

CAREX AND UNCINIA (CYPERACEAE, CARICEAE) FROM THE JUAN FERNANDEZ ARCHIPELAGO, CHILE

Gerald A. Wheeler

University of Minnesota Herbarium, Bell Museum of Natural History, St. Paul, Minnesota 55108-1095, United States of America; wheel039@tc.umn.edu

Abstract. Wheeler, G. A. 2007. *Carex* and *Uncinia* (Cyperaceae, Cariceae) from the Juan Fernández Archipelago, Chile. *Darwiniana* 45(1): 120-141.

Ten members of the tribe Cariceae (Cyperaceae) occur on the Juan Fernández Archipelago: four species of *Carex* and six of *Uncinia*. Eight of the ten species occur on Alejandro Selkirk Island (= Masafuera; 50 km²) while four are known from Robinson Crusoe Island (= Masatierra; 48 km²). *Carex fernandezensis*, *C. stuessyi*, *Uncinia aspericaulis*, and *U. macloviformis* are newly described from the archipelago and all are endemic to the islands. Only two species, *Carex berteroniana* and *Uncinia douglasii*, both endemics, are of frequent occurrence and each occurs on both islands. Another endemic, *Uncinia costata*, is known only from the type locality on Alejandro Selkirk. The three remaining species, *Uncinia phleoides*, *U. tenuis*, and *Carex phalaroides*, the last here reported for the first time from the archipelago, also occur on the South American mainland. Lectotypes are chosen for the names *Uncinia costata* and *U. tenuis* f. *firmula*. Additionally, a new section of *Carex*, sect. *Pellucidae*, is circumscribed in this paper for the sectional placement of *C. stuessyi* and cognate species.

Keywords. Alejandro Selkirk Island, *Carex*, Juan Fernández Archipelago, Robinson Crusoe Island, Section *Pellucidae*, taxonomy, *Uncinia*.

Resumen. Wheeler, G. A. 2007. *Carex* y *Uncinia* (Cyperaceae, Cariceae) del Archipiélago Juan Fernández, Chile. *Darwiniana* 45(1): 120-141.

En el Archipiélago Juan Fernández se encuentran diez miembros de la tribu Cariceae (Cyperaceae): cuatro especies de *Carex* y seis de *Uncinia*. Ocho de las especies se hallan en la Isla Alejandro Selkirk (= Masafuera; 50 km²), y cuatro en la Isla Robinson Crusoe (= Masatierra; 48 km²). Se describen cuatro nuevos taxones endémicos para el Archipiélago: *Carex fernandezensis*, *C. stuessyi*, *Uncinia aspericaulis*, y *U. macloviformis*. Sólo dos especies endémicas, *Carex berteroniana* y *Uncinia douglasii*, son frecuentes en ambas islas. Otro endemismo, *Uncinia costata*, es conocido sólo en la localidad de colección del tipo en Alejandro Selkirk. Las tres especies restantes, *Uncinia phleoides*, *U. tenuis*, y *Carex phalaroides*, se encuentran también en el continente Sudamericano, y se cita aquí por primera vez *C. phalaroides* para el archipiélago. Se lectotipifican los nombres *Uncinia costata* y *U. tenuis* f. *firmula*, y se describe una nueva sección de *Carex*, sect. *Pellucidae*, para ubicar a *C. stuessyi* y taxones afines.

Palabras clave. Alejandro Selkirk, Archipiélago Juan Fernández, *Carex*, Robinson Crusoe, Sección *Pellucidae*, taxonomía, *Uncinia*.

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INTRODUCTION

The Juan Fernández Archipelago (= Robinson Crusoe Islands, V Región Valparaíso, Prov. Valparaíso) lies in the Pacific Ocean about 660 km west of continental Chile. The archipelago (between 33° and 34° S. Lat. and 78° and 81° W. Long.) consists of two major islands: Alejandro Selkirk (= Masafuera), the slightly larger island and farthest from the mainland, and Robinson Crusoe (= Masatierra), some 150 km farther east (Marticorena et al., 1998). A much smaller island, Santa Clara, lies near Robinson Crusoe, but no member of the Cariceae is reported from this islet (Skottsberg, 1953; Marticorena et al., 1998). The islands, which were discovered by the Spanish sailor Juan Fernández in 1574 (Greimler, 2002), are of volcanic origin, with Robinson Crusoe and Alejandro Selkirk dated at approximately 4 million and 1-2 million years old, respectively (Stuessy et al., 1984). The flora of the islands is well known for its high degree of endemism (e.g., Skottsberg, 1956; Marticorena et al., 1998), with some 60 percent of the native vascular plants and about 18 percent of the genera restricted to the archipelago (Stuessy et al., 1990; Stuessy et al., 1992). Due to this extraordinary flora, the three islands were designated as a Chilean National Park in 1935 and subsequently as a World Biosphere Reserve (Marticorena et al., 1998).

In the past eighty years or more, however, little work has been done on the tribe Cariceae Kunth ex Dumort. (Cyperaceae) from the archipelago. Motivated by the past as well as by the recent and continuing activity to better understand and to conserve the remarkable flora of these islands, the author here treats the *Carex* L. and *Uncinia* Pers. of the Juan Fernández Archipelago.

Kükenthal (1909, 1920) recognized four members of the Cariceae from the archipelago and Skottsberg (1922) subsequently reported three additional taxa. More recently, Marticorena et al. (1998) listed six species of this tribe from the islands (see Table 1). In the present treatment ten species of Cariceae are recognized from the islands, four of which are here newly described and illustrated: *Carex fernandezensis*, *C. stuessyi*, *Uncinia aspericaulis*, and *U. macloviformis*. Of the six remaining species, *Carex berteroniana* Steud., *Uncinia costata* Kük., and *U. douglasii*

Boott are endemic to the archipelago while *Carex phalaroides* Kunth, *Uncinia phleoides* (Cav.) Pers., and *U. tenuis* Poeppig ex Kunth also occur on the South American mainland. Lectotypes are selected for the names *U. costata* and *U. tenuis* f. *firmula* Kük. Additionally, *Carex* section Pellucidae is newly circumscribed for the sectional placement of *C. stuessyi* and allied species, all of which are indigenous to South America; the new section is treated immediately after specimen citation given for *C. stuessyi*.

Of phytogeographic interest, seven of the ten species are endemic to the Robinson Crusoe Islands, and, of these ten, only *Carex berteroniana* and *Uncinia douglasii* seemingly are of frequent occurrence. In regard to local distribution, eight species occur on Alejandro Selkirk Island while four are known from Robinson Crusoe Island (Table 2). Little is known about the evolutionary history of the Cariceae on the archipelago, but following the phylogenetic scheme presented by Stuessy et al. (1990), some comments on this topic are made throughout the paper. Also, a brief note is offered regarding the conservation status of each species.

Based on early collections made by David Douglas and Carlo G. Bertero, the first two species of the Cariceae described from the Juan Fernández Archipelago were *Uncinia douglasii* in 1847 and *Carex berteroniana* in 1855. Other notable early collectors of these two genera on the islands were P. Germain, F. Johow, H. N. Moseley, R. A. Philippi, E. C. Reed, and Scouler. But some of the most important Cariceae collections from the archipelago are those of Carl J. Skottsberg (1880-1963), some made with his wife Inga, and particularly those collected during the 1916-17 excursion and sent to Georg Kükenthal (1864-1955) in Germany for identification; disastrously, however, the Berlin (B) specimens, among them holotypes and syntypes, were destroyed during World War II. More recent collections of the Cariceae and other plants have come, at least in part, from the Chile-United States expedition of 1965 and some two decades later by those of the joint botanical expeditions of the Universidad de Concepción and The Ohio State University (Stuessy et al., 1990), and more recently by the University of Vienna (Marticorena et al., 1998).

MATERIALS AND METHODS

Methods of traditional taxonomy were used. Data gathered from the literature, personal communication, and the labels of specimens were used to acquire phenological information and develop habitats. Genera and species within genera are arranged alphabetically below. Complete descriptions are offered for the seven species of *Carex* and *Uncinia* endemic to the Juan Fernández Archipelago. Only a brief description, however, is given for the three species that also occur on the South American mainland, as detailed descriptions for these taxa

already exist in the literature (e.g., Kükenthal, 1909; Barros, 1947; Wheeler & Goetghebeur, 1997). When citing specimens, the following terms are used interchangeably for collections from the Juan Fernández Archipelago: Robinson Crusoe Islands and Juan Fernández Islands; Robinson Crusoe Island and Masatierra; and Alejandro Selkirk Island and Masafuera. Distribution maps for the species of Cariceae are not offered at this time, awaiting a comprehensive book on the archipelago, which as noted by Marticorena et al. (1998) is currently under synthesis, and presumably where detailed maps will be presented for the entire flora.

RESULTS

Key to the Cariceae (*Carex* and *Uncinia*) from the Juan Fernández Archipelago.

- 1. Perigynia lacking a rachilla or, if present, vestigial and not tipped with a hooked inrolled scale I. *Carex*
- 1. Perigynia with a conspicuous exerted rachilla tipped by a retrorse, inrolled scale (i.e., an uncus or hook) II. *Uncinia*

I. *Carex*

- 1. Perigynia coriaceous; lateral spikes (with perigynia) gynaeandrous, up to 12 cm long 2
- 1. Perigynia papery or membranaceous; lateral spikes not gynaeandrous, less than 6 cm long 3
- 2 (1). Staminate spikes 2-6 (most often 4); perigynia 1.4-1.8 mm wide, with beaks 0.2-0.5 mm long; culms 50-110 cm tall 1. *C. berteroniana*
- 2. Terminal spike gynaeandrous or staminate, lateral spikes gynaeandrous; perigynia 0.8-1.3 mm wide, with beaks 0.6-0.9 mm long; culms 38-42 cm tall 2. *C. fernandezensis*
- 3 (1). Perigynia less than 20 per spike, trigonous, opaque; pistillate scales whitish, awned 3. *C. phalaroides*
- 3 (2). Perigynia more than 50 per spike, flattened, semi-diaphanous; pistillate scales dark reddish brown or purplish black, mucronate 4. *C. stuessyi*

II. *Uncinia*

- 1. Perigynia glabrous; pistillate scales deciduous, but the basal one-third persisting as a conspicuous appendage 10. *U. tenuis*
- 1. Perigynia slightly to densely pubescent, the margins ciliate; pistillate scales persistent 2
- 2 (1). Achenes oblong, less than 3 times as long as wide; majority of perigynia less than 4.2 mm long 3
- 2. Achenes narrowly oblong, at least 3 times as long as wide; majority of perigynia 4.2 mm long or longer 4
- 3 (2). Culms scabrous, especially just beneath the inflorescence; achenes 1.6-1.9 mm long; spikes subclavate 5. *U. aspericaulis*
- 3. Culms smooth; achenes 2.2-2.6 mm long; spikes linear-cylindrical 8. *U. macloviformis*
- 4 (2). Spikes 1-2.6(-2.9) mm wide, filiform-cylindrical; leaves 1.5-3.5(-4) mm wide 7. *U. douglasii*
- 4. Spikes 4-14 mm wide, cylindrical or clavate; leaves (2.5-) 3.5-10 mm wide 5
- 5 (4). Perigynia 3.8-5.2 mm long, strongly veined abaxially and adaxially; achenes 2.6-3 mm long; spikes cylindrical 6. *U. costata*
- 5. Perigynia 6-8 mm long, weakly veined abaxially and veinless (or nearly so) adaxially; achenes 4.2-5.2 mm long; spikes clavate 9. *U. phleoides*

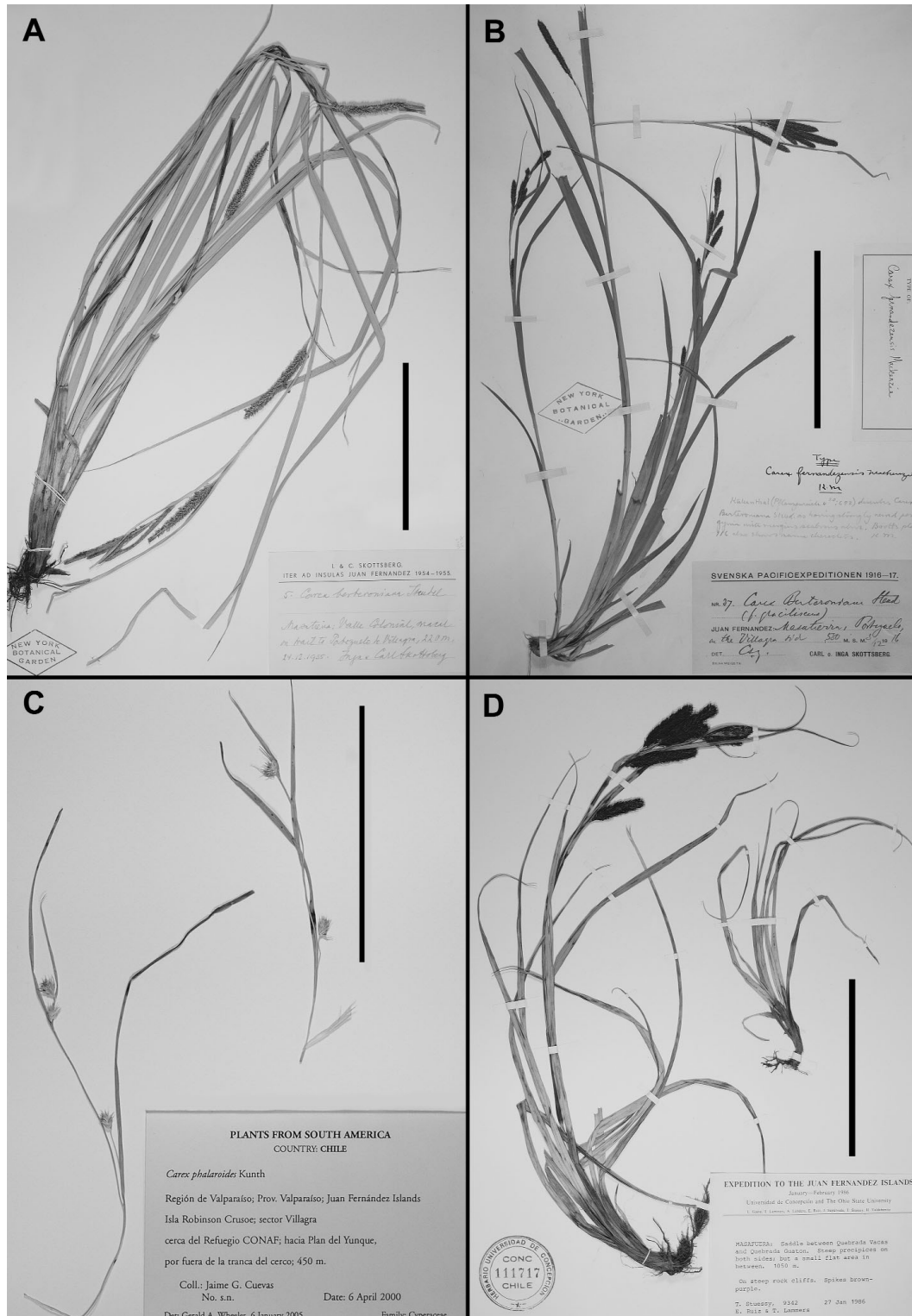


Fig. 1. *Carex*. A, *C. berteroniana*. B, *C. fernandezensis*. C, *C. phalaroides*. D, *C. stuessyi*. Bars = 10 cm.

Table 1. Comparison of major treatments and taxa assignments for the members of *Carex* and *Uncinia* occurring on the Juan Fernández Islands.

Kükenthal (1909, 1920)	Skottsberg (1922)	Marticorena et al. (1998)	Wheeler
<i>Carex</i>			
<i>C. berteroniana</i>	<i>C. berteroniana</i> <i>C. banksii</i>	<i>C. berteroniana</i> <i>C. banksii</i>	<i>C. berteroniana</i> <i>C. stuessyi</i> <i>C. fernandezensis</i> <i>C. phalaroides</i>
<i>Uncinia</i>			
<i>U. costata</i>	<i>U. costata</i>	<i>U. costata</i>	<i>U. costata</i>
<i>U. douglasii</i>	<i>U. douglasii</i>	<i>U. douglasii</i>	<i>U. douglasii</i>
<i>U. tenuis</i> f. <i>firmaula</i>	<i>U. tenuis</i> f. <i>firmaula</i>	<i>U. tenuis</i>	<i>U. tenuis</i>
	<i>U. brevicaulis</i>	<i>U. brevicaulis</i>	<i>U. macloviformis</i>
	<i>U. phleoides</i> var. <i>nux-nigra</i>		<i>U. phleoides</i> <i>U. aspericaulis</i>

1. *Carex berteroniana* Steud., Flora 25: 604. 1842. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso: Juan Fernández Islands, *Bertero 1445* (holotype P; isotype TO?). Figs. 1A, 2Aa.

Carex paleata Boott, Proc. Linn. Soc. London 1: 259. 1845. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso, Juan Fernández Islands, *Scouler s.n.* (holotype K).

Plants perennial, densely caespitose; fertile culms 50-110 cm tall, sharply trigonous, smooth, with glabrous, brown basal sheaths. Leaves 9-13, mostly basal; blades 55-105 cm long, 5-15 mm wide, flat to M-shaped, coriaceous, glabrous, the margins antrorsely scabrous. Inflorescences 28-70 cm long, the lowest internodes 12-24 cm long, the upper ones much shorter; spikes single at nodes, ascending to drooping on scaberulent peduncles; lowest spikes with peduncles 8-19 cm long, the upper ones much shorter; lowermost bracts with blades ca. 40-60 cm long and 4-10 mm wide and sheaths 3-7 cm long, the uppermost bracts much reduced. Spikes 7-11, upper 2-6 (most often 4) staminate and strongly overlapping, the remaining lateral ones gynaecandrous and well separated. Terminal spikes 2-4 cm long, 2-3 mm wide, ca. 50-120-flowered; lateral staminate spikes generally smaller. Lateral gynaecandrous spikes (3-) 5-12 cm long; staminate portion up to 1 cm long, 3-4 mm wide, ca. 5-25-flowered; staminate scales 4-5.2 mm long (excluding awns), 2.2-2.5 mm wide,

ovate, glabrous, stramineous or pale reddish brown, with stramineous center and narrow hyaline margins, 1 (-3)-veined, the apices acute, with a ciliate-scabrous awn up to 5 mm long; pistillate portion 3.5-11 cm long, 4-6 mm wide, ca. 90-350-flowered; pistillate scales 2.2-2.8 mm long (excluding awns), 1-1.4 mm wide, ovate, glabrous, pale reddish brown to reddish brown, with stramineous center and narrow hyaline margins, 3-veined, the apices acute, with a ciliate-scabrous awn up to 2 mm long. Perigynia 2.3-2.8 mm long, 1.4-1.8 mm wide, ascending, compressed-trigonous with oblong-obovate sides, coriaceous, olive, red-mottled, glabrous, 2 lateral veins prominent and 8-14 weak or very obscure veins, subsessile, abruptly contracted into a short beak; beaks 0.2-0.5 mm long, neck short, bidentate, with stiff teeth up to 0.3 mm long and scaberulent within. Achenes 1.6-1.9 mm long, 1.2-1.4 mm wide, compressed-trigonous with more or less flat, oblong-obovate sides, tightly enveloped by the perigynium, brown with pale yellowish angles, sessile (or nearly so). Stigmas 3. Anthers 3, 1.2-1.8 mm long, including an apical white-hyaline appendage 0.1-0.3 mm long and usually tipped with 1-7 prickly hairs.

Distribution and habitat. *Carex berteroniana* (Fig. 1A) is endemic to the Juan Fernández Archipelago and occurs on both Robinson Crusoe and Alejandro Selkirk islands. Skottsberg (1953: 871) reported it from “canyon walls and in the forest,”

Table 2. Distribution of *Carex* and *Uncinia* on the Juan Fernández Islands. Species endemic to the archipelago are indicated by an asterisk.

Species	Alejandro Selkirk	Robinson Crusoe
<i>Carex berteroniana</i> *	x	x
<i>Carex fernandezensis</i> *		x
<i>Carex phalaroides</i>		x
<i>Carex stuessyi</i> *	x	
<i>Uncinia aspericaulis</i> *	x	
<i>Uncinia costata</i> *	x	
<i>Uncinia douglasii</i> *	x	x
<i>Uncinia macloviformis</i> *	x	
<i>Uncinia phleoides</i>	x	
<i>Uncinia tenuis</i>	x	

and this tall, densely cespitose plant also frequents other habitats, such as thickets, open grassy slopes, and the edges of trails. Most collections of *C. berteroniana* come from Robinson Crusoe Island, where the plant grows from about 200 to 600 m, in what Greimler et al. (2002) call endemic upper and lower montane forest; the few collections seen from Alejandro Selkirk Island come from 280 to 440 m.

Observations. The plant reportedly starts flowering in September (Skottsberg, 1953) and mature perigynia with ripe achenes have been collected from December through February. This species is named in honor of its discoverer, Carlo Giuseppe Bertero (1789-1831), an Italian botanist who collected plants in the Juan Fernández Archipelago in 1831. Both the island and specific locality where the type collection was made are unknown to me.

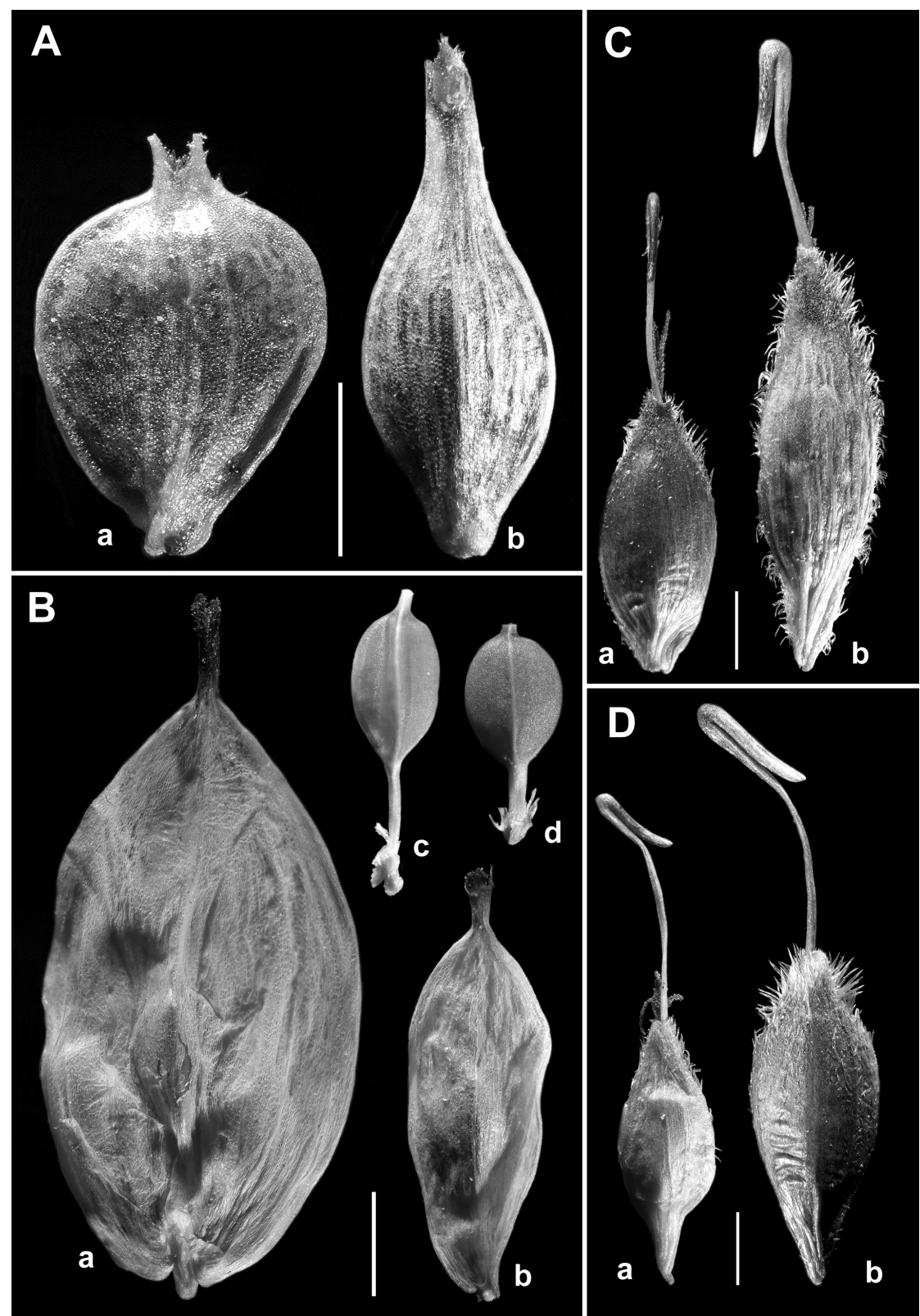
This species has a close affinity with *C. fernandezensis* (discussed further below) but differs by features given in the key; also see Fig. 2, compare Aa and Ab. Also, the lateral gynaeceandrous spikes of the former are generally well separated, whereas in the latter species the upper lateral spikes overlap to some degree. Moreover, a subtle, but distinctive diagnostic feature of *C. berteroniana* is the highly ornamented apex of the anthers, consisting of a broad white-hyaline appendage often tipped with 5 to 7 prickly-hairs; contrarily, *C. fernandezensis* has a conical appendage with none or 1 to 3 prickly-hairs.

Carex berteroniana is a member of *Carex* section Echinochlaenae T. Holm (Kükenthal, 1909; Hamlin, 1968), a section pervasive in Australasia, such as in New Zealand (e.g., Moore & Edgar, 1971), but only four species are known from the New World. Of these, *C. berteroniana* and *C. fernandezensis* are endemic to the Robinson Crusoe Islands and the other two, *C. lamprocarpa* Phil. and *C. poeppigii* C. B. Clarke ex G. A. Wheeler, are confined to the Chilean mainland (Wheeler, 1988). Because both mainland species are very poorly represented in herbaria, especially by recent collections, this may indicate that they are rarities. If the mainland populations of sect. Echinochlaenae decline and become extirpated in the future, then the Juan Fernández Archipelago may indeed become the final refuge for this group of carices in the Western Hemisphere.

The conservation status of *C. berteroniana* is of special concern, though it seems neither threatened nor endangered at this time.

Additional specimens examined

CHILE. V Región Valparaíso. Prov. Valparaíso, Robinson Crusoe Islands, Alejandro Selkirk Island, Quebrada de las Casas, 11-II-1917, C. & I. Skottsberg 453 (GB, S, UPS); Quebrada de las Casas, 28-VIII-1908, C. Skottsberg 467 (GB, S, UPS); sine locus, 1856-1857, P. Germain s.n. (BM, K). Robinson Crusoe Island, Puerto Frances, Cerro Pascua, 470 m, scattered on slopes up to



ridge, 8-II-1990, *T. F. Stuessy et al.* 11573 (CONC); ridge just W of Cerro Alto overlooking Valle Ingles and La Vaqueria, at base of ridge at edge of forest on Villagra side, 490 m, 19-I-1991, *T. F. Stuessy et al.* 11826 (CONC); Cerro Alto, 450 m, 18-X-2000, *J. G. Cuevas s.n.* (MIN); Cerro Pascua, Quebrada Michay, 300 m, en bosque abierto, s.d., *C. Marticorena et al.* 9160 (CONC, OS); Quebrada Villa Alemana, La Vaqueria, 300 m, 27-I-1984, *H. Valdebenito et al.* 6461 (OS); Puerto Ingles, under Maqui, 14-XII-1965, *O. Solbrig et al.* 3864 (BISH, NY, GH, S); Pangal, on stony ledge wall, 11-XII-1965, *O. Solbrig et al.* 3834 (GH); El Yunque, Plazoleta Yunque, on roadside, 12-XII-1965, *O. Solbrig et al.* 3845 (GH); Portuzuelo de Damajuana, near El Camote, 550 m, 14-II-1955, *B. Sparre* 24 (CONC, NA, S); S side of Cerro Alto, in woodland, 1000 ft., 14-XII-1965, *F. G. Meyer* 9560 (MO, NA, UC); Cerro Sal-sipuedas, 1000 ft., near trail, 10-XII-1965, *F. G. Meyer* 9512 (MO, NA, S, UC); Yunque, 250 m, X-1935, *C. Bock* 61 (CONC, GB); Cordón Sal-sipuedo, 8-XII-1916, *C. & I. Skottsberg* 85 (UPS); Damajuana, 30-XII-1916, *C. & I. Skottsberg* 213 (K, S); Valle Colonial, trail to Portezuelo de Villagra, 220 m, 24-XII-1955, *I. & C. Skottsberg* 5 (NY, S); Portezuelo de Villagra, 575 m, 3-XII-1916, *C. & I. Skottsberg* 5 (GB, S); ibid, 14-XII-1916, *C. & I. Skottsberg* 5b (BISH). Island and locality unknown: Moist hillsides, 10-14-I-1901, *G. T. Hastings* 237 (NY, UC); X-1872, *E. C. Reed s.n.* (BM); s.d., *D. Douglas s.n.* (BM); XI-1875, *H. N. Moseley s.n.* (BM).

2. *Carex fernandezensis* Mackenzie ex G. A. Wheeler, sp. nov. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso, Juan Fernández Islands, Masatierra, Portezuelo de Villagra, 580 m, 3-XII-1916, *C. & I. Skottsberg* 37 (holotype NY; isotypes GB, S, UPS). Figs. 1B, 2Ab.

Plantae caespitosae; culmi ca. 21.5-44 cm alti; vaginae basales glabrae, rubrobrunneae. Folia ca. 5-11; laminae 6-25 cm longae, (1.8-) 3-6.5 mm latae, planae,

glabrae, marginibus saepe scabridus. Inflorescentiae ca. 13.5-22 cm longae; inferior bracteae foliaceae, laminae ca. 15-20 cm longae et 2.5-5 mm latae. Spica 5-7 (-8); spicae terminalis gynaeandreae vel staminatae, 1.5-3 cm longae, 3-4.5 mm latae, erectae; spicae laterales gynaeandreae, 1.5-5 cm longae, pistillatae pars ca. 40-150-florae. Squamae pistillatae 2.5-4 mm longae, 1-1.5 mm latae, ovatae, acutae, glabrae, rubrobrunneae, aristatae. Perigynia 2.5-3.2 mm longa, 0.8-1.3 mm lata, trigona, ellipto-ovata, coriacea, rubrobrunnea, glabra, marginibus laevis, plurinervi cum nervi 2 marginales prominentes; rosta 0.6-0.9 mm longa, glabra, apice bidentata, dentibus rigidus saepe 0.4 mm longis scabrelis intus. Achenia 1.7-2 mm longa, 0.9-1.1 mm lata. Stigmata 3. Antherae 3, 1.3-1.8 mm longae.

Plants perennial, densely caespitose. Fertile culms ca. 21.5-44 cm tall, about equaling or longer than leaves, obscurely trigonous, smooth, with glabrous, pale to dark reddish brown basal sheaths. Leaves ca. 5-11, mostly basal; blades 6-25 cm long, (1.8-) 3-6.5 mm wide, flat to M-shaped, glabrous, the margins smooth (at least proximally) or, more often, antrorsely scabrous, tapering into a long-attenuate scabrate tip. Inflorescences ca. 13.5-22 cm tall, with the upper spikes overlapping and the lowest two spikes 4.5-8 cm distant; spikes single at nodes, erect or suberect, lowermost ones on smooth or scaberulent peduncles ca. 4.5-7 cm long (exserted portion 1.5-2.5 cm long), the uppermost sessile or short-peduncled; lowermost bracts with blades ca. 15-20 cm long and 2.5-5 mm wide and sheaths 4-5.5 cm long; uppermost bracts much reduced. Spikes 5-7 (-8), the terminal gynaeandrous or staminate (and sometimes accompanied by a much smaller secondary staminate spike), lateral ones gynaeandrous. Terminal spikes 1.5-3 cm long, 3-4.5 mm wide, erect, on smooth or scaberulent peduncles 7-17 mm long. Lateral spikes 1.5-5 cm long; staminate portion up to 8 (-15) mm long, few flowered; pistillate portion 1.2-3.5 cm long, 4.5-6 mm wide, ca. 40-150-flowered. Staminate scales 3.5-4.5 (-7.5) mm long, 0.6-1.4 mm wide, ovate-lanceolate, acute, glabrous, reddish brown with stramineous center, 3-veined, the

Fig. 2. *Carex* and *Uncinia*. **Aa**, *C. berteroniana*, perigynium (from *F. G. Meyer* 9512). **Ab**, *C. fernandezensis* (from *D. Wiens et al.* 11207). **Ba** and **c**, *C. banksii*; **a**, perigynium; **c**, achene (from *E. Pisano* 4373). **Bb** and **d**, *C. stuessyi*; **b**, perigynium; **d**, achene (from *T. F. Stuessy et al.* 9342). **Ca**, *U. macloviformis*, perigynium (from *T. F. Stuessy & Sepúlveda* 9546). **Cb**, *U. macloviana*, perigynium (from *O. Zöllner* 5499). **Da**, *U. aspericaulis*, perigynium (from *H. Valdebenito* 9610). **Db**, *U. scabriuscula*, perigynium (from *U. Eskuche & R. M. Klein* 1547-15). Bars = 1 mm.

midrib excurrent as a scabrous-ciliate awn up to 1.2 mm long. Pistillate scales equaling or longer than perigynia, 2.5-4 mm long, 1-1.5 mm wide, ovate, acute, glabrous, reddish brown with stramineous center, 3-veined, the midrib excurrent as a scabrous-ciliate awn up to 1.5 mm long. Perigynia 2.5-3.2 mm long, 0.8-1.3 mm wide, ascending, trigonous, with elliptic-ovate sides, coriaceous, reddish brown, glabrous, the margins smooth, 2 lateral veins prominent and 12-16 weaker veins, sessile or nearly so, tapered into a beak; beaks 0.6-0.9 mm long, glabrous, the margins smooth or sparingly scaberulent, bidentate, with stiff teeth up to 0.4 mm long and scaberulent within. Achenes 1.7-2 mm long, 0.9-1.1 mm wide, compressed-trigonous with oblong-obovate sides, tightly enveloped by perigynium, dark brown to blackish (when mature), sessile or nearly so. Stigmas 3. Anthers 3, 1.3-1.8 mm long, including a dark reddish brown, apical appendage 0.1-0.3 mm long and sometimes tipped with 1-2 (-3) prickles.

Distribution and habitat. *Carex fernandezensis* (Fig. 1B) is endemic to the Juan Fernández Archipelago, as indicated by its epithet, and is known only from Robinson Crusoe Island.

Observations. Two insular collections (*C. & I. Skottsberg 5 and 37*) were originally called *C. berteroniana* by Skottsberg (1922), but the preeminent cyperologist Georg Kükenenthal, at Berlin (B), later annotated both of them as "*C. berteroniana* f. *gracilescens* Kük." Subsequently, Kenneth K. Mackenzie (1877-1934) recognized this entity as a good species and on a specimen at NY (*C. & I. Skottsberg 37*) wrote "*C. fernandezensis* Mackenzie" and "Type" on the herbarium sheet, but he died without describing the plant. Due to Mackenzie's recognition of this species and his sagacity with the genus *Carex*, his name for the new species is retained here and the NY specimen has been selected as holotype.

Skottsberg (1922: 108) reported the plant as "scattered along the ridges" near Portezuelo de Villagra, but little else is known about the ecology of this species. Mature fruit seemingly can be collected from late December through February.

Carex fernandezensis differs from *C. berteroniana* by features given in the key (also see Fig. 2, compare Aa and Ab). Utilizing the phylogenetic

scheme presented by Stuessy et al. (1990), *C. fernandezensis* perhaps evolved from *C. berteroniana* by anacladogenesis, where a peripherally isolated species (*C. fernandezensis*) was cut off from the parental stock (*C. berteroniana*), the former then surviving as a small population in a "geographic" corner—in this case, along the ridges of quebradas (i.e., canyons, ravines, or deep passes)—of the ancestral range.

Known from very few sites on Robinson Crusoe Island, *C. fernandezensis* seems to warrant the conservation status of Threatened.

Additional specimens examined

CHILE. V **Región Valparaíso**. Prov. Valparaíso, Robinson Crusoe Island, Corrales de Molina, 340 m, scarce, 24-I-1990, *D. Wiens et al. 11207* (CONC); Portezuelo de Villagra, 575 m, 24-XII-1916, *C. & I. Skottsberg 5c* (BM, C). (Paratypes).

3. *Carex phalaroides* Kunth, Enum. Pl. 2: 482. 1837. TYPE: "Brasilia meridionalis," *Sellow s.n.* (holotype B destroyed; isotypes K, LE). Fig. 1C.

Plants perennial, loosely caespitose. Fertile culms 10-16 cm tall, smooth, with glabrous, pale brown sheaths. Leaves with blades 1.5-2.5 mm wide, flattish or keeled proximally. Inflorescences 6-11 cm long, the lowest spike 3.5-9 cm distant; lowermost spikes more or less erect, on smooth peduncles 2.5-5 cm long; upper spikes mostly erect, sessile or subsessile; lowermost bracts leaf-like, 9-15 cm long, upper ones reduced; sheaths 6-15 mm long, greenish. Spikes 2-3, androgynous, 7.2-8 mm long, 5-7 mm wide, staminate portion ca. 2-3-flowered, pistillate portion 8-15-flowered, terminal spikes sessile or nearly so, lateral spikes subsessile or on smooth peduncles 2.5-5 cm long. Pistillate scales (awn included) longer than perigynia, the body 4.8-5.4 mm long, 1.6-1.8 mm wide, ovate, pale greenish center, with broad white-hyaline margins, 3-veined, the midrib excurrent as a scabrous-ciliate awn up to 1 cm long. Perigynia 3-3.4 mm long, 1.4-1.5 mm wide, trigonous, greenish, opaque, slightly pubescent, 11-15-veined, base stipitate-like (when dried); perigynium beak less than 0.5 mm long, orifice more or less truncate.

Achenes ca. 2 mm long and 1.2 mm wide, trigonous with elliptical sides, pale brown, occupying upper two-thirds of perigynium body. Stigmas 3.

Distribution and habitat. On the South American mainland *Carex phalaroides* (Fig. 1C) and its infraspecific taxa are reported from Argentina, Bolivia, Paraguay, Uruguay (Guaglianone, 1996), Chile (Marticorena & Quezada, 1985), Ecuador, and Venezuela (Jørgensen & Ulloa Ulloa, 1994; Luteyn, 1999). Although this species has long been known from central Chile (e.g., Kükenhal, 1899, 1909), and currently from Regions V, VIII, IX, and X, it has only recently been discovered on the Robinson Crusoe Islands, with this paper representing the first report from the archipelago. Only a single locality is known for *C. phalaroides* on the islands, where it was collected by J. G. Cuevas in the Villagra sector, near the CONAF (National Forest Service) shelter on Robinson Crusoe Island. The site, at about 255 m, is approximately 3.5 km west of San Juan Bautista uphill along Villagra, a ravine ("quebrada") extending westward from the town to the collection site and somewhat beyond (Cuevas, pers. comm.). According to Cuevas (pers. comm.), the plant was growing in moist soil in pastureland, heavily grazed by cattle, and only two fruiting plants were observed. It is also worth noting that this species is known only from an area on the island where cattle are sometimes fed with grass bundles, these coming from Región V on the mainland (Cuevas et al., 2004). While it is not entirely clear whether the plant is a long-time resident of the island or a recent arrival that was either deliberately or inadvertently introduced (Cuevas, pers. comm.), the scenario of accidental anthropochory seems most tenable.

Observations. Selection of a lectotype for this species awaits a revision of the *C. phalaroides* species complex in South America.

Additional specimens examined

CHILE. **V Región Valparaíso.** Prov. Valparaíso, Robinson Crusoe Islands, Robinson Crusoe Island, sector Villagra, cerca del Refugio CONAF, yendo hacia Plan del Yunque, por fuera de la tranca del cerco, 255 m, 6-IV-2000, J.G. Cuevas s. n. (MIN).

4. *Carex stuessyi* G. A. Wheeler, sp. nov. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso, Juan Fernández Islands, Masafuera, saddle between Quebrada Vacas and Quebrada Guatón, steep precipices on both sides, but a small flat area in between, 1050 m, on steep rock cliffs, 27-I-1986, T. F. Stuessy et al. 9342 (holotype CONC). Figs. 1D, 2Bb, 2Bd.

Herbae rhizomate; radices coactus flavus trichomatibus. Culmi 35-70 cm alti; basi vaginis rubrobrunneis. Folia 7-15; lamina 9-43 cm longa, 4.5-8 mm lata, glabra, marginibus tuberculato-scabra. Inflorescentiae 10-22.5 cm longae; bracteis infirmis evaginatibus rubrobrunneis. Spicis 6-8, ascendentibus vel leviter pendentibus, terminalibus staminatis vel saepe perigynis mixtus, lateralibus pistillatis ca. 80-160 (or more)-flowered; Squamae pistillatae 4-5.5 mm longae, 1.5-2 mm latae, ovatae ad lanceolatae, apice bifidae rubrobrunneae mucronatae. Perigynia 3.6-5.2 mm longa, 0.8-2 mm lata, elliptica, valde adpressa, papyracea, glabra, straminea ad pallida brunnea interdum rubrobrunnea suffusa, marginibus laevis, brevis stipitata, in rostrum abrupte contracta; rostra 0.5-0.9 mm longa, anguste cylindrica, glabra, rubrobrunnea, bidentulata. Achenium atrobrunneum, ellipticum ad obovatum, corpus 1.2-1.6 mm longum, 0.7-1 mm latum, stipes 0.5-1 mm longum. Stigmata 3. Antherae 3, 1.8-5 mm longae.

Plants perennial, rhizomatous; roots felt-covered with yellowish hairs; fertile culms 35-70 cm tall, obtusely trigonous, smooth, with glabrous, reddish brown basal sheaths. Leaves 7-15; blades 9-43 cm long, 4.5-8 mm wide, flat to M-shaped, glabrous, the margins smooth or sparingly tuberculate-scabrous, gradually tapering into a roughened triangular tip; leaf sheaths 2-9 cm long, more or less tightly enveloping culms, glabrous, sparsely to strongly reddened or reddish purple; inner band of leaf sheaths reddish-purple-tinged except for the hyaline, friable apex, glabrous, the apex concave; ligules 2.5-7.5 mm long, obtuse to acute, the free portion pale reddish-brown or purplish. Inflorescences 10-22.5 cm long, with the upper spikes overlapping and the lowest spike 2.5-11 cm distant; lowermost spikes more or less erect, on smooth peduncles 20-62 mm long (exserted portion 7-40 mm long); upper spikes mostly erect, on smooth peduncles up to 17 mm long; lowermost bracts with blades 8-23 cm long and 2.2-5 mm wide and sheaths 1.2-2.8 cm long, sparsely to strongly reddish-purple-tinged, the uppermost

bracts reduced. Spikes 6-8, terminal staminate or frequently with perigynia intermixed, lateral pistillate. Terminal spikes 2.5-3.5 cm long, 4-6 mm wide (up to 8 mm wide with intermixed perigynia); peduncles smooth, up to 15 mm long. Lateral spikes 2-3.5 cm long, 6-8 mm wide, ca. 80-160 (or more)-flowered. Staminate scales 5-8 mm long, 0.6-2 mm wide, lanceolate or elliptical, glabrous, reddish brown or purplish black, midrib more or less lighter colored than body, apices bifid and mucronate. Pistillate scales 4-5.5 mm long, 1.5-2 mm wide, as long as or longer than perigynia, ovate to lanceolate, glabrous, dark reddish brown or purplish black, midrib more or less same color as body, apices bifid and mucronate. Perigynia 3.6-5.2 mm long, 0.8-2 mm wide, ascending to somewhat spreading, with elliptical or slightly obovate sides, strongly flattened but distended by ripening achene, papery, semi-diaphanous, glabrous, 11-19-veined with 2 prominent marginal veins and the rest faint, stramineous or pale brown and sometimes sparsely suffused with reddish brown (especially distally), the margins smooth, gradually tapered to a short-stipitate base, more or less abruptly contracted into a beak; beaks 0.5-0.9 mm long, about 0.2 mm wide, narrowly cylindrical, smooth, dark purplish brown or blackish, apex bidentulate, the teeth 0.1-0.3 mm long. Achenes trigonous with elliptical or slightly obovate sides, the body 1.2-1.6 mm long and 0.7-1 mm wide, loosely enveloped by perigynium, dark brown, stipitate with stipes 0.6-1 mm long and ca. 0.2 mm wide. Stigmas 3. Anthers 3, 2-3 mm long, with reddish brown apiculate tips 0.1-0.2 mm long.

Distribution and habitat. *Carex stuessyi* is endemic to the Juan Fernández Archipelago and is known only from Alejandro Selkirk Island, where it grows in alpine fell-fields (Skottsberg, 1953) and on steep canyon walls, at about 950 to 1370 m.

Observations. *Carex banksii* Boott occurs in Argentina and Chile, ranging roughly from Tierra del Fuego northward in the Andes to 39° S. lat. (Moore, 1983). Skottsberg (1922) and Marticorena et al. (1998) called similar-appearing plants from the Juan Fernández Archipelago *C. banksii*, but the insular entity, here newly described and named *C. stuessyi* (Fig. 1D), differs from the mainland

species by having appreciably smaller perigynia, a shorter cylindrical perigynium beak, and achenes with shorter stipes (see Fig. 2, compare Ba and Bb as well as Bc and Bd); also, the new species has smaller and shorter-awned pistillate scales as well as shorter stamens. Furthermore, *C. stuessyi* is a scopulicolous (or cliff-growing) species, growing primarily in thin soils on canyon walls, whereas *C. banksii* grows in moist to wet soils (e. g., along streams and creeks, around lake shores, and in boggy ground). It is also worth noting that the insular plants cannot be assigned to any of the infraspecific taxa of *C. banksii* recognized by Kükenthal (1909) and subsequent workers (e.g., Lévillé, 1915; Barros, 1947, 1969; Marticorena & Quezada, 1985; Guaglianone, 1996). The new species is named in honor of Prof. Tod F. Stuessy, internationally known botanist who has made substantial contributions to the biology and geology of the Robinson Crusoe Islands as well as to the conservation of its flora.

Phenological data on *C. stuessyi* is scarce but mature fruit has been collected in late January. On the archipelago this species can be recognized, even when strictly vegetative, by its tuberculate-scabrous leaves and roots felt-covered with yellowish hairs. Based on the phylogenetic scheme of Stuessy et al. (1990), *C. stuessyi* probably evolved by anagenesis from an ancestral *banksii*-like plant from the South American mainland.

Because *C. stuessyi* grows primarily on precipitous canyon walls, it probably is largely safe from human activity. Nevertheless, based on the limited number of known sites, as well as its apparent restriction to Alejandro Selkirk Island, this species seems to warrant a conservation status of Threatened.

Additional specimens examined

CHILE. V Región Valparaíso. Prov. Valparaíso, Robinson Crusoe Islands, Alejandro Selkirk Island, Quebrada Pasto, locally common on steep wet rock face, 100 m, 9-II-1986, *T. F. Stuessy & T. Lammers 8406* (CONC, OS); Quebrada Guaton up south slope toward Inocentes, 1200 m, 27-I-1986, *H. Landero 9358* (CONC, OS); Cordón Atravesado down into Quebrada Vacas, E side of upper part of deep valley, 950 m, 25-I-1986, *H.*

Landero & E. Ruiz 9248 (CONC); Las Torres, 1350-1370 m, 14-II-1917, *C. & I. Skottsberg 393* (BISH, C, GB, NY, S, UPS); Cuchara Camp, 28-I-1955, *I. & C. Skottsberg 180* (S); Frio Torres, ca. 1050 m, 20-II-1955, leg. Kuschel s.n., *I. & C. Skottsberg 248* (S).

A new section of *Carex*

Kükenthal (1909) placed *Carex banksii* and its infraspecific taxa in *Carex* section Aulocystis Dumort. (Kükenthal's subsect. Fuliginosae Tuckerm. of his large sect. Frigidae Fries), but the *banksii*-like plants from South America are anomalous in sect. Aulocystis. *Carex banksii* and closely related species, such as *C. stuessyi*, differ from members of sect. Aulocystis by having strongly flattened, papery perigynia with short- to long-cylindrical beaks, stipitate achenes, bifid scales, and tuberculate-scabrous leaf and bract margins. Moreover, Ball & Mastrogioseppe (2003: 477) maintain that sect. Aulocystis occurs in "temperate and arctic regions of North America and Eurasia, primarily in temperate Asia," with no mention made of South American species. Because the combination of diagnostic characters just mentioned for *C. stuessyi* and allied species from the South American mainland differ from those of other recognized sections of *Carex*, a new section is here circumscribed and named to facilitate the sectional placement of the species listed further below.

CAREX L. section **Pellucidae** G. A. Wheeler, sect. nov. Type species: *Carex banksii* Boott, Proc. Linn. Soc. London 1: 257. 1845.

Herbae rhizomate longi crasso; radices coactus flavus trichomatibus. Culmi 10-80 cm alti; basi vaginis rubrobrunneis. Folia 5-15; lamina 3-13 mm lata, glabra, marginibus tuberculato-scabra. Inflorescentiae (3-) 7-35 cm longae; spicis 3-8, ascendentibus vel pendentibus, terminalibus staminatis, lateralibus pistillatis vel androgynis; bracteis infirmis evaginatibus rubrobrunneis. Squamae pistillatae oblongo-lanceolatae ad ellipticae vel oblanceolatae, apice bifidae rubrobrunneae mucronatae. Perigynia elliptica vel lata ovata ad subrotunda, valde adpressa, papyracea, glabra, albidostaminea ad pallida brunnea interdum rubrobrunnea suffusa, brevis stipitata, in rostrum abrupte contracta;

rostra anguste cylindrica, lavis, rubrobrunnea, bidentulata. Achenium brunneum, ellipticum ad obovatum, conspicuum stipitatum. Stigmata 3. Antherae 3, 1.8-5 mm longae.

Plants perennial, with short- to long-creeping rhizomes; roots felt-covered with yellowish hairs. Fertile culms 10-80 cm tall, smooth, with glabrous, pale reddish brown to dark reddish brown sheaths. Leaves 5-15; blades 3-13 mm wide, flattish, glabrous, the margins sparingly to considerably tuberculate-scabrous; leaf sheaths glabrous, weakly to strongly dark reddish brown; inner band of leaf sheaths glabrous, reddish-brown-tinged except for the hyaline, concave apex. Inflorescences (3-) 7-35 cm long, with 3-8 spikes, the terminal spikes staminate or gynaeandrous, the lateral spikes pistillate or the distal 1-2 staminate or gynaeandrous, short- to long-peduncled, erect or pendent; lowermost bracts leaf-like, often exceeding the inflorescence, with well-developed sheaths, these very sparsely (if at all) to strongly dark reddish-purple-tinged, the upper bracts much reduced. Pistillate scales oblong-lanceolate or elliptical to oblanceolate, reddish brown or dark purplish brown to blackish, with yellowish midvein, apex bifid and mucronate. Perigynia ascending, elliptical or broadly ovate to suborbicular, strongly flattened but distended by ripening achene, papery, semi-diaphanous, glabrous, moderately to very weakly 13-25-veined, whitish or stramineous to pale brown but sometimes suffused with reddish brown (especially distally and along veins), the margins smooth, short-stipitate at base, abruptly contracted into a distinct beak; beaks narrowly cylindrical (about 0.2 mm wide), smooth, dark purplish brown to blackish, bidentulate. Achenes trigonous with elliptical to obovate sides, brown, stipitate with stipes 0.4-1.6 mm long. Stigmas 3. Anthers 3, 1.8-5 mm long.

Species included

1. *Carex banksii* Boott, Proc. Linn. Soc. London 1: 257. 1845.
2. *Carex odontolepis* Phil., Linnaea 29: 82. 1858.
3. *Carex stuessyi* G. A. Wheeler.

5. *Uncinia aspericaulis* G. A. Wheeler, sp. nov.
TYPE: Chile. V Región Valparaíso, Prov. Vala-



Fig. 3. *Uncinia*. A, *U. costata*. B, *U. douglasii*. C, *U. aspericaulis*. D, *U. macloviformis*. Bars = 10 cm.

paraíso, Juan Fernández Islands, Masafuera, upper reaches of Quebrada Chorro Doña Maria, 900 m, abundant, 8-II-1986, *H. Valdebenito 9610* (holotype CONC; isotype OS). Figs. 2Da, 3C.

Herbae rhizomatis; culmi ca. 23-28 cm alti, saepe curvatus, valde scabrellis; vaginae basales pallide brunneae vel brunneae, glabrae. Folia 5-11, basilaria; laminae 9-32 cm longae, 2.6-5.2 mm latae, planae, glabrae; ligulae 2-3.5 mm longae. Spica solitaria, terminalis, androgyna, subclavata, 4-5 cm longa. Pars mascula 4-7 mm longa, 1.2-1.6 mm lata, ca. 5-15-flora. Pars feminea 3.8-4.5 cm longa, 2.5-4.5 mm lata, ca. 40-70-flora; squamae pistillatae persistentes, 3-4.2 mm longae, 1.2-1.6 mm latae, glabrae, subcoriaceae. Perigynia 3.2-4 mm longa, 1.2-1.5 mm lata; rostra 0.8-1.2 mm longa, superne parce hispidula, marginibus ciliata. Achenium 1.6-1.9 mm longum, 1.1-1.3 mm latum; rachilla 5.5-7 mm longa, exserta pars 2.8-4.4 mm longa. Stigmata 3.

Plants perennial, rhizomatous. Fertile culms ca. 23-28 cm tall, 0.7-1 mm thick, often curved, usually shorter than leaves, more or less trigonous, scabrous (strongly so just beneath inflorescence), with glabrous, pale brown to brown basal sheaths. Leaves 5-11, basal; blades 9-32 cm long, 2.6-5.2 mm wide, ascending, membranaceous, flattish, glabrous, the margins antrorsely scabrous, terminating in a scabrate attenuated tip; inner band of leaf sheaths hyaline or pale brown, glabrous, apex concave; ligules 2-3.5 mm long, acute. Inflorescences a solitary, androgynous spike 4-5 cm long, subclavate. Staminate portion 4-7 mm long, 1.2-1.6 mm wide, ca. 5-15-flowered; scales 1.5-2.3 mm long, 0.8-1.2 mm wide, ovate, obtuse, glabrous, membranaceous, greenish center and pale reddish brown margins. Pistillate portion 3.8-4.5 cm long, 2.5-4.5 mm wide, ca. 40-70-flowered; scales persistent, 3-4.2 mm long, 1.2-1.6 mm wide, ovate or ovate-lanceolate, obtuse to subacute, glabrous, semi-coriaceous, broad greenish center, with narrow white-hyaline or pale reddish brown margins, weakly 3-7-veined. Perigynia 3.2-4 mm long, 1.2-1.5 mm wide, compressed trigonous with elliptical sides, greenish or greenish brown to brown, glabrous, margins ciliate (at least distally), 2 prominent lateral veins and weakly 2-5-veined abaxially and veinless (or nearly so) adaxially, abruptly tapered to a stipitate-like base, gradually tapered into a beak; beaks conical, 0.8-

1.2 mm long, sparingly appressed-hispid, margins ciliate with hairs usually in fascicles. Achenes 1.6-1.9 mm long, 1.1-1.3 mm wide, compressed-trigonous with oblong sides, brownish. Rachilla 5.5-7 mm long, projecting beyond orifice of perigynium, exserted portion 2.8-4.4 mm long, smooth, greenish or brownish, the hook 1.1-1.3 mm long and stramineous or pale brown (particularly the descending part). Stigmas 3. Anthers unknown.

Distribution and habitat. *Uncinia aspericaulis* (Fig. 3C) is known only from the type locality on Alejandro Selkirk Island, where it is recorded as being "abundant" at 900 m.

Observations. Very little is known about the phenology and ecology of this species, but mature perigynia are present in February. It is easily separated from other uncinias on the archipelago by having the combination of scabrous culms and subclavate spikes. Indeed, the epithet refers to the strongly scabrate or "roughened" culms of this plant.

The new species resembles *U. scabriuscula* G. A. Wheeler from the South American mainland (Wheeler, 1997) but differs by having smaller perigynia (see Fig. 2, compare Da and Db) and achenes, smaller pistillate scales, and shorter and more densely compacted spikes. Anthers of this species have not been seen, but the plant is tentatively assigned to sect. *Uncinia* based on perigynium characteristics.

This endemic species, known only from a single site on the archipelago, seems to warrant the conservation status of Endangered.

6. *Uncinia costata* Kük., Repert. Spec. Nov. Regni Veg. 16: 433. 1920. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso, Juan Fernández Islands, Masafuera, Quebrada de la Loberia, 280 m, (17-II-1917, *C. & I. Skottsberg 488* (holotype B destroyed; lectotype GB here designated; isoelectotypes BISH, BM, C). Fig. 3A.

Plants perennial, caespitose from short rhizomes. Fertile culms ca. 50-58 cm long, 1.3-2 mm thick, rigid, shorter than to exceeding the leaves, obscurely trigonous, smooth, with glabrous, red-

dish brown basal sheaths. Leaves basal, with blades 20-60 cm long, (2.5-) 3.5-6.5 mm wide, ascending, flat to broadly U-shaped, glabrous proximally, often papillate-scabrescent distally (scattered above and on midrib below), the margins antrorsely scabrous, terminating in a 3-angled, scabrid attenuated tip; inner band of leaf sheaths hyaline or pale brown, glabrous, the apex slightly concave; ligules 1.5-3.5 mm long, rounded to subacute. Inflorescences a solitary, androgynous spike, 10-14.5 cm long, subclavate-cylindrical, tightly flowered; bractless or sometimes with a scabridulous-ciliolate awn up to ca. 11 cm long. Staminate portion 1-1.5 cm long, 2.5-3 mm wide, ca. 35-55-flowered; scales 1.5-2.5 mm long, 1-1.8 mm wide, ovate, obtuse, glabrous, coriaceous, pale brown to brown, apices narrowly white-hyaline and ciliolate. Pistillate portion 9-13 cm long, 4-6 mm wide, ca. 250-400 (or more)-flowered; scales persistent, 3.5-5 mm long, 1.8-2.5 mm wide, broadly ovate, obtuse, glabrous, coriaceous, greenish brown to brown, with a pale reddish brown strip bordering the margins, apices narrowly white-hyaline and ciliolate, several-veined. Perigynia 3.8-5.2 mm long, 1.2-1.4 mm wide, oblong-elliptic, minutely papillate-scabrescent with appressed hairs distally, smooth (or nearly so) proximally, margins ciliate with hairs in fascicles on the shoulders, 2 prominent lateral veins and strongly 6-9-veined abaxially and 5-7-veined adaxially, pale brown to brown; beak conical, minutely papillate-scabrescent with appressed hairs, margins ciliate with hairs in fascicles. Achenes 2.6-3 mm long, 0.8-1 mm wide, compressed-trigonus with narrowly oblong sides, brownish. Rachilla 5.2-6.2 mm long, projecting beyond orifice of perigynium, exerted portion 1.6-2.4 mm long, smooth, brownish, the hook 0.8-1.3 mm long and stramineous or brownish. Stigmas 3. Anthers 3, ca. 1.5 mm long; filaments linear, dilated (0.2-0.3 mm wide), as wide as or wider than anthers.

Distribution and habitat. *Uncinia costata* (Fig. 3A) is known only from the type locality on Alejandro Selkirk Island. Habitat and phenological data for *U. costata* are scarce, but the type collection is reported from "stony ground in forest" (Skottsberg, 1922: 107) and was made at 280 m. **Observations.** Mature fruit and ripe achenes are available in February. The epithet *costata*, which

means "ribbed," refers to the prominent veins of the perigynia. Notably, a perigynium, pistillate scale, and achene of this species have been illustrated by Skottsberg (1922: 107, Fig. 3b). Based on features of the perigynia and stamens, *U. costata* belongs in sect. *Platyandrae* C. B. Clarke (sensu Clarke, 1883 and Kükenthal, 1909).

This species differs from *U. douglasii* (Fig. 3B) by having perigynia strongly-veined abaxially and adaxially, appreciably wider spikes and leaves, and pistillate scales lacking acuminate tips. Nevertheless, a close affinity between these two species has been suggested by some workers (Kükenthal, 1920; Skottsberg, 1922). Indeed, the perigynia, achenes, and leaves of both species manifest notable similarities: namely, perigynium shape, texture, and vestiture; achene shape; and leaf vestiture. As such, anacladogenesis, as defined by Stuessy et al. (1990), might have occurred between *U. costata* and *U. douglasii*, with the latter perhaps being the progenitor species.

Known from only a single location, *U. costata* seems to warrant the conservation status of Endangered.

7. *Uncinia douglasii* Boott, in J. D. Hooker, Fl. Antarct. 2: 369. 1847. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso, Juan Fernández Islands, XII-1824, *D. Douglas* 65 (holotype K; isotypes BM, LD). Fig. 3B.

Uncinia macloviana Gaudich. var. *douglasii* (Boott) Kük., Bot. Centralbl. 82: 133. 1900 (based on type collection).

Plants perennial, caespitose from short rhizomes. Fertile culms 25-90 cm tall, 0.6-0.9 mm thick, erect or slightly curved, trigonus, smooth or sometimes scaberulent (especially distally), with glabrous, reddish brown to dark reddish brown basal sheaths. Leaves 4-9, some cauline; blades (5-) 9-75 cm long, 1.5-3.5 (-4) mm wide, ascending or somewhat spreading, stiff, flattish or channeled (at least proximally), glabrous proximally and often papillate-scabrescent distally (both above and below and especially on ribs), the margins antrorsely scabrous, terminating in a 3-angled, scabrate attenuated tip; inner band of leaf sheaths hyaline or, more often, pale to dark reddish brown, glabrous or sparingly scabrescent, slightly thick-

ened at the mouth, apex concave; ligules up to 5 mm long, rounded to subacute. Inflorescence a solitary, androgynous spike, 7.5-19 cm long, filiform-cylindrical. Staminate part (0.6-) 1-2.5 cm long, 0.8-1.4 mm wide, 15-30-flowered; scales 2-3 mm long, 0.8-1.6 mm wide, ovate, coriaceous, glabrous, greenish brown, 1-veined, apices with narrow white-hyaline margins and ciliate obtuse tips. Pistillate part 6-17 cm long, 1-2.6 (-2.9) mm wide, tightly flowered with ca. 30-100 (or more) perigynia; scales persistent, 3.8-6 mm long, 1.8-2.6 mm wide, shorter than to equaling perigynia, amplexicaulis, broadly ovate, coriaceous, glabrous, broad greenish center with reddish brown margins, several-veined, apices acuminate with narrow white-hyaline margins and ciliate obtuse tips, the lowest sometimes with a scabridulous-ciliate awn up to 2 cm long. Perigynia 4-6 mm long, 0.8-1.2 mm wide, narrowly oblong-elliptic to narrowly oblanceolate, minutely papillate-scabridulous with appressed hairs distally, smooth or nearly so proximally, margins ciliate with hairs in fascicles from apex to near middle, below middle smooth or, more often, sparsely ciliate, stramineous or pale brown and sometimes dark-brown-streaked, 2 veins prominent and finely 7-11-veined abaxially and very faintly 5-9-veined adaxially, tapered to a stipitate-like base; perigynium beak conical, ca. 0.6-1 mm long, minutely papillate-scabridulous with appressed hairs, margins ciliate with hairs in fascicles. Achenes 3-4 mm long, 0.8-1 mm wide, compressed-trigonal, with narrowly oblong sides, tightly enveloped by perigynium, brownish, sessile. Rachilla 4.8-7.2 mm long, projecting beyond orifice of perigynium, exerted portion 2-3.2 mm long, smooth, stramineous or pale brown, the hook 0.6-1.5 mm long and stramineous or pale brown (particularly the descending part), Stigmas 3. Anthers 3, 1-1.6 mm long, ca. 0.2 mm wide; filaments linear, dilated (0.2-0.3 mm wide), as wide as or wider than anthers.

Distribution and habitat. *Uncinia douglasii* (Fig. 3B) is endemic to the Juan Fernández Archipelago and occurs on both Robinson Crusoe and Alejandro Selkirk islands. Skottsberg (1922, 1953) reported it as common in forests, and it has also been collected in shaded ravines and, less commonly, in open glades, on cliffs, and along

trails. Skottsberg (1922) noted that *U. douglasii* rarely grows below 200 m, and data from herbarium sheet labels indicate that it occurs on both islands from about 200 to 550 m and often in woodlands dominated by *Myrceugenia*. Based on the classification of Greimler et al. (2002), it is a plant primarily of endemic upper and lower montane forests.

Observations. This species is characterized by having a long filiform spike, narrow leaves, and pistillate scales acuminate at the apex. A close affinity with *U. costata* has been suggested (see discussion under *U. costata*). Plants with mature fruit have been collected from December through March. The epithet honors its discoverer, David Douglas (1798-1834), famous Scottish botanist who collected plants in the New World for the Royal Horticultural Society in the early part of the nineteenth century. Of the specimens cited above for the type collection of *Uncinia douglasii*, Douglas's collection number "65" appears only on the LD specimen. Both the island and specific locality where the type collection was made are unknown to me.

The conservation status of *U. douglasii* is of special concern, but this species seems neither threatened nor endangered at this time.

Additional specimens examined

CHILE. V Región Valparaíso. Prov. Valparaíso, Robinson Crusoe Islands, Alejandro Selkirk Island, end of Casas Canyon by waterfall, 27-XI-1965, *O. Solbrig et al.* 3647 (BISH, GH-2 sheets, K, MICH); headwaters of Quebrada Sanchez, S fork, on side of deep narrow ravine, 800 m, 4-XII-1965, *O. Solbrig et al.* 3769 (GH, K); Quebrada Sanchez, 500 m, 9-II-1986, *L. Gaete & J. Sepúlveda* 8433 (CONC); in bottom of Quebrada del Tongo, 280-320 m, 14-II-1986, *H. Landero & L. Gaete* 8486 (CONC, OS); moist walls of Quebrada Vacas, 60 m, 16-I-1986, *E. Ruiz & T. Lammers* 8033 (CONC); along trail to Correspondencia Camp at Quebrada de la Mata Maqui, woodland at 1500 ft., 30-XI-1965, *F. G. Meyer* 9398 (MO, NA); Quebrada de La Colonia al fondo, 30-XI-1965, *C. Muñoz & E. Sierra* 7184 (SGO); Quebrada de la Loberia, 280 m, s.d., *C. & I. Skottsberg* 487 (GB);

Quebrada de las Casas, 28-VIII-1908, *C. Skottsberg* 468 (GB, LD); locality unknown, 1856-1857, *P. Germain s.n.* (BM, K). Robinson Crusoe Island, down into Villagra on path from Mirador Selkirk, then up slope on N side, 480 m, 31-I-1984, *T. F. Stuessy & D. Crawford* 6510 (OS); Cerro Agudo, down into fourth quebrada from ridge on Villagra side, 560 m, 17-II-1990, *T. F. Stuessy & M. García* 11670 (CONC); Cerro Agudo, 4th quebrada, 600-650 m, 21-I-1991, *T. F. Stuessy & Soto* 11904 (CONC); Corrales de Molina, down from Damajuana ridge (S side), on rock outcrop, 450 m, 25-I-1991, *T. F. Stuessy et al.* 12036 (CONC); down from ridge of El Camote into forest toward La Plazoleta del Yunque, 480 m, 28-I-1991, *T. F. Stuessy et al.* 12095 (CONC); Valle Villagra, down from Mirador Selkirk on S side, 540 m, 20-I-1990, *T. F. Stuessy & et al.* 11064 (CONC); Villagra, 350 m, 7-IV-2004, *J. G. Cuevas s.n.* (MIN); subida al Mirador de Selkirk desde San Juan Bautista, Agua del Guindal, 260 m, 27-I-1980, *C. Marticorena et al.* 9001 (OS); entre Plazoleta del Yunque y El Camote, 300 m, 2-II-1980, *C. Marticorena & E. Ugarte* 9074 (M, OS); Cordón Salsipuedes, 250 m, 5-II-1980, *C. Marticorena et al.* 9107 (M, OS); S side of Cerro Alto above Porto Ingles, 1000 ft., 14-XII-1965, *F. G. Meyer* 9569 (MO, NA, OS); above Plazoleta del Yunque, on ledges near base of El Yunque, 1300 m, 22-XII-1965, *F. G. Meyer* 9641 (MO, NA, SGO); Plazoleta del Yunque, 250 m, 21-I-1962, *K. Kubitzki* 180 (M); Quebrada Piedra Agujereada, 400 m, 9-II-1980, *E. Ugarte & O. Parra* 9163 (M, OS); Pangal, damp places in Maqui forest, 11-XII-1965, *O. Solbrig et al.* 3824 (BISH, GH, K); Valle Anson, 10-II-1955, *B. Sparre* 6 (NA); Portezuelo de Villagra, 550 m, 24-XII-1916, *C. & I. Skottsberg* 189 (BM, GB, K, LD); Quebrada de la Damajuana, 250 m, 6-XII-1916, *C. & I. Skottsberg* 56 (BISH, GB); Quebrada de Gutierrez, 7-XII-1916, *C. & I. Skottsberg* 47 (GB); Tlazñela, 23-IX-1935, *C. Bock* 88 (GB); locality unknown, 950 ft., 31-I-1935, *J. P. Chapin* 1082 (GH); locality unknown, II-1958, *W. Brünner s.n.* (CONC-109711). Both island and specific locality unknown: s.d., *E. C. Reed s.n.* (BM, GH, K); 1861, *R. A. Philippi s.n.* (F, G); XI-1875, *H. N. Moseley s.n.* (BM); 1-I-1892, *F. Johow s.n.* (LD).

8. *Uncinia macloviformis* G. A. Wheeler, sp. nov. TYPE: Chile. V Región Valparaíso, Prov.

Valparaíso, Juan Fernández Islands, Masafuera, up Cordon Inocentes from Las Tres Torres toward Los Inocentes, just below Los Inocentes, 1350 m, *Lophosoria* covered rocky outcrops, often covered in fog, scattered among ferns, 5-II-1986, *T. F. Stuessy & J. Sepúlveda* 9546 (holotype CONC). Fig. 2Ca, 3D.

Herbae caespitosae; culmi 5-25 cm alti; vaginae basales brunneae, glabrae. Folia 5-9, basilaria; laminae 1.5-10 cm longae, 1.5-3.5 mm latae; ligulae minusquam 1.5 mm longae. Spica solitaria, terminalis, androgyna, 1.5-3.5 cm longa, 2.5-4.5 mm lata, cylindrica densiflora. Pars mascula 0.5-1.2 cm longa, 8-20-flora. Pars feminea 1-3 cm longa, ca. 10-50-flora; squamae pistillatae persistentes, 3-5.2 mm longae, 1.4-2.3 mm latae, coriaceae, ferrugineae, apice albo ciliolatae. Perigynia 3-4.2 mm longa, 1.2-1.5 mm lata, supra scabrido-hispidula, supra media marginibus ciliolata. Achenium 2.2-2.6 mm longum, 0.9-1.5 mm latum; rachilla 4-5.6 mm longa, glabra, exserta pars 1.5-2.5 mm longa. Stigmata 3. Antherae 3, ca. 1-1.4 mm longae, ca. 0.2 mm latae; filamenta linearia dilata, 0.2-0.4 mm lata.

Plants perennial, caespitose from short rhizomes. Fertile culms 5-25 cm tall, erect or slightly curved, frequently exceeding the leaves, trigonous, smooth, with glabrous, brownish basal sheaths. Leaves 5-9, basal; blades 1.5-10 cm long, 1.5-3.5 mm wide, ascending, flattish or, more often, channeled, semi-coriaceous, glabrous, the margins smooth or sparingly scaberulent distally, terminating in a 3-angled, scaberulent tip; inner band of leaf sheaths hyaline or pale brown, glabrous, the apex slightly concave; ligules less than 1.5 mm long, rounded to subacute. Inflorescences a solitary, androgynous spike 1.5-3.5 cm long, linear-cylindrical. Staminate portion 0.5-1.2 cm long, 1-1.8 mm wide, ca. 8-20-flowered; scales 1.5-3 mm long, 0.8-2 mm wide, ovate, obtuse, glabrous, reddish brown, with white-hyaline and ciliolate apices, 1-veined. Pistillate portion 1-3 cm long, 2.5-4.5 mm wide, ca. 10-50-flowered; scales persistent, 3-5.2 mm long, 1.4-2.3 mm wide, ovate-lanceolate, obtuse to subacute, glabrous, coriaceous, ferruginous, with stramineous or pale brown center, white-hyaline and ciliolate apices, 1(-3)-veined, the lowest sometimes with a scabrous-ciliate awn up to ca. 2.7 cm long. Perigynia 3-4.2 mm long, 1.2-1.5 mm wide, compressed-trigonous with broadly elliptical sides, semi-coria-

ceous, brownish, 2 lateral veins prominent and the rest obscure or finely-veined, sparsely to moderately appressed-hispid distally and glabrous proximally, margins ciliate above the middle but sparsely (if at all) below, tapered to a broad stipitate-like base, gradually tapered into a beak; beaks conical, 0.3-0.6 mm long, appressed-hispid. Achenes 2.2-2.6 mm long, 0.9-1.5 mm wide, compressed-trigonus with oblong sides, brownish. Rachilla 4-5.6 mm long, projecting beyond orifice of perigynium, exserted portion 1.5-2.5 mm long, smooth, stramineous, the hook 0.9-1.5 mm long and stramineous or brownish (particularly the descending part). Stigmas 3. Anthers 3, ca. 1-1.4 mm long and 0.2 mm wide; filaments linear, dilated (0.2-0.4 mm wide), as wide as or wider than anthers.

Distribution and habitat. On the Juan Fernández Archipelago, *U. macloviformis* is known from three localities on Alejandro Selkirk Island, all rocky places at elevations from about 1100 to 1400 m. Skottsberg (1922: 106) collected it "on rocks" and in "alpine fell-fields in the northern half of the highland," and more recent collections have come from rocky outcrops, particularly under ferns, such as *Lophosoria*. Also regarding habitat, *U. macloviformis* grows in alpine fell-fields and among rocky outcrops, whereas the closely related *U. macloviana*, from the mainland, grows primarily in moist to wet depressions in meadows and grasslands (Moore, 1968).

Observations. *Uncinia macloviformis* differs from *U. brevicaulis* Thouars, whose type comes from the Tristan da Cunha Archipelago in the south-Atlantic Ocean, by having narrower and shorter spikes, obtuse scales, and shorter perigynia. Some authors (Skottsberg, 1922, 1953; Marticorena et al., 1998) have reported *U. brevicaulis* from the Juan Fernández Archipelago, but Hooper (1968) referred the Juan Fernández plants to *U. macloviana* Gaudich. (her *U. brevicaulis* var. *macloviana* (Gaudich.) C. B. Clarke), whose type comes from the Falkland Islands (Islas Malvinas) (Type: Isle Malouines, April 1825, *Gaudichard s.n.* [holotype: P; isotypes: BM, G, K]). When plants from the Robinson Crusoe Islands are compared to those of *U. macloviana* from austral South America and the Falkland Islands (Islas

Malvinas), however, it is clear that the Robinson Crusoe plants represent a distinct species.

Plants of *U. macloviformis* (Fig. 3D) with mature fruit have been collected from January through March. The epithet refers to the outward similarity of the Juan Fernández entity to *U. macloviana*. But the pistillate scales of *U. macloviformis* are as long as or longer than the perigynia, whereas those of *U. macloviana* are shorter than the perigynia. Also, the former species has perigynia with margins very sparsely (if at all) ciliate below the middle, whereas the perigynia of the latter have margins that generally are ciliate to the base; furthermore, the perigynia of *U. macloviformis* are shorter and more "plump" than those of *U. macloviana*, i.e., perigynia of the latter are tapered to a longer and narrower stipitate-like base and also have a longer beak. See Fig. 2, compare Ca and Cb for the differences just mentioned. Lastly, but of great interest, Henrickson and Herbst (1988) reported *U. brevicaulis* from the Hawaiian Islands and suggested that the plants were probably "introduced" from the Juan Fernández Archipelago by migrating birds. The Hawaiian entity, as well as Henrickson and Herbst's suggestion of a possible relationship between the Hawaiian and Juan Fernández plants, is presently under study by the author.

Based on the limited number of known sites on Alejandro Selkirk Island, this species seems to warrant a conservation status of Threatened.

Additional specimens examined

CHILE. **V Región de Valparaíso.** Prov. Valparaíso, Robinson Crusoe Islands, Alejandro Selkirk Island, Cordón La Cuchara (N slope), ridge between 2nd and 3rd branches of Quebrada Pasto, 1100 m, 16-I-1986, *H. Valdebenito & H. Landero 9037* (CONC); alpine region of Las Torres, 1370 m, 14-II-1917, *C. & I. Skottsberg 369* (BISH, GB, LD, US); Correspondencia Camp, 1130 m, 26-III-1955, *I. & C. Skottsberg 169* (US). (Paratypes).

9. *Uncinia phleoides* (Cav.) Pers., Syn. 2: 534. 1807. *Carex phleoides* Cav., Icon. 5: 40, tabula 464 fig. 1. 1799. TYPE: Chile. VIII Región Bio-Bío, Prov. Concepción, Concepción, sine data, *Née s.n.* (syntype MA); Talcahuano, sine data, *Née s.n.* [syntype MA (partim)].

Plants perennial, caespitose. Fertile culms (22-) 30-115 cm tall, smooth, with brownish sheaths. Leaves mostly basal, with blades 4-10 mm wide, semi-coriaceous, flat to M-shaped. Inflorescence a solitary, androgynous spike, clavate, (6-) 8-19 cm long and up to 14 mm wide in the distal half. Pistillate part tightly flowered, with ca. 100-250 (or more) perigynia; scales persistent, 6.8-14 mm long, 1.3-1.8 mm wide, shorter than perigynia, 1-veined, the tips with broad hyaline margins and ciliolate. Perigynia 6-8 mm long, 0.9-1.4 mm wide, brownish, margins ciliate with hairs mostly in fascicles. Achenes 4.2-5.2 mm long, 0.6-1 mm wide, compressed trigonous with narrowly oblong sides. Rachilla terete, exserted portion 2.7-5.2 mm long. Stigmas 3. Anthers 3, 1-1.6 mm long; filaments as wide as or wider than anthers.

Distribution and habitat. The range of *U. phleoides*, as presently understood, extends from northern Patagonia (Barros, 1947, 1969; Marticorena & Quezada, 1985) northward to Bolivia (Foster, 1965), with a disjunct occurrence on the Robinson Crusoe Islands (though not reported by Marticorena et al., 1998); this species has also been reported from Ecuador (Wheeler & Goetghebeur, 1997) and Colombia (Mora-Osejo, 1966) as well as Central America (Chater, 1994) and Mexico (González, 1983).

On the Juan Fernández Archipelago, *U. phleoides* is known only from a single locality on Alejandro Selkirk Island. According to Skottsberg's (1922: 107) itinerary, this "rare" species was collected, at 1130 m, in "fern beds" at the same site on two different dates; unfortunately, no specimen has been seen from the earliest date (i.e., 25-II-1917). Moreover, no additional collections of this species from the archipelago have been seen.

Observations. Mature fruit with ripe achenes has been collected in early March. The epithet refers to the timothy-like spikes of this species. As noted by Skottsberg (1922), Kükenthal assigned the Alejandro Selkirk Island plant to *U. phleoides* var. *nux-nigra* C. B. Clarke, whose type comes from Ecuador. But because Wheeler & Goetghebeur (1997), after a study of Ecuadorian uncinias, did not consider var. *nux-nigra* distinct from typical *U. phleoides*, the insular entity is treated here as typical *U. phleoides*. It is rec-

ommended, however, that a thorough re-examination of the insular plant be made when a revision of the *U. phleoides* species aggregate in South America is undertaken.

Although the conservation status of this species on the South American mainland is not endangered, the insular entity, if still extant on the archipelago, could possibly become extirpated if not protected.

A full description and illustration of this species are offered in Wheeler & Goetghebeur (1997: 17, Figs. 8, 9). Although partial synonymy is given in the literature (e.g., Kükenthal, 1909; Barros, 1947; Wheeler & Goetghebeur, 1997), complete synonymy as well as selection of a lectotype must await a revision of the *U. phleoides* species aggregate in South America. As *Uncinia phleoides* and *U. trichocarpa* C. A. Meyer, which are sympatric in central Chile, can be easily confused, the selection of a lectotype for *U. phleoides* must await a thorough study of the syntypes.

Additional specimens examined

CHILE. V **Región Valparaíso**. Prov. Valparaíso, Robinson Crusoe Islands, Alejandro Selkirk Island, Correspondencia Camp, 1130 m, 5-III-1917, C. & I. Skottsberg 370 (BISH, GB, LD).

10. *Uncinia tenuis* Poeppig ex Kunth, Enum. Pl. 2: 525. 1837. TYPE: Chile. VIII Región Bío-Bío, Prov. Bío-Bío, Antuco, Valle de Quilai-Leuvu, II-1827-29, *Poeppig* 243 (holotype B destroyed; lectotype BM designated by Wheeler & Goetghebeur, Aliso 15: 22. 1997).

Uncinia tenuis f. *firmula* Kük. TYPE: Chile. V Región Valparaíso, Prov. Valparaíso, Juan Fernández Islands, Masafuera, Cordon del Barril, 925 m, 1-III-1917, C. & I. Skottsberg 561 (syntypes B destroyed; lectotype GB here designated; isoelectotypes BISH, BM, LD).

Plants perennial, with slender, short- to long-creeping rhizomes. Fertile culms 5-47.5 cm tall, smooth, with brownish basal sheaths. Leaves with blades (0.7-) 1.5-3.5 mm wide, flattish, terminating in a scabrous attenuate tip. Inflorescence a solitary, linear, androgynous spike, 1.7-6.3 cm long, 2-3 mm wide. Pistillate portion with ca. 8-40 perigynia; scales deciduous, but the basal one-

third persisting as a conspicuous whitish green or pale brown saccate structure about 1 mm long, 2.4-4 mm long, 0.8-1.3 mm wide, 1-veined, the tips entire. Perigynia 3.6-4.5 mm long, 0.8-1.2 mm wide, whitish green to greenish brown, glabrous; perigynium beak 0.8-1.2 mm long, the margins smooth. Achenes 2.2-2.8 mm long, 0.8-1.1 mm wide. Rachilla terete, exserted portion 2.4-3.6 mm long. Stigmas 3. Anthers 3, 0.8-1.2 mm long, wider than the filiform filaments.

Distribution and habitat. *Uncinia tenuis* ranges from Cape Horn in Tierra del Fuego (Wheeler, 1994) northward to west-central Argentina (Barros, 1969) and central Chile (Muñoz-Schick, 1980) and is disjunct on the Juan Fernández Archipelago (Marticorena et al., 1998); farther north it occurs in Ecuador (Wheeler & Goetghebeur, 1997) and Colombia (Wheeler, 1996) and is also reported from Costa Rica in Central America (Chater, 1994). On the Juan Fernández Archipelago, this species grows at elevations from about 850 to 1200 m and is known only from Alejandro Selkirk Island. It often grows in loose mats in moist, shaded places in quebradas, particularly under ferns such as *Lophosoria*; it has also been collected under ferns on rocky slopes, where it forms more or less compact mats, as well as growing epiphytically on tree ferns, such as on *Dicksonia* stems.

Observations. Specimens with mature fruit have been collected from January through March, though by late March the majority of perigynia have been shed. Even then, however, this species can be readily identified by its distinctive inflorescences, which although greatly (or entirely) divested of perigynia continue to display whitish or pale brown saccate appendages, structures which are the persistent portions of otherwise deciduous scales (Wheeler & Goetghebeur, 1997). The epithet, which means "slender or thin," refers to several features of this species (e.g., its narrow rhizomes, culms, and spikes).

Only two South American uncinias, *U. tenuis* and *U. subsacculata* G. A. Wheeler & Goetghb., the latter known only from Ecuador (Wheeler & Goetghebeur, 1995, 1997), are characterized by deciduous scales and persistent saccate appendages. As such, *U. tenuis* should not be con-

fused with any other species on the archipelago. Based on its perigynia and stamens, the species belongs in sect. *Uncinia*.

Kükenthal (1920) called the entity from Alejandro Selkirk Island *U. tenuis* f. *firmula* and indicated that it has firmer culms and denser spikes than those of typical *U. tenuis*. Some mainland plants, however, particularly those growing among rocks, tend to have short, firm culms and dense spikes, whereas some specimens from Alejandro Selkirk Island possess long, lax culms with more or less open spikes. Since intergrades occur on both the archipelago and on the mainland, the entity called f. *firmula* by Kükenthal appears to be a mere ecotype with no taxonomic significance.

A full description and illustrations of this species are given in Wheeler & Goetghebeur (1997: 22, Figs. 10, 11).

While the conservation status of this species in austral South America is not endangered, the insular plants are of special concern and should be protected from extirpation.

Additional specimens examined

CHILE. V Región Valparaíso. Prov. Valparaíso, Robinson Crusoe Islands, Alejandro Selkirk Island, Plano de Rodríguez, above sea at Punta Buque Varado, 1090 m, 20-I-1986, *H. Valdebenito* 9134 (CONC); upper reaches of Quebrada Chorro Dona Maria, 1000 m, 8-II-1986, *H. Valdebenito* 9599 (CONC, OS); Quebrada Chorro Doña Maria, 850 m, 8-II-1986, *H. Valdebenito* 9602 (CONC, OS); upper part of Quebrada Varadero, 950-1050 m, 5-II-1986, *T. F. Stuessy et al.* 9557 (CONC); saddle between Quebrada Vacas and Quebrada Guaton, 1050 m, 27-I-1986, *T. F. Stuessy et al.* 9340 (CONC); Cordón Atravesado at top of Quebrada Vacas (1200 m), then down to Quebrada Guaton towards sea, 25-I-1986, *T. F. Stuessy & T. Lammers* 9224 (CONC); *ibid.*, *T. F. Stuessy & T. Lammers* 9230 (CONC); Los Inocentes, over 1100 m, 2-XII-1965, *O. Solbrig et al.* 3741 (GH); *ibid.*, in wet cave at 1200 m, 4-XII-1965, *O. Solbrig et al.* 3756 (GH); on bottom of quebrada SE of Las Tres Torres, 1030 m, 4-II-1986, *T. F. Stuessy & L. Gaete* 9518 (CONC); Inocentes, 1500 m, 9-III-1917, *C. & I. Skottsberg* 382 (GB).

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Recensión

Endress, P. K.; U. Lüttge & B. Parthier (eds.). 2005. From Plant Taxonomy to Evolutionary Biology—Von der Taxonomie zur Evolution der Pflanzen. Nova Acta Leopoldina, neue Folge 342(92): 7-238. ISSN 0369-5034.

La Deutschen Akademie der Naturforscher Leopoldina ha publicado las conferencias presentadas durante el simposio realizado entre el 10 y 12 de junio de 2004 en Reichelsheim (Odenwald), Alemania. Estas conferencias cubren un amplio rango de temas dentro de la sistemática evolutiva de las Plantas Vasculares. Los trabajos están ordenados en 5 capítulos: 1) una revisión de la evolución y sistemática de las Danthonioideae, Poaceae (Linder & Barker: 29-46); 2) tres artículos sobre filogenia, evolución y diversidad de plantas terrestres y grandes grupos de Angiospermae; 3) cuatro artículos sobre diversidad y evolución del nivel específico y genérico (filogeografía); 4) dos artículos sobre fisiología y evolución, enfocados en las Crassulaceae; y 5) dos artículos sobre morfología y evolución de las Angiospermae.

De las 12 conferencias publicadas, 7 se destacan por su interés general, a saber:

√ Un análisis de los centros mundiales de diversidad de Plantas Vasculares (Barthlott et al.: 61-84).

√ Una actualización de la diversificación de las Angiospermas basales (Borsch et al.: 85:112).

√ Una reevaluación del uso de las secuencias de rDNA para la reconstrucción de filogenias intragenéticas o intraespecíficas (Grimm et al.: 129-145).

√ Un estudio modelo de filogeografía del archipiélago Juan Fernández (Chile) basado en el análisis de la divergencia genética de 7 géneros de Angiospermae (Stuessy et al.: 147-165).

√ Un análisis del origen de la flor de las Angiospermas basado en el enfoque de la genética evolutiva del desarrollo (Theissen: 209-219).

√ Un muy interesante enfoque del papel de la morfología en los nuevos estudios evolutivos basados en marcadores moleculares (Endress: 221-238). Endress presenta nuevas direcciones de investigación para una disciplina tan antigua como la Biología misma, e introduce nuevos conceptos e ideas, algunas tomadas de la Zoología, como el fenómeno del “reloj de arena” (“hourglass phenomenon”) referido a ciertas etapas del desarrollo embrionario, indicando nuevas líneas de investigación para el desarrollo floral y embrionario de las Angiospermae.

En síntesis, el tomo 342(92) de Nova Acta Leopoldina reúne una colección de conferencias de gran interés particular y general, que sobrepasa el ámbito de la sistemática y evolución vegetal.

Raúl Pozner