

NOMENCLATURAL NOTES ON NEW WORLD *CYPERUS* (CYPERACEAE)

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Abstract. We discuss nomenclatural and taxonomic matters pertaining to three species of New World *Cyperus*. We provide correct names for three species hitherto known as: *Cyperus friburgensis*, *C. niger*, and *C. spectabilis*. Also, *C. multifolius*, and *C. penicillatus* are noted as overlooked synonyms of *C. prolixus*. New combinations are made for the varieties previously recognized in *C. niger*.

Keywords: Neotropical, Cyperaceae, *Cyperus*, sedge, nomenclature

The genus *Cyperus* L. (Cyperaceae) includes over 900 species, occurring worldwide in warm temperate and tropical regions (Larridon et al., 2011a, 2011b). The distribution of species ranges from nearly cosmopolitan, e.g., *C. squarrosus* L. and *C. flavescens* L., to regional and narrow endemics found in most tropical and temperate regions (Alves et al., 2007; Kükenthal, 1935–1936; Tucker, 1994, 2013; Tucker et al., 2002). In the New World, areas of high diversity and endemism include the southeastern United States, Mexico, the Greater Antilles, and eastern Brazil (Ribeiro et al., 2015; Tucker, 2007, 2013). Recent molecular studies (Larridon et al., 2011b; 2013; Reid et al., 2017) have demonstrated that the “*Cyperus* Clade” comprises 13 or more genera,

confirming the majority of subgenera and sections proposed by Kükenthal (1935–1936) and including other genera traditionally segregated (*Kyllinga* Rottb., *Lipocarpa* R. Br., *Remirea* Aubl.).

This study was based on examination of type specimens and relevant literature, including taxonomic assessment of numerous synonyms. We found earlier valid names for three species hitherto known as: *Cyperus friburgensis* Boeckeler, *C. niger* Ruiz & Pav., and *C. spectabilis* Link. Also, *C. multifolius* Kunth and *C. penicillatus* Conzatti are noted as overlooked synonyms of *C. prolixus* Kunth. New combinations are made for the varieties previously recognized in *C. niger*.

AN EARLIER NAME FOR *CYPERUS FRIBURGENSIS*

Cyperus sect. *Diffusi* Kunth includes about 26 species in Old and New World Tropics (Kükenthal, 1935–1936). In the Neotropics, there are 12 species (Tucker, 2007). Within the preceding section, Nees (in Martius, 1842: 32) described *C. martianus* Schrad. ex Nees, as a new species from Brazil, notably characterized in having digitate spikelets, cuspidate scales, and only one stamen per flower. The species name, however, was a later homonym of *C. martianus* Schultes (1824). MacBride (1929) provided a new name for the species, *C. schraderi*. Meanwhile, in 1890 and 1895, Boeckeler described two new Brazilian *Cyperus* species, viz., *C. friburgensis* Boeckeler and *C. fuscoferrugineus* Boeckeler, respectively. The synonymy citation follows the chronology provided by Kükenthal (1935–1936) for *C. friburgensis*.

While studying the species of *Cyperus* sect. *Diffusi* housed at the MNHN Herbarium (Paris), the taxonomy of the type specimen of *C. caducus* Steud. was assessed. Kükenthal (1936: 215–216) treated this name as *incertae cedis*. The specimen (Fig. 1) was annotated as “*Cyperus martianus*” by C.B. Clarke in 1888. However, we assert that the specimen having primary, secondary, and tertiary branching in the inflorescence and numerous single spikelets

is readily identifiable as *C. friburgensis* (Tucker, 2007). We conclude that *C. caducus* is the earliest available name for the species generally recognized hitherto as *C. friburgensis*.

Cyperus caducus Steud., Syn. Pl. Glumac. 2(10): 315. 1855. TYPE: “America.” *s. coll.* [Anonymous *s.n.*], Herb. Steudel (ex herb. Boeck.) (Holotype: P-00542053).

Heterotypic synonyms: *Cyperus martianus* Schrad. ex Nees in Martius, Fl. brasil. 2(1): 32. 1842, not Schult., 1824. TYPE: [BRAZIL]. “Habitat in udis ad margines silvarum ad Ytú et alibi in provincia S. Pauli et juxta S. Barbara provincia Minarum: M(artius) [*s.n.*, *s.d.*] – ad Retiro praedium prov. Rio de Janeiro: Pohl, Herb. Vindob. 946.” [A lectotype should be designated from among these syntypes. We have been unable to locate any of the syntype materials.]

Cyperus schraderi J. F. MacBr., Publ. Field Mus. Nat. Hist., Bot. Ser. 4(7): 167. 1929, *nom. nov.* for *C. martianus* Schrad. ex Nees.

Cyperus friburgensis Boeckeler, Beitr. Cyper. 2: 2–3. 1890. TYPE: [BRAZIL] Brasilia. Friburgo, F. R. Mendonca [*Mendonça*] 909, 1308 (*Vidi in herb. Mus. bot. Berlin.*)

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FIGURE 1. Holotype of *Cyperus caducus* Steudel.

Cyperus fuscoferrugineus Boeckeler, Allg. bot. Zeitschr. 1: 226. 1895 (as *fusco-ferrugineus*). TYPE: BRAZIL. Rio de Janeiro: Friburgo, *F. R. Mendonça 909* (Holotype: B-100146616).

Perennial herb, 25–70 (–130) cm tall. *Rhizomes* 5–10 mm thick, indurate, covered with fibrous remnants, ± horizontal. *Culms* 1–2.5 (–3.5) mm wide, trigonous or roundly trigonous, smooth. Leaves 1–5, 10–40 cm long, 4–10 mm wide, flat, the margins and keels scabrellate; sheaths yellowish green. *Inflorescence bracts* 8–14, 4–12 (–22) cm long, 2–9 mm wide, v-shaped, the margins and keels scabrellate, ascendant at 30–45°. *Rays* 8–18, 3–18 cm long; secondary rays 1.5–3.5 cm long; tertiary rays 5–15 mm long; quaternary rays often present, 3–6 mm long. *Heads* digitate (many spikelets often solitary as well), 6–11 mm wide. *Spikelets* 1–3, 4–6 mm long, 1.7–2 mm wide, broadly lanceolate, compressed; rachilla persistent, 0.5 mm wide, 0.2 mm thick, straight or slightly geniculate, purplish-brown with yellow scale scars, successive scales 0.5–0.6 mm apart, wingless. *Scales* deciduous, 10–14, 1.5 mm long (excluding the mucronate apex of 0.2–0.3 mm), 1.0–1.2 mm wide,

lanceolate, laterally nerveless, pale brown, medially 3 nerved, green. *Stamen* 1; filament ribbonlike, 1.2 mm long; anthers about 0.7 mm long, narrowly ellipsoid, the connective apex about 0.1 mm long, reddish brown, glabrous. *Styles* 1 mm long; stigmas 3, 2–3 mm long. *Achenes* 1.2–1.4 mm long, 0.5–0.6 mm wide, trigonous, oblong-ellipsoid, apiculate, stipitate, the faces slightly concave, the surface punctulate, brown.

Selected specimens examined: ARGENTINA. Salta: Orán: Finca Arazayal, *Novara 383* (CORD). BOLIVIA. Santa Cruz: Ñuflo de Chavez Prov., 2 km N de la comunidad Las Trancas, *Mamani & Jardim 744* (EIU, USZ); Sara Prov., B. Vista, *Steinbach 7429* (F). BRASIL. Goias: Serra do Caiapó, 5 km S of Caiapônia, *Anderson 9486* (AAU, NY). São Paulo: Mpio. Teodoro Sampaio, Serra do Diabo, *Muñiz 326* (EIU, SP). COLOMBIA. Boyaca: Carretera a Yopal, río Charté, *Idrobo 5212* (AAU). ECUADOR: Zamora-Chinchi: El Padmi, Vivar & Toledo 1817 (AAU). PARAGUAY. Guairá: Tororo, San Pedro, *Degen 1178* (MO). Caazapa: Tavai, *Soria 3326* (FCQ, MA). VENEZUELA. Yaracuy: carretera San Felipe–Nirgua, *Aristeguieta 1169* (US).

THE IDENTITY OF *CYPERUS MULTIFOLIUS* AND *C. PENICILLATUS*

Cyperus multifolius Kunth was accepted as a species by Kükenthal (1935–1936), and assigned to *C. sect. Subulati* C.B. Clarke of the subgenus *Cyperus*. The type specimen, although immature, is undoubtedly identifiable as a plant of *C. prolixus* Kunth. The strongly ascendent bracts with conspicuous septa, presence of secondary rays, and ascendent spikelets support this identification (Tucker 1994). The length of the floral scales and separation of the scales matches the dimensions of *C. prolixus*. Also, Kükenthal described the rays of *C. multifolius* as being compressed, a condition not found in any other members of Subgenus *Cyperus*. *Cyperus multifolius* had been proposed for IUCN Red List status.

Another overlooked synonym of *C. prolixus* is *C. penicillatus* Conz. Examination of an isotype (MICH) shows that it is in no way distinguishable from *C. prolixus*. It was annotated as such by Tucker in 1985.

Cyperus prolixus Kunth in H.B.K., Nov. Gen. Sp. 1: 166 (ed. fol.); 206 (ed. qto.). 1816. TYPE: COLOMBIA, “*Crescit in montosis regni Novogranatensis cum in alta planitie Bogotensi inter Facatativa et Canoas, tum prope lacum Guatavitae, regione quae aeterno premitur frigore, alt. 1360–1080 hexap. Floret Julio*”, A. J. A. von Humboldt & F. W. H. A. Bonpland s.n. (Lectotype, here designated: P-128949; Isolectotypes: BW no. 1397; Herb. Bonpland, P). Heterotypic synonyms: *Mariscus polyphyllus* Kunth in H.B.K., Nov. Gen. 1: 174 (ed. fol.); 217 (ed. qto.). 1816, non *C. polyphyllus* Vahl, Enum. Pl. 2: 317. 1805. TYPE: ECUADOR: “*Crescit locis alsis regni Quitensis prope Chillo, Conocoto et Alangasi, alt. 1350 hex. Floret Februario*”; A. J. A. Bonpland & F. W. H. A. von Humboldt in Willd. herb. 1434 (Lectotype, here designated: P; Isolectotypes: B, P). *Cyperus multifolius* Kunth, Enum. Pl. 2: 91. 1837, nom. nov. for *M. polyphyllus* Kunth *Cyperus amplissimus*

Steud., Syn. Pl. Glumac. 2(10): 316. 1855. TYPE: South America. “Ex Hrbo Boeckeler Collector ignotus, sine loco speciali nisi America” (Holotype: P-542063).

Cyperus longeradiatus Steud., Syn. Pl. Glumac. 2(7): 37. 1854. TYPE: MEXICO. Oaxaca: 1845, *Buchinger s.n.* (Holotype: P-0542062).

Cyperus penicillatus Conz., [Fl. Taxon Mex. 2: 230. 1943, nom. invalid. (sine descr. lat.)] Fl. Taxon Mex., ed. 2, 1: 334. 1946. TYPE: MEXICO. Oaxaca: Mineral Zavaleta, 1931/10/02, *C. Conzatti 4647* (Holotype: not located; Isotype MICH).

Perennial herb, 0.5–3 m tall. *Culms* 3–30 mm in diameter, stoutly trigonous, smooth, basally indurate, thickened. *Rhizomes* 3–20 cm long, 1–2 cm in diameter, indurate. *Leaves* 3–10, 40–130 cm long, 1015 mm wide, v-shaped, with crossveins, the margins and keel scabrous. *Inflorescence bracts* (6–) 9 or –10, (5–) 15–90 cm long, 0.5–20 mm wide, v-shaped or inversely w-shaped, the margins scabrous, ascendent at 45–75°; longest bract 2–4 times longest inflorescence bract. *Rays* (5–) 9–12, 2–22 (–30) cm long (flattened-elliptic in cross-section); secondary rays 1–10 cm long; tertiary rays 0.5–3 cm long. *Spikelets* (2–) 3–45 mm long, (4–) 7–10 mm wide, narrowly cylindrical (appressed-ascendent); rachis 2.5–4.0 cm long. *Spikelets* (4–) 10–35, 7–12 (–15) mm long, 0.6–1.2 mm wide, linear, compressed (appressed-ascendent); rachilla persistent, 0.3–0.4 mm wide, about 0.2 mm in diam., flexuous, light brown, with hyaline wings 0.204 mm wide, successive scale scars 1.5–2.2 mm apart. *Scales* deciduous, 6–20, (3.2–) 3.8–4.3 mm long, 1.2–1.7 mm wide, oblongovate, acute to obtuse, mucronulate, the apices spreading, marginally hyaline, laterally 2– or 3–veined, brown, medially 1-veined, green. *Stamens* 3; filaments 24 mm long; anthers 0.7–0.9 mm long, the connective apex up to 0.1 mm long, oblong,

bright red. *Styles* 0.8–1.3 mm long; stigmas 3, 2.0–3.3 mm long. *Achenes* 1.8–2.5 mm long, 0.8–1.3 mm wide, trigonous, narrowly ellipsoid, the apex subacute (not apiculate), the base sessile, the faces planar or slightly concave, the surface punctulate, brown.

THE CORRECT NAME FOR *CYPERUS NIGER* RUIZ & PAV.

Found from the southwestern U.S.A. to northern Argentina, *Cyperus niger* Ruiz & Pav. (1798) is a common species of the Neotropical region in upland areas. However, the preceding name is illegitimate, as it is a later homonym of *C. niger* Salisb. (1796), a situation that has been hitherto overlooked. The date of publication of *C. niger* Ruiz & Pav. was incorrectly given as “1789” by Corcoran (1941) in her monograph of this subgenus of *Cyperus*. Kükenthal (1935–1936) in his worldwide monograph of *Cyperus*, did not include the Salisbury name.

Several names have been proposed for this species. The earliest available name is *Cyperus melanostachyus* Kunth (1815), which we consider as the correct name for the species generally treated as “*C. niger*.”

Cyperus melanostachyus Kunth in H. B. K., Nov. gen. sp. 1: 167 (ed. Fol.); 207 (ed. Qto.). 1816. TYPE: COLOMBIA. “*Crescit in praeruptis temperatis regni Novogranatensis, cum ad radices Andium Quinduensium prope Combeima, tum inter Alto de Gascas et Santa Fe de Bogota, alt. 700–900 hexap. Floret Augusto.*” *S.d., F. W. H. A. Humboldt s.n.* (Lectotype designated here (or perhaps Holotype): P; Isolectotype (or Isotype): HAL).

Homotypic synonyms: *Chlorocyperus melanostachyus* (Kunth) Rikli, Jahrb. Wiss. Bot. 27: 564. 1895.

Pycneus melanostachyus (Kunth) C.B. Clarke, Bot. Jahrb. Syst. 30: 8. 1901.

Heterotypic synonyms: *Cyperus niger* Ruiz & Pav., Fl. Peruv. 1: 47. 1798, non Salisb. (1796). TYPE: PERU. Habitat in nundatis et stagnatis Provinciae Cercado et Chancay. Floret Junio, et Julio,” Chancay, *H. Ruiz & J. A. Pavon 12/62* (Lectotype designated here: MA; photograph, F).

Pycneus niger Cufod., Bull. Jard. Bot. Natl. Belg. 40(3, Suppl.): 1443. [Enum. Pl. Aethiop. Spermat.] 1970, nom. superfl. & illegit. [Cufodontis cited *Cyperus melanostachyus* Kunth (1816) and *Pycneus melanostachyus* (Kunth) C.B. Clarke (1901) as synonyms].

Cyperus cimicinus J.Presl & C.Presl, Reliq. Haenk. 1:166 1828. TYPE: “Hab. in Peruvia? In Chili?”, *T. P. X. Haenke s.n.* (holotype: PRC; isotype: HAL).

Chlorocyperus cimicinus (J.Presl & C.Presl) Rikli, Jahrb. Wiss. Bot. 27: 563 1895.

Pycneus cimicinus (J.Presl & C.Presl) Pfeiff., Feddes Rept. 28: 17. 1930.

Cyperus melanostachyus var. *gracilis* Liebm., Mexic. halvgr. 14. 1850. TYPE: MEXICO. Puebla, Chinantla, July 1841, *F. M. Liebmann 14439* (Lectotype, designated by Tucker, 1986: C; isolectotype: C).

Phenology: Flowers and fruits from July to November.

Distribution: Neotropical; Louisiana; northwestern Mexico south through Central America and South America to northern Argentina; found along streams, rivers, and roadside ditches from (500–) 1000–2000 m.

Cyperus niger var. *pseudoelegantulus* Kük., Pflanzenreich IV. 20 (Heft 101): 345. 1936 (as *pseudoelegantulus*). TYPE: COSTA RICA. “La Palma (A. Tonduz 12627); Ufer des Rio grande bei San Ramön (A. M. Brenes 14438). COLOMBIA. Hochland von Popayän, 1600–2000 m (*F. C. Lehmann 417, 5741*). Südbrasilien: Paranä, Calmon (*P. K. H. Düsen 9312*).” Lectotype, selected from the syntypes listed above (designated by Tucker, 1994): COSTA RICA. Bords du Río Grande près San Ramón, 18 June 1901, *A. M. Brenes 14438* (GH; Isolectotype: US).

Cyperus piceus f. *densior* Kük., Pflanzenreich IV. 20(Heft 101): 397. 1936. TYPE: COSTA RICA. Cartago: “Gräben und feuchte Weiden bei Turrialba”, [Nov. 1893] (*A. Tonduz 8266*) (*sic*) (holotype: B, not located; Isotypes: BM, Z) Lectotype, here designated: Z; isolectotype: BM.

Cyperus intricatoramosus Boeckeler, Allg. Bot. Z. Syst. 1: 186. 1895 (as *intricato-ramosus*). TYPE: BOLIVIA. “Mandon Pl. Andium Boliviens. No. 1400. Viciniis Sarota alt. 3000 m in paludosis.” (Lectotype, here designated: GH; Isolectotype: NY).

Cyperus niger var. *intricatoramosus* (Boeckeler) Kük., Pflanzenr. (Engler) IV. 20 (Heft 101): 345. 1936.

Perennial herb, 540 (–95) cm tall. *Culms* 0.31.4 (–2.0) mm in diameter, trigonous to triquetrous, smooth. *Rhizomes* about 1 mm in diameter, soft, producing culms 130 (–50) mm apart. *Leaves* (2 or–) 3–7, 3–20 (–30) cm long, 1.53 mm wide, broadly v-shaped, the margins scabrellate for the entire length, or apically only. *Inflorescence bracts* 2 or 3, 1–15 cm long, 1–3 mm wide, broadly v-shaped, the margins and keel scabrellate, erect, horizontal to reflexed downward parallel to the culm. *Rays* 1 or 2, 3–45 mm long (rays sometimes none, the inflorescence 620 mm in diameter, densely ovoid). *Spikes* 7–16 mm in diameter, loosely to densely ovoid to hemispherical; rachis 1–2 mm long, or absent. *Spikelets* (3–) 525 (–60), (3–) 5–9 mm long, 1.8–2.3 mm wide, linear to oblonglinear, flattened; rachilla persistent, 0.4–0.6 mm wide, 0.4–0.5 mm in diam., quadrate, stramineous to reddish brown, wingless, successive scales scars 0.8–1.1 mm apart. *Scales* deciduous, 4–18, 1.5–2.1 mm long, 1.4–2.2 mm wide, ovate to orbiculate, obtuse, laterally nerveless, castaneous, black, or light brown, medially distinctly bicarinate basally, 2 (or 3)-veined, green or greenish brown. *Stamens* 2; filaments 1.6–2.3 mm long; anthers 0.6–0.8 mm long, narrowly ellipsoid, the connective apex not prolonged. *Styles* 0.4–0.6 mm long; stigmas 2, 0.7–2.1 mm long. *Achenes* 1.2–1.4 mm long, 0.6–0.8 mm wide, lenticular, ovoid-ellipsoid, apiculate (or not), the base slightly stipitate, the faces convex, the surface punctulate, brown.

Distribution: Southeastern Oklahoma to western California, south through the mountains of Mexico and Central America to northern Argentina; disjunct in the mountains of East Africa. Rather common in most of its range, occurring in ditches, wet pastures, seepage, streambanks and wet meadows, from (800–) 1500–2200 (–3200) m.

Kükenthal recognized several varieties with his concept

of *C. niger*. Corcoran (1941) reviewed these. She accepted several. Southernmost populations have been distinguished as *C. niger* var. *lorentzianus*, although some have treated these at the specific level, as *C. lorentzianus*, distinguished from *C. niger* by having blunt achenes (not apiculate). We accept the varieties of *C. niger* described by Corcoran (1941), making needed combinations below.

KEY TO THE VARIETIES OF *CYPERUS MELANOSTACHYUS*

- 1a. Culms 2–4 mm in diam., flattened, flaccid; bracts 3–4 mm wide; Mexico. var. *robustus*
 1b. Culms 0.5–2 mm in diam., not flattened; bracts 0.2–3 mm wide; South America, south west United States and Mexico; East Africa. 2
 2a. Achenes not apiculate, about 1 mm long (about half as long as the scale); leaves, culms, and bracts not vesiculate; southern South America. var. *lorentzianus*
 2b. Achenes apiculate, 1–1.4 mm long (nearly as long as the scale); leaves, culms, and bracts usually vesiculate; south west United States and Mexico; East Africa. 3
 3a. Scales castaneous; spikelets 8–10 mm long; rays absent; south west United States and Mexico. var. *capitatus*
 3b. Scales black; spikelets 4–8 mm long; rays present or absent; Mexico to Peru and E Africa. 4
 4a. Scales with greenish midvein; achenes 0.4–0.5 mm wide; Mexico to Peru. var. *melanostachyus*
 4b. Scales with greenish-yellow midvein; achenes 0.5–0.6 mm wide; East Africa. var. *elegantulus*

Cyperus melanostachyus* Kunth var. *melanostachyus

Synonymy as per species.

Selected specimens examined: MEXICO. Sierra de las Cruces, *Pringle 6671* (BRU, CM, US). Oaxaca: about 1 km W of Natividad, *Tucker 2161* (DUKE, ENCB). San Luis Potosí: Las Canoas, *Pringle 3789* (ARIZ, BRU, E, GH, M, MO, NY, TEX, UC, US, Z). PANAMA. Chiriquí: Reserva Forestal de Fortuna, *Thomas & Wilson 14026* (MO, NY). VENEZUELA. Merida: between Timotes and Chachopo, *Alston 6563* (BM, P). Trujillo: municipio Bocono, *Gonto & Fernandez 5971* (MA).

***Cyperus melanostachyus* var. *robustus* Liebmann, Mexic. halvgr. 13. 1850.** TYPE: MEXICO. Puebla: San Lorenzo in the Tehuacán Valley, Dec. 1841, *F. M. Liebmann 14441* (Lectotype, designated by Tucker, 1986: C).

C. niger var. *robustus* (Liebmann) Kük., Pflanzenreich IV. 20(Heft 101): 344. 1936.

Cyperus variegatus Kunth in H. B. K., Nov. gen. sp. 1: 167 (ed. Fol.); 208 (ed. Qto.). 1816. TYPE: MEXICO. "Crescit in calidis regni Mexicani prope rivum San Pedro Jorullensium [San Pedro Jorullo], alt. 405 hexap.; item in declivitate ipsius montis ignivomi. Floret Septembri." S.d., F. W. H. A. Humboldt s.n. ((Lectotype designated here (or perhaps holotype): P).

Selected specimens examined: MEXICO. Chihuahua: *Gentry 1795* (MO), 1996 (MO). Puebla: *Arsene 2322* (MO, US), 1389 (MO, US); San Lorenzo. *Liebmann 14441* (GH). Tlaxcala: Sta. Ana Chinantepan, *Arsène 1726* (ILL, MO, NY, US). GUATEMALA. Chimaltenango: *Wallace et al. 439* (MO).

Although *Cyperus variegatus* Kunth was initially treated as a synonym of *C. melanostachyus* (e.g., Liebmann, 1850: 200), Kükenthal (1836: 344) made it a synonym of his taxon *C. niger* var. *robustus* as shown above.

***Cyperus melanostachyus* var. *capitatus* (Britton) G. C. Tucker & Gandhi, comb. nov.**

Basionym: *Cyperus diandrus* var. *capitatus* Britton, Bull. Torr. Bot. Club 13: 205. 1886.

TYPE: "Texas and northern Mexico to California. Here I include the var. *castaneus* of Watson in Botany of California, ii., p. 214; No. 1949 of C. Wright's New Mexican Collection, and No. 49a of Dr. Palmer's Chihuahuan Collection of 1885." Lectotype (designated here): U.S.A. New Mexico: *C. Wright 1949* (NY; Isolectotype: GH).

Homotypic synonyms: *Cyperus flavescens* subvar. *capitatus* (Britton) Farw., Amer. Midl. Naturalist 12: 118. 1930. *Cyperus niger* var. *capitatus* (Britton) O'Neill, Rhodora 44: 86. 1942.

Cyperus niger var. *castaneus* Kük., Pflanzenreich IV.20(Heft 101): 344. 1936, nom. superfl.

Cyperus diandrus Torr. var. *castaneus* sensu S. Watson, Bot. Calif. 2: 214. 1880, non (Pursh) Torr. 1836.

Selected specimens examined: U.S.A. Arizona: *Kearney & Peebles 1448* (US). Yavapai Co., Crescent Moon Ranch, *Licher 2566* (ASU). California: *Parish 3811* (F). Butte Co., *Ahart 8274* (UC, UTEP). New Mexico: *Arsene 18461* (US); *Wright 1949* (GH, NY). Hidalgo Co., *Sivinski et al. 8117* (UNM). MEXICO. Baja California Sur: Sierra de San Francisquito, 22 March 1892, *Brandege s.n.* (UC). Jalisco: *Pringle 3848* (COL, NY). Oaxaca: *Conzatti 50* (US). Tlaxcala: *Arsene 10140* (US). GUATEMALA. *Steyermark 32306* (F). PANAMA. *Killip 4534* (US).

***Cyperus melanostachyus* var. *lorentzianus* (Boeckeler) G. C. Tucker & Gandhi, comb. nov.**

Basionym: *Cyperus lorentzianus* Boeckeler, Linnaea 35: 357. 1874. TYPE: ARGENTINA. Cordoba: Cerro de San Lorenzo, *P. G. Lorentz 36* (holotype: B, not found; lectotype, here designated: CORD).

Heterotypic synonyms: *Cyperus pergracilis* Boeckeler, Cyper. Nov. 2: 1. 1890. TYPE: ARGENTINA. S.d., *G. Niederlein s.n.* (Holotype: B, not located). [Application of name follows Kükenthal (1936: 344)] *Cyperus biradiatus* Boeckeler, Allg. Bot. Zeit. 1: 186. 1895. TYPE: BRAZIL. Santa Catharina: Serra do Orontario, *E. H. Ule 1604* (Holotype: B, not located; no duplicates found). [Application of name follows Kükenthal (1936: 344).]

Selected specimens examined: ARGENTINA. Buenos Aires: *Cabrera 2730* (US). Córdoba: *Barros 2357* (LCA), *Lossen 137* (F, GH); *Lorentz & Hieronymus s.n.* in 1873 (NY). Tucumán: *Venturi 4370* (US) and *10036* (GH, US). BOLIVIA. *Fries 1228* (US).

Cyperus melanostachyus* var. *elegantulus (Steud.), G. C. Tucker & Gandhi, *comb. nov.*
Basionym: *Cyperus elegantulus* Steud., *Flora* 25(2): 583.

AN OLDER NAME FOR *CYPERUS SPECTABILIS*

The accomplishments of the Royal Expedition to New Spain, made during 1787–1803 and led by Sesse and Mociño, are well documented by McVaugh (1977) and others. In addition to herbarium specimens and botanical illustrations, seeds were collected and sent back to the Real Jardín Botánico in Madrid. Many new species were described by Lagasca from these living plants. In the account of *Cyperus* for the *Flora Novo-Galiciana*, Tucker and McVaugh (1993) treated this name, *Cyperus acutiusculus* Lag., as *incertae sedis*, since the name could not be matched with certainty with any Mexican species, based on Lagasca's protologue. The name was not included by Kükenthal (1935–1936) in his worldwide monograph of *Cyperus* or Benedict Ayers (1946) in his account of Mexican *Cyperus*. Recently, with the help of staff at MA and SEV, authentic material was located at SEV. The specimen (Fig. 2), pressed from plants grown from seed by Lagasca, is readily identifiable as the species treated by Kükenthal, Benedict Ayers, Tucker & McVaugh, and Tucker et al. (2002) as *Cyperus spectabilis* Link. The ovoid spikes have widely spaced spikelets [about 14 per cm], and light brown, spreading scales. The scales are 2–2.5 mm long, and laterally 3-veined, and separated by 2.6–3 mm on the rachilla. These features match those of *C. spectabilis*, confirming the identification. We provide synonymy, description, and representative specimens below.

Cyperus acutiusculus Lag., *Gen. Sp. Nov.* 2. 1816. TYPE: "H[abitat] in N[ueva] H[ispania]. *Semina misit D. Sessé.*" (Lectotype, here designated: SEV H9412).

Heterotypic synonyms: *Cyperus spectabilis* Link, *Hort. Berol.* 1: 318. 1827. Type: based on a cultivated plant from the Berlin Botanical Gardens (Holotype: not located at B; Lectotype, here designated: BR; Isolectotype: P).

Cyperus scaberrimus Nees, *Linnaea* 19: 697. 1847.

Cyperus spectabilis var. *scaberrimus* (Nees) Boeckeler, *Linnaea* 35: 606. 1868. TYPE: MEXICO. A. *Aschenborn 683* (Holotype: B, destroyed; Lectotype, here designated: B; isolectotype WRS�).

Cyperus buckleyi Britton ex J.M.Coult., *Contr. U. S. Natl. Herb.* 2: 461. 1894. TYPE: U.S.A. Texas: S. B. *Buckley s.n.* (Lectotype, designated by Tucker & McVaugh, 1993: NY; Isolectotype: GH).

Cyperus parryi Britton ex C.B. Clarke, *Kew Bull. Addit. Ser.* 8: 9. 1908.

1842. TYPE: ETHIOPIA. In uliginosis prope Demerki, 9. Aug. 1838, W. *Schimper 574* (holotype: P).

Homotypic synonym: *Cyperus niger* subsp. *elegantulus* (Steud.) Lye, *Sedges & Rushes E. Afr.* (Haines & Lye) 271 in error "Appendix 3". 1983.

Cyperus melanocephalus R.Br., *Voy. Abyss.* [Salt] *Append.* 62. 1814, *nom. nud.*

Cyperus atronitens Hochst., *Flora* 24(1, *Intelligenzbl.*): 20. 1841, *nom. nud.*

Cyperus spectabilis var. *parryi* (C.B. Clarke) Kük., *Pflanzenreich* IV. 20(Heft 101): 462. 1936. TYPE: MEXICO. San Luis Potosí: C. C. *Parry & Edw. Palmer 906* (Lectotype, designated by Tucker, 1994: NY; Isolectotypes: GH, US).

Perennial herb, (12–) 30–80 (–90) cm tall, tending to form small clumps by basal offshoots. *Rhizome* 1–5 cm long, 2–5 mm in diam., covered with fibrous brown scale remnants. *Culms* 0.7–1.7 mm in diameter, trigonous, smooth or essentially so. Leaves 3–5, 20–45 cm long, 2–4 mm wide, flat to v-shaped, the margins and keel scabrellate. *Inflorescence bracts* 2–4, 1–15 (–24) cm long, 0.4–3.5 mm wide, v-shaped, the keel and margins scabrous, ascendant at 15–30°. *Rays* 1–4, 1–15 cm long. *Spikes* (1.5–) 2.5–7.0 cm long, (1.0–) 1.5–3.5 cm wide, loosely ovoid to ovoidellipsoid; rachis (4–) 10–30 mm long, with 12–16 [range: 3–28] spikelets per cm. Spikelets (3–) 8–40, 8–18 mm long, (2.4–) 2.8–4 mm wide, linear, compressed-quadrate; rachilla ± deciduous, about 0.4 mm wide, 0.1–0.2 mm in diam., flat, greenish, whitish or stramineous, wingless or essentially so, successive scale scars (2.0–) 2.4–3.0 mm apart. *Scales* deciduous, (2–) 4–12, 1.6–2.6 mm long, (1.6–) 1.8–2.4 (–2.7) mm wide, oblong-ovate, obtuse, sometimes mucronulate, laterally weakly 2- or 3-nerved, light brown to reddish brown, medially 1 (–3) -veined, green or light brown. Stamens 3; filaments 1.6–2.8 mm long; anthers 0.4–0.6 mm long, linearellipsoid, the connective apex not prolonged. *Styles* 0.3–0.6 mm long; stigmas 3, 0.6–1.0 mm long. *Achenes* 1.7–2.2 mm long, 0.8–1.1 mm wide, trigonous, ellipsoid, the apex obtuse, slightly apiculate, the base substipitate, 0.1–0.2 mm long, whitish, the faces slightly concave, the surface papillose, dark brown to black.

Phenology: Flowers and fruits from early July to early September (–early November).

Distribution: Oklahoma to Arizona south to Chiapas; also in the mountains of Bolivia and northwestern Argentina. Grows in pine and pine oak woods, pinyon-juniper woodlands, grasslands with cacti, chaparral, damp arroyos in semi-desert scrub, and sometimes as a weed of croplands; (1000–) 1500–2000 (–2400) m.

Representative specimens examined: U.S.A. Arizona: Yavapai Co., *Keil 2801* (ASU, EIU). Texas: Jeff Davis Co., Colleen Canyon, *Worthington 6727* (UTEP). MEXICO. Aguascalientes: 4 km W of Asientos, *Rzedowski 25077* (ENCB, MICH). Chiapas: San Cristóbal, *Breedlove 37964* (DS). Chihuahua: Sierra La Brena, Tinaja Wash, *Spencer &*

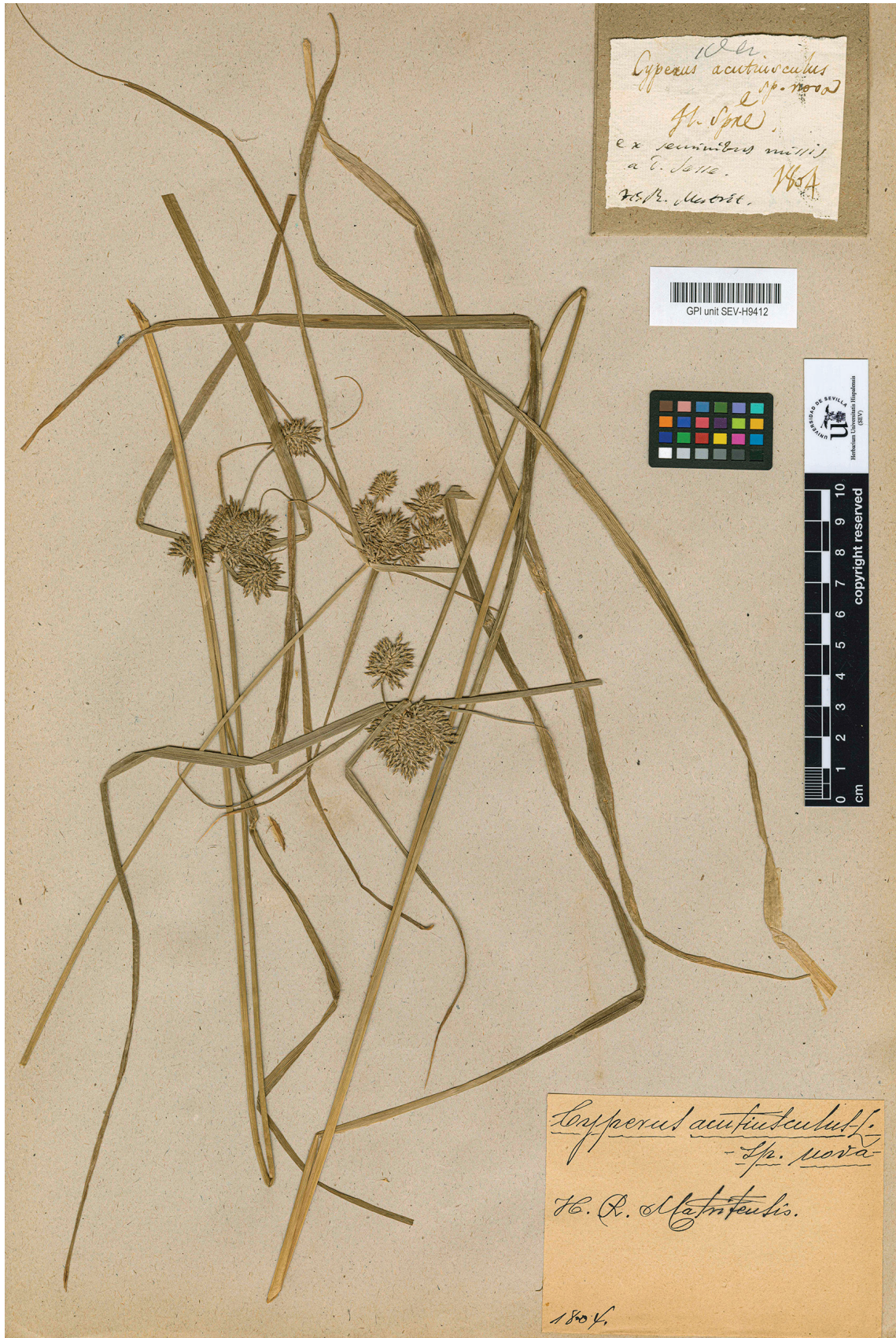


FIGURE 2. The lectotype of *Cyperus acutiusculus* Lag., from a plant grown at the Madrid Botanical Garden.

Atwood 1173 (ARIZ, BYU). Distrito Federal: near Mexico City, *Pringle 13233* (ARIZ, C, CU, F, GH, K, MICH). Guanajuato: between Guanajuato and Santa Rosa, *Moore 1356* (BH, GH). Guerrero: Dis. Mina, Zihuaqueo, *Hinton 9323* (GH, K, LCU, US). Jalisco: 4.4 miles N of Guadalajara, *Denton 2090* (MICH); 54 km N of Guadalajara, Carr. Saltillo, *Puga 7599* (IBUG). México: Río Hondo Canyon, *Pringle 3159* (ARIZ, ASU, C, DUKE, F, GH, LL, MICH, MSC, TEX, UC, WIS, Z). Oaxaca: Portillo San Dionisio, *Tucker 2781* (CAS, DUKE, ENCB, MICH). Tamaulipas: 3 mi. N of Miquihuana, *Stanford et al. 2448* (DAO). Zacatecas: 29 miles SW of Fresnillo, *Anderson & Laskowski 3594B* (MICH). ARGENTINA Catamarca: Ambato: Cuesta de la Loma Larga, *Hunziker & Di Fulvio 21201* (CORD). BOLIVIA. Cochabamba: Quillacollo to Morochata, *Ritter & Wood 2816* (MO, NHA).

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