Sussex Co., Aug. 17, 1899, *Commons* (P). VIRGINIA: upper border of siliceous and argillaceous shore, Airfield Mill-pond, southwest of Wakefield, Sussex Co., *Fernald & Long*, no. 14301 (G). NORTH CAROLINA: *Mr. Curtis*, in Gray's handwriting (NY, TYPE); moist savannah between Newport and New Bern Highway, no. 70, Craven Co., *Blomquist*, no. 11241 (D, G); moist sandy soil between Morehead City and Newport, Highway no. 70, Carteret Co., *Blomquist*, no. 11238 (D, G); wet sand, 7 miles southwest of Wilmington, Brunswick Co., *Godfrey & Shunk*, no. 4117 (G, NC). SOUTH CAROLINA: grass-sedge bog or savanna, 12 miles north of Georgetown, Georgetown Co., *Godfrey & Tryon*, no. 749 (CU, D, G, NY, P); damp soils, Oct., *Ravenel* (G). GEORGIA: margin of cypress pond, north of Douglas, Coffee Co., *Harper*, no. 1434 (G, US); pineland pool just east of the Clinch Co. line on U. S. Route 84, Ware Co., *Eyles*, no. 6328 (CU). FLORIDA: moist pine barrens near Jacksonville, Duval Co., *Curtiss*, no. 3153 (CU, G, P, US); margin of flatwoods pond, Welaka, Putnam Co., *Laessle*, no. 13 (CU); Indian Mound near Citrus Center, DeSoto Co., *Small*, no. 9918 (NY); cypress swamp, vicinity of Ft. Myers, Lee Co., *Standley*, no. 12865 (US); hammock north of Eagle Bay near Kissimmee River, Okeechobee Co., *Small*, no. 9188 (G); margins of ponds in pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 864b (G, NY, US). ALABAMA: about swamp, Elberta, Baldwin Co., Aug. 24, 1926, *Wolf* (StB); in woods, Spring Hill, Mobile Co., *Langlois*, no. 178 (US). MISSISSIPPI: Ocean Springs, Jackson Co., *Tracy*, no. 4866 (NY, US); Biloxi, Harrison Co., *Tracy*, no. 2926 (NY). LOUISIANA: vicinity of Covington, St. Tammany Parish, *Arsène*, no. 11869 (US); frequent, low prairies, vicinity of Lake Charles, Calcasieu Parish, *Mackenzie*, no. 443 (Mo, NC). TEXAS: ponds, Hempstead, Waller Co., *Hall*, no. 717 (Mo, US). CUBA: in lagoon near El Paynes, between Guane and Remates near sea level, Pinar del Rio, *Killip*, no. 32373 (CU, US); Laguna Los Indios and vicinity, Pinar del Rio, *Shafer*, no. 10819 (NY); Herradura, Pinar del Rio, *Baker & Abarca*, no. 4195 (NY); savanna, Vivijagua, Isle of Pines, *Britton, Britton & Wilson*, no. 15018 (NY); in wet sand, shore of Laguna Yaiti, Mordazo, Santa Clara, *Ekman*, no. 17083 (G); near lagoon, Asiento Viejo, Sabana de Manacas, Santa Clara, *León*, no. 9288 (NY).

26. *R. FUSCOIDES* Clarke. Caespitose: leaves 1–1.5 mm. wide, involute on drying, stiffly erect: culms obtusely triquetrous, slender, erect, 4.7–7.8 dm. high: fascicles 2–4, the terminal one turbinate to hemispherical, barely if at all exceeded by the sub-

tending bract, 0.9–2 cm. wide; peduncles of the lateral fascicles included or nearly so: spikelets lanceolate in outline, closely approximate, 3–6-flowered, 1–5-fruited, 3.5–5 mm. long: scales aristulate, loosely imbricate, somewhat caducous: bristles 6, approximating the height of the tubercle, stiffly erect, upwardly serrulate: achene pyriform, lenticular, conspicuously marginate, 0.7–0.8 mm. wide, 1.2–1.3 mm. long; the surface tending to become granular, drab to somewhat polished cinnamon-brown, with a paler central disc: tubercle deltoid, subulate, compressed, with the margin thickly setose. PLATE 822, FIGS. 5A and 5B; MAP 29.—Clarke in Britton, Trans. N. Y. Acad. Sci. xi. 89 (1892), in part and excl. syn. *R. fascicularis*, var. *distans* Chapm., *nomen nudum*; Clarke in Urban, Symb. Ant. ii. 124 (1900), excl. syn. *R. fascicularis*, var. *distans* Chapm. and *R. fusca* hb. Chapm., first valid publication; Britton, Mem. Soc. Cubana Hist. Nat. ii. 195 (1916). *R. filifolia* sensu Wright in Sauvalle, Anal. Acad. Ci. Habana, viii. 84 (1871) and Fl. Cub. 180 (1873), non Gray in Torrey. *R. distans* var. *microcarpa* Boeckeler, Flora, lxiv. 78 (1881).—Lagoon-margins and wet pinelands of western Cuba. CUBA: Wright, no. 3783 (G, NY, US, ISOTYPES, this number cited by Clarke as type of *R. fuscoides* and by Boeckeler as type of *R. distans* var. *microcarpa*); wet grassy places, pinelands, at 12 km. of highway to La Coloma, Pinar del Rio City, Pinar del Rio, Ekman, no. 17807 (NY); swale in pinelands, Laguna Santa Maria, Pinar del Rio, Britton, Britton & Gager, no. 7137 (NY); border of lagoon, Laguna Santa Maria, Pinar del Rio, Britton, Britton & Gager, no. 17179 (NY, US); wet pine woods, Pinar del Rio, Sept., 1863?¹ Wright, (NY).

R. fuscoides is closely related to *R. filifolia* Gray, a species of the Coastal Plain which also occurs in Cuba. *R. fuscoides* can be distinguished in the field, however, by its coarser, stiff unbending habit, its lack of filiform basal leaves, its culms which frequently bear 4 fascicles, and its long spikelets. *R. filifolia* has a delicate habit, with the culms normally flexuous, the basal, and often the cauline leaves as well, filiform and arching, and the fascicles limited to 3. In *R. fuscoides* the terminal fascicle is subtended by a short bract which may slightly exceed the fascicle; in *R. filifolia*, however, the bract is prominent, undulant, and at least twice the height of the fascicle.

Under a lens the tiny achenes of *R. filifolia*, with their glassy surfaces picked out by the lustrous white discs, are unmistakable. Those of *R. fuscoides* are, by contrast, less pyriform in outline,

¹ See Underwood, Bull. Torr. Bot. Cl. xxxii. 297 (1905).

longer, with a dull and often granulose drab-brown surface, somewhat relieved by lighter discs.

Boeckeler in 1880 was the first to recognize that the specimens of Wright's no. 3783¹ were not *R. filifolia* as labeled. He set them off, therefore, as var. *microcarpa* of *R. distans* (Michx.) Vahl but added, ". . . Torrey's Pflanze wird durch eine andere schwächte Form, *Rh. gracilentia* A. Gray, mit der typischen Form der *R. distans* genau verbunden." However, so utterly different in all but the most superficial details are the Wright specimens from *R. distans* and *R. gracilentia* that it is difficult to imagine wherein lay Boeckeler's basis for the suggested relationship.

By 1892 Clarke had evidently studied the Wright material and come to the decision that its status was that of a new species; for in that year Britton included in his list of North American Rhynchospora, *R. fuscoides* Clarke, based on Wright no. 3783. The description of the new species was not published, however, until 1900, when it appeared in Clarke's treatment of the West Indian Cyperaceae for Urban's *Symbolae Antillanae* ii. Clarke, in giving the synonymy of *R. fuscoides*, lists both *R. distans* var. *microcarpa* Boeckl. and *R. fascicularis* var. *distans* (Michx.) Chapm., probably taking his cue for the inclusion of the latter from Boeckeler's original misalliance.

Series 5. **Fasciculares**, ser. nov. Inflorescentia fasciculata vel cymoso-fasciculata (*R. Gageri* excepta) rigida: squamis castaneis vel furvis: setis antrorse serrulatis rudimentariis vel bene evolutis: achaenio late ovato vel elliptico laevi castaneo vel fusco; saepe disco pallido.

Plants of usually moist areas in pineland and savannas of the Coastal Plain, West Indies and Central America. Habit caespitose: leaves filiform to 4 mm. wide: culms stout and erect to capillary, then occasionally procumbent: cymes usually fasciculate, simple or compound (spiciform in *R. Gageri*), stiff: scales castaneous to blackened: bristles rudimentary to well formed, antrorsely serrulate: achene broadly ovate to elliptic, smooth, castaneous to blackish-brown, often with a prominent pale disc, usually dull: tubercle triangular, compressed, often prolonged.—*Rhynchospora* V. *Glomeratae* Small, Man. 175 (1933), in part.

¹ One of the sheets of Wright's no. 3783 at the New York Herbarium is mixed. The other species is *R. leptorhyncha* Wright in Sauvalle. According to C. B. Clarke (Urban, Symb. Ant. ii. 125 (1900)), this is also true of a sheet of the same number in the herbarium at Kew.

Rhynchospora Series B. *Diplostyleae* Sect. 4. *Fuscae* Clarke in Urban, Symb. Ant. ii. 105 (1900), in part.

KEY TO SPECIES IN SERIES FASCICULARES

- a. Terminal cyme ovoid, spiciform, or consisting of 2 corymbiform fascicles aligned one above the other; setaceous bracts long; species endemic to the West Indies....b.
- b. Terminal cyme composed of 2 secondary corymbiform fascicles aligned one above the other; scales dark brown to blackish; achenes 1.6–1.8 mm. wide, 1.6–1.8 mm. long
27. *R. leptorhyncha*.
- b. Terminal cyme spiciform to ovoid, the division into fascicles not distinct; scales castaneous; achenes 1.2–1.6 mm. wide, 1.4–1.7 mm. long....c.
- c. Cymes spiciform; surface of achene polished; bristles bearing a basal tuft of long white hairs; tubercles subulate-attenuate.....28. *R. Gageri*.
- c. Cymes ovoid-congested; surface of achene mostly dull; bristles basally hispidulous or with a few short inconspicuous hairs; tubercle deltoid.....29. *R. joveroensis*.
- a. Terminal cyme fasciculate, corymbiform when well developed; setaceous bracts short, slightly if at all exceeding the cymes; species continental, with a few also represented in the West Indies....d.
- d. Bristles 12; achene 2–2.5 mm. long.....30. *R. Baldwinii*.
- d. Bristles 6; achene 1.8 mm. long or less....e.
- e. Achene minute, 0.8 mm. wide, 0.9–1 mm. high.....31. *R. Fernaldii*.
- e. Achene exceeding 1 mm. in width and 1–2 mm. in length...f.
- f. Tubercle with a prominent strap- or beak-like prolongation....g.
- g. Bristles equalling to falling short of the tubercles; tubercle broad-based, gradually tapering toward the apex, 1–2.6 mm. in length.....32. *R. gracilentia*.
- g. Bristles rarely equalling the achene; tubercle basally triangular but abruptly contracted into a broad blunt beak.....33. *R. Wrightiana*.
- f. Tubercle deltoid to deltoid-subulate, not prolonged....h.
- h. Bristles rudimentary to exceeding the achene; culms erect, often coarse.....34. *R. fascicularis*.
- h. Bristles rudimentary; culms filiform, loosely ascending to procumbent.....35. *R. debilis*.

27. *R. LEPTORHYNCHA* C. Wright. Stiffly caespitose: leaves 1–2 mm. wide, erect, numerous, with a long triquetrous tip due to the development of a carina: culms erect, obtusely triangular, 2.2–5.0 dm. high: inflorescence of 2 terminal simple corymbiform fascicles, 0.8–1.1 cm. wide, having not more than 20 spikelets, the one sessile and subtended by a long setaceous bract, the other raised directly above it on a short erect branchlet; rarely a distant lateral fascicle on a slender erect peduncle present: spikelets ovoid, sessile, ascending to spreading, 2–3-flowered, mostly 1- or occasionally 2-fruited, 5.5–6.5 mm. long: scales prominently aristate, dark brown, often blackened, tightly imbricate: stamens 4: bristles 8, upwardly hispidulous; the tips

connivent around and exceeding the tubercle, plumose at their bases: achene elliptic to suborbicular in outline, strongly bi-convex, 1.6–1.8 mm. wide, 1.6–1.8 mm. long; surface smooth, dull brown: tubercle deltoid-subulate, broad-based, nearly smooth to setose, usually pale, 1.4–1.8 mm. high. PLATE 824, FIGS. 1A and 1B; MAP 30.—C. Wright in Sauvalle, Anal. Acad. Ci. Habana, viii. 84 (1871) and Fl. Cub. 180 (1873); Clarke in Urban, Symb. Ant. ii. 124 (1900); Britton, Mem. Soc. Cubana Hist. Nat. ii. 195 (1916); Kükenthal, Fedde Rep. Spec. Nov. xxiii. 209 (1926); usually as "*leptorrhyncha*." *R. leptorrhyncha* var. *laevirostris* Kükenthal, Fedde Rep. Spec. Nov. xxiii. 209 (1926). *R. gracilenta* sensu Clarke in Urban, Symb. Ant. ii. 126 (1900), non Gray. *R. tetrandra* C. Wright msc. ex Clarke in Urban, Symb. Ant. ii. 127 (1900), pub. in syn. of *R. gracilenta* sensu Clarke, non Gray. *Phaeocephalum leptorrhynchum* House, Am. Midland Nat. vi. 202 (1920).—Near or in shallow water, western Cuba and the Isle of Pines. CUBA: Wright, no. 3784 (G, TYPE; NY, US, probable ISOTYPES)¹; Wright, no. 3787 (G. This sheet of the number listed by Wright for *R. odorata* is *R. leptorrhyncha*); in ponds, pinales, jurisdicción Pinar del Rio, Oct., 1862 or 3² Wright (NY); moist places in pineland savannas to the south of Laguna de Junco, Pinar del Rio City, Pinar del Rio, Ekman, no. 17869 (NY); in brook between Pinar del Rio and Coloma at 11 kilometers, Ekman, no. 18252 (NY, US. Cited by Kükenthal with other Ekman numbers in type-description of *R. leptorrhyncha* var. *laevirostris*); in pebbly pinelands, La Siguanea, Isla de Pinos, Ekman, no. 12187 (NY).

Specimens in the Wright collection without number but labeled *R. tetrandra* are undoubted *R. leptorrhyncha*. The fact that Wright never published a species *tetrandra* suggests that he also realized this fact.³

C. B. Clarke in Urban's Symbolae Antillanae, ii. page 127, erroneously refers *R. tetrandra* to *R. gracilenta* Gray. On a basis of this misidentification, Britton⁴, in his publication on Cuban Rhynchospora provisionally lists *R. gracilenta*, but states that the Wright material of *R. tetrandra* in the Herbarium of the New York Botanic Garden is *R. leptorrhyncha*.

I am not keeping up Kükenthal's var. *laevirostris*. As the name indicates this variety is based on specimens, the achenes

¹ No. 3784 is also listed by Wright under *R. gracilis*. There is one sheet of this no. labeled "*Rh. gracilis*" in the Gray Herbarium.

² See Underwood, Bull. Torr. Bot. Cl. xxxii. 297 (1905).

³ Also one Gray Herbarium sheet, C. Wright, no. 3787, labeled *R. odorata* is *R. leptorrhyncha*.

⁴ Mem. Soc. Cubana Hist. Nat. ii. 196 (1916).

of which have a smooth, rather than setose, tubercle. However, even in the specimens of sheets cited by Kükenthal, I find this character to be inconstant; for individual achenes from the same inflorescence vary considerably, some having nearly smooth, others rather densely setose tubercles.

28. *R. GAGERI* Britt. Densely caespitose with thick, often fibrous bases: leaves setaceous, canaliculate, firm, arched-ascending, 1.8–3.3 dm. high: culms filiform, terete, ascending or somewhat arched, varying within a tuft from 0.5–2.2 dm. in height: terminal cyme fasciculate, compact, ovoid, small (0.9–1.2 mm. long, 0.6–1 cm. wide) rarely containing more than 15 spikelets, exceeded by a setaceous, recurving bract 0.4–1.3 dm. long which has the appearance of continuation of the culm: spikelets ovoid, crowded, 1-flowered with the achene terminating the axis, sessile, mostly ascending, closely approximate, 3–4 mm. long: scales aristulate, tightly imbricate, castaneous: stamens 3–4: bristles 6–8, delicate, upwardly serrulate, connivent around the tubercle which they fall short of to slightly exceed, bearing at their bases a few silky hairs which are 0.6 mm. in length: achene broadly ovoid, strongly biconvex, not umbonate, surface evenly browned, smooth, occasionally lustrous, 1.3–1.6 mm. wide, 1.4–1.7 mm. long: tubercle subulate-attenuate, compressed, smooth or rarely slightly setulose at the base, whitish, 0.9–1.1 mm. long. PLATE 824, FIGS. 3A and 3B; MAP 31.—Mem. Soc. Cubana Hist. Nat. ii. 196 (1916). *R. longifrons* var. β . *reducta* Kükenthal, Fedde Rep. Spec. Nov. xxiii. 209 (1926).—Moist savannas, Isle of Pines; western and central Cuba. CUBA: in white sand of Sabana de los Indios, Isle of Pines, *León*, no. 17501 (G); Hacienda San Julian, south of Mendoza, Pinar del Rio, *León & Roca*, no. 6955 (NY); in moist places, Mateo Sanchez, Pinar del Rio City, Pinar del Rio, *Ekman*, no. 17939 (G, US. This number cited by Kükenthal as *R. longifrons* Kük. var. *reducta*); Colpothrinax savanna, vicinity of Herradura, Pinar del Rio, *Britton, Britton, Earle & Gager*, no. 6618 (NY, TYPE; US, ISOTYPE); savannas at La Ciega, Coabilla, Camaguey, *Acuña*, no. 4396 (NY).

29. *R. JOVEROENSIS* Britt. Densely caespitose with stiff quill-like bases: leaves 1–2 mm. wide, 3.9–6 dm. long, canaliculate, stiffly ascending, with arched filiform tips; upper margins setiferous: culms terete, rigidly erect, 2.6–4.5 dm. tall: cymes congested-spiciform; the terminal one 0.5–1 cm. wide, 2.5–4 cm. long, exceeded by a setaceous recurving bract 1.8–2.5 dm. long; the lateral smaller, on an included peduncle: spikelets ovoid, 3.5–4 mm. long, extremely compact, sessile, 1-flowered, with the achene terminating the axis: scales aristulate, tightly involute, castaneous: stamens 3–4: bristles 6–8, delicate, upwardly serru-

late, connivent at their tips, approximating the tubercle in length; bases without prominent hairs: achene obovoid, lenticular, with compressed margins and a prominent umbo which may be glossy, remainder of surface dull, smooth, brown, 1.2–1.3 mm. wide, 1.4–1.5 mm. long: tubercle deltoid-compressed, with heavily setose margins, 0.6–0.8 mm. long. PLATE 824, FIGS. 4A and 4B; MAP 32.—Mem. Soc. Cubana Hist. Nat. ii. 195 (1916). *R. longifrons* Kükenthal, Fedde Rep. Spec. Nov. xxiii. 209 (1926).—Lake margins, western Pinar del Rio, Cuba. CUBA: wet sand, Laguna Jovero to Laguna del Bufe, Pinar del Rio, *Shafer*, no. 10992 (NY, TYPE; G, US, ISOTYPES); Hacienda San Julian, south of Guane, Pinar del Rio, *León & Roca*, no. 6935 (NY); shore of Laguna El Punto, Pinar del Rio City, Pinar del Rio, *Ekman*, no. 18263 (NY. One of several Ekman numbers cited by Kükenthal after type-description of *R. longifrons*); banks of south Lagoon, Santa Maria, near San Luis, Pinar del Rio, *León*, no. 19627 (G).

30. *R. BALDWINII* Gray. Forming a coarse clump: radical leaves commonly short, flat becoming carinate, 3–4 mm. broad, tips acutely triquetrous due partially to development of the keel; upper margins and keel finely serrulate: culms triquetrous, erect, becoming flexuous, 0.5–1 m. high: terminal fascicle corymbiform, 1.6–2 cm. wide, rarely accompanied by a small fascicle on a short stiff erect branchlet; lateral fascicles smaller, simple, exsertly pedunculate: spikelets ovoid, 1–3-flowered, 1–2-fruited, sessile, bursting, 5–5.5 mm. long: scales aristate, caducous, castaneous to dark brown: bristles 12, slender, typically convergent, upwardly hispidulous, shorter than the tubercle: achene ovoid to subrotund, lenticular-compressed, emarginate, dark brown, with a pale disc, smooth to minutely pitted, dull, 1.8–2 mm. wide, 2–2.5 mm. long: tubercle deltoid-compressed, whitish, 0.8–1 mm. long. PLATE 825, FIGS. 4A and 4B; MAP 33.—Ann. Lyc. N. Y. iii. 210, pl. 6, fig. 18¹ (1835); Chapman, Fl. So. U. S. 526 (1860); Small, Fl. 196 (1903) and Man. 182 (1933). *Phaeocephalum Baldwinii* House, Am. Midland Nat. vi. 201 (1920).—Peaty savannas and low pine barrens of the Coastal Plain from North Carolina southward through the peninsula of Florida and west to Mississippi. NORTH CAROLINA: savanna near Jacksonville, Onslow Co., *Godfrey*, no. 5822 (G); savanna near Burgaw, Pender Co., *Godfrey*, no. 4737 (G, NC); long-leaf pine and wire grass savanna, Carolina Beach, New Hanover Co., *Godfrey*, no. 4685 (G, NC). SOUTH CAROLINA: peaty excavated area in savanna at side of road, 12 miles north of Georgetown, Georgetown Co., *Godfrey & Tryon*, no. 8 (G, NY); in damp stiff soils, Santee Canal, *Ravenel* (G). GEORGIA: rather dry pine barrens between

¹ Figures 19 and 18 were apparently reversed in the printing; *R. Baldwinii* is fig. 18, not 19 as listed.

Guyton and Springfield, Effingham Co., *Harper*, no. 934 (G, NY, US); sandy bog, Bullock Co., *Harper*, no. 852 (NY); moist pine barren 2 miles west of Glennville, Tatnall Co., *Eyles*, no. 6435 (CU); *Dr. Baldwin*, fragment from Herb. Schweinitz (NY, TYPE). FLORIDA: moist pine barrens near Jacksonville, Duval Co., *Curtiss*, no. 4868 (G, NY, US); Hastings, St. Johns Co., *Tracy*, no. 9286 (G, NY, US); Tampa, Hillsborough Co., May, 1876, *Garber* (US); prairie, 18 miles east of Okeechobee City, St. Lucie Co., *Small et al.*, no. 9303 (NY); wet places, Bear Creek, Gadsden Co., June 1841, *Chapman* (G, in part); wet pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 256a (G, NY, US); pine barrens 8 miles west of Apalachicola, Gulf Co., *Eyles*, no. 5783 (CU); swamps, Walton Co., 1885, *Curtiss* (NY). ALABAMA: low pine barrens, Mobile, Mobile Co., June, 1870, *Mohr* (NY); *Sartwell* (G). MISSISSIPPI: Biloxi, Jackson Co., *Tracy*, no. 4894 (NC, NY, US). LOUISIANA: New Orleans, *Drummond* (G).

31. *R. Fernaldii*, sp. nov. Planta caespitosa: foliis basilaribus 1–1.5 mm. latis planis marginibus laevibus vel subtiliter serrulatis, apicem versus triquetris: culmis teretibus tenuibus rigide erectis 2.5–5.2 dm. longis: fasciculis 1–2 congestis corymbiformibus; lateralibus exsertis pedunculatis; pedunculis erectis: spiculis ovoideis 2–2.5 mm. longis sessilibus confertis erectis vel patentibus 3–4-floris 2–3-carpis: squamis aristulatis laxè imbricatis fuscis: setis 6 antrorse hispidulis rigide erectis, achaenio fere aequantibus: achaenio lenticulari-obovoideo, biconvexo, parvo (0.8 mm. lato 0.9–1 mm. longo) laevi furvo; disco leviter pallidiores: tuberculo compresso-deltaideo, 0.2–0.3 mm. alto. PLATE 825, FIGS. 3A and 3B; MAP 34.—Pine barrens of southern Georgia, northern Florida and coastal Alabama. GEORGIA: rather dry sandy road in pine barrens near Camp Cornelia, Charlton Co., Aug. 8, 1902, *Harper*, no. 1487 (G, TYPE; NY, US, ISOTYPES); near Lem Griffin's Camp, Okefenokee Swamp, Clinch Co., Oct. 1938, *Eyles*, no. 164 (CU); piney woods, Billy Island, Charlton Co., July 7, 1912, *Bradley*, no. 4 (P). FLORIDA: in a low pineland, 7 miles southwest of St. Augustine, St. Johns Co., Aug. 8, 1929, *O'Neill* (CU); Sanford, Orange Co., Aug. 23, 1899, *Pieters*, no. 301 (US); in low pinelands, Alva, Lee Co., Oct. 30, 1917, *Francis*, no. 41 (US); low pine barrens near the seashore, Apalachicola, Franklin Co., Oct. 27, 1895, *Mohr* (US); pine barrens, Apalachicola, Franklin Co., July, 1870, *Chapman* (US); low pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 5963 (G, NY; US, in part); *Chapman* (P, no locality given). ALABAMA: *Buckley*, no. 35 (NY).

In habit, *R. Fernaldii* suggests a dwarfed state of *R. fascicularis* var. *distans*. The plant is tufted, the slender culm is stiffly



S. G. del.

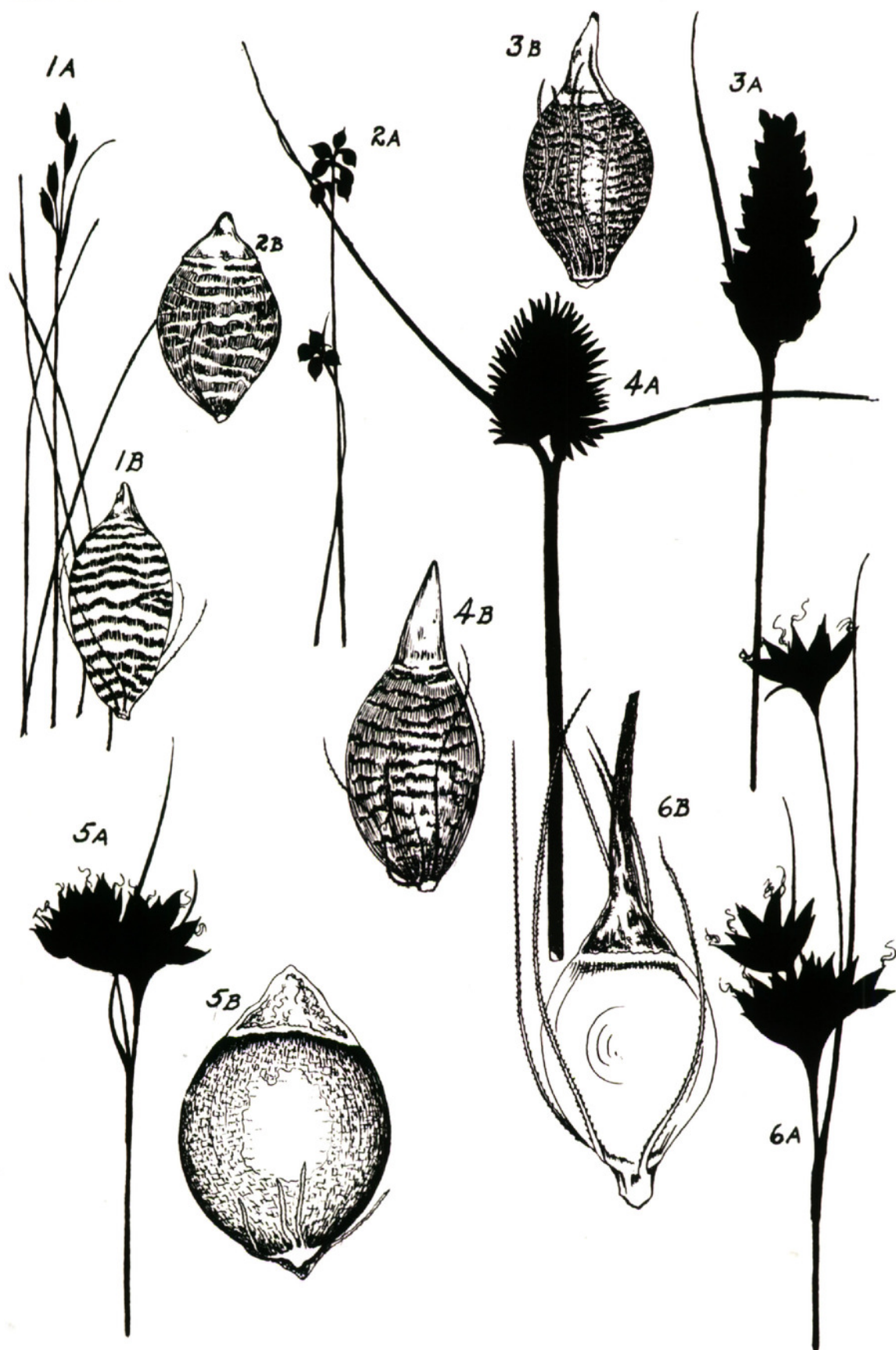
RYNCHOSPORA FASCICULARIS, var. *TYPICA*: FIG. 1A, portion of inflorescence, $\times 2$; FIG. 1B, achene, $\times 20$.

R. FASCICULARIS, var. *DISTANS*: FIG. 2A, portion of inflorescence, $\times 2$; FIG. 2B, achene, $\times 20$.

R. FERNALDII: FIG. 3A, portion of inflorescence, $\times 2$; FIG. 3B, achene, $\times 20$.

R. BALDWINII: FIG. 4A, portion of inflorescence, $\times 2$; FIG. 4B, achene, $\times 20$.

R. WRIGHTIANA: FIG. 5A, portion of inflorescence, $\times 2$; FIG. 5B, achene, $\times 20$.



S. G. del.

- RHYNCHOSPORA DEPRESSA: FIG. 1A, inflorescence, $\times 2$; FIG. 1B, achene, $\times 20$.
 R. CERNUA: FIG. 2A, inflorescence, $\times 2$; FIG. 2B, achene, $\times 20$.
 R. PRUINOSA: FIG. 3A, portion of inflorescence, $\times 2$; FIG. 3B, achene, $\times 20$.
 R. NIPENSIS: FIG. 4A, inflorescence, $\times 2$; FIG. 4B, achene, $\times 20$.
 R. DEBILIS: FIG. 5A, inflorescence, $\times 2$; FIG. 5B, achene, $\times 20$.
 R. GRACILENTA: FIG. 6A, portion of inflorescence, $\times 2$; FIG. 6B, achene, $\times 20$.

erect, and the small terminal fascicle is corymbiform and frequently accompanied by a lateral fascicle on a slender peduncle. However, among the members of this series the spikelets and achenes of this species are unique in their minuteness. The former measure only 2–2.5 mm. in length and the tiny blackish achene varies from 0.9–1 mm. in length. I suspect that this character was in part responsible for the long neglect of this species, for at first glance the inflorescence does suggest an undeveloped state of var. *distans*. This species has been named in honor of Professor M. L. FERNALD.

32. *R. GRACILENTA* Gray. Caespitose: radical leaves filiform, about 10 mm. high, cauline leaves filiform to usually 1–2.5 mm. wide, flat; upper margins serrulate; tips triquetrous: culms terete, slender, erect to flexuous, 0.3–1 m. in height: terminal cyme a single fascicle, irregular in outline to corymbiform, with few spikelets, 0.8–1.2 cm. wide; or less often several fascicles on stiff branchlets; lateral fascicles 1–2 (rarely 3) on exserted peduncles: spikelets ovate, split open by the developing achenes, bearing 2–3 florets, the lowermost of which is often abortive, 1–2-fruited, sessile, 3–3.5 mm. long: scales aristate, castaneous: bristles 6, delicate, upwardly serrulate, falling short of to slightly exceeding the tubercle: achene oval to suborbicular in outline, 1.1–1.7 mm. wide, 1.3–1.8 mm. long, compressed, umbonate, smooth, dull dark brown at maturity, often with a conspicuous light disc: tubercle broad-based, with a long slender strap-like terminal extension, strongly compressed, 1–2.6 mm. long. PLATE 826, FIGS. 6A and 6B; MAP 36.—Ann. Lyc. N. Y. iii. 216, pl. 6, fig. 27 (1835); Chapman, Fl. So. U. S. 527 (1860); Britton & Brown, Ill. Fl. i. 279, fig. 657 (1896); Britton, Man. 186 (1901); Small, Fl. 195 (1903) and Man. 182 (1933); Robinson & Fernald in Gray, Man. ed. 7: 200, fig. 320 (1908); Britton, Mem. Soc. Cubana Hist. Nat. ii. 196 (1916); Kükenthal, Fedde Rep. Spec. Nov. xxiii. 208 (1926). *R. gracilentata* var. *diversifolia* Fernald, RHODORA, xxxvii. 399 (1935). *R. fusca* sensu Gray, Gram. et Cyp. i. no. 93 (1834), in part.¹ *R. Drummondiana* Boeckeler, Fl. xli. 644 (1858). *R. trichophylla* Fernald, RHODORA, xxxix. 389 (1937). *Phaeocephalum gracilentum* House, Am. Midland Nat. vi. 202 (1920).—Bogs and moist areas in swales, common along the Coastal Plain from New Jersey to southeastern Virginia; apparently more scattered southward in the Carolinas and Georgia;

¹ No. 93 was apparently made up from a mixed collection. In the volume belonging to the library of the New York Botanic Garden, no. 93 is *R. gracilentata*, as stated by Gray in an appended correction; but in the volume belonging to the Gray Herbarium, no. 93 is *R. fusca* (L.) Ait. f., as stated on the original label.

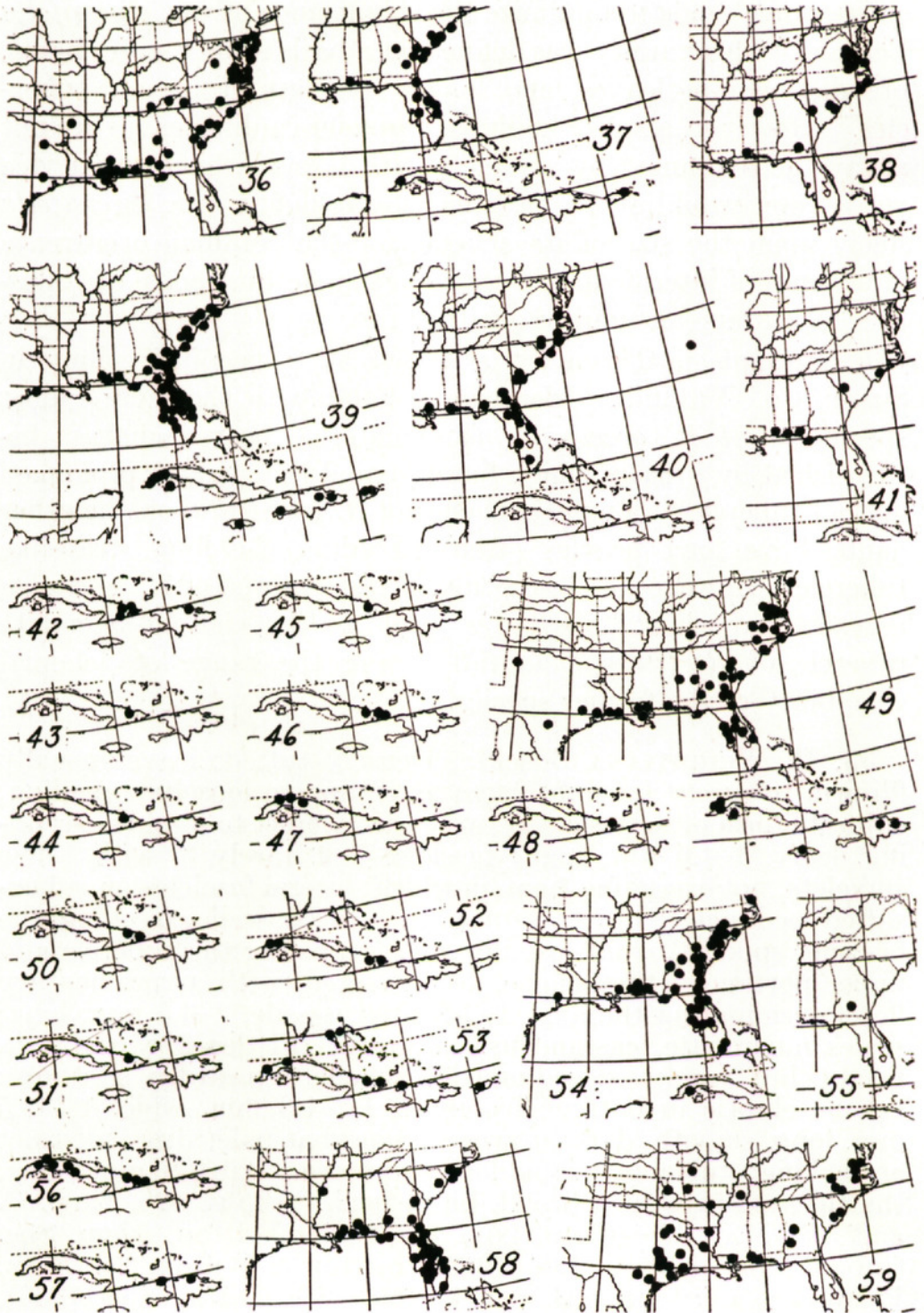
westward along the coast to eastern Louisiana; infrequent inland stations in the mountains of Virginia, North Carolina and Tennessee, and in central Arkansas and eastern Texas. The citation of the bulk of specimens from New Jersey and states south to Virginia has been omitted. NEW JERSEY: "pine barrens of N. J., Aug.-Sept." in Gray's handwriting (NY, TYPE). VIRGINIA: cranberry-meadow in wet spots, Stuart's Draft, Augusta Co., *Carr*, no. 303 (G). NORTH CAROLINA: wet grassy pineland, 12 miles west of Swan Quarter, Hyde Co., *Oosting*, no. 22 (D); low pineland at Dunn, Harnett Co., *Godfrey*, no. 6140 (D, G); sphagnum swamp, vicinity of Black Mt., Buncombe Co., *Standley & Bollman*, no. 10464 (US); dry sandy soil near Supply, Brunswick Co., *Blomquist*, no. 11266 (D, G). SOUTH CAROLINA: grass-sedge bog or savanna, 12 miles north of Georgetown, Georgetown Co., *Godfrey & Tryon*, no. 60 (D, G, NY); grass-sedge bog or savanna, 1 mile west of Chicora, Berkeley Co., July 24, 1939, *Godfrey & Tryon* (G); Sumter, Sumter Co., *Bartram*, no. 3740 (P); Aiken, Aiken Co., July-Aug., 1866, *Ravenel* (G). GEORGIA: pine barren, Pooler Road near Ogeechee Canal and Little Ogeechee River, Chatham Co., *Eyles*, no. 6239 (CU); moist pine barrens, Rushing Pond, near Statesboro, Bullock Co., *Eyles*, no. 6185 (CU); moist meadow, Leslie, Sumter Co., *Harper*, no. 414 (G, NY, US). FLORIDA: sphagnum swamps near Jacksonville, Duval Co., *Curtiss*, no. 5072 (CA, NC, NY, US); Marianna, Jackson Co., *Tracy*, no. 4887 (US); wet pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 4478a (G, NY, US). ALABAMA: Lee Co., June 29, 1897, *Earle & Baker* (NY); in a wet place, Perdue, Coffee Co., *Blanton*, no. 84 (G, US). TENNESSEE: permanently moist meadow with ox-bows of Abrams Creek, west end of Cades Cove, Blount Co., Great Smoky National Park, alt. 1700 ft., *Camp*, no. 1993 (US); grassy borders of small pond south of Altamont, Grundy Co., *Svenson*, no. 9181 (G); bogs between Tracy City and Coalmont, Grundy Co., *Svenson*, no. 9568 (G). MISSISSIPPI: Ocean Springs, Jackson Co., *Pollard*, no. 1005 (G, NY, US); Biloxi, Harrison Co., *Tracy*, no. 7003 (G, NY); Bay of St. Louis, Hancock Co., Sept. 13, 1883, *Langlois* (G, NY). ARKANSAS: sandy bogs, Malvern, Hot Spring Co., *Palmer*, no. 8095 (CA, Mo, P, US). LOUISIANA: vicinity of Covington, St. Tammany Parish, *Arsène*, no. 11735 (Mo); dampish soil, 2 miles west of Hammond, Tangipahoa Parish, *Trotter & Chilton*, no. 153 (La); New Orleans, Orleans Parish, *Drummond*, no. 397 (G, ISOTYPE of *R. Drummondiana* Boeckeler). TEXAS: swamps, Swan, Smith Co., *Reverchon*, no. 2921 (Mo) and no. 2918 (Mo); ponds, Hempstead, Waller Co., *Hall*, no. 717 (G).

A study of specimens of *R. gracilentia* selected to represent its

entire range tends to minimize the significance of var. *diversifolia* Fernald. This variety was defined on a basis of its "stiffer habit, broadish cauline leaves, and longer spikelets, fruits and tubercles." However, a stiffer habit and broader cauline leaves are not always accompanied by spikelets with larger achenes, and vice versa; nor would it be practical to re-define var. *diversifolia* solely upon the size of its achene, for the common occurrence of achenes of intermediate sizes would make the choice of definitive measurements purely arbitrary.

R. trichophylla Fernald was based on a peculiar colony in Sussex Co., Virginia. Identical in habit with the more robust specimens of *R. gracilentia*, this material bears achenes distinguished by bristles which barely equal the slightly prolonged deltoid tubercles. Typical achenes of *R. gracilentia*, on the other hand, have long bristles often exceeding the long strap-like tubercle. However, a close study of the material of *R. gracilentia* reveals that short bristles as well as the deltoid-attenuate tubercle of *R. trichophylla* fall within the range of achenial variability of the former species.

33. *R. WRIGHTIANA* Boeckl. Densely tufted: leaves usually filiform to rarely 1.3 mm. wide, ascending to loosely spreading: culms filiform or very slender, wiry, stiffly erect to weakly ascending, leafy, 1-4.6 dm. high: fascicles 1-2, rarely 3, with 1-few spikelets, not exceeding 1 cm. in width; lateral fascicles on subexserted peduncles: bracts setaceous, several well exceeding the fascicle: spikelet ovoid, usually split, revealing the tubercle and upper portion of the achene, 1-2-flowered, with a rudimentary floret terminating the axis, 1-2-fruited, sessile, 3-3.5 mm. long: scales mucronate, castaneous, caducous: bristles 6, variable in height but rarely exceeding the achene, upwardly serrulate: achene elliptic in outline, biconvex, 1.2-1.3 mm. wide, 1.3-1.5 mm. long, smooth, dark brown; a somewhat paler disc indistinct or lacking: tubercle triangular-compressed, 0.6-0.8 mm. long, the tip prolonged as a broad, blunt beak. PLATE 825, FIGS. 5A and 5B; MAP 37.—Flora, lxiv. 78 (1881); Britton, Mem. Soc. Cubana Hist. Nat. ii. 197 (1916); Britton & Wilson, Sci. Surv. Porto Rico and Virgin Isl. v. 104 (1923); Small, Man. 183 (1933), excl. syn. *R. brachychaeta* Sauv. *R. gracillima* C. Wright in Sauvalle, Anal. Acad. Ci. Habana, viii. 85 (1871) and Fl. Cub. 181 (1873). *R. tenuis* Baldwin ex Gray, Ann. Lyc. N. Y. iii. 217 (1835), publ. in syn. of *R. distans* var. β ., non Link. *R. distans* var. β . Gray, Ann. Lyc. N. Y. iii. 217 (1835). *R. distans*



Range of 36, *RYNCHOSPORA GRACILENTA*; 37, *R. WRIGHTIANA*; 38, *R. DEBILIS*; 39, *R. FASCICULARIS*, var. *TYPICA*; 40, *R. FASCICULARIS*, var. *DISTANS*; 41, *R. STENOPHYLLA*; 42, *R. PRUINOSA*; 43, *R. CRISPA*; 44, *R. SHAFERI*; 45, *R. NIPENSIS*; 46, *R. CERNUA*; 47, *R. TENUIFOLIA*; 48, *R. DEPRESSA*; 49, *R. RARIFLORA*; 50, *R. SCABRATA*; 51, *R. SCABRATA*, var. *LAEVIFOLIA*; 52, *R. LINDENIANA*, var. *TYPICA*; 53, *R. LINDENIANA*, var. *BAHAMENSIS*; 54, *R. GRAYII*; 55, *R. CULIXA*; 56, *R. CUBENSIS*; 57, *R. STENOPHYLLOIDES*; 58, *R. MEGALOCARPA*; 59, *R. HARVEYI*.

var. *tenuis* (Baldwin) Britton, Trans. N. Y. Acad. Sci. xi. 90 (1892). *R. brachychaeta* sensu Small, Fl. 196 (1903), non C. Wright in Sauvalle. *R. pallida* sensu Clarke in Urban, Symb. Ant. ii. 126 (1900), in part, non M. A. Curtis. *R. distans* (Michx.) Vahl var. γ . *gracillima* (C. Wright) Kükenthal, Fedde Rep. Spec. Nov. xxiii. 208 (1926) and xxxii. 77 (1933).—Wet sand or peat of ditches, swamps, ponds or pockets in pineland of the Coastal Plain from southern North Carolina south to the Florida Peninsula and westward in coastal Alabama; also ponds of Cuba and mountains of Puerto Rico. NORTH CAROLINA: wet sand, Fort Caswell, Brunswick Co., *Godfrey & Shunk*, no. 4140 (G, immature). SOUTH CAROLINA: peaty pocket in pine barren, 5½ miles south of Georgetown, Georgetown Co., *Godfrey & Tryon*, no. 201 (G, NY, P); peaty pocket in pine barren, 5 miles northwest of McClellanville, Charleston Co., *Godfrey & Tryon*, no. 1120 (G, NY); gum-pond in pine barren, 4 miles west of Bonneau, Berkeley Co., *Godfrey & Tryon*, no. 1625 (G, NY); margin of barrow-pit near Savannah River Refuge, Jasper Co., *Eyles*, no. 6123 (CU). GEORGIA: drainage-ditch, Wilmington Island, Chatham Co., *Eyles*, no. 4380 (D); pine barrens, Bethesda Church, Effingham Co., *Eyles*, no. 6104 (CU); moist sandy place, Bullock Co., *Harper*, no. 897 (NY, US); margin of pine-barren pond about 2 miles northeast of Hawkinsville, Pulaski Co., *Harper*, no. 1376 (G, NY); sandy soil along railroad near Douglas, Coffee Co., *Harper*, no. 684 (NY, US). FLORIDA: moist pine barrens near Jacksonville, Duval Co., *Curtiss*, no. 4946 (G, NY, US) and 3152 (CU, D¹, G, NY, P, US); low pineland, vicinity of Eustis, Lake Co., *Nash*, no. 662 (G, NY, P, US) and no. 642 (G, NY, US); grassy swamp, Okeechobee Region, Brevard Co., *Fredholm*, no. 5750 (G, NY, immature); prairie, 18 miles east of Okeechobee City, St. Lucie Co., *Small et al.*, no. 9304 (NY); wet place, Hardin Co., July 29, 1940, *Schallert* (G, in part). ALABAMA: Mobile, Mobile Co., July 16, 1897, *Mohr* (CU). CUBA: swampy place, pinelands at km. 12 of the highway to La Coloma, Pinar del Rio City, Pinar del Rio, *Ekman*, no. 17824 (NY); shore of Laguna de Junco, Pinar del Rio City, Pinar del Rio, *Ekman*, no. 17861 (G, US); "sobre tembladeras en medio de lagunas, en la Vuelta de Abajo"², *Wright*, no. 3781 (G, TYPE; NY, US, probable ISOTYPES). PUERTO RICO: plants of the Luquillo Mt., *Wilson*, no. 97 (NY); in monte Jimenes, S^a de Luquillo, *Sintenis*, no. 1381 (NY, US).

This species was originally described by Wright in 1873 under the name of *R. gracillima*. Boeckeler, however, in 1881, noting

¹ One sheet of this number from Duke University is *R. fascicularis* (Michx.) Vahl var. *distans* (Michx.) Chapman.

² C. Wright in Sauvalle, Fl. Cub. 181 (1873).

an earlier application of this name by Thwaites¹ in 1864 to a species from Ceylon, renamed the West Indian species *R. Wrightiana*, in honor of its collector. Subsequently its status was confused by C. B. Clarke who mistakenly placed *R. Wrightiana* in the synonymy of the Atlantic coastal species *R. pallida* M. A. Curtis. With *R. brachychaeta* it formed the basis for Clarke's report of *R. pallida* from the West Indies. The plant which extends northward into southeastern Virginia and which has there passed as *R. Wrightiana* is *R. debilis*.

34. *R. FASCICULARIS* (Michx.) Vahl. Caespitose, often coarsely so: radical leaves 1 (rarely less) to 4 mm. wide, curling to erect, flat, margins and keel finely serrulate: culms subterete and slender to stout and obtusely 3-angled, stiffly erect, becoming flexuous, 0.4 (rarely)–1.3 m. high: terminal fascicle simple or corymbosely compound, 1–5.5 cm. wide, the ultimate densely fasciculate clusters borne on stiff erect peduncles, lateral fascicles 1–3 or none, simple or less commonly compound, distant, exserted to subexserted on short erect peduncles: bracts several, foliaceous to setaceous, exceeding the fascicles: spikelets lance-ovoid to ovoid, 3–4.5 mm. long, erect, sessile, 2–4-flowered, with a terminal rudimentary floret, 1–3-fruited: scales ovate to lanceolate, prominently mucronate to aristate, caducous, 3–4 mm. long: bristles 5–6, rudimentary and short to well developed and exceeding the achene, stiffly erect, antrorsely serrulate: achene ovate to orbicular or elliptic, smooth, chestnut- to blackish-brown, evenly biconvex to umbonate, with or without a pale disc, obscurely marginate, 1.1–1.5 mm. wide, 1.3–1.5 mm. long: tubercle variable but essentially deltoid to deltoid-subulate, 0.4–0.7 mm. long.

34a. Var. **typica**. Habit usually very robust: spikelets usually with a conspicuous recurved mucro: achene ovate to orbicular, rarely elliptic, dark to blackish brown, umbonate, usually relieved by a prominent pale disc, 1.2–1.5 mm. wide, 1.4–1.5 mm. long: tubercle variable but essentially deltoid to deltoid-subulate. PLATE 825, FIGS. 1A and 1B; MAP 39.—*R. fascicularis* (Michx.) Vahl, Enum. ii. 234 (1806); Elliott, Sk. Bot. S. Car. and Ga. i. 60 (1816); Gray, Ann. Lyc. N. Y. iii. 210, pl. 6, fig. 20 (1835); Chapman, Fl. So. U. S. 527 (1860); Clarke in Urban, Symb. Ant. ii. 125 (1900), excl. syn. of European authors other than Vahl; Small, Fl. 196 (1903) and Man. 182 (1933); Britton, Mem. Soc. Cubana Hist. Nat. ii. 197 (1916). *Schoenus fascicularis* Michaux, Fl. Bor.-Am. i. 37 (1803). *R. distans* var. β . *fascicularis* Kükenthal, Fedde Rep. Spec. Nov. xxiii. 208

¹ Thwaites, Enum. Pl. Zeyl. 435 (1864).

(1926). *Phaeocephalum fasciculare* House, Am. Midland Nat. vi. 202 (1920).—Roadside-ditches, peaty savannas, low pine barrens and lake-margins, Princess Anne County in southeastern Virginia, and common southward on the Coastal Plain from North Carolina to the Peninsula of Florida; less frequent in the coastal states west to eastern Texas; also in western Cuba, Jamaica, Hispaniola, Puerto Rico and Central America. VIRGINIA: wet peaty depressions in sandy pineland, The Desert, Cape Henry, Princess Anne Co., *Fernald & Long*, no. 3790 (G, P). NORTH CAROLINA: New Bern, Craven Co., *T. H. Kearney Jr.*, no. 1974 (US); pineland at sea-level, Carteret Co., *Godfrey*, no. 6408 (G, NC, NY); pineland, White Lake, Bladen Co., *Godfrey*, no. 5982 (D, G); drainage-ditch at Carolina Beach, New Hanover Co., *Godfrey*, no. 4724 (G); savanna, 7 miles southwest of Wilmington, Brunswick Co., *Godfrey & Shunk*, no. 4113 (G, NC). SOUTH CAROLINA: sandy drainage-ditch, 2 miles west of Salters, Williamsburg Co., *Godfrey & Tryon*, no. 512 (CU, D, G, NY, P); shallow peaty pond in pine barrens, 9 miles north of Georgetown, Georgetown Co., *Godfrey & Tryon*, no. 758 (D, G, NY); drainage-ditch, 3 miles north of McClellanville, Charleston Co., *Godfrey & Tryon*, no. 683 (G); grass-sedge bog or savanna, 3 miles southwest of Manning, Clarendon Co., *Godfrey & Tryon*, no. 940 (G, NY); grass-sedge bog or savanna, 1 mile west of Chicora, Berkeley Co., *Godfrey & Tryon*, no. 842 (G, NY); wet sand pockets, 5 miles north of Ridgeland, Jasper Co., *Wiegand & Manning*, no. 599 (G). CAROLINA, Juin, *Michaux* Herb. (G, TYPE-PHOTO.; NY, TYPE-FRAGMENT from Michx. Herb.). GEORGIA: moist sandy roadside in pine barrens, Bullock Co., *Harper*, no. 878 (G); Wilmington Island, Chatham Co., *Eyles*, no. 4891 (CU); Wayne Co., *Baldwin* (P); green sphagnum swamp, 9 miles north of Darien on U. S. Route 17, MacIntosh Co., *Eyles*, no. 6439 (CU); pine woods, Kingsland, Camden Co., *Small & DeWinkler*, no. 9682 (NY); pineland-pool just east of the Clinch Co. line on U. S. Route 84, Ware Co., *Eyles*, no. 6327 (CU); hammock at edge of swamp on Billy's Island, Okefenokee Swamp, Charlton Co., *Eyles*, no. 6356½ (CU); margin of pine-barren pond near Downing, Coffee Co., *Harper*, no. 1440 (G, NY, US); moist pine barrens, Thomas Co., *Harper*, no. 1173 (G, US). FLORIDA: moist pine barrens near Jacksonville, Duval Co., *Curtis*, no. 4945 (G); low pineland, Lake City, Columbia Co., *O'Neill*, no. 7675 (CU); Hibernia, Clay Co., Mar., 1869, *Canby* (G, NY, US); ditch near Clyatt's Station, Gainesville, Alachua Co., July 13, 1940, *Arnold* (CU); wet flatwoods, Welaka, Putnam Co., *Laessle*, no. 15 (CU); dry sand, high pineland, vicinity of Eustis, Lake Co., *Nash*, no. 641 (G, NY, US); near Sanford, Seminole Co., Aug., 1931, *Rapp* (NY); in a low pineland, Bithlo, Orange Co., *O'Neill*, no. 5268 (CU);

prairies near Lake Washington, Brevard Co., *Small & DeWinkler*, no. 9741 (NY); Kissimmee, Osceola Co., May 10, 1901, *Mearns* (US); ditch, Polk Co., July 27, 1940, *Schallert* (G); in wet ditch, Lake Jovita, Pasco Co., *Britton*, no. 2609 (CU); near water, near St. Petersburg, Pinellas Co., *Mrs. C. C. Deam*, no. 2899 (G); pinelands near Fellsmere, Indian River Co., *Small*, no. 8868 (NY); Okeechobee Prairie north of Okeechobee City, Okeechobee Co., *Small et al.*, no. 9238 (NY); Palma Sola, Manatee Co., *Tracy*, no. 6996 (G, NY, US); ditch, Sarasota Co., July 29, 1940, *Schallert* (G); pinelands, east of Punta Gorda, Charlotte Co., *Small, Mosier & DeWinkler*, no. 10928 (NY); around ponds, Myers, Lee Co., *Hitchcock*, no. 423 (G, NY, US); low pineland, 5 miles south of Stuart on east coast, Martin Co., *O'Neill*, no. 5265 (CU); St. Vincent Island, Franklin Co., *McAtee*, no. 1806 (US); low pine barrens, Apalachicola, Franklin Co., *Chapman in Biltmore Herb.*, no. 4469 (G, NY, US); Lake Gentry, Santa Rosa Co., *Howell*, no. 1092 (US). ALABAMA: low pineland about Miflin Creek, Elberta, Baldwin Co., Aug. 25, 1926, *Wolf* (StB); low swampy pine barrens, Mobile, Mobile Co., July, 1872, *Mohr* (US). MISSISSIPPI: Ocean Springs, Jackson Co., *Pollard*, no. 1016 (D, G, NY, US); Long Beach, Harrison Co., Aug. 25, 1896, *Joor* (Mo); Cat Island, Hancock Co., *Lloyd & Tracy*, no. 359 (NY). LOUISIANA: in pine wood clearings, Slidell, St. Tammany Parish, Oct. 5, 1891, *Langlois* (NY); near Indian Village, east of New Orleans, Orleans Parish, *Killip*, no. 13968 (US). TEXAS: Jefferson Co., *Tharp*, no. 3055 (US). CUBA: in savannas, towards Bibijaguas, Nueva Gerona, Isla de Pinos, *Ekman*, no. 12535 (G, US); dry ground, Laguna Jovero and vicinity, Pinar del Rio, *Shafer*, no. 10752 (G, NY); sabanas, El Sabalo, Finca Sabanalamar, Pinar del Rio, near sea level, *Killip*, no. 32260 (CU); palm barrens west of Guane, Pinar del Rio, *Shafer*, no. 10500 (NY); among Acoeloraphe, on shore of laguna, Laguna Santa Maria, Pinar del Rio, *Ekman*, no. 17274 (US); sandy pine woods (damp) Pinar del Rio, Oct. 1863?¹ *C. Wright*, no. 3392² (NY); on edge of laguna, Herradura, Pinar del Rio, *Ekman*, no. 11585 (G); low savannas, Chirigota, Pinar del Rio, Oct. 26, 1863?³ *Wright*, no. 3399?² (US); low wood at 420 m., north slope of Loma Pelada de Buenavista, Cayajabos, Pinar del Rio, *León*, no. 13561 (NY). JAMAICA: summit of Bull Head, Chapelton to Bull Head, Middlesex, *Underwood*, no. 33646 (NY). HISPANIOLA: laterite soil at Dutreuil, Corail, Western Group, Massif de la Hotte, Dept. du Sud, Haiti, c. alt. 250 m., *Ekman*,

¹ See Underwood, Bull. Torr. Bot. Cl. xxxii. 297 (1905).

² The penciled number 3399 appears on 3 Wright sheets, the specimens of which are for the most part *R. fascicularis*. These are undoubtedly no part of the original "Cuba or. (Wr. 3399)" on which Grisebach based in part his description of *R. deflexa*.

³ See Underwood, Bull. Torr. Bot. Cl. xxxii. 297 (1905).

no. 10741 (US); in savannas, El Valle, Sabana de la Mar, prov. de Samana, Cordillera Central, Dominican Republic, *Ekman*, no. 15667 (NY); forming colonies, in Sabana de Ponton, toward Cotui, Rincón, prov. de la Vega, Valle del Cibao, Dominican Republic, *Ekman*, no. 14623 (G, US). PUERTO RICO: in sphagnum, western end of Laguna Tortuguero, *Britton & Britton*, no. 7872 (NY, US); wet white sand, vicinity of Vega Baja, *Britton, Britton & Brown*, no. 5788 (NY); moist sandy soil, Santurce, *Heller & Heller*, no. 583 (NY, US).

34b. Var. *DISTANS* (Michx.) Chapm. Habit more slender than that of var. *typica*: spikelets mucronulate: achene elliptic in outline, gradually biconvex, not umbonate, chestnut to dark brown, without a well-defined central disc, 1.1–1.3 mm. wide, 1.3–1.5 mm. long: bristles 6, always exceeding the achene: tubercle compressed, triangular-subulate, with a narrow base. PLATE 825, FIGS. 2A and 2B; MAP 40.—Fl. So. U. S. 527 (1860). *Schoenus distans* Michaux, Fl. Bor.-Am. 1. 36 (1803). *R. distans* Vahl, Enum. ii. 235 (1806); Elliott, Sk. Bot. S. Car. and Ga. i. 59 (1816); Gray, Ann. Lyc. N. Y. iii. 216, pl. 6, fig. 28 (1835); Clarke in Urban, Symb. Ant. ii. 125 (1900); Small, Fl. 195 (1903) and Man. 182 (1933); Britton, Fl. Bermuda 53, fig. 81 (1918); Britton & Wilson, Sci. Surv. Porto Rico and Virgin Isl. v. 103 (1923); Kükenenthal, Fedde Rep. Spec. Nov. xxiii. 208 (1926). *R. dommucensis* A. H. Moore, List of Pl. Coll. in Bermuda, 1905: 6, pl. 1 and 2 (1906). *Phaeocephalum distans* House, Am. Midland Nat. vi. 202 (1920). *Dichromena distans* Macbride, Field Mus. Pub. Bot. xi. 5 (1931).—Moist sandy or peaty pineland from southeastern Virginia southward along the Coastal Plain to the tip of Florida and west to Mississippi; also Bermuda. VIRGINIA: moist sandy and peaty pine barrens, south of Lee's Mill, Isle of Wight Co., *Fernald & Long*, no. 12273 (G, P); wet peaty pine barrens, east of Cox Landing, south of South Quay, Nansemond Co., *Fernald & Long*, no. 10551 (CU, G, NY, P). NORTH CAROLINA: savanna, Chocowinity, Beaufort Co., *Godfrey*, no. 5417 (G); sand-ridge, 5 miles west of Clinton, Sampson Co., *Godfrey*, no. 4502 (D, G); moist boggy places, north side of White Lake, Bladen Co., *Blomquist*, no. 10863 (D); pineland near Carolina Beach, New Hanover Co., *Godfrey*, no. 4708 (G, NC). SOUTH CAROLINA: peaty pocket in pine barren, 5 miles northwest of McClellanville, Charleston Co., *Godfrey & Tryon*, no. 1122 (D, G, P, NY). CAROLINA: *Michaux* (G, TYPE-PHOTO; NY, TYPE-FRAGMENT from Michaux Herb.). GEORGIA: shady woods between Guyton and Springfield, Effingham Co., *Harper*, no. 936 (G, NY, US); border of pond near Middleground Road, Chatham Co., *Eyles*, no. 6228 (CU); moist sandy roadside in pine barrens, Bullock Co., *Harper*, no. 878 (C, NY, US); margin of shallow pond in sandhills of Satilla River, Coffee Co., *Harper*, no.



Gale, Shirley. 1944. "RHYNCHOSPORA, SECTION EURHYNCHOSPORA, IN CANADA, THE UNITED STATES AND THE WEST INDIES (Continued)." *Rhodora* 46, 159–197.

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