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TWO NEW SPECIES OF *UNCINIA* (CYPERACEAE) FROM CHILE

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ABSTRACT

Two new species of *Uncinia* (Cyperaceae) are described from Chile. Both are local endemics, with *U. chilensis* known from VIII (Bío Bío) and IX (Araucanía) regions of central Chile and *U. araucana* from IX Región only.

Key words: Chile, Cyperaceae, *Uncinia araucana*, *U. chilensis*, *U. erinacea*.

INTRODUCTION

An estimated 60 to 70 species of *Uncinia* Pers. (Cyperaceae) occur worldwide, all south of the Tropic of Cancer, with between 20 and 30 growing in the mountains and cooler regions of South America (Wheeler and Goetghebeur 1995). In this paper, two new species of *Uncinia* are described from austral South America. Both are endemic to Chile, as far as known, and physiognomically both resemble *U. erinacea* (Cav.) Pers., which also grows in central Chile (Marticorena and Quezada 1985). At this point, it is worthy of note that all of the names placed by Kükenthal (1909, p. 56) under the synonymy of *U. erinacea* (including var. *longifolia* [Kunth] C. B. Clarke) are indeed referable to that species, i.e., *U. longearistata* Steudel (*D'Urville s.n.* [holotype: P!; isotypes: P–2 sheets!]), *U. longifolia* Kunth (*Dombey s.n.* [holotype: B (destroyed); isotype: G!]), *U. macrotricha* Franchet (*Savatier s.n.* holotype: P! isotype: P!]), and *U. philippii* Steudel (*Philippi 177* [holotype: P!; isotypes: BM!, G! K!, P–2 sheets!]). Because very few specimens of the two new species are present in major herbaria, both apparently are rarities. A morphological comparison of 13 characters for the two new species and *U. erinacea* is given in Table 1, and the most salient of these are given in the key near the end of this report.

It is also worth noting here that Hamlin (1958, p. 85) considered *Uncinia erinacea*, based on its leafy culms, broad leaves, and long rachillae, to be “the most primitive living member of the genus.” In this regard, both new species share several putatively primitive features in common with *U. erinacea*. For example, unlike most *Uncinia* species, which have short internodes so that the leaves are basal (Kukkonen 1967), the culms of the two new species (as well as those of *U. erinacea*) additionally have some cauline leaves. Also, all three species have perigynia with prolonged beaks, whereas nearly all other South

American *uncinia* have short, conical beaks. Moreover, the rachillae of these three species are among the largest in the genus. The sectional affinities of these three seemingly related species await a revision of *Uncinia*, which the author is currently pursuing.

DESCRIPTIONS AND COMMENTS

Uncinia chilensis G. A. Wheeler, sp. nov. Fig. 2, 3

TYPE.—CHILE. IX Región Araucanía, Prov. Malleco: WSW of Lonquimay, Cordillera de las Raíces, 38° 29' S. lat., 71° 27' W. long., 1000 m, 22 Jan 1989, Zoellner 15203 (holotype: MIN!).

Herbae caespitosae; culmi 25–26 cm alti; vaginae basales ferrugineae, glabrae. Folia ca. 6–8, nonnulli caulini; laminae 8–27 cm longae, 3.5–6.5 mm latae, abaxialis papilloso; ligulae 1–3 mm longae. Spica solitaria, terminalis, androgyna, 4.5–8.5 cm longa, 8–12 mm lata. Pars mascula 10–20 mm longa, ca. 30–50-flora. Pars feminea ca. 50–200-flora; squamae pistillatae persistentes, corporis 1.5–5.5 mm longis et 0.8–1.8 mm latis, coriaceae, apices longissime aristatae. Perigynia 5.2–7.2 mm longa, 2.4–4 mm lata, superne scabrido-hispidula, marginibus ciliolata. Achenium 3.2–4.2 mm longum, 2.2–3.5 mm latum; rachilla 14–22 mm longa, glabra, exserta pars 6.5–18 mm longa. Stigmata 3. Antherae 3, 1.4–1.9 mm longae, ca. 0.2–0.3 mm latae; filamenta filiformia non dilatata, ca. 0.1 mm lata.

Plants caespitose with short to elongate rhizomes. Fertile culms 25–56 cm tall, 0.8–1.4 mm thick, erect or nearly so, from shorter than to about equaling the leaves, obscurely trigonous, smooth, lowermost sheaths glabrous, ferruginous, bladeless or with short blades up to 6 cm long. Leaves ca. 6–8, the upper 2–4 cauline; basal ones with blades 8–27 cm long, 3.5–6.5 mm wide, ascending, subcoriaceous, stiff, conspicuously papillate on abaxial side, the margins antrorsely scabrous, terminating in a 3-angled, scabrous attenuate tip, cauline ones the same but with sheaths 3.5–5 cm long and blades 10–20

Table 1. A selected morphological comparison of *Uncinia araucana*, *U. chilensis*, and *U. erinacea* in Chile.

Character	<i>Uncinia erinacea</i>	<i>Uncinia chilensis</i>	<i>Uncinia araucana</i>
leaf width (mm)	5–17	3.5–6.5	5–8
leaf surface, abaxial side	smooth (or nearly so)	conspicuously papillate	smooth (or nearly so)
staminate scales	oblong-ovate, obtuse, awnless	lanceolate, acute, often with short awns	oblong-ovate, obtuse, awnless
pistillate scales	oblong-ovate, obtuse, awnless	lanceolate, acute, with long awns	oblong-ovate, obtuse to sub-acute, awnless
perigynium length (mm)	4–5	5.2–7.2	8.5–10.8
perigynium width (mm)	2–3	2.4–4	2–3
perigynium orientation	wide spreading at maturity	wide spreading at maturity	± ascending at maturity
perigynium vestiture	hispidulous to hispid	hispidulous to nearly glabrous	hispid
achene length (mm)	2–2.6	3.2–4.2	4.6–5.4
rachilla length (exserted portion) (mm)	6–16	6.5–18	6–8.5
rachilla hook length (mm)	0.9–1.4(–1.7)	1.6–2.8	2–2.4
anther length (mm)	0.7–1.3	1.4–1.9	1.7–2.3
staminal filament, shape and width (mm)	linear, dilated (ca. 0.2–0.3)	filiform, not dilated (ca. 0.1)	linear, dilated (ca. 0.3–0.5)

cm long and 3–5 mm wide; inner band of leaf sheaths hyaline or pale brown, glabrous, the apex concave; ligules 1–3 mm long, rounded, wider than long. Inflorescence a solitary, androgynous spike, 4.5–8.5 cm long, 8–12 mm wide, oblong-cylindric. Staminate part 10–20 mm long, ca. 30–50-flowered; scales 3–4.5 mm long, 0.6–1.2 mm wide, lanceolate, acute, coriaceous, glabrous, stramineous center with broad, hyaline or pale brown margins, 1(–3)-veined, the tips awnless or with short awns up to 2 mm long. Pistillate part tightly flowered with ca. 50–200 perigynia; scales persistent, the bodies 1.5–5.5 mm long and 0.8–1.8 mm wide, lanceolate, acute, coriaceous, glabrous, stramineous center with broad, hyaline or pale brown margins, 3(–5)-veined, the lowermost one with scabrous-ciliate to nearly smooth awns up to 15 cm long, the inner ones with awns 0.5–20(–45) mm long. Perigynia 5.2–7.2 mm long, 2.4–4 mm wide, widely spreading at maturity, the bodies trigonous with broadly elliptic to slightly obovate sides, hispidulous (especially in the distal half), the margins ciliolate to smooth, stramineous to brownish, 2 veins prominent and the rest faint, abruptly contracted into a long beak; perigynium beak 2–2.8 mm long, narrowly conical, hispidulous to nearly glabrous. Achenes 3.2–4.2 mm long, 2.2–3.5 mm wide, trigonous with concave to flat, oblong-obovate to nearly suborbicular sides, brown, granulose, sessile. Rachilla 14–22 mm long, projecting beyond orifice of perigynium, the exserted portion 6.5–18 mm long, smooth, stramineous or brown, the hook 1.6–2.8 mm long and stramineous or brownish (particularly the descending part). Stigmas 3. Anthers 3, 1.4–1.9 mm long, ca. 0.2–0.3 mm wide, wider than the filiform filaments (ca. 0.1 mm wide).

PARATYPES.—CHILE. VIII Región Bío Bío, Prov. Arauco: Cordillera de Nahuelbuta, Reserva Forestal Pino Huacho, 37° 42' S. lat., 73° 09' W. long., 1000 m, 19 Dec 1978, *Martcorena et al.* 1638 (CONC).—Prov. Bío Bío: Valle del Renaico, San Ignacio de Peñahue, [37° 53' S. lat., 72° 12' W. long.] Jan 1894, *F. Philippi s.n.* (SGO-45968).—Prov. Concepción: Concepción, 1893–96, *Neger s.n.* (M). IX Región Araucanía, Prov. Malleco: Cordillera de las Raíces, 38° 29' S. lat., 71° 27' W. long., 1100 m, 14 Feb 1992, *Zoellner* 18812 (MIN).

Uncinia chilensis is known only from four localities in central Chile (Fig. 1). It grows from about 1000 to 1500 m, and plants with mature fruit have been collected from December through February. The epithet refers to the discovery of this species in Chile.

One of the first known collections of *Uncinia chilensis* was made by F. W. Neger in the 1890s, plants which Kükenthal (1909) did not consider to be distinct from those of *U. erinacea*. However, a recent examination of Neger's plants (Fig. 3) and additional collections (Fig. 2) reveals that there is a real discontinuity in morphology between these two entities (cf. Fig. 3 and 5). For example, Kükenthal (1909, p. 56) described the pistillate scales of *U. erinacea* as "obtusae vel interdum longissime aristatae," with the last-mentioned character no doubt based on Neger's collection. But *U. chilensis*, as indicated in the key and in Table 1, has long-awned pistillate scales, whereas those of *U. erinacea* (Fig. 4, 5) are awnless. Likewise, the staminate scales of the two species differ considerably (see Table 1). Also, *U. chilensis* has larger perigynia, achenes, anthers, and rachillae. Indeed, the very long and thick rachilla of *U. chilensis* probably is the largest in the genus. Moreover, unlike *U. erinacea* (and most other *Uncinia* species), the abaxial surface of the leaves of *U. chilensis* are

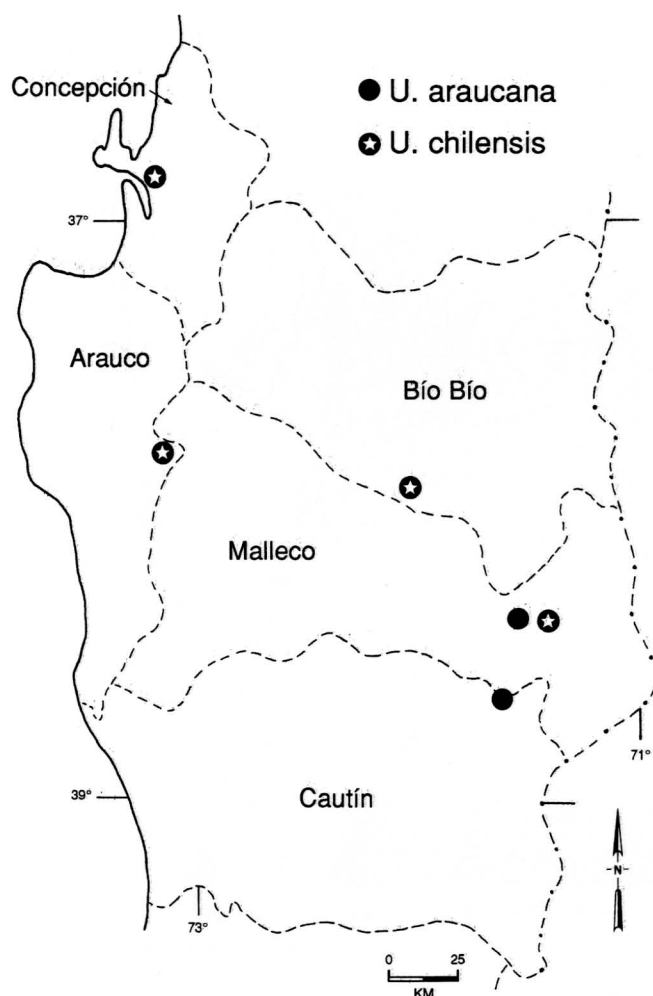


Fig. 1. Map of VIII Región Bío Bío (excepting Ñuble Province) and IX Región Araucanía in central Chile showing the distributions of *Uncinia araucana* and *U. chilensis*.

conspicuously papillate. One additional difference, which concerns a feature traditionally regarded as important in the taxonomy of the genus (Clarke 1883; Kükenthal 1909), is that the staminal filaments of *U. chilensis* are narrower than the anthers, whereas in *U. erinacea* the filaments are as wide as or wider than the anthers. Based on this study, it is abundantly clear that these two entities are taxonomically distinct species.

***Uncinia araucana* G. A. Wheeler, sp. nov. Fig. 6, 7**

TYPE.—CHILE. [IX Región Araucanía,] Prov. Cautín: Volcán Llaima, 38° 42' S. lat., 71° 44' W. long., 1500 m, 4–7 Jan 1943, *Gunckel 13899* (holotype: CONC!).

Herbae caespitosae; culmi 15–30 cm alti; vaginae basales brunneae glabrae. Folia 7–13, nonnulli caulini; laminae 9–40 cm longae, 5–8 mm latae; ligulae 1.5–3 mm longae. Spica solitaria, terminalis, androgyna, 4–5 cm longa, 5–8 mm lata, oblongo-cylindrica vel sub-

clavata. Pars mascula 6–10 mm longa, ca. 10–20-flora. Pars feminea ca. 20–60-flora; squamae pistillatae persistentes, 5–8 mm longae, 1.5–2.2 mm latae, coriaceae, glabrae. Perigynia 8.5–10.8 mm longa, 2–3 mm lata, hispidula, marginibus ciliata; rostra 2–3.5 mm longa. Achenium 4.6–5.4 mm longum, 1.3–1.6 mm latum; rachilla 14.2–16.2 mm longa, exserta pars 6–8.5 mm longa, glabra. Stigmata 3. Antherae 3, 1.7–2.3 mm longae, ca. 0.3–0.4 mm filamenta latae; linearia dilatata, 0.3–0.5 mm lata.

Plants caespitose from short rhizomes. Fertile culms 15–30 cm tall, 0.8–1.2 mm thick, erect, shorter than the leaves, obscurely trigonous, smooth, with glabrous, pale brown to brown basal sheaths. Leaves 7–13, the upper 1–3 cauline; basal ones with blades 9–40 cm long, 5–8 mm wide, ascending, flat or plicate, glabrous, the margins antrorsely scabrous, cauline ones the same but with sheaths 1.5–4 cm long and blades ca. 9–25 cm long and 4–6 mm wide; inner band of leaf sheaths hyaline or pale brown, glabrous, slightly thickened at the mouth, the apex concave; ligules 1.5–3 mm long, rounded, wider than long. Inflorescence a solitary, androgynous spike, 4–5 cm long, 5–8 mm wide, oblong-cylindric to slightly subclavate. Staminate part 6–10 mm long, ca. 10–20-flowered; scales 2.5–3.5 mm long, 1–1.6 mm wide, oblong-ovate, obtuse, subcoriaceous, glabrous, narrow green center with broad, pale reddish brown margins, 1(–3)-veined, the tips with narrow hyaline margins and ciliate. Pistillate part more or less tightly flowered with ca. 20–60 perigynia; scales persistent, 5–8 mm long, 1.5–2.2 mm wide, shorter than the perigynia, oblong-ovate, obtuse to subacute, coriaceous, glabrous, pale greenish center with hyaline or pale reddish brown margins, 1(–3)-veined, the tips with narrow hyaline margins and ciliate, awnless but the lowermost sometimes with a scabrous-ciliate awn up to 5 cm long. Perigynia 8.5–10.8 mm long, 2–3 mm wide, elliptical, more or less ascending, hispid distally and sparingly hispid to nearly glabrous proximally, the margins ciliate from apex to near the base, stramineous to pale brown, 2 veins prominent and the rest faint, tapered to a stipitatelike base; perigynium beak long-conical, 2–3.5 mm long, appressed hispid, the margins ciliate. Achenes 4.6–5.4 mm long, 1.3–1.6 mm wide, compressed-trigonous with oblong sides, yellowish brown (immature). Rachilla 14.2–16.2 mm long, projecting beyond orifice of perigynium, the exserted portion 6–8.5 mm long, smooth, stramineous, the hook 2–2.4 mm long and stramineous or pale reddish brown (particularly the descending part). Stigmas 3. Anthers 3, 1.7–2.3 mm long, ca. 0.3–0.4 mm wide; filaments linear, dilated (0.3–0.5 mm wide), as wide as or wider than the anthers.

PARATYPE.—CHILE. IX Región Araucanía, Prov. Malleco: Malalcahuello 38° 27' S. lat., 71° 35' W. long., 8 Jan 1974, *Zoellner 7681* (MIN).

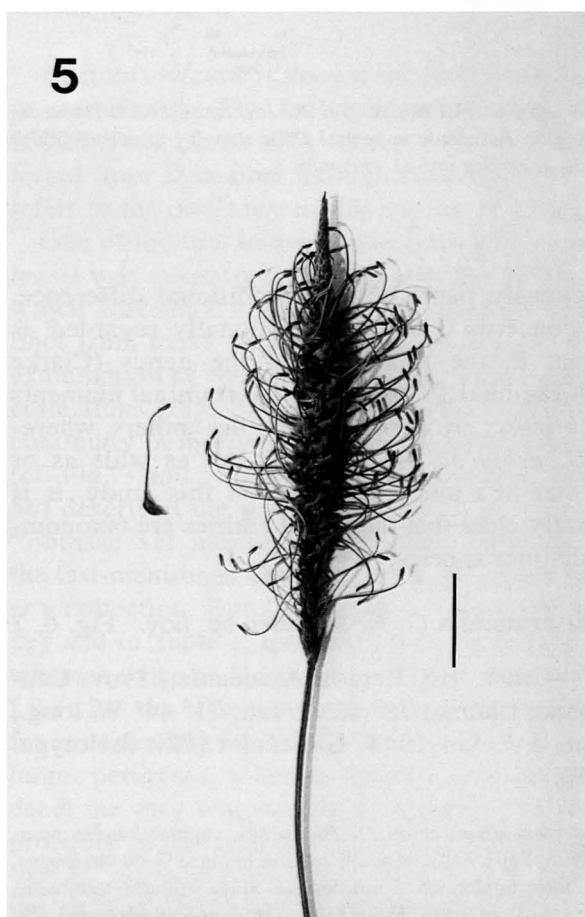
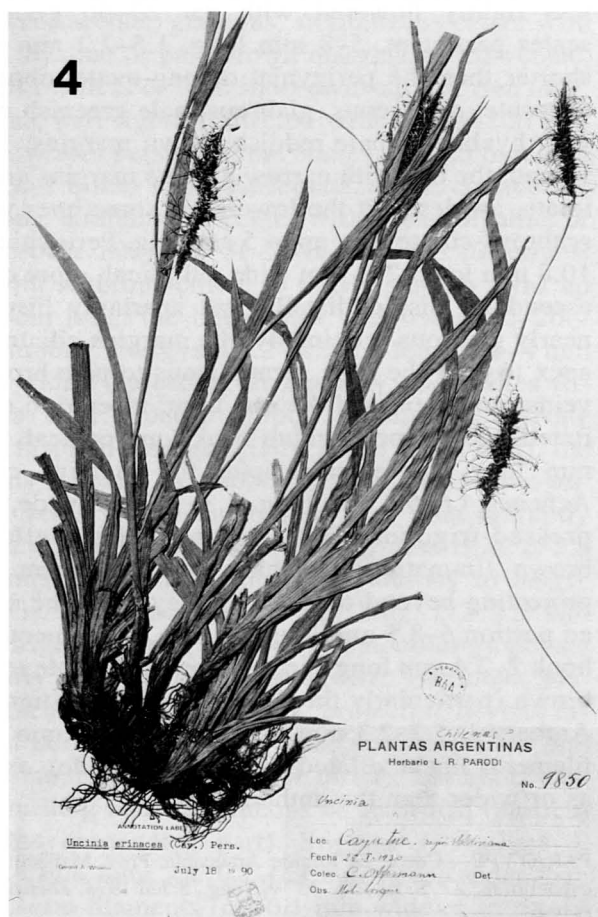
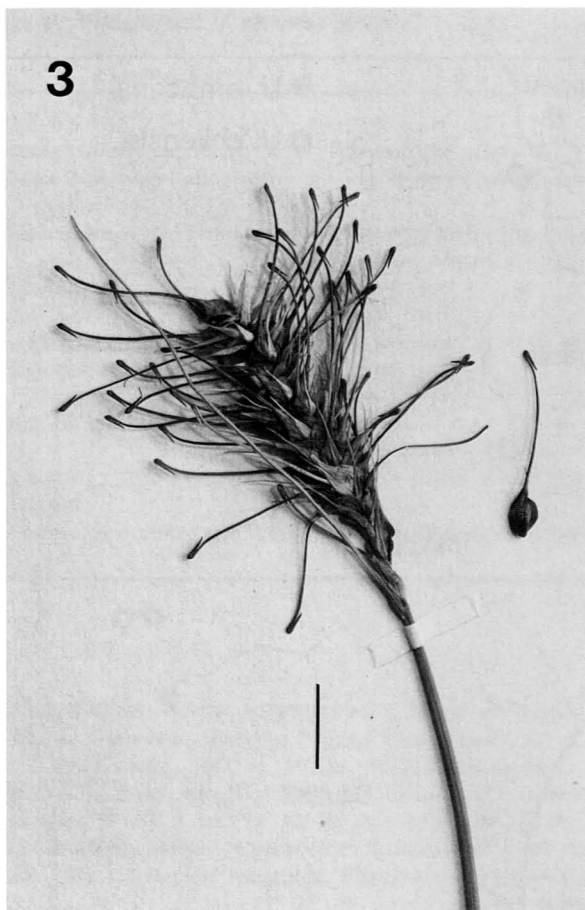




Fig. 6-7. *Uncinia araucana*, from Gunckel 13899 (CONC), holotype.—6. Habit.—7. Inflorescence (plant on right in Fig. 6, but the spike enlarged). (Bar = 0.5 cm in Fig. 7.)

Uncinia araucana is known only from two localities in central Chile (Fig. 1). The holotype was collected in a forested area, in dry soil, at about 1500 m. Very little is known about the biology of this species, but plants collected in early January have slightly immature achenes, so peak fruiting probably occurs in late January and February. The epithet refers to the fact that, thus far, this species is known only from IX Región Araucanía in Chile.

The holotype was originally identified as *Uncinia multifaria* Nees ex Boott, but the plants are not referable to that species in that *U. multifaria* has narrowly oblong perigynia and achenes, as well as a short perigynium beak. Rather, these plants (Fig. 6, 7) are similar to *U. erinacea* and *U. chilensis*, in having relatively broad perigynia and a prolonged beak, but differ from both of them by having longer achenes, shorter rachillae (i.e., the exerted part), and longer perigynia that are conspicuously hispid and more or less ascend-

ing at maturity (cf. Fig. 3 and 7; also see Table 1 and the key).

Of the approximately 15 uncinia that grow on the Chilean mainland (Kükenthal 1909; Marticorena and Quezada 1985; Wheeler 1994, in press), the three species discussed in this paper are differentiated from the others by having cauline leaves and a prolonged perigynium beak. A key to the two new species and *U. erinacea* is given below.

- A. Scales lanceolate, with short to long awns; leaves conspicuously papillate abaxially; filaments filiform, narrower than anthers *U. chilensis*
- A. Scales oblong-ovate, awnless; leaves not papillate; filaments linear, as wide as or wider than anthers.
 - B. Perigynia less than 6 mm long, wide spreading at maturity; achenes less than 4 mm long; anthers less than 1.5 mm long *U. erinacea*
 - B. Perigynia more than 6 mm long, more or less ascending at maturity; achenes more than 4 mm long; anthers more than 1.5 mm long *U. araucana*

Fig. 2-5. 2-3. *Uncinia chilensis*.—2. Habit, from Zoellner 15203 (MIN), holotype.—3. Inflorescence, from Neger s.n., 1893-96 (M).—4-5. *Uncinia erinacea*.—4. Habit (plant from Llanquihue Province, Chile), from Hb. Parodi 9850 (BAA).—5. Inflorescence (plant from Osorno Province, Chile), from Zoellner 20440 (MIN). (Bar = 3 cm in Fig. 2; bar = 1 cm in Fig. 3 and 5.)

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