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FOUR NEW SPECIES OF UNCINIA (CYPERACEAE) FROM NORTHERN SOUTH AMERICA

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ABSTRACT

Four new species of Uncinia (Cyperaceae) are described from northern South America. Three of them, U. lacustris, U. paludosa, and U. tenuifolia, belong in sect. Platyandrae; the fourth, U. subsacculata, belongs in sect. Uncinia. Three of the new species are known only from Ecuador, whereas U. paludosa has also been collected in Colombia.

Key words: Colombia, Cyperaceae, Ecuador, Uncinia lacustris, U. paludosa, U. subsacculata, U. tenuifolia.

INTRODUCTION

All of the 60 to 70 species of Uncinia Pers. (Cyperaceae) occur south of the Tropic of Cancer, with slightly over 20 growing in the mountains and cooler regions of South America. Five species have previously been reported from the northern half of the continent (Kunth 1837; Kükenthal 1909; Steyermark 1951). In this paper, we describe four new species of Uncinia from northern South America.

DESCRIPTIONS AND COMMENTS

Uncinia lacustris G. Wheeler, sp. nov. Fig. 2, 6B

TYPE.—Ecuador. Prov. Pichincha: Páramo de Guamaní, about 5 km W of Paso de la Virgen, 00° 18' S. lat., 78° 14' W. long., alt. 3900 m, at small lake, 29 Mar 1984, Lregaard 51887 (holotype: AAUL; isotypes: GENT, MIN!, NY, QCA!).

Herbe laxae caespitosae; vaginae basales brunneo-purpureae, glabrae. Folia 5-7, basilaria; laminae 3.5-14 em longae, 1.5-3 mm latae; ligulae 0.8-1.5 mm longae. Spica solitaria, terminalis, androgyna, 2.5-3.8 em longa, 1.5-2.3 mm lata. Pars mascula 5-10 mm longa, 7-15-flora. Pars feminea ca. 25-45-flora; squamae pistillatae persistentes, 2.6-3.5(-4) mm longae, 1.4-1.8 mm latae, coriacea, apice albo ciliolatae. Perigynia 2.8-3.6 mm longa, 0.8-1.2 mm lata, superior scabrido-hispidula, margitus subciliata. Achenium 1.9-2.3 mm longum, 0.9-1.1 mm latum; carpella 4-5.4 mm longa, exserta pars 1.5-2.7 mm longa, glabra. Stigma 3. Antherae 3, 0.9-1.2 mm longae, ca. 0.2 mm latae; filamenata linearia dilatata, ca. 0.2 mm lata.

Plants loosely cespitose from short, creeping rhizomes; rhizomes 1.7-2.3 mm thick, dark reddish brown. Fertile culms 5.5-23 cm tall, 0.6-0.8 mm thick, erect or slightly curved, from shorter than to exceeding the leaves, obscurely trigonous to nearly terete, smooth, with glabrous, reddish brown basal sheaths. Leaves 5-7, basal; blades 3.5-14 cm long, 1.5-3 mm wide (average 2.2 mm), ascending, rigid, flat or channelled (especially proximally), glabrous, the margins scabrous (a mixture of antorse and dolabriform hairs), terminating in a 3-angled, scabrous attenuate tip; inner band of leaf sheaths hyaline or reddish brown-tinged, glabrous, the apex slightly concave; ligules 0.8-1.5 mm long, rounded to subacute, wider than long. Inflorescence a solitary, androgynous spike, 2.5-3.8 cm long, 1.5-2.3 mm wide, linear. Staminate part 5-10 mm long, 1-1.5-flowered; scales 1.6-2.8 mm long, 0.8-1.4 mm wide, oblong to slightly obovate, obtuse, glabrous, pale brown or reddish brown-tinged, 1-veined, the tips with hyaline margins and ciliolate. Pistillate part tightly flowered with ca. 25-45 perigynia; scales persistent, 2.6-3.5(-4) mm long, 1.4-1.8 mm wide, from shorter than to slightly exceeding the perigynia, oblong to slightly obovate, obtuse, coriaceous, glabrous, reddish brown and stramineous. Center, 1(-3)-veined, the tips with hyaline margins and ciliolate, the lowermost one infrequently with a scabrous-ciliate awn up to 7.5 mm long. Perigynia 2.8-3.6 mm long, 0.8-1.2 mm wide, elliptical, appressed hispid distally, smooth or sparsely hispid proximally.
Uncinia lacustris (Fig. 2) somewhat resembles U. paludosa (described below; Fig. 3) but differs by having smaller perigynia (cf. Fig. 6B and 6C) and achenes as well as narrower leaves and shorter rachillae and pistillate scales. Based on characteristics of its stamens and perigynia, the new species belongs in sect. Plantyandreae C. B. Clarke (Clarke 1883; Kü在一个 thal 1909), i.e., the staminal filaments are as wide as or wider than the anthers and the margins of the appressed-hispid perigynia are ciliate from the apex to near the base.

Although the stature of Uncinia lacustris is somewhat similar to that of U. meridensis Steyerm., which was originally described from Venezuela (Steyermark 1951), the former species differs from the latter in several morphological features. Indeed, as intimated elsewhere (Hooper 1968), U. meridensis belongs in sect. Uncinia.

Uncinia paludosa G. Wheeler & Goethebeuer, sp. nov.

**TYPE.**—Ecuador. Prov. Chimborazo: páramo above Azul along road to Osogochi, 02° 18' S. lat., 78° 42' W. long., alt. 4200 m, swamp, 26 Apr 1988, Lagaard 71014 (holotype: AAU!; isotypes: GENT, MIN!, NY).

Herbae laxae caespitoseae; culmi 10–80 cm alti; vaginae basales brunneo-purpureae, glabrae. Folia 6–10, basilaria; laminae 5–29 cm longae, 3–5.5 mm latae; ligulae 1–2 mm longae. Spica terminalis, androgyna, 3.4–8.4 cm longa, 1.8–3 mm lata. Pars mascula 7–12 mm longa, 9–17-flora. Pars feminea ca. 25–50-flora; squamae pistillatae persistentes, 4–6.2 mm longae, 1.2–2 mm latae, coriaceae, apice albo ciliolata. Perigynia 4.6–5.3 mm longa, 1–1.3 mm lata, superne scabrido-hispida, marginibus ciliolatis. Achenium 2.2–2.6 mm longum, 0.8–1.1 mm latum; rachilla 6.4–7.8 mm longa, glabra, exserta pars 2.4–4.2 mm longa. Stigmata 3. Anthereae 3, 1.1–1.7 mm longae, ca. 0.2 mm latae; filamenta linearia dilatata, 0.2–0.3 mm lata.

Plants loosely cespitose from short, creeping rhizomes; rhizomes 1.8–3 mm thick, dark reddish brown. Fertile culms 10–80 cm tall, 0.7–1.4 mm thick, erect or slightly curved, usually exceeding the leaves, obscurely trigonous, smooth, with glabrous, dark reddish brown basal sheaths. Leaves 6–10, basal; blades 5–29 cm long, 3–5.5 mm wide (average 4 mm), ascending, rigid, flat or channeled (at least proximally), coriaceous, glabrous, the margins antrorsely scabrous, terminating in a 3-angled, scabrous attenuate tip; inner band of leaf sheaths hyaline or pale reddish brown, glabrous, slightly thickened at the usually reddish brown-tinged mouth, the apex concave; ligules 1–2

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\[\text{Fig. 1. Map of Ecuador in northern South America showing the distributions of Uncinia lacustris, U. paludosa, U. subsacculata, and U. tenuifolia. The single known locality for U. paludosa in Colombia is not shown on the map.}\]

the margins ciliate from apex to near the base with the longest hairs distally, stramineous to reddish brown, 2 veins prominent and the rest faint, tapered to the base; perigynium beak conical, appressed hispid, the margins densely ciliate. Achenes 1.9–2.3 mm long, 0.9–1.1 mm wide, compressed-trigonous with more or less flat, oblong sides, tightly enveloped by the perigynium, brownish, sessile. Rachilla 4–5.4 mm long, projecting beyond orifice of perigynium, the exerted portion 1.5–2.7 mm long, smooth, stramineous or pale brown, the hook 0.9–1.2 mm long and stramineous or pale brown (particularly the descending part). Stigmas 3. Anthers 3, 0.9–1.2 mm long, ca. 0.2 mm wide; filaments linear, dilated (ca. 0.2 mm wide), as wide as or wider than the anthers.

\[\text{PARATYPE.—Ecuador. Prov. Imbabura: Volcán Cotocachi, 00° 22' N. lat., 78° 20' W. long., alt. 3900–4100 m, páramo, 6 Jun 1985, Lagaard 54497B (AAU!).}\]

Uncinia lacustris is known from two sites in Ecuador (Fig. 1), where it grows in páramo at elevations from about 3900–4100 m. Plants with mature fruit have been collected in late March and early June. The epithet refers to the occurrence of this species on the wet margins of lakes.

Uncinia paludosa, habit, from Lagaard 51887 (MIN), isotype.—3. Uncinia paludosa, habit, from Lagaard 71014 (MIN), isotype.—4. Uncinia tenuifolia, habit, from *Ilgaard et al. 90884 (MIN), isotype.—5. Uncinia subsacculata, habit, from Lagaard 54469A (MIN), isotype. (Bar = 1 cm.)
mm long, rounded, wider than long. Inflorescence a solitary, androgynous spike, 3.4–8.4 cm long, 1.8–3 mm wide, linear. Staminate part 7–12 mm long, 9–17-flowered; scales 2.2–3.5 mm long, 1–1.6 mm wide, oblanceolate to ovate, obtuse, glabrous, stramineous or pale brown to brown, 1-veined, the tips with narrow hyaline margins and ciliolate. Pistillate part more or less tightly flowered with ca. 25–50 perigynia; scales persistent, 4–6.2 mm long, 1.2–2 mm wide, about equaling to slightly exceeding the perigynia, oblanceolate to ovate, obtuse, ciliate, glabrous, pale brown to brown and stramineous center, 1-veined, the tips with narrow hyaline margins and ciliolate, the lowermost one sometimes with a scabrous-ciliate awn up to 3 cm long. Perigynia 4.5–5.4 mm long, 1–1.3 mm wide, narrowly elliptical, appressed hispid distally, smooth or sparsely hispid proximally, the margins ciliate from apex to near the base with the longest hairs distally, stramineous or pale reddish brown to castaneous, 2 veins prominent and 9–13 faint veins in the proximal half, tapered to a stipitatelike base; perigynium beak conical, appressed hispid, the margins densely ciliolate. Achenes 2.2–2.6 mm long, 0.8–1 mm wide, compressed-trigonous with more or less flat, oblanceolate sides, tightly enveloped by the perigynium, brownish, sessile. Rachilla 6.4–7.8 mm long, projecting beyond orifice of perigynium, the exerted portion 2.4–4.2 mm long, smooth, whitish green or stramineous, the hook 1–1.4 mm long and stramineous or reddish brown (particularly the descending part). Stigmas 3. Anthers 3, 1.1–1.7 mm long, ca. 0.2 mm wide; filaments linear, dilated (0.2–0.3 mm wide), as wide as or wider than the anthers.

Additional Specimens Examined.—COLOMBIA. Arauca: Sierra Nevada del Cocuy, Quebrada El Playón, alt. 3625 m, 9 Jun 1973, Cleef 10057 (GB).—ECUADOR. Prov. Azuay: Páramo de las Cajas, W of Cuenca, alt. 4000–4150 m, 2 Sep 1984, Læggaard 52840 (AAU).—Prov. Bolivar/Chimborazo: road between Guaranda and Riobamba, alt. 4050–4150 m, 10 Jul 1990, Læggaard 71745 (AAU).—Prov. Cotopaxi: Quebrada de la Río Blanco, Páramo de la Cooperativa Cotopilalau, alt. 4000 m, 2 Feb 1984, Læggaard 51301A (AAU).—Prov. Napo: N side of Volcán Los Puntos, alt. 4150–4200 m, 26 Jul 1985, Læggaard 54733 (AAU); Llanganati, pámara SE of Chosa Aucacocha, alt. 3800–3900 m, 15 May 1982, Øllgaard et al. 38475 (AAU, GENT, MIN); Llanganati, Río Golpe, just north of Chosa Aucacocha, alt. 3600 m, 16 May 1982, Øllgaard et al. 38666 (AAU, GENT, MIN).—Prov. Pichincha: Páramo de Guanambi, close to Paso de la Virgen, alt. 4050 m, 8 Feb 1984, Læggaard 51310 (AAU, GENT, MIN); Páramo de Guanambi, about 5 km W of Paso de la Virgen, alt. 3700–3800 m, 19–20 May 1984, Læggaard 52185 (AAU, GENT, QCA); road between Olmedo and Laguna San Marcos, alt. 3600 m, 10 Jul 1980, Øllgaard et al. 34404 (AAU, GENT, MIN); Páramo de Papallacta, Laguna de Hoyas, alt. 4050 m, 8 Aug 1987, Ramsay & Merrow-Smith 162 (QCA).

Uncinia paludosa is known from several sites in Ecuador (Fig. 1) and one locality in the Sierra Nevada del Cocuy in northeastern Colombia. It grows in páramos at elevations from about 3600 to 4200 m, and frequents bogs and swamps and other marshy places. At the type locality, it was growing in a swamp with the rushes Distichia acicularis Balslev & Læggaard and Rostkovia magellanica (Lam.) Hook. f. and other cyperaceous plants including Oreobolus ecuadorensis T. Koyama and Eleocharis sp. Flowering plants have been collected in February and those with mature fruit from April through July. The epithet refers to the occurrence of this species in marshy habitats.

This species (Fig. 3) resembles Uncinia macloviana Gaudich. but differs by having smaller perigynia and achenes. Moreover, in U. macloviana the perigynia are longer than the pistillate scales, whereas in U. paludosa the scales are about equal to or slightly exceed the perigynia. Uncinia paludosa also resembles U. lacustris but differs by having wider leaves and longer perigynia, achenes, Rachillae, and pistillate scales. Like U. lacustris, this new species also belongs in sect. Platyandrae.

Uncinia tenuifolia G. Wheeler & Goetghebuer, sp. nov.

**TYPE.**—ECUADOR. Prov. Zamora-Chinchipe: road between Loja and Zamora, about 13 km E of the pass, just before junction with old road, 03° 58' S. lat., 79° 05' W. long., alt. ca. 2030 m, vertical dry cliff, 8 Mar 1989, Øllgaard et al. 90884 (holotype: AAU!; isotypes: GENT, K, MIN!, NY, QCA!).

Herbae dense caespitose; culmi 7–21 cm alti; vaginae basales brunnea, glabrae. Folia 3–7, basilaria; laminae 4–17 cm longae, 0.6–1.5 mm latae; ligulae 0.4–0.8 mm longae. Spica solitaria, terminalis, androgyn, (7–)12–22 mm longa, 1.5–2 mm lata. Pars mascula 4.5–8 mm longa, 3–11–flora. Flora 3–5; lobae 0.2–0.3 mm longae, aetheraeae. Pistillatae persistentes, 2.5–3.4 mm longae, 1.2–2 mm latae, subcoriacea, apice abo ciliolata. Perigynia 2.5–3.3 mm longa, 0.8–1.2 mm lata, superne scabrido-hispida, marginibus ciliolatis. Achenium 1.8–2.2 mm longum, 0.9–1.1 mm latum; rachilla 5–7.6 mm longa, exserta pars (1.8–)2.5–4.6 mm longa, glabra. Stigmata 3. Antherae 3, 1–1.4 mm longae, ca. 0.2 mm latae; filamina lineaer dissilata, ca. 0.2 mm lata.

Plants densely caespitose. Fertile culms 7–21 cm tall, 0.3–0.5 mm thick, erect or slightly curved, from shorter than to exceeding the leaves, obscurely trigonous, smooth, with glabrous, brown basal sheaths. Leaves 3–7, basal; blades 4–17 cm long, 0.6–1.5 mm wide, more or less spreading. Flat or channelled (especially in the proximal half), membranaceous, glabrous, the margins antrorsely scabrous distally, terminating in a long, scabrous attenuate tip; inner band of leaf sheaths hyaline or pale brown, glabrous, the apex concave; ligules 0.4–0.8 mm long, rounded. Inflorescence a solitary, androgynous spike, (7–)12–22 mm long, 1.5–2 mm wide, narrowly linear. Staminate part 4.5–8 mm long, 3–11-flowered; scales 2–2.8 mm long, 0.8–1.6 mm wide, obovate, obtuse to subacute, glabrous, brownish, 1(–3)-veined, the tips with hyaline margins...
Uncinia subsacculata G. Wheeler & Goetghbeur, sp. nov.

Fig. 5, 6D

TYPE.—ECUADOR. Prov. Pichincha: N side of Volcán Pichinchà above Hacienda Yanacocha, 00° 07' S. lat., 78° 34' W. long., alt. 3800 m, Polylepis forest, loose mats in shade, 4 Jun 1985, Lægaard 54469A (holotype: AAU!; isotypes: GENT, K, MIN!, NY, QCA!).

Herbae rhizomate repentis elongatos; culmi 15-25 cm alti; vaginae basales brunnæae, glabrae. Folia 7-9, plerumque basilaria; laminae 5-21 cm longæ, (1.5-)2-3.4 mm latae; ligulae 1.5-2.5 mm longæ. Spica solitaria, terminalis, androgyna, 2.5-4 cm longa, 2-3.5 mm lata. Pars mascula 6-8 mm longa, 7-11-flora. Pars feminea ca. 10-30-flora; squarnæ pistillatae deciduae, 4.2-6 mm longæ, 0.8-1.6 mm latae, membranaceae, apicis albo integrae, basi quarta parte vada; saccata persistentes, parte superiore mox deciduae. Perigynia 4.8-5.6 mm longa, 0.9-1.2 mm lata, glabra. Achenium 2.4-2.6 mm longum, 0.8-1.1 mm latum; ligula 1.5-2.5 mm longa, glabra, exserta pars 4.5-6 mm longa. Stigmata 3. Antheræ 3, 1.3-1.8 mm longae, glabra, 0.2 mm latae; filamenta filiformia non dilatata, ca. 0.1 mm lata.

Plants rhizomatos; rhizomes slender (0.7-1 mm thick), long-creeping, brownish. Fertile culms 15-25 cm tall, 0.7-1 mm thick, more or less erect, obscurely trigonous, smooth, with glabrous, pale brown to brown basal sheaths. Leaves 7-9, mostly basal; blades 5-21 cm long, (1.5-)2-3.4 mm wide, somewhat spreading, flat membranaceous, glabrous, the margins antrorsely scabrous distally, terminating in a scabrous attenuate tip; inner band of leaf sheaths hyaline, glabrous, the apex concave; ligules 1.5-2.5 mm long, subacute to acute. Inflorescense a solitary, androgynous spike, 2.5-4 cm long, 2-3.5 mm wide, linear or narrowly cylindric. Staminate part 6-8 mm long, 7-11-flowered; scales 3.5-4 mm long, 0.6-1.2 mm wide, lanceolate, subacute to acute, membranaceous, glabrous, green center with broad, hyaline margins and sometimes reddish brown-tinted distally, 1-veined, the tips entire. Pistillate part more or less tightly flowered, with ca. 10-30 perigynia; scales deciduous, but the basal one-fourth (or less) persisting as a conspicuous greenish or pale brown saccate structure less than 0.5 mm long, 4.2-6 mm long, 0.8-1.6 mm wide, from shorter than to about equaling the perigynia, membranaceous, lanceolate, subacute to acute, glabrous, green center with broad, hyaline margins and sometimes pale reddish brown-tinted distally, 1-veined, the tips entire, but the
lowermost one frequently with a scabrous-ciliate awn up to 2.5 cm long. Perigynia 4.8–5.6 mm long, 0.9–1.2 mm wide, fusiform, glabrous, the margins smooth, whitish green to pale greenish brown, 2 prominent veins and the rest faint, abruptly contracted to a stipitate base, the stipe 0.8–1.2 mm long; perigynium beak narrowly conical, 1.5–2 mm long, glabrous, the margins smooth. Achenes 2.4–2.6 mm long, 0.8–1.1 mm wide, compressed-trigonous with more or less concave, oblong sides, yellowish (immature). Rachilla 8.5–10.2 mm long, projecting beyond orifice of perigynium, the exserted portion 4.5–6 mm long, smooth, whitish green or pale greenish brown, the hook 1.8–2.2 mm long and stramineous or pale brown (particularly the descending part). Stigmas 3. Anthers 3, 1.3–1.8 mm long, ca. 0.2 mm wide, wider than the filiform filaments (ca. 0.1 mm wide).

*Uncinia subsacculata* is known only from the type locality (Fig. 1). Plants with well-developed perigynia (Fig. 6D) have been collected in early June. The epithet refers to the very short, persistent saccate bases of the deciduous scales.

This species (Fig. 5) resembles *Uncinia tenuis* Poeppig ex Kunth but differs by having longer perigynia, achenes, rachillae, anthers, and scales. Also, the perigynium beak of *U. subsacculata* is more narrowly conical and longer than the beak of *U. tenuis*. It is worthy of note that these two South American uncinias are readily identified by their distinctive inflorescences, which, when greatly (or entirely) divested of perigynia, display few to numerous saccate structures which are the persistent portions of the otherwise deciduous scales. However, whereas in *U. tenuis* the proximal one-third of the scale persists as a conspicuous appendage (about 1 mm long), in *U. subsacculata* the saccate appendage is appreciably shorter (less than 0.5 mm long).

Unlike the other three species described above, *U. subsacculata* belongs in sect. *Uncinia*, i.e., the perigynia are glabrous and the staminal filaments are narrower than the anthers. Moreover, *U. subsacculata* has deciduous scales, whereas in members of sect. *Platyandrae* the scales are persistent.

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**LITERATURE CITED**


