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TAXONOMIC REVISION OF HYPOCHAERIS (COMPOSITAE: CICHORIEAE) IN URUGUAY

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Abstract. Mailhos, A.; J. M. Bonifacino & E. Marchesi. 2023. Taxonomic revision of *Hypochaeris* (Compositae: Cichorieae) in Uruguay. *Darwiniana*, nueva serie 11(2): 643-704.

The taxonomic revision of *Hypochaeris* L. (Compositae: Cichorieae) for Uruguay is presented. Specimens from the main herbaria of the country were reviewed, field trips were carried out to study the species "in situ" throughout the country, and all reference publications and original material for each species were reviewed. A list of all species present in Uruguay is included together with their respective synonyms, expanded descriptions, distribution maps, habitat and phenological data, taxonomic and nomenclatural observations, as well plates with images and illustrations highlighting the most relevant morphological characters of each. Additionally, dichotomous and virtual keys are provided for the identification of the sections, series and species of the genus in Uruguay. The genus *Hypochaeris* in Uruguay comprises 11 species, two exotic (*Hypochaeris* sect. *Hypochaeris*), and nine native to the territory (*Hypochaeris* sect. *Phanoderis*), two of which are considered priorities for conservation in Uruguay. The name *H. rosengurttii* is reinstated as a species and the species *H. pampasica* is recorded for the first time in the country, while *H. lutea* and *H. neopinnatifida* are excluded. The taxonomic complexities surrounding the name *H. microcephala* are discussed, as well as the presence of hybrid taxa within the genus and their taxonomic implications.

Keywords. Asteraceae; Cichorioideae; flora; Hypochaeridinae; taxonomy.

Resumen. Mailhos, A.; J. M. Bonifacino & E. Marchesi. 2023. Revisión taxonómica de *Hypochaeris* (Compositae: Cichorieae) en Uruguay. *Darwiniana*, nueva serie 11(2): 643-704.

Se presenta la revisión taxonómica de *Hypochaeris* L. (Compositae: Cichorieae) para Uruguay. Se revisó material de los principales herbarios del país, se realizaron salidas de campo para estudiar a las especies "in situ" a lo largo del país, y se revisaron las publicaciones de referencia y el material original de cada especie. Se incluye un listado de las especies presentes en el país con sus respectivas sinonimias, descripciones ampliadas, mapas de distribución, datos de hábitat y fenología, observaciones, y láminas con imágenes e ilustraciones resaltando los caracteres morfológicos más relevantes de cada una. Adicionalmente se presentan claves dicotómicas y virtuales para la identificación de las secciones, series y especies del género presentes en Uruguay. El género *Hypochaeris* en Uruguay comprende 11 especies, dos exóticas (*Hypochaeris* secc. *Hypochaeris*), y nueve nativas del territorio (*Hypochaeris* secc. *Phanoderis*), dos de las cuales son consideradas prioritarias para la conservación en Uruguay. Se reinstaura el nombre *H. rosengurttii* como especie y se registra la especie *H. pampasica* por primera vez en el país, a la vez que se excluyen *H. lutea* y *H. neopinnatifida*. Se discuten las complejidades taxonómicas en torno al nombre *H. microcephala*, así como la ocurrencia de taxa híbridos dentro del género y sus implicancias taxonómicas.

Palabras clave. Asteraceae; Cichorioideae; flora; Hypochaeridinae; taxonomía.

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INTRODUCTION

Hypochaeris L. (Compositae: Cichorieae), with nearly 60 species, comprises the largest genus within subtribe Hypochaeridinae. Species of this genus can be recognized by their indumentum of unbranched, non-glandular trichomes, paleaceous receptacles, cypselae with transverse scales and stiffly fimbriate plumose pappus (Urtubey et al., 2019; Killian et al., continuously updated). The presence of paleae, in particular, distinguishes it from all other genera in its subtribe. Despite being morphologically well defined as a genus, however, *Hypochaeris* species are usually very polymorphic, which creates problems for specimen identification (Cabrera, 1963).

The genus is currently divided into five sections with a remarkably disjunct distribution: *Hypochaeris* sect. *Amblachaenium* Benth. & Hook. f. (four species, Eurasia), *H.* sect. *Hypochaeris* (four species, Mediterranean region), *H.* sect. *Metabasis* (DC.) Benth. & Hook. f. (three species, Mediterranean region), *H.* sect. *Phanoderis* (DC.) Ortiz & Talavera (42 species, northwestern Africa and South America), and *H.* sect. *Seriola* (L.) Benth. & Hook. f. (five species, Mediterranean region) (Urtubey et al., 2019). Phylogenetic studies have revealed that South American species form a monophyletic clade sister to *H. angustifolia* (Litard. & Maire) Maire from northern Africa (Samuel et al., 2003; Tremetsberger et al., 2005), together with which they compose *H.* sect. *Phanoderis*. It is presumed that New World species are derived from an ancestor that arrived in the continent through a long-distance dispersal event across the Atlantic Ocean from northwestern Africa during the late Pliocene or Pleistocene (Tremetsberger et al., 2005; Tremetsberger et al., 2013). According to this hypothesis, the entire South American clade is the product of a relatively recent large radiation in just over a million years, which is reflected in the little divergence of nucleotide sequences found between species (Samuel et al., 2003). Because of this, it has been necessary to resort to markers such as AFLP in order to better resolve the relationships between species of this group (Tremetsberger et al., 2006; Weiss-Schneeweiss et al., 2008; Reck et al., 2011). The information provided by the molecular data together with morphological and cytogenetic characters (Weiss-Schneeweiss et al., 2008) has led to the recognition of nine series within the South American clade (Urtubey et al., 2019).

The first author to refer to *Hypochaeris* species in Uruguay was Gibert (1873) in what constitutes the first catalog of vascular plants for the country. In this work he included the species *Achyrophorus variegatus* (Lam.) Sch.Bip. (= *H. variegata* (Lam.) Baker) and *H. glabra* L. He also mentioned "*Achyrophorus brasiliensis* Hook. & Arn." but this pairing of name and author does not exist; it is possible that he was referring to *Achyrophorus brasiliensis* (Less.) Sch.Bip. (= *H. chillensis* (Kunth) Britton). He additionally cited five of his gatherings identified as *Achyrophorus* sp., which suggests he had found other entities within this genus to which he could not assign a name.

Later on, Arechavaleta (1906) presented descriptions of the species already mentioned by Gibert, properly citing *Hypochaeris chillensis* as *H. brasiliensis* (Less.) Griseb., and including the variety *H. brasiliensis* var. *microcephala* (Sch.Bip.) Baker (= *H. microcephala* (Sch.Bip.) Cabrera). He also cited *H. petiolaris* (Hook. & Arn.) Griseb. for the first time as well as *H. apargioides* Hook. & Arn.

Larrañaga's posthumously published writings (Larrañaga, 1922, 1923) contain descriptions of four species of *Hypochaeris*: *H. brasiliensis* Larrañaga, *H. erectus* Larrañaga, *H. procumbens* Larrañaga, and *H. sichorioides* Larrañaga. The descriptions provided are very brief and hardly diagnostic, and in the absence of the type material they do not allow the precise association of these names with any currently recognized species.

Herter (1930) added *Hypochaeris radicata* L. (as "*H. radiata*") to the list of species present in Uruguay, but without referring to any voucher specimen or herbarium.

Cabrera (1937) described the species *Hypochaeris megapotamica* Cabrera and *H. grisebachii* Cabrera and created the combination *H. microcephala* var. *albiflora* (Kuntze) Cabrera (= *H. albiflora* (Kuntze) Azevêdo-Gonç. & Matzenb.), including in each case specimens from Uruguay in the list of examined material. He also commented on the records of *H. apargioides* in the region, indicating that they actually correspond to misidentified specimens of *H. megapotamica* or

H. grisebachii and not the true *H. apargioides*, a mainly Chilean species.

Cabrera (1938) proceeded to describe *Hypochaeris rosengurttii* Cabrera (= *H. lutea* (Vell.) Britton *sensu* Azevêdo-Gonçalvez & Matzenbacher (2005a)) based on material collected by Rosengurtt in Uruguay, and later (Cabrera 1963) published *H. tropicalis* Cabrera, once again including material from Uruguay.

In the flora of Entre Ríos, Cabrera (1974) indicated the presence of *Hypochaeris pampasica* Cabrera in Uruguay, but without providing any specific locality or citing any voucher specimens.

Lombardo (1983) formally cited *Hypochaeris radicata* including reference material for the first time for the country.

Finally, Urtubey et al. (2019) recently presented a comprehensive review of all South American species of *Hypochaeris*, including descriptions, keys, illustrations, and distribution maps. Their updated list of species from Uruguay incorporates recent taxonomic changes, bringing the total number of species in the country to 12: *H. albiflora*, *H. chillensis*, *H. glabra*, *H. grisebachii*, *H. lutea*, *H. megapotamica*, *H. microcephala*, *H. neopinnatifida* (Speg.) Azevêdo-Gonç. & Matzenb., *H. petiolaris*, *H. radicata*, *H. tropicalis*, and *H. variegata*.

The aim of this study is to present the taxonomic revision of the genus *Hypochaeris* in Uruguay. We present an updated list of all species occurring in the country, including synonymies, expanded descriptions, distribution maps, phenology and habitat data. We also include dichotomous and electronic keys for the identification of the sections, series and species of *Hypochaeris* in Uruguay, as well as plates of images and illustrations of the most distinctive features of each species.

MATERIALS AND METHODS

We based the taxonomic treatment of *Hypochaeris* in Uruguay on the study of the protologues, type specimens and herbarium specimens, as well as all relevant literature referring to the species cited for the country and region.

We reviewed all collections hosted at MVFA, MVJB, and MVM (acronyms according to Thiers, continuously updated). Additionally, digitized specimens from other herbaria were analyzed, available through the JSTOR Global Plants database (https://plants.jstor.org/) or in the individual databases of each herbarium when available. We studied all type specimens through digitized images.

We conducted field trips to various localities within Uruguay in an attempt to locate all species present in the territory with the aim of: directly observing characters that are not well preserved in herbarium specimens, obtaining photographs of relevant characters, and recording complementary data on phenology, distribution and habitat. In some cases, specimens that did not yet have mature reproductive structures were kept alive to be observed in cultivation. All collected specimens are hosted at MVFA.

For each species, we selected between five and 10 specimens to be analyzed in detail, ensuring a wide representation of the entire observed spectrum of morphological variation, as well as the geographical distribution within the country. These specimens were characterized quantitatively and qualitatively, using a stereoscopic magnifying glass when necessary, and recording over 90 morphological characters upon which the descriptions were made. We carried out the measurements of vegetative structures with a 0.5 mm precision ruler, and those of reproductive structures with a 0.1 mm precision ruler. When recording the morphological data of these specimens, we took the following considerations into account: regarding laminar organs, we use the term "narrowly" to refer to structures where the length/width ratio is between 3 and 10; likewise, the term "linear" applies when said ratio is greater than 10. The degree of division of the leaf blades is classified as "pinnatifid" when the divisions range from ¼ to ½ of the blade; "pinnatipartite" when they range from ½ to ¾ of the blade; and "pinnatisect" when they range from ¾ to the midvein of the lamina. Leaf lobes are described considering those present in the upper ⅔ of the leaf blade. We measured peduncles from the last branch and/or cauline leaf to the base of the capitula; bracts are described from those present on the peduncles. We measured involucres separately for flowering and fruiting capitula, without considering intermediate stages due to their accrescent nature; we measured

the width of the involucre across its basal third in order to avoid the deforming effect of the pressing process; we based phyllary descriptions on flowering capitula; we describe receptacles, paleae and pappus from capitula in the fruiting stage. We recorded cypselae proportions from mature cypselae located towards the center of the capitula; we recorded the number of veins or ribs from cross sections of cypselae. Terminology for the indumentum of stems, leaves and phyllaries follows Lawrence (1951).

We obtained data on the geographic distribution, phenology, and habitat of species from herbarium labels and field observations. In cases where labels did not provide geographic coordinates, we estimated them from the collection locality, georeferencing its central point in Google Earth. Distribution maps were made with QGIS.

We took photographs of plants in their natural environment. Unless otherwise indicated, images were taken by us. For the images of cypselae, we used a Nikon DS-Fi3 camera coupled to a Nikon SMZ1270i stereomicroscope. We made illustrations from living and herbarium material, using Adobe Illustrator and SketchBook.

We created the electronic key with Lucid 3.5, and it is available at https://florauruguaya.org/LUCID/hypochaeris_uruguay_en.html.

TAXONOMIC TREATMENT

Hypochaeris L., Sp. Pl.: 810. 1753. TYPE: *Hypochaeris radicata* L. (lectotype designated by Green in Hitchcock & Green [1929: 178]).

Herbaceous plants, annual or perennial and hemicryptophytes, laticiferous; stems erect, simple or branched, cylindrical, striated, glabrous to hirsute. Basal leaves alternate, rosette-forming, sessile, lamina narrowly obovate to linear, entire to pinnatisect, base attenuate, apex acute, obtuse or rounded, glabrous to hirsute, penninervate, herbaceous or coriaceous, concolorous, margin flat, entire or dentate. Cauline leaves present or absent, sometimes bract-like, reduced towards the apex of stems, alternate, sessile, lamina ovate or obovate to linear, entire to pinnatisect, base truncate, rounded or cordate, amplexicaul or not, apex acute or obtuse, glabrous to hirsute, penninervate, herbaceous, concolorous, margin flat, entire or dentate. Capitula homogamous, terminal, solitary or in loose corymbiform capitulescences, pedunculate, peduncles mostly bracteate. Involucres cylindrical or campanulate; phyllaries free, graded in size, arranged in 3 to 6 series, accrescent; outer phyllaries ovate to narrowly ovate or oblong, base truncate, obtuse or rounded, apex subacute, obtuse or rounded, glabrous or with variable pubescence on the abaxial face, uninervate, membranaceous, margin often ciliate; inner phyllaries narrowly ovate or oblong to linear, base acute, rounded or truncated, apex acute, subacute, obtuse or rounded, glabrous or with variable pubescence on the abaxial face, palmatinervate, membranaceous, margin membranaceous, frequently ciliate. Receptacles paleaceous, flat or slightly convex, scrobiculate; paleae narrowly elliptic or ovate to linear, base obtuse or truncate, apex attenuate, filiform, glabrous or glabrescent, membranaceous, margin entire or paucidentate. Florets perfect; corollas ligulate, white or yellow, glabrous or villous at the apex of the tube and base of the ligule, ligules obovate, elliptic or narrowly elliptic, lobes 5, triangular or oblong, apex acute; anteropodium present, anther base sagittate, connective appendage ovate or oblong, apex rounded or acute; style branches linear, villous abaxially, collecting trichomes extending below the bifurcation point, stigmatic surface continuous, sterile appendage absent. Cypselae monomorphic or dimorphic, ray cypselae, when present, obconic, beakless, disk cypselae fusiform, terete, beaked or tapering at the apex, with transverse scales, carpopodium present. Pappus homomorphic or heteromorphic, composed of scabrous or plumose bristles, arranged in 1 or 2 series.

Distribution and habitat. *Hypochaeris* species are found in open areas throughout the country, mainly on grasslands, where they are very prevalent and rarely absent. It is very common to observe several species growing together in the same area. A couple of species (*H. albiflora* and *H. chillensis*) also occur in partially shaded areas on forest edges or clearings, and along with the alien *H. radicata*, are also relatively common in urban and suburban areas.

Phenology and reproductive biology. The flowering period of this genus in Uruguay is closely associated with spring, occurring for most species between the end of September and the beginning of December. Four species, including the two aliens (*Hypochaeris glabra*, *H. radicata*, *H. albiflora* and *H. chillensis*), have longer flowering periods that extend into the summer and late autumn, and in the case of *H. radicata*, individuals can be found flowering throughout the year. However, even for these four species, the flowering peak occurs in the spring.

Flowering capitula open during the day, generally mid-morning, and close mid-afternoon, staying closed overnight. In species where the corollas are largely exserted from the involucre, capitula usually remain open for slightly longer. Mature capitula repeat this cycle for a few days, generally opening for the first time when only the marginal florets are developed (sometimes opening even before there are any fully developed florets, this is somewhat common in *Hypochaeris chillensis*), until eventually the central florets also develop (depending on the number of florets in the capitulum this can take between two and four days). Beetles were the main pollinators observed in capitula of several species. A few days later the capitulum closes definitively and the cypselae begin to develop, a process that takes approximately one to two weeks. During this period the corollas wither and fall clumped together as a single unit, while the phyllaries continue to grow in length. Finally, phyllaries bend outwards, eventually falling off, and the mature cypselae are released.

Once the reproductive period is over, perennial species lose their aerial stems and persist as rosettes, or else, in unfavorable conditions, all aerial organs wither until they resprout when favorable conditions resume.

Taxonomic notes. Within Uruguay, *Hypochaeris* can be distinguished from the other genera of tribe Cichorieae by the presence of unbranched trichomes, paleaceous receptacles, and a plumose pappus. It is the only genus of this tribe in Uruguay with paleaceous receptacles, which means it can be easily recognized in the presence of capitula with mature cypselae, when paleae are directly visible. It is also easy to recognize in the field due to the frequent presence of purple spots or lines on the apices and/or midveins of phyllaries, a trait that it shares only with some specimens of the genus *Lactuca* L., which differs from *Hypochaeris* mainly by its paniculiform or racemiform capitulescences.

Cabrera (1963) describes *Hypochaeris* as one of the genera of Compositae from the South American continent that presents the greatest difficulties for the identification of its species. *Hypochaeris* is a taxonomically complex genus, mainly due to the high morphological plasticity exhibited by many of its constitutive species. In spite of this, once the most consistent and taxonomically relevant characters are identified, species are mostly well delimited.

As pointed out by Cabrera (1963), the most useful characters for species delimitation include the branching pattern of the stems and the relative proportions of the lengths of tubes and ligules in corollas and beaks and bodies in cypselae. Curiously, Cabrera also included the size of capitula as a useful character, something that in the course of this revision we noticed sometimes varies considerably within the same species (e.g., *Hypochaeris glabra*, *H. rosengurttii*).

Other characters that can also be considered relevant (at least for Uruguayan species) are the pubescence of corollas and scales of cypselae. The corollas can be completely glabrous, have a few trichomes around the transition between the tube and the ligule, or be conspicuously villous around that same area. Species with corollas very exserted from the involucre and ligules longer than tubes have a tendency to always exhibit villous corollas.

Moreover, the scales of the cypselae represent an extremely useful character. Transversal scales range from short and inconspicuous to very prominent. In some cases, these are joined by other minute and dense scales that are arranged along the beak and apex of the body, giving the cypsela a villous appearance, while in other species the beak is glabrous or with widely spaced scales. Together with the relative proportions of the beak and the body, and the coloration of the cypselae (ranging from lightly-colored to nearly black), this makes of cypselae the most useful single structure for identifying *Hypochaeris* species (Figs. 1 and 2).

Among the most variable characters, the degree of division of the lamina, and the pubescence of leaves, stems and phyllaries are notably included.

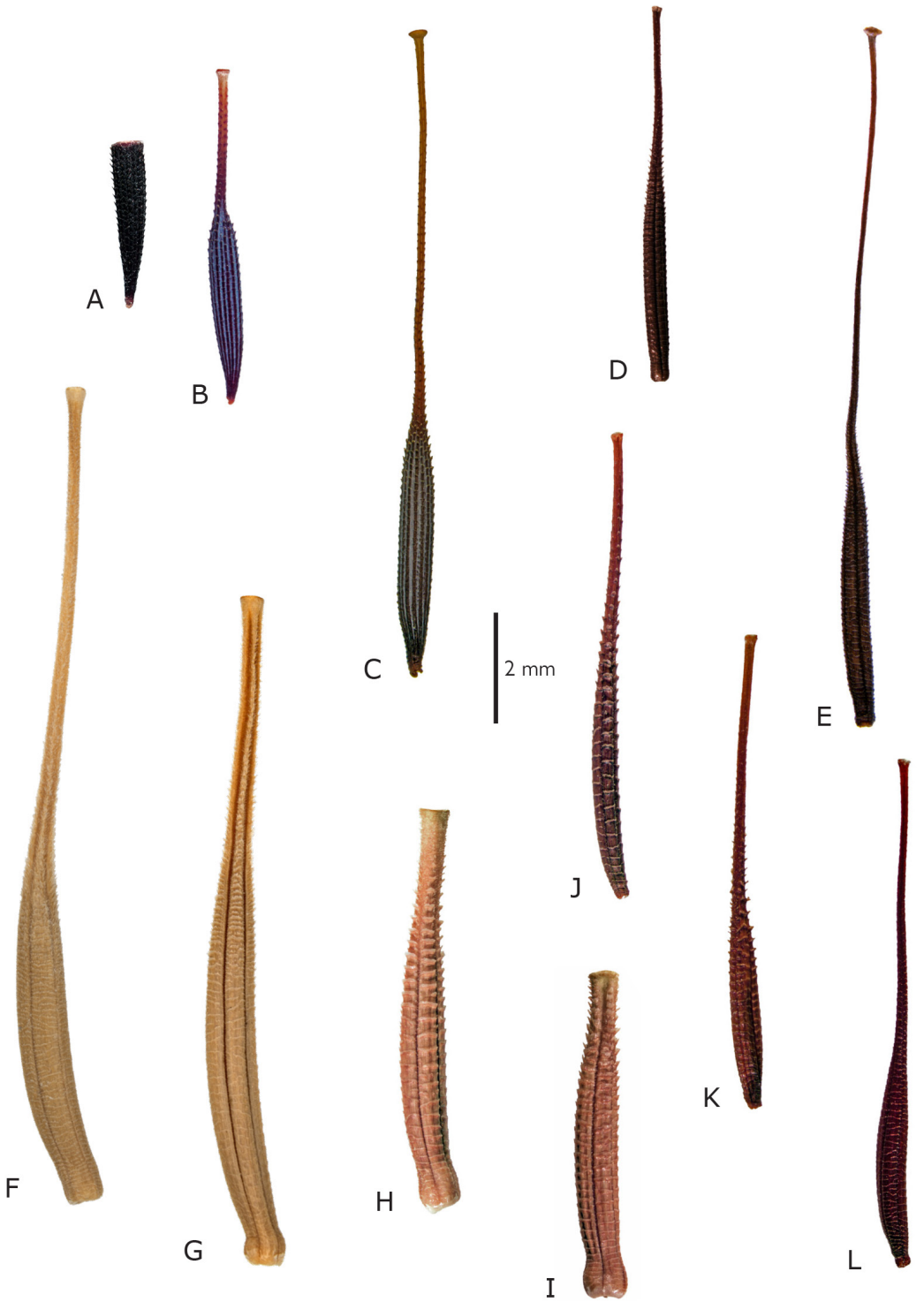

Fig. 1. Cypselae of species of *Hypochaeris* present in Uruguay. **A, B,** *H. glabra.* **C,** *H. radicata*. **D,** *H. albiflora*. **E,** *H. chillensis*. **F,** *H. megapotamica*. **G,** *H. pampasica*. **H,** *H. rosengurttii*. **I,** *H. tropicalis*. **J,** *H. petiolaris*. **K,** *H. variegata*. **L,** *H. grisebachii*. Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

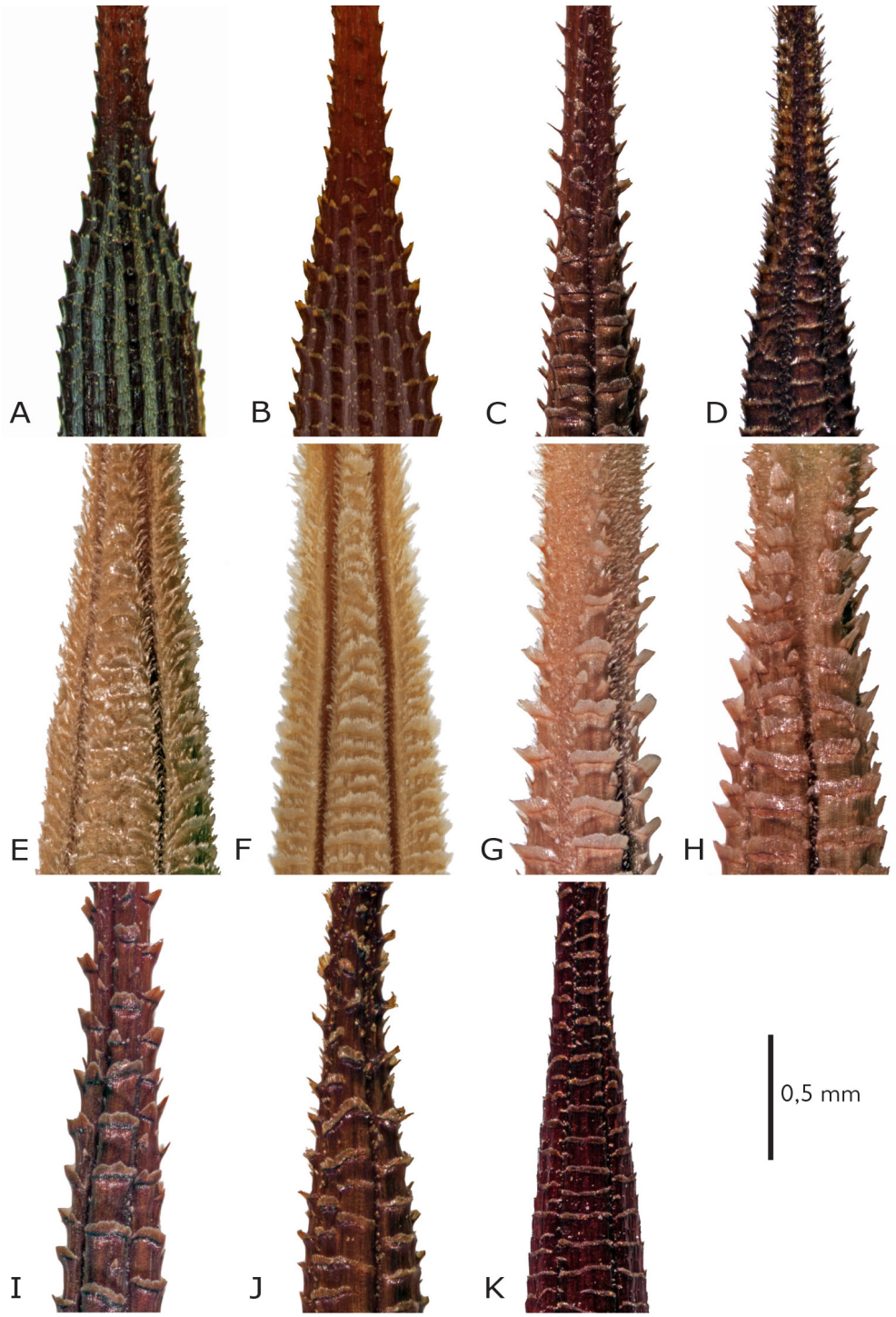

Fig. 2. Detail of scales of cypselae of species of *Hypochaeris* present in Uruguay. **A,** *H. glabra.* **B,** *H. radicata*. **C,** *H. albiflora*. **D,** *H. chillensis*. **E,** *H. megapotamica*. **F,** *H. pampasica*. **G,** *H. rosengurttii*. **H,** *H. tropicalis*. **I,** *H. petiolaris*. **J,** *H. variegata*. **K,** *H. grisebachii*. Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

This is not always the case, however, as some species show somewhat consistent states for these characters (e.g., *Hypochaeris tropicalis* can be very easily recognized by its pinnatisect leaves with very narrow segments; *H. megapotamica* distinctively has hirsute indument on stems, leaves and phyllaries), although even in such cases there are always exceptions.

Key to sections and series of *Hypochaeris* L. present in Uruguay

1. Peduncular bracts ovate with hyaline margins; cypselae with ca. 15 conspicuous ribs, with no longitudinal grooves; pappus bristles arranged in 2 series, inner series plumose, outer series shorter and slightly scabrous .... *Hypochaeris* sect. *Hypochaeris*

1. Peduncular bracts narrowly ovate or linear, margins not differentiated; cypselae inconspicuously ribbed, with 5 pronounced longitudinal grooves; pappus bristles arranged in 1 series, plumose 2

2(1). Capitula grouped in lax corymbiform cymes, if solitary then corollas white .... *Hypochaeris* sect. *Phanoderis* ser. *Microcephala*

2. Capitula solitary on long peduncles or scapiform stems; corollas always yellow .... *Hypochaeris* sect. *Phanoderis* ser. *Pampasica*

Considerations for the use of keys

For the easy identification of many species of *Hypochaeris* it is extremely useful to have material with both flowers and cypselae, being in some cases impossible to unequivocally arrive at a species if only one or the other element is available. However, in some species, particularly those of *H.* ser. *Pampasica* that have few capitula per plant and a brief flowering period, it is common to find populations where all individuals are either flowering or fruiting, but not in both stages at the same time. Unfortunately, due to the high level of morphological polymorphisms prevalent in the genus, it is not possible to build a functional dichotomous key that does not limit the user in the absence of either flowers or cypselae. In such cases it is strongly recommended to resort to the virtual key, available at https://florauruguaya.org/LUCID/hypochaeris_uruguay_en.html.

Additionally, it is common to find more than one species of *Hypochaeris* growing in close proximity, which has frequently resulted in mixed gatherings in herbaria. Therefore, special care and attention should be paid when using these keys to identify gatherings composed of more than one individual, especially if they are in different phenological stages, since they could belong to different species.

When assessing the length of the beaks relative to the bodies of cypselae, those located towards the margin should be avoided since they tend to have shorter beaks and different proportions in comparison to cypselae located at the center of capitulum.

Finally, hybrid taxa are known to occur within *Hypochaeris* (Parker, 1975; Wulff, 1992; Azevêdo-Gonçalvez & Matzenbacher, 2005b). While the keys here provided do not incorporate these taxa due to their high morphological variability, they are usually found growing in close proximity to both parental species and have intermediate morphological characters between them. Hybrids in *Hypochaeris* usually produce very few or no fertile cypselae, so this is an important element to look for when specimens are at a fruiting stage. We provide a more comprehensive discussion on this subject further below.

Hypochaeris sect. Hypochaeris L., Sp. Pl.: 810. 1753.

Porcellites Cass., in Cuvier, Dict. Sci. Nat. (ed. 2) 25: 64. 1822. *Hypochaeris* sect. *Porcellites* (Cass.) DC., Prodr. 7: 91. 1838. TYPE: *Hypochaeris radicata* L.

Hypochaeris sect. Arachnites DC., Prodr. 7: 90. 1838. TYPE: *Hypochaeris arachnoides* Poir.

Hypochaeris sect. Diplostephanae Bisch., Beitr. Fl. Deutsch.: 139. 1851. TYPE: *Hypochaeris glabra* L.

This section consists of a monophyletic group (Tremetsberger et al., 2005) comprising four species: *Hypochaeris arachnoides*, *H. glabra*, *H. radicata*, and *H. salzmanniana* DC., all native to the Mediterranean region of Europe and Africa. Two of them (*H. glabra* and *H. radicata*) are widespread throughout much of the globe, including Uruguay. They are characterized by presenting ovate bracts with hyaline margins, cypselae with ca. 15 conspicuous ribs, and pappus elements arranged in 2 series, the inner one plumose, the outer one shorter and slightly scabrous.

Key to species of *Hypochaeris* sect. *Hypochaeris* L. present in Uruguay

1. Corollas shorter than or slightly exserted from the involucre; corolla tubes longer than ligules; ray cypselae beakless; annual plants ..... *Hypochaeris glabra*
1. Corollas much exserted form the involucre; corolla tubes shorter than ligules; cypselae all beaked; perennial plants ..... *Hypochaeris radicata*

1. Hypochaeris glabra L., Sp. Pl. 2: 811. 1753. *Hypochaeris radicata* subsp. *glabra* (L.) Mateo & Figuerola, Fl. Analit. Prov. Valencia 14: 369. 1987. TYPE: "Dania, Germania, Belgio" (lectotype LINN 959.4! designated by A. Alavi, Fl. Libya 107: 347. 1983). Figs. 3 and 4.

Hypochaeris pumila Phil., Anales Univ. Chile 87: 322. 1894. SINTYPES: Chile, "Habitat in provincia Ñuble, ubi inter Bollen et Coigueco nec non ad La Huerta", *F. Puga s.n.* (SGO 44669, SGO 76733, not seen).

Therophytes 5-60 cm tall, laticiferous; stems 1 to 28, erect or decumbent, unbranched or branched in the distal half, cylindrical, striated, glabrous. Basal leaves alternate, rosette-forming, sessile, (7-)23-160 × 3-45 mm, narrowly obovate to linear, entire to pinnatipartite, base attenuate, apex acute, obtuse or rounded, glabrous or scabrous towards the apex on the adaxial face and loosely scabrous, mainly along the midvein on the abaxial face, penninervate, coriaceous, concolorous, margin flat, dentate or lobed, ciliate or not; lobes oblong or deltoid, 1-7 × 1-10 mm, apex acute or rounded, margins entire. Cauline leaves absent. Capitula homogamous, terminal, solitary or in lax cymose capitulescences, peduncles 24-150 mm, glabrous or laxly scabrous; bracts 3 to 7 along the peduncles, 1.5-4 × 0.7-1.1 mm, ovate. Involucres 4-8 × 1-6 mm in flowering, 12-17 mm in fruiting, cylindrical or campanulate; phyllaries free, graded in size, arranged in 3 to 4 series; outer phyllaries 1.8-4 × 0.8-1.5 mm, ovate, base obtuse or truncate, apex obtuse or subacute, frequently violaceous at the apex and upper margin, glabrous or minutely scabrous abaxially, uninervate, membranaceous, margin ciliate towards the apex; inner phyllaries 5.1-8.7 × 1.1-2.3 mm, narrowly elliptical, base cuneate or truncate, apex acute or subacute, frequently violaceous, glabrous or minutely scabrous abaxially, exceptionally with few rigid trichomes on the midvein, palmatinervate, membranaceous, margin ciliate towards the apex. Receptacles paleaceous, slightly convex, scrobiculate; paleae 11.7-16.3 × 0.9-1.5 mm, linear, base truncate, apex attenuate, filiform, scabrous at the apex, membranaceous, margin entire or with a few subapical teeth. Florets 17 to 111, perfect, equal to or slightly longer than the involucre; corollas ligulate, 3.8-7.3 mm, yellow, those on the margin with an longitudinal white stripe abaxially, villous at the apex of the tube, tubes 2.1-3.8 mm, ligules 1.7-3.5 × 0.7-1.5 mm, elliptical, lobes 5, 0.1-0.3 mm, triangular, apex acute; anteropodium present, anthers 1.1-1.9 mm, base sagittate, connective appendage oblong, apex rounded; styles 3.5-6.4 mm, style branches 0.4-0.7 mm, narrowly oblong, villous abaxially. Cypselae dimorphic, ray cypselae 2.7-3.9 mm, obconic, beakless, terete, 14 to 15 costate, scaly, carpopodium present; disk cypselae 5.9-9.9 mm, fusiform, beaked, beak 2.8-6.5 mm, body 2.9-3.7 mm, terete, 14 to 15-ribbed, scaly, body purplish-brown, pruinose between ribs, beak brown-orange at the base, yellow in the middle and whitish at the apex, carpopodium present. Pappus heteromorphic, 2-seriate, outer series 0.8-4.5 mm, composed of numerous scabrous, whitish bristles, inner series 4.7-10 mm, composed of 17 to 22 plumose, whitish bristles.

Additional iconography. Cabrera (1974: 513, fig. 305).

Common names. "Diente de León" (Del Puerto et al., 1990).

Distribution and habitat. *Hypochaeris glabra* is native to the Mediterranean region of Europe, North Africa and the Middle East, and widely distributed throughout the world. In Uruguay it is found in the departments of Canelones, Cerro Largo, Colonia, Durazno, Flores, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Rivera, Rocha, San José, Soriano, Tacuarembó and Treinta y Tres (Fig. 5). It grows in various ruderal and natural environments, predominantly on sandy and stony or rocky soils.

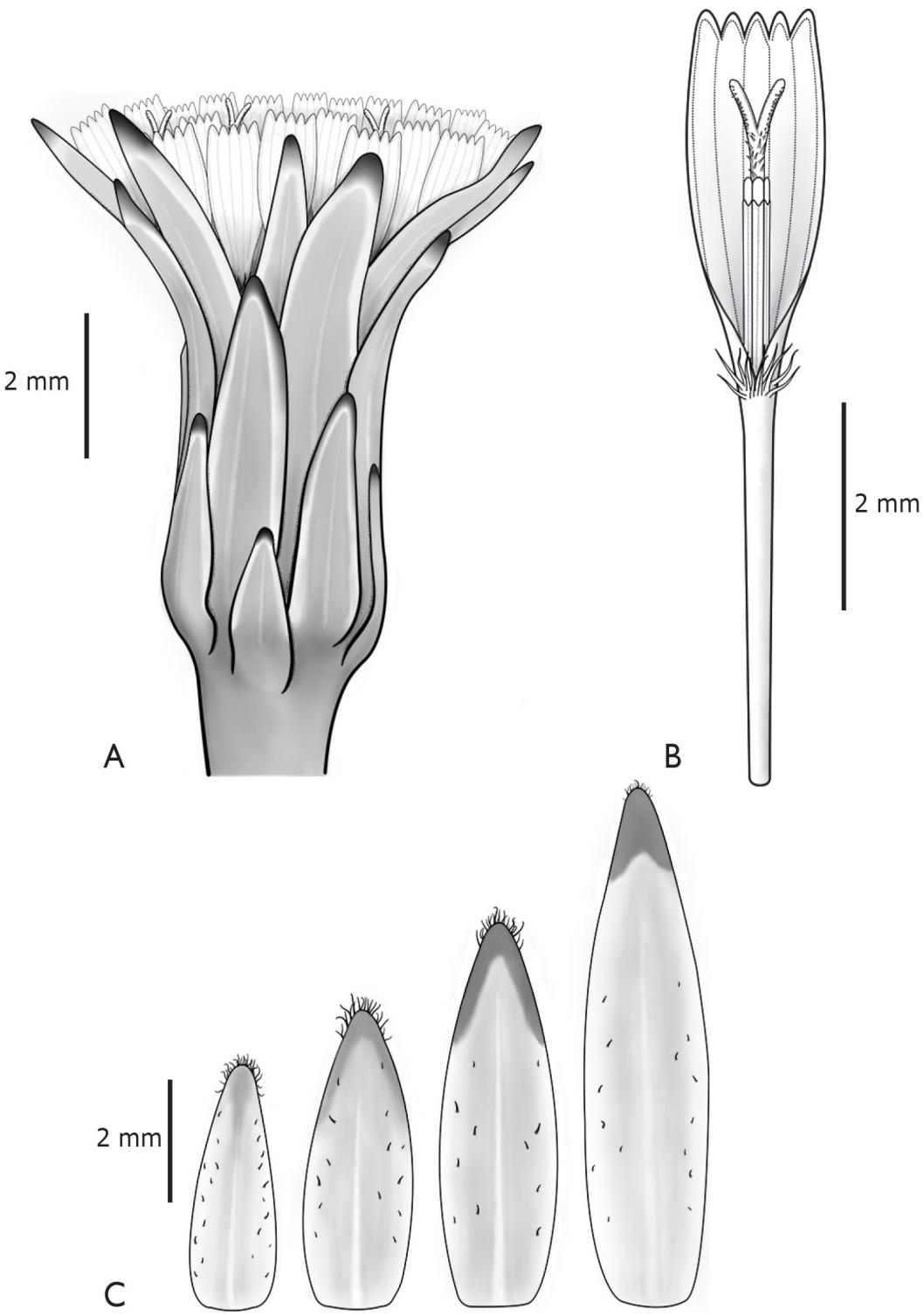

Fig. 3. *Hypochaeris glabra*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *O. Lema et al. s.n.* (MVFA 8095).

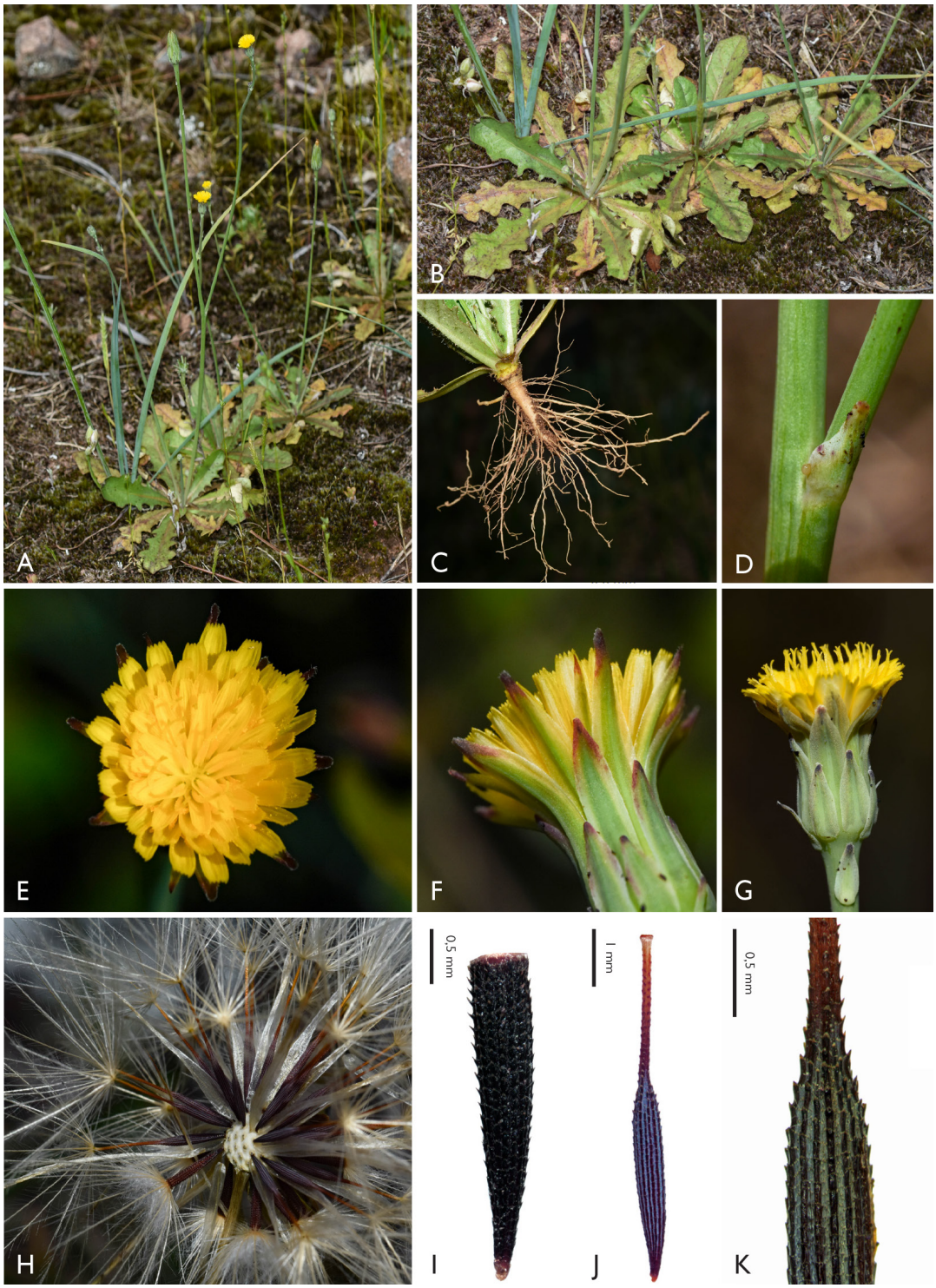

Fig. 4. *Hypochaeris glabra*. **A,** habit. **B,** basal rosette. **C,** root. **D,** bract on branching point of stem. **E-G,** flowering capitula. **H,** fruiting capitulum. **I,** ray cypsela. **J,** disk cypsela. **K,** detail of scales on disk cypsela. I-K, from *M. B. Berro 3189* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

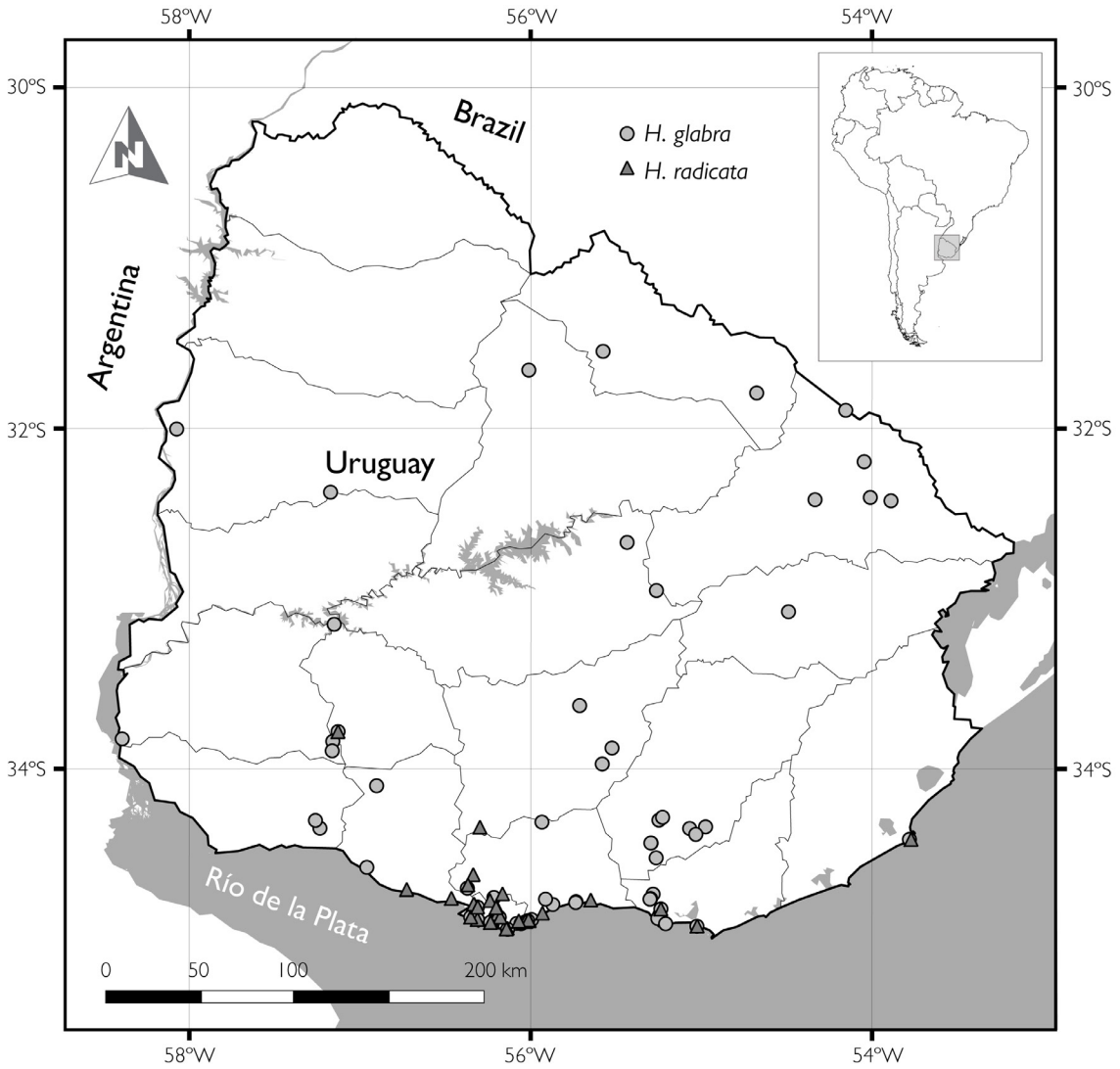

Fig. 5. Distribution of *Hypochaeris glabra* and *H. radicata* in Uruguay.

Phenology. Flowering from late September to mid-January; fruiting from mid-October to the end of January.

Taxonomic notes. *Hypochaeris glabra* is characterized by its annual habit, somewhat coriaceous basal leaves and lack of cauline leaves, corollas equal to or slightly longer than the involucres, with tubes longer than ligules, and heteromorphic cypselae (ray cypselae beakless and disk cypselae beaked), without longitudinal grooves and a dimorphic, 2-seriate pappus.

Some specimens may closely resemble *Hypochaeris radicata*, a species distinguished by usually having phyllaries with robust dark trichomes at the apex (vs. glabrous at the apex), corollas that are very exserted from the involucre (vs. equal to or slightly surpassing the involucre), with tubes shorter than ligules (vs. tubes longer than ligules), and beaked cypselae (vs. ray cypselae beakless).

Observations. The size of leaves, stems and capitula are very variable in this species, with

flowering individuals ranging from extremely short, with unbranched stems and capitula with very few florets, to individuals over half a meter tall with highly branched stems and capitula with over 100 florets.

Representative examined material

URUGUAY. **Canelones.** Atlántida, punta Piedras Negras, 13-X-1935, *B. Rosengurtt B1290* (MVFA). **Cerro Largo.** Ruta 26 km 29.5, entre Melo y Rio Branco, 20-X-1969, *A. Olano et al., s.n.* (MVFA 8705). **Colonia.** Nueva Helvecia, Molino Quemado, 16-X-1941, *D. Legrand 2932* (MVM). **Durazno.** Camino a Cuchilla Pereira, 15 km al noroeste de La Paloma, 32° 39' 15.5'' S, 55° 27' 22.3'' W, 14-X-2006, *C. Brussa & I. Grela s.n.* (MVJB 25287). **Flores.** Río Yi, entre arroyo Matanzas y Carpintería, 25-XI-1936, *B. Rosengurtt B462* (MVFA). **Florida.** Arroyo Casupá, 27-X-1968, *O. Del Puerto & E. Marchesi s.n.* (MVFA 7529). **Lavalleja.** Ruta 8 km 134, 20-XI-1968, *O. Lema et al., s.n.* (MVFA 8095). **Maldonado.** Punta Ballena, 34° 54' 46.3'' S, 55° 02' 41.8'' W, 13-X-2018, *M. Bonifacino et al., 6570* (MVFA). **Montevideo.** Miguelete, 18-XI-1904, *M. B. Berro 3189* (MVFA). **Paysandú.** Estancia El Mirador, 9-X-1961, *O. Del Puerto 312* (MVFA). **Rivera.** Ruta 29 entre Miriñaque y Minas de Corrales, 31° 31' 48.8'' S, 55° 35' 50.9'' W, 14-X-2018, *M. Bonifacino et al., 6590* (MVFA). **Rocha.** Cabo Polonio, 17-XI-2001, *E. Figueredo s.n.* (MVJB 22886). **San José.** Sierra de Mahoma, 27-X-1940, *B. Rosengurtt B3181* (MVFA). **Soriano.** Santa Elena, 18-XI-1937, *A. Gallinal et al., PE680* (MVFA). **Tacuarembó.** Gruta de los Helechos, 31° 38' 24.1'' S, 56° 02' 01.5'' W, 14-X-2018, *M. Bonifacino et al., 6584* (MVFA). **Treinta y Tres.** Cañada Sauce del Yerbal, 33° 3' 40'' S, 54° 30' 24'' W, 2-XI-2018, *M. Bonifacino & A. Rossado 6684* (MVFA).

2. Hypochaeris radicata L., Sp. Pl. 2: 811. 1753. *Achyrophorus radicatus* (L.) Scop., Fl. Carniol. (ed. 2) 2: 117. 1772. *Porcellites radicata* (L.) Cass., Dict. Sci. Nat. (ed. 2) 43: 43. 1826. TYPE: "Habitat in Europae cultioris pascuis." (lectotype LINN 959.5! designated by A. J. Scott, Fl. Mascareignes 109: 28. 1993). Figs. 6 and 7.

Herbaceous hemicryptophytes 35-65 cm tall, laticiferous; stems 1 to 4, erect, branched mainly in the distal half, rarely unbranched, cylindrical, striated, glabrous. Basal leaves alternate, rosette-forming, sessile, 50-160 × 12-45 mm, narrowly obovate, entire to pinnatipartite, base attenuate, apex acute, obtuse or rounded, glabrous to hirsute on both faces, penninervate, coriaceous, concolorous, margin flat, entire or dentate, ciliate; lobes ovate or deltoid, 3-15 × 2-10 mm, apex acute or rounded, margins entire or paucidentate. Cauline leaves usually absent, rarely 1 or 2 at the base of the stems, identical to basal leaves. Capitula homogamous, terminal, solitary, peduncles 65-320 mm, glabrous; bracts 5 to 14 along the peduncles, 2.3-3.9 × 0.9-1.6 mm, ovate or narrowly ovate. Involucres 10-13 × 6-11 mm in flowering, 15-21 mm in fruiting, campanulate; phyllaries free, graded in size, arranged in 4 to 5 series; outer phyllaries 3-5.2 × 1-2 mm, ovate, base truncate, apex acute or subacute, greenish or purple towards the apex, glabrous or minutely scabrous towards the margin abaxially, sometimes with few long, rigid trichomes on the midvein and some dark trichomes towards the apex, uninervate, membranaceous, margin undifferentiated, sometimes ciliate towards the apex; inner phyllaries 8-14.7 × 1.8-2.8 mm, narrowly ovate, base cuneate or truncate, apex acute, greenish or purple towards apex, glabrous or minutely scabrous towards the margin abaxially, with up to 7 dark subapical trichomes on midvein, palmatinervate, membranaceous, margin ciliate towards apex. Receptacles paleaceous, convex, scrobiculate; paleae 16.4-22.2 × 1-1.6 mm, linear, base truncate, apex attenuate, filiform, with some short trichomes towards the apex abaxially, membranaceous, margin entire or with some subapical teeth. Florets 54 to 161, perfect, much longer than the involucre; corollas ligulate, 10.1-19 mm, yellow, those on the margin with a longitudinal white or reddish stripe abaxially, villous at the apex of the tube, tubes 3.3-7.7 mm, ligules 6.4- 11.3 × 1.1-2.9 mm, narrowly elliptic, lobes 5, 0.3-1.8 mm, narrowly oblong, apex acute; anteropodium present, anthers 3.7-5.3 mm, base sagittate, connective appendage oblong, apex rounded; styles 6.8-12.7 mm, style branches 0.6-1.1 mm, linear, villous on the abaxial surface.

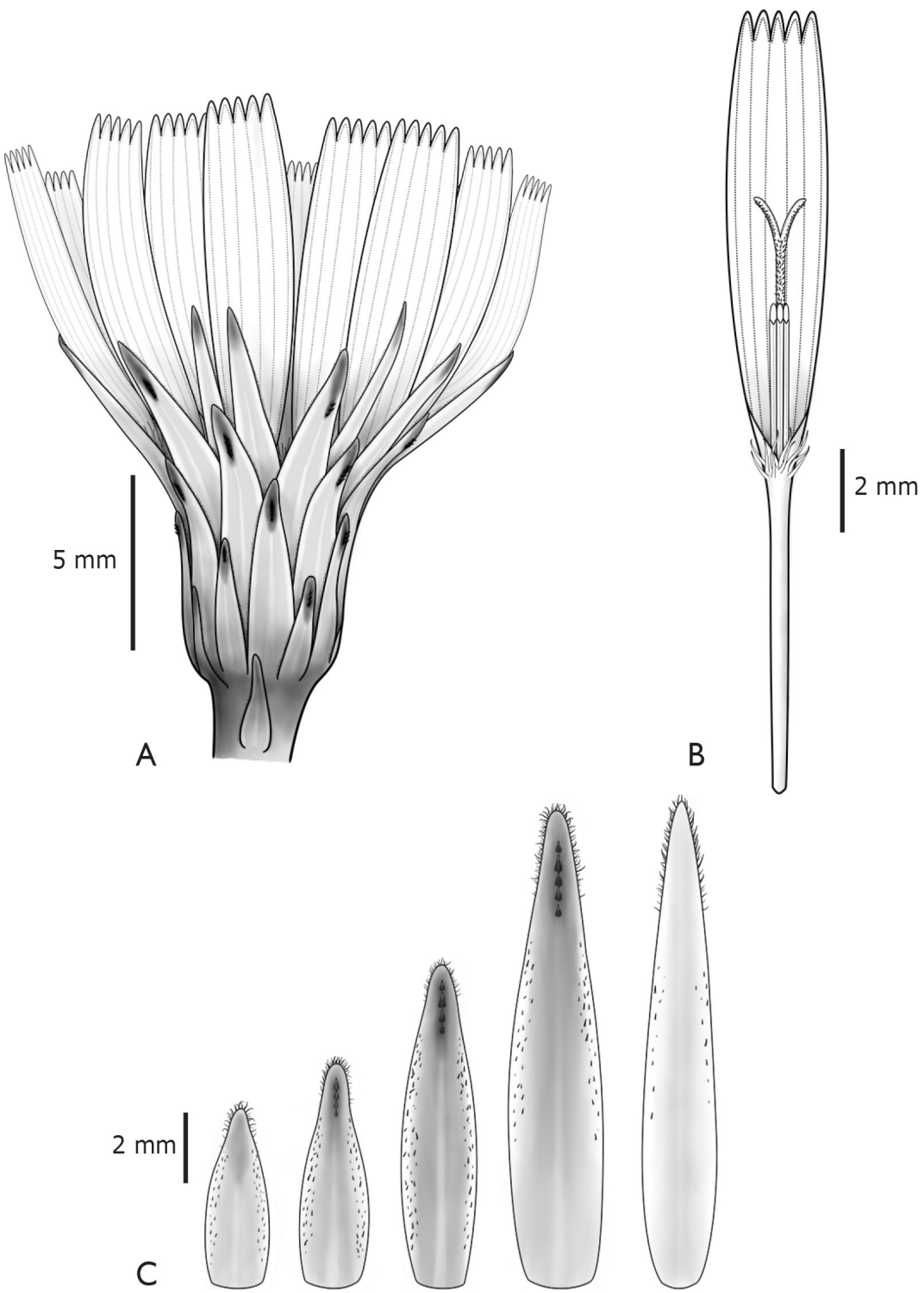

Fig. 6. *Hypochaeris radicata*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *A. Mailhos 26* (MVFA).

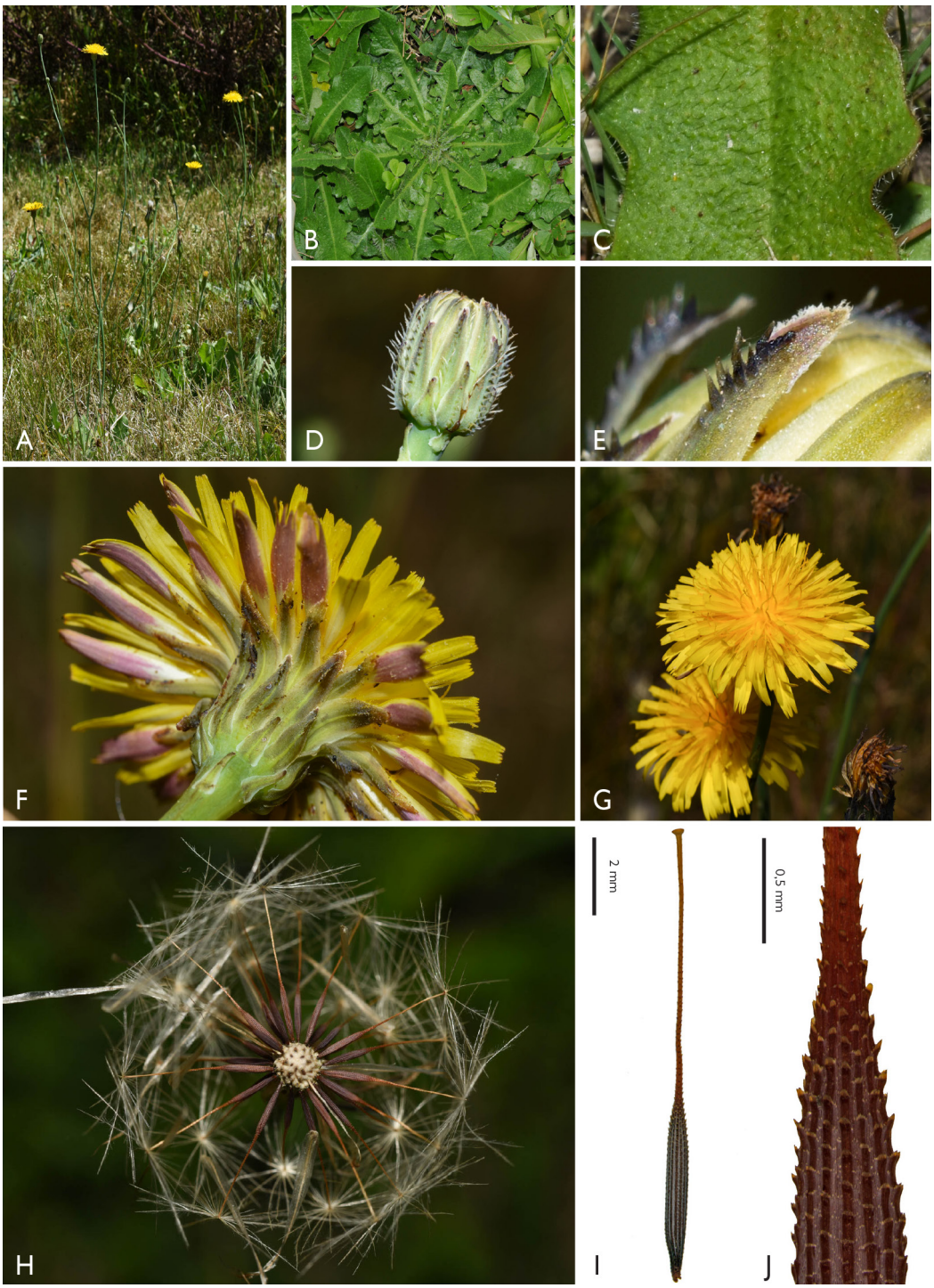

Fig. 7. *Hypochaeris radicata*. **A,** habit. **B,** basal rosette. **C,** detail of adaxial surface of basal leaves. **D,** budding capitulum. **E,** detail of phyllary apex. **F, G,** flowering capitula. **H,** fruiting capitulum. **I,** cypsela. **J,** detail of scales on cypsela. I, J, from *O. Del Puerto s.n.* (MVFA 10998). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Cypselae monomorphic, (6-)9-15.2 mm, fusiform, beaked, beak 3.8-11 mm, body 3.3-4.5 mm, terete, 14 to 16-ribbed, scaly, purplish-brown on the body, pruinose between ribs, beak orange-brown at the base, yellow in the middle and whitish at the apex, carpopodium present. Pappus heteromorphic, 2-seriate, outer series 1.4-4.2 mm, composed of numerous scabrous, whitish bristles, inner series 5.2-10.7 mm, composed of 16 to 21 plumose, whitish bristles.

Additional iconography. Cabrera (1974: 514, fig. 306).

Distribution and habitat. *Hypochaeris radicata* is an European species with a cosmopolitan distribution. In Uruguay it has been collected in the departments of Canelones, Flores, Florida, Maldonado, Montevideo, Rocha and San José but is likely to be found throughout the country (Fig. 5). It grows in a wide range of habitats, mostly in open areas.

Phenology. Flowering and fruiting throughout the year, mostly in spring and summer.

Taxonomic notes. *Hypochaeris radicata* can be recognized by its usually branched stems, basal leaves frequently scabrous or hirsute with a tuberculate texture, with rounded apex lobes, cauline leaves absent, phyllaries frequently with short dark subapical trichomes along the midvein, corollas very exserted from the involucres, with ligules longer than tubes, beaked, dark cypselae without longitudinal grooves, and pappus elements arranged in two series.

It may be confused with *Hypochaeris variegata* because of its showy capitula with corollas very exserted from the involucre and phyllaries dark at the apex, but this species is distinguished by its smoothly textured leaves (vs. tuberculate), phyllaries with tomentose and whitish indumentum near the margins, and frequently glabrous on the midvein (vs. phyllaries without whitish indumentum), cypselae with five longitudinal grooves (vs. non-grooved cypselae) and pappus elements monomorphic and arranged in one series (vs. dimorphic and arranged in two series). It can also resemble *H. glabra*, see comments under this species.

Representative examined material

URUGUAY. **Canelones.** Cerrillos, 20-XI-1970, *O. Del Puerto & Codina s.n.* (MVFA 9835). **Flores.** Santa Adelaida, 21-XI-1937, *A. Gallinal et al. PE1016* (MVFA). **Florida.** Rincón de Vignoly, estancia La Rinconada, 34° 19' 44.7'' S, 56° 19' 17.5'' W, 27-X-2018, *A. Mailhos 38* (MVFA). **Maldonado.** Punta Ballena, 34° 54' 36.3'' S, 55° 02' 41.1'' W, 30-X-2020, *P. Mai et al. 713* (MVJB 32583). **Montevideo.** Villa Colón, 26-X-1915, *M. Berro 8157* (MVFA). **Rocha.** Cabo Polonio, I-2001, *L. Delfino s.n.* (MVJB 20172). **San José.** Kiyú, 21-XI-1961, *O. Del Puerto & J. Millot 686* (MVFA).

Hypochaeris sect. Phanoderis (DC.) Ortiz & Talavera, Syst. Bot. Monogr. 106: 26. 2019. *Achyrophorus* Vaill. sect. *Phanoderis* DC. Prodr. 7: 92. 1838. TYPE: *Achyrophorus andinus* DC. (= *Hypochaeris arenaria* Gaudich.) (lectotype designated by Urtubey et al., Syst. Bot. Monogr. 106: 26. 2019).

Distoecha Phil., Anales Mus. Nac. Santiago de Chile Bot. 8: 36. 1891. TYPE: *Distoecha taraxacoides* Phil. (= *Hypochaeris eremophila* Cabrera).

This section includes all of the South American species (*Hypochaeris* sect. *Phanoderis* subsect. *Phanoderis* [DC.] Ortiz & Talavera) together with *H. angustifolia* from northwest Africa (*H.* sect. *Phanoderis* subsect. *Africana* Ortiz & Talavera). It is a monophyletic group, located in the same clade as *H.* sect. *Amblachaenium* and *H.* sect. *Metabasis* (Samuel et al., 2003; Tremetsberger et al., 2005; Enke et al., 2012).

Nine series are recognized within *Hypochaeris* subsect. *Phanoderis*: *H.* ser. *Apargioides* Urtubey, Stuessy & Tremetsb., *H.* ser. *Caespitosa* Urtubey, Stuessy & Tremetsb., *H.* ser. *Chondrilloides* Urtubey, Stuessy & Tremetsb., *H.* ser. *Lutea* Urtubey, Stuessy & Tremetsb., *H.* ser. *Microcephala* Urtubey, Stuessy & Tremetsb., *H.* ser. *Oreophila* (D.Don) Urtubey, Stuessy & Tremetsb., *H.* ser. *Pampasica* Urtubey, Stuessy & Tremetsb., *H.* ser. *Phanoderis* (DC.) Ortiz & Talavera, and *H.* ser. *Scorzonerae* Urtubey, Stuessy & Tremetsb.. Two of them are found in Uruguay: *H.* ser. *Microcephala* and *H.* ser. *Pampasica*.

Hypochaeris ser. Microcephala Urtubey, Stuessy & Tremetsb., Syst. Bot. Monogr. 106: 120. 2019. TYPE: *Hypochaeris microcephala* (Sch.Bip.) Cabrera.

Series containing six species: *Hypochaeris alba* Cabrera, *H. albiflora*, *H. chillensis*, *H. microcephala*, *H. argentina* Cabrera and *H. parodii* Cabrera. They are distributed mostly over northern and central-eastern Argentina, Uruguay, southern Brazil, and Paraguay, with a couple of species (*H. chillensis* and *H. microcephala*) extending north to Colombia. Most species of this group share the presence of branched and leafy stems and capitula grouped in lax corymbiform cymes. *Hypochaeris albiflora* and *H. chillensis* occur in Uruguay (but see comments on *H. microcephala* under doubtful names).

Key to species of *Hypochaeris* ser. *Microcephala* Urtubey, Stuessy & Tremetsb. present in Uruguay

1. Corollas white, tubes equal to, slightly shorter, or slightly longer than ligules ..... *Hypochaeris albiflora*
1. Corollas yellow, tubes at least twice as long as ligules .. .. *Hypochaeris chillensis*

3. Hypochaeris albiflora (Kuntze) Azevêdo-Gonç. & Matzenb., Compositae Newslett. 42: 3. 2005. *Hypochaeris brasiliensis* var. *albiflora* Kuntze, Revis. Gen. Pl. 3(3): 159. 1898. *Hypochaeris microcephala* var. *albiflora* (Kuntze) Cabrera, Notas Mus. La Plata, Bot. 2(16): 201. 1937, "*Hypochoeris"*. TYPE: Argentina, Santa Fé, Ceres, X-1892, *O. Kuntze s.n.* (lectotype NY [00180219]! designated by Urtubey et al., Syst. Bot. Monogr. 106: 123. 2019; photo F). Figs. 8 and 9.

Herbaceous hemicryptophytes 5-60 cm tall, laticiferous; stems 1 to 4, erect, branched mostly in the distal portion, cylindrical, striated, glabrous or puberulous and scabrous. Basal leaves alternate, rosette-forming, sessile, 18-285 × 2-45 mm, narrowly obovate to linear, entire to pinnatisect, base attenuate, apex acute, completely glabrous or scabrous on the abaxial midvein, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate or not; lobes narrowly oblong or deltoid, 2-15 × 1-5 mm, apex acute, margin entire. Cauline leaves present, reduced towards the apex of stems, alternate, sessile, 11-175 × 1-14 mm, narrowly ovate to linear, entire to pinnatifid, base truncate, sometimes rounded and semi-amplexicaul, apex acute, glabrous, penninervate, herbaceous, concolorous, margin flat, entire or dentate; lobes deltoid, 2-6 × 1-2 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary or in loose corymbiform capitulescences, peduncles 12-87 mm, puberulous towards the apex, sometimes also scabrous; bracts 2 to 5 (11) along the peduncles, 1.6-5 × 0.5-1 mm, narrowly ovate. Involucres 8-14 × 2-6 mm in flowering, 15-19 mm in fruiting, cylindrical or narrowly cylindrical; phyllaries free, graded in size, arranged in 4 to 5 series; outer phyllaries 1.9-3.8 × 0.8-1.4 mm, ovate or narrowly ovate, base obtuse, apex subacute, greenish or often with darkened midvein, adaxially glabrous, abaxially puberulous on the margins, uninervate, membranaceous, margin ciliate; inner phyllaries 6.7-11.5 × 1.3-2.2 mm, narrowly ovate or oblong, base acute, apex acute, obtuse or rounded, greenish or dark on the midvein towards the apex, glabrous or puberulous on the margins abaxially, palmatinervate, membranaceous, margin ciliate. Receptacles paleaceous, flat, scrobiculate; paleae 9.2-16.7 × 0.9-1.4 mm, linear, base truncate, apex attenuate, filiform, glabrous, membranaceous, margin entire or with few subapical teeth, ciliate towards the apex. Florets 19 to 54, perfect, equal to or slightly longer than the involucre; corollas ligulate, 6.4-11.3 mm, white, those on the margin sometimes with a faint longitudinal pink stripe abaxially, glabrous, tubes 3.5-6.8 mm, ligules 2.7-5 × 0.8-1.7 mm, elliptical or narrowly elliptical, lobes 5, 0.1-0.4 mm, triangular, apex acute; anteropodium present, anthers 1.7-2.5 mm, base sagittate, connective appendage oblong or ovate, apex rounded; styles 6.2-9.5 mm, style branches 0.7-1.6 mm, linear, villous on the abaxial surface. Cypselae monomorphic, 6-9.4 mm, fusiform, beaked, beak 2.1-4.9 mm, body 3.5-4.7 mm, terete, with 5 longitudinal grooves, 15-veined, scaly, brown to dark brown, carpopodium present. Pappus homomorphic, 1-seriate, 5.9-8.1 mm, composed of 22 to 28 plumose, whitish bristles.

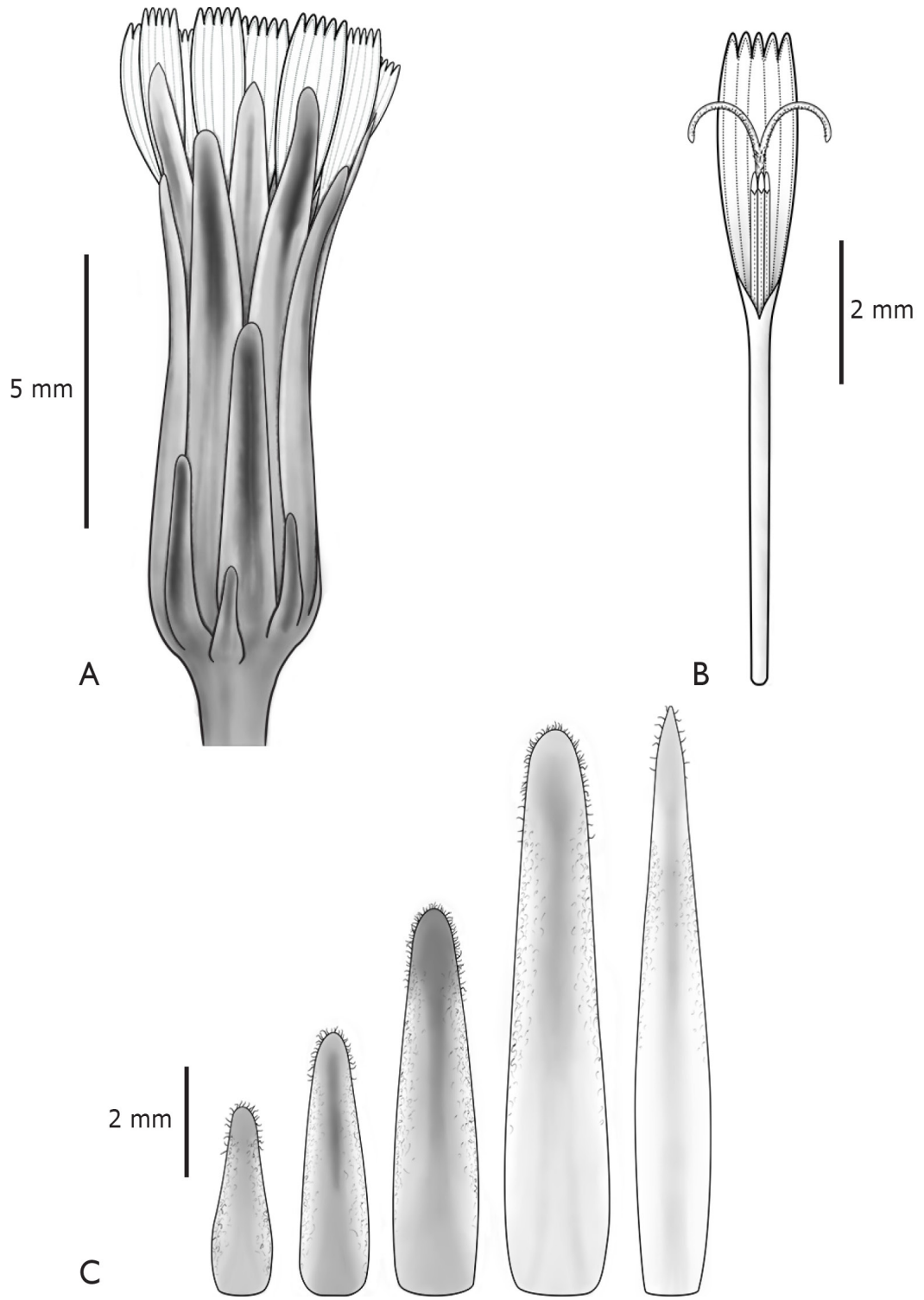

Fig. 8. *Hypochaeris albiflora*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *B. Rosengurtt & O. Del Puerto 9274* (MVFA).

Fig. 9. *Hypochaeris albiflora*. **A, B,** habit. **C,** budding capitulum, note the adpressed phyllary apices. **D-F,** flowering capitula. **G,** fruiting capitulum. **H,** cypsela. **I,** detail of scales on cypsela. H, I, from *B. Rosengurtt & O. Del Puerto 9274* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

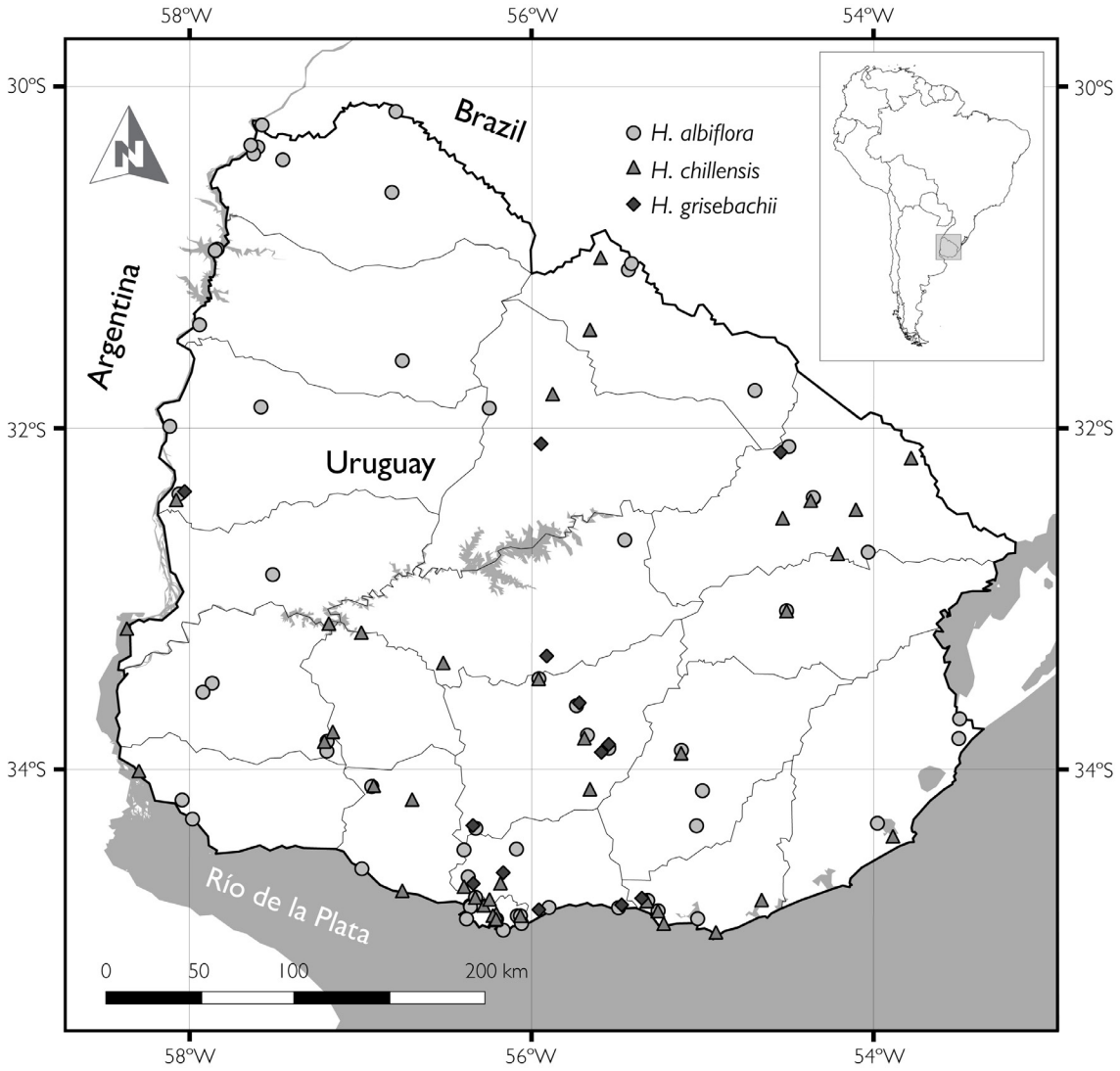

Fig. 10. Distribution of *Hypochaeris albiflora*, *H. chillensis* and *H. grisebachii* in Uruguay.

Additional iconography. Cabrera (1974: 519, fig. 310j, j'); Urtubey et al. (2019: 125, fig. 52).

Distribution and habitat. Argentina (Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, Misiones, Salta, Santa Fé, Santiago del Estero, Tucumán), Bolivia (La Paz, Santa Cruz, Tarija), Brazil (Rio Grande do Sul, Santa Catarina), Paraguay (Cordillera, Guairá, Itapúa, San Pedro), Peru (Cajamarca) (Urtubey et al., 2019), and Uruguay, where it is known from the departments of Artigas, Canelones, Cerro Largo, Colonia, Durazno, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Salto, San José, Soriano, Tacuarembó and Treinta y Tres (Fig. 10). Additionally, it is naturalized in Australia (Thompson, 2007), the United States (Pruski, 2011), South Africa (SANBI, 2016) and Taiwan (Jung et al., 2009). It grows mostly in low, somewhat humid areas, in sandy or stony fields, in the sun or in the shade, on edges and clearings of forests. It is also common in somewhat disturbed areas such as flowerbeds and roadsides.

Phenology. Flowering from mid-September to early May; fruiting from late September to mid-May.

Taxonomic notes. *Hypochaeris albiflora* is characterized by having distally branched stems, well-developed cauline leaves, corollas equal to or slightly longer than the involucres, with tubes equal to or slightly longer than ligules, and dark brown, almost black, beaked cypselae. It is the only species in Uruguay with white corollas.

The morphologically closest species are *Hypochaeris chillensis* and *Hypochaeris microcephala* which are clearly distinguished by having yellow corollas, with tubes twice or more as long as ligules (vs. white corollas with tubes subequal to ligules). In flowering capitula, a useful field character to distinguish them lies in the external and middle phyllaries; in *H. chillensis* and *H. microcephala* they have their apices free and not adpressed against the innermost phyllaries, while in *H. albiflora* the apices are always adpressed against inner phyllaries (Fig. 9C). Furthermore, phyllaries in *H. chillensis* and *H. microcephala* can sometimes have long patent trichomes along the midvein, while in *H. albiflora* the midvein of the phyllaries is always glabrous. Herbarium specimens without mature capitula, particularly those of a smaller stature, can be difficult to identify.

Another similar species is *Hypochaeris alba* from Argentina (Corrientes) and Paraguay (Caaguazú, Itapúa), which also has white corollas. It is distinguished from *H. albiflora* by having corollas much longer than the involucres (vs. equal or slightly longer) and villous corollas at the apex of the tubes (vs. completely glabrous corollas).

Representative examined material

URUGUAY. **Artigas.** Tomás Gomensoro, 9-I-1971, *E. Marchesi s.n.* (MVFA 10055) **Canelones.** Independencia, 8-XI-1903, *M. Berro 3121* (MVFA). **Cerro Largo.** Bañado de Medina, 18-XII-1970, *O. Del Puerto s.n.* (MVFA 9959). **Colonia.** Estancia Anchorena, 23-II-1962, *O. Del Puerto 1433* (MVFA). **Durazno.** Camino a Cuchilla Pereira, 32º38'57.70'' S, 55º27'07.30'' W, 2-XI-2006, *C. Brussa & I. Grela s.n.* (MVJB 25782). **Florida.** Rincón de Vignoly, estancia La Rinconada, 34° 19' 44.7'' S, 56° 19' 17.5'' W, 27-X-2018, *A. Mailhos 40* (MVFA). **Lavalleja.** Ruta 8 km 140, estancia Tala Grande, 1-XII-1979, *E. Marchesi s.n.* (MVFA 16460). **Maldonado.** Sierra de las Ánimas, 16-XI-1971, *O. Del Puerto et al. s.n.* (MVFA 10779). **Montevideo.** Jardín Botánico, 34° 51' 35.1'' S, 56° 11' 58.4'' W, 18-X-2004, *F. Ferreyro s.n.* (MVJB 24029). **Paysandú.** Establecimiento San Pedro, Cuchilla San José, 31° 52' 20.10'' S, 57° 34' 30.40'' W, 12-XII-2016, *C. Brussa et al. s.n.* (MVJB 30773). **Río Negro.** Ruta 3, 32° 51' 00'' S, 57° 30' 20.3'' W, 15-X-2018, *M. Bonifacino et al. 6636* (MVFA). **Rivera.** Frente a Batoví, 31° 04' 15.5'' S, 55° 25' 54'' W, 14-X-2018, *M. Bonifacino et al. 6601* (MVFA). **Rocha.** Ruta 9 entre Coronilla y Chuy, 13-XI-1962, *B. Rosengurtt & O. Del Puerto 9274* (MVFA). **Salto.** Estancia Los Venados, puntas del Tapado, 16-XI-1995, *M. Bonifacino s.n.* (MVFA 25133). **San José.** Sierra Mahoma, 11-X-1970, *O. Del Puerto s.n.* (MVFA 9443). **Soriano.** Ruta 2 km 248, 17-X-1961, *J. Millot 459* (MVFA). **Tacuarembó.** Tambores, IV-1928, *Schroeder s.n.* (Herb. Osten 19411 - MVM). **Treinta y Tres.** Cañada Sauce del Yerbal, 33° 03' 40'' S, 54° 30' 24'' W, 2-XI-2018, *M. Bonifacino & A. Rossado 6696* (MVFA).

4. **Hypochaeris chillensis** (Kunth) Britton, Bull. Torrey Bot. Club 19(12): 371. 1892, "*chilensis*". *Apargia chillensis* Kunth, Nov. Gen. Sp. 4: 2. 1820. *Leontodon chillense* (Kunth) DC., Prodr. 7(1): 105. 1838, "*chilense*". *Achyrophorus chillensis* (Kunth) Sch.Bip. Nov. Actorum Acad. Caes. Leop.-Carol. German. Nat. Cur. 21: 104. 1845, "*chilensis*". *Hypochaeris chillensis* (Kunth) Hieron., Bot. Jahrb. Syst. 28: 658. 1901, *nom. illeg.*, "*Hypochoeris*". TYPE: Ecuador, Chillo (nowadays part of Quito), III-1802, *A. Bonpland & F. Humboldt 3005* (lectotype P [00322230]! designated by Urtubey et al., Syst. Bot. Monogr. 106: 128. 2019; isolectotype P [00322231]!). Figs. 11 and 12.

Porcellites brasiliensis Less., Linnaea 6: 103. 1831. *Seriola brasiliensis* (Less.) Less., Syn. Gen. Compos. 131. 1832. *Achyrophorus brasiliensis* (Less.) Sch.Bip., Nov. Actorum Acad. Caes. Leop.-Carol. German. Nat. Cur. 21: 106. 1845, *non* Gardner, London J. Bot. 4: 128. 1845 [= *Hypochaeris lutea* (Vell.) Britton].

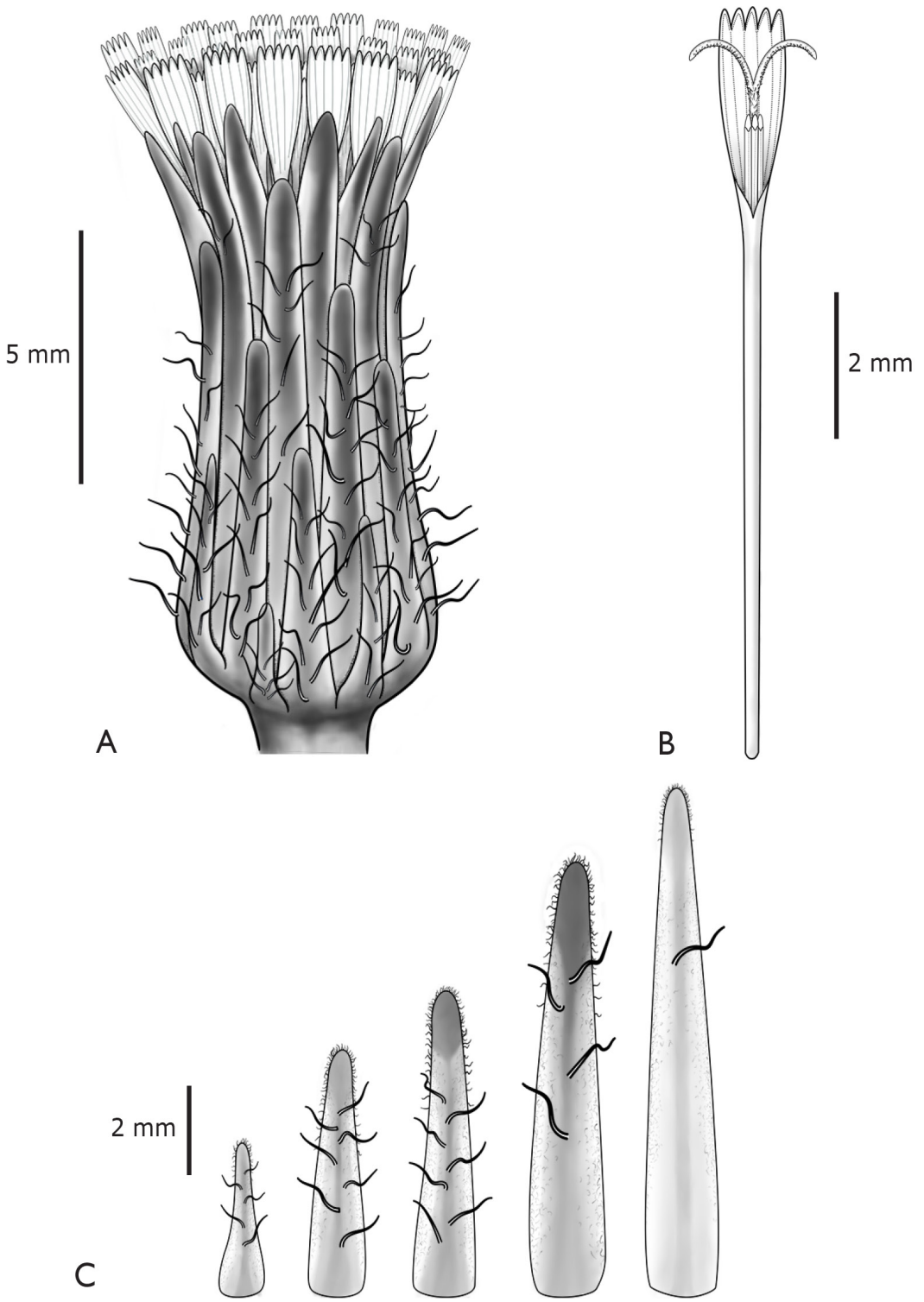

Fig. 11. *Hypochaeris chillensis*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *M. B. Berro 5259* (MVFA).

Fig. 12. *Hypochaeris chillensis*. **A,** habit. **B,** basal leaves. **C,** cauline leaf. **D,** clasping base of cauline leaf. **E,** budding capitulum, note the free phyllary apices. **F-H,** flowering capitula. **I,** cypsela. **J,** detail of scales on cypsela. I, J, from *O. Del Puerto s.n.* (MVFA 9950). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Hypochaeris brasiliensis (Less.) Griseb., Abh. Königl. Ges. Wiss. Göttingen 24: 217. 1879. TYPE: Brasil, Brasilia, "in Brasilia meridionali ad Rio Pardo," X-XI 1823, *F. Sellow* 3079 (lectotype K [000035250]! designated by Cabrera, Darwiniana 20: 317. 1976).

Seriola tweediei Hook. & Arn., Comp. Bot. Mag. 1: 31.1835. *Hypochaeris brasiliensis* var. *tweediei* (Hook. & Arn.) Baker, in Mart. Fl. Bras. 6(3): 334. 1884. *Hypochaeris tweediei* (Hook. & Arn.) Cabrera, Notas Mus. La Plata, Bot. 2: 203. 1937, "*Hypochoeris"*. TYPE: Argentina, Buenos Aires, 1825, *J. Tweedie s.n.* (lectotype K [000035237]! designated by Cabrera, Not. Mus. La Plata, Bot. 2: 204. 1937).

Achyrophorus sagittatus Phil., Anales Univ. Chile 36: 178. 1870. TYPE: Argentina, Mendoza, 1868-1869, *P. Ortega s.n.* (lectotype SGO [44701] designated by Cabrera, Not. Mus. La Plata, Bot. 2: 204. 1937, not seen; isolectotype B†, negative F [16183]!).

Hypochaeris brasiliensis var. *sulfurea* Kuntze, Revis. Gen. Pl. 3: 159. 1898. TYPE: Uruguay, Río Santa Lucía, XI-1892, *O. Kuntze s.n.* (lectotype NY [180223]! designated by Cabrera, Darwiniana 20: 319. 1976).

Hypochaeris brasiliensis var. *chacoënsis* Hassler, Repert. Spec. Nov. Regni Veg. 12: 371. 1913. TYPE: Paraguay, Gran Chaco, Loma Clavel, XI-1903, *E. Hassler* & *T. Rojas 2603* (holotype, G [00166254]!).

Herbaceous hemicryptophytes 30-90 cm tall, laticiferous; stems 1 to 3, erect, branched mostly in the distal portion, cylindrical, striated, glabrous or puberulous and scabrous. Basal leaves alternate, rosette-forming, sessile, 65-335 × 13-100 mm, narrowly obovate, entire to pinnatisect, base attenuate, apex acute or obtuse, glabrous to scabrous on the midvein, sometimes also scabrous adaxially, penninervate, herbaceous, concolorous, margin flat, dentate, ciliate; lobes oblong, narrowly oblong or deltoid, 3-60 × 2-31 mm, apex acute or obtuse, margin entire or slightly dentate. Cauline leaves present, reduced towards the apex of stems, alternate, sessile, 33-140 × 3-80 mm, ovate or narrowly ovate to linear, entire to pinnatisect, amplexicaul or semi-amplexicaul, base rounded or cordate, apex acute, glabrous or scabrous adaxially and on the abaxial midvein, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate or not; lobes narrowly ovate or oblong to linear, 7-40 × 2-18 mm, apex acute, margin entire or dentate. Capitula homogamous, terminal, in loose corymbiform capitulescences, peduncles 20-150 mm, puberulous towards the apex, sometimes also loosely scabrous; bracts 2 to 5 on the peduncles, 2.7-15 × 0.5-0.8 mm, narrowly ovate to linear. Involucres 9-16 × 2-8 mm in flowering, 17-20 mm in fruiting, cylindrical or slightly campanulate; phyllaries free, graded in size, arranged in 4 to 6 series; outer phyllaries 2.6-4.3 × 0.4-1 mm, narrowly ovate or oblong, base obtuse, apex subacute, greenish or dark on the midvein, adaxially glabrous, abaxially puberulous on margins, glabrous or scabrous to hirsute on the midvein, uninervate, membranaceous, margin ciliate towards the apex; inner phyllaries 9.3-13.7 × 1.3-2 mm, narrowly ovate or oblong, base acute, apex subacute or rounded, greenish or dark at the apex and the midvein towards apex, puberulous on margins abaxially, midvein glabrous or scabrous, palmatinervate, membranaceous, margin sometimes ciliate towards the apex. Receptacles paleaceous, flat, scrobiculate; paleae 10.2-16.8 × 0.9-1.4 mm, linear, base truncate, apex attenuate, filiform, glabrous or with short trichomes towards the apex abaxially, membranaceous, margin entire or with a pair of subapical teeth, ciliate at apex. Florets 77 to 175, perfect, equal to or slightly longer than the involucres; corollas ligulate, 7-10.5 mm, yellow, those on the margin with a white or reddish longitudinal stripe abaxially, glabrous or with some isolated trichomes towards the apex of the tube, tubes 4.9-8 mm, ligules 1 .9-3 × 0.8-1.2 mm, obovate, lobes 5, 0.2-0.4 mm, triangular, apex acute; anteropodium present, anthers 1-1.5 mm, base sagittate, connective appendage oblong, apex rounded; styles 7.1-9.8 mm, style branches 0.5-1.5 mm, linear, villous on abaxial surface. Cypselae monomorphic, 7.6-12.6 mm, fusiform, beaked, beak 4.2-7.8 mm, body 3.4-5.3 mm, terete, with 5 longitudinal grooves, 15-veined, scaly, brown to dark brown, somewhat blackish, on some plants lightly colored and with an orange hue, carpopodium present. Pappus homomorphic, 1-seriate, 5.7-8.5 mm, composed of 20 to 27 plumose, whitish bristles.

Additional iconography. Cabrera (1974: 518, 520, figs. 309, 311); Urtubey et al. (2019: 130, fig. 54).

Common names. "Achicoria", "Cerraja" (Cabrera et al., 2000), "Achicoria del campo" (Herter, 1930; Cabrera et al., 2000), "Radicheta" (Herter, 1930).

Distribution and habitat. Argentina (Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, Mendoza, Misiones, Salta, San Luis, Santa Fé, Santiago del Estero, Tucumán), Bolivia (Chuquisaca, Cochabamba, La Paz, Tarija), Brazil (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo), Colombia (Boyacá, Cundinamarca), Ecuador (Pichincha), Paraguay (Caaguazú, Guairá, Misiones, Paraguarí), Peru (Cajamarca, Huancayo, Junín, La Libertad, Lima) (Urtubey et al., 2019), and Uruguay, where it is found in the departments of Canelones, Cerro Largo, Colonia, Durazno, Flores, Florida, Lavalleja, Maldonado, Montevideo, Paysandú , Río Negro, Rivera, Rocha, San José, Soriano and Treinta y Tres (Fig. 10). Additionally, it is naturalized in the United States (Bogler, 2006), South Africa (Hilliard & Burtt, 1970) and Taiwan (Jung et al., 2010). It grows in diverse environments, frequently under partial shade in clearings and forest edges, but it also occurs in open fields, hill-slopes and rocky areas. It is common in urbanized environments, in vacant lots, flowerbeds and roadsides.

Phenology. Flowering and fruiting from September to June.

Taxonomic notes. *Hypochaeris chillensis* can be recognized by its branched and leafy stems, capitula arranged in lax corymbiform capitulescences, corollas shorter than or equal to the involucres, with tubes much longer than ligules, and dark-colored, long-beaked cypselae.

Hypochaeris chillensis is one of the species of *Hypochaeris* present in Uruguay with the highest intraspecific variability. Cabrera (1976) observed that the height, degree of branching, shape of leaves and pubescence of stems, leaves and phyllaries are extremely variable and lack taxonomic value. In the course of this study, we were able to observe individuals with short stems and relatively few capitula that, when cultivated under different conditions, produced highly branched stems more than twice as tall the following year. Similarly, individuals with tall stems and numerous capitula, when pruned from the base during the flowering period, quickly regrow, producing new, shorter stems with few branches, and smaller capitula. As mentioned by Azevêdo-Gonçalvez & Matzenbacher (2007), the shape of the involucre varies slightly depending on the size of the capitula and the number of florets: campanulate in larger capitula and more cylindrical in smaller ones.

Nomenclatural notes. Lessing (Linnaea 6: 104. 1831) published three varieties under the name *Porcellites brasiliensis* Less.: *P. brasiliensis* var. *hirta* Less., *P. brasiliensis* var. *integrifolia* Less., and *P. brasiliensis* var. *pinnatifida* Less., but did not provide any significant diagnosis for any of them, thus they are treated as *nomina nuda*.

Achyrophorus selloi Sch.Bip., Jahresber. Pollichia 16-17: 60. 1859, is a superfluous name based on the type of *Porcellites brasiliensis* Less. (1831).

The designation *Seriola brasiliensis* subvar. *hirsutula* Less. ex Hook. & Arn., Comp. Bot. Mag. 1: 31. 1835, *nom. nud.* has been treated as a synonym of *H. chillensis* but after analyzing the type material (Argentina, Buenos Aires, 1825, *J. Tweedie s.n.*, K [000035239]!) we believe that it actually belongs to *Hypochaeris* ser. *Pampasica*, either to *H. megapotamica* or *H. pampasica* due to its hirsute indumentum in stems, leaves and phyllaries, stems slightly branched at the base but not at the top, and solitary capitula. It is necessary to see mature cypselae from the center of the capitulum of the type specimen to be able to determine with certainty which of these two species it belongs to, since both occur in the province of Buenos Aires.

Representative examined material

URUGUAY. **Canelones.** Canelón Chico, 21-XI-1907, *M. Berro 3540* (MVFA). **Cerro Largo.** Bañado de Medina, 18-XII-1970, *O. Del Puerto s.n.* (MVFA 9950). **Colonia.** Carmelo, 23-XI-1934, *A. L. Cabrera 3243* (Herb. Osten 23332 - MVM).

Durazno. Ruta frente al aeropuerto, 33° 21' 50.2'' S, 56° 30' 39.9'' W, 13-X-2018, *M. Bonifacino et al. 6573* (MVFA). **Flores.** Arroyo Timote, estancia San Pedro, 18-XII-1936, *B. Rosengurtt B761* (MVFA). **Florida.** Rincón de Santa Elena, 9-XI-1946, *B. Rosengurtt & A. Gallinal 5765* (MVFA). **Lavalleja.** Polanco, 20-XI-1963, *O. Del Puerto 3056* (MVFA). **Maldonado.** Cerro Pan de Azúcar, 12-XI-1970, *O. Del Puerto et al. s.n.* (MVFA 9682). **Montevideo.** Calle Agraciada, 10-XI-1906, *M. Berro 5250* (MVFA). **Paysandú.** Estación experimental de Agronomía, 2-XII-1976, *P. Ferrés s.n.* (MVFA 12976). **Río Negro.** Balneario Las Cañas, 21-XII-1965, *O. Del Puerto & E. Marchesi 5644* (MVFA). **Rivera.** Ruta 5, 10 km al norte del límite con Tacuarembó, 31° 25' 14.7'' S, 55° 39' 16.2'' W, 21-XII-2018, *A. Rossado et al. 514* (MVFA). **Rocha.** Laguna de Castillos, 10-XI-1965, *D. Bayce et al. s.n.* (MVFA 26409). **San José.** Sierra Mahoma, 21-X-1966, *P. Izaguirre et al. s.n.* (MVFA 2545). **Soriano.** Santa Elena, arroyo Grande, 24-XI-1940, *A. Gallinal et al. PE4511* (MVFA). **Treinta y Tres.** Cañada Sauce del Yerbal, 33º3'40'' S, 54º30'24'' W, 2-XI-2018, *M. Bonifacino & A. Rossado 6698* (MVFA).

Hypochaeris ser. Pampasica Urtubey, Stuessy & Tremetsb., Syst. Bot. Monogr. 106: 141. 2019. TYPE: *Hypochaeris pampasica* Cabrera.

Hypochaeris ser. *Pampasica* is composed of seven species distributed throughout central and northern Argentina, southern Brazil, Paraguay, and Uruguay. Plants of this series are characterized by having solitary capitula on unbranched or scarcely branched stems and reduced or bract-like cauline leaves. All species from this series are present in Uruguay: *Hypochaeris grisebachii*, *H. megapotamica*, *H. pampasica*, *H. petiolaris*, *H. rosengurttii*, *H. tropicalis*, and *H. variegata*.

Key to species of *Hypochaeris* ser. *Pampasica* Urtubey, Stuessy & Tremetsb. present in Uruguay

1. Corollas much exserted from the involucre; corolla tubes much shorter than ligules, ligules villous at the base 2
1. Corollas shorter than involucres or slightly exserted; corolla tubes longer, equal to, or slightly shorter than ligules; ligules glabrous or with some isolated trichomes at the base 3
2(1). Median phyllaries oblong, apex rounded or obtuse; cypselae dark brown or blackish at maturity .... *Hypochaeris variegata*
2. Median phyllaries narrowly ovate, apex subacute; cypselae brown or light brown at maturity .... *Hypochaeris rosengurttii*
3(1). Cypselae brown to very light brown at maturity 4
3. Cypselae dark brown to blackish at maturity 6
4(3). Cypselae beakless or with beaks up to 1 mm long; adult leaves pinnatisect with linear or narrowly oblong segments ..... *Hypochaeris tropicalis*
4. Cypselae with beaks longer than 3 mm; leaves entire or pinnatisect, but then segments ovate or oblong 5
5(4). Beaks of cypselae longer than bodies .... *Hypochaeris megapotamica*
5. Beaks of cypselae shorter than or equal to bodies .... *Hypochaeris pampasica*
6(3). Leaves hirsute on both surfaces; involucres greyish-green; outline of cypselae smooth, with inconspicuous scales ..... *Hypochaeris grisebachii*
6. Leaves glabrous or only scabrous abaxially along the midvein; involucres greenish; outline of cypselae interrupted by scales, scales conspicuous .... *Hypochaeris petiolaris*

5. Hypochaeris grisebachii Cabrera, Notas Mus. La Plata, Bot. 2: 194, f. 10. 1937, "*Hypochoeris"*. TYPE: Argentina, Buenos Aires, Elizalde, 15-XI-1930, *A. L. Cabrera 1522* (lectotype LP 060416-A [003246]! designated by Freire & Iharlegui, Darwiniana 38: 322. 2000; isolectotypes LP 009762 [003247]!, LP 060416-B [003248]!). Figs. 13 and 14.

Herbaceous hemicryptophytes 10-45 cm tall, laticiferous; stems 1 to 12, erect, unbranched or rarely with some basal branching on robust plants, cylindrical, striated, puberulous to loosely puberulous. Basal leaves alternate, rosette-forming, sessile, 32-265 × 6-37 mm, narrowly obovate, entire to pinnatipartite, base long attenuate, apex acute, hirsute on both sides, penninervate, herbaceous, concolorous, margin flat, entire or slightly dentate, ciliate; lobes oblong or deltoid, 2-10 × 1-7 mm, apex acute or rounded, margin entire.

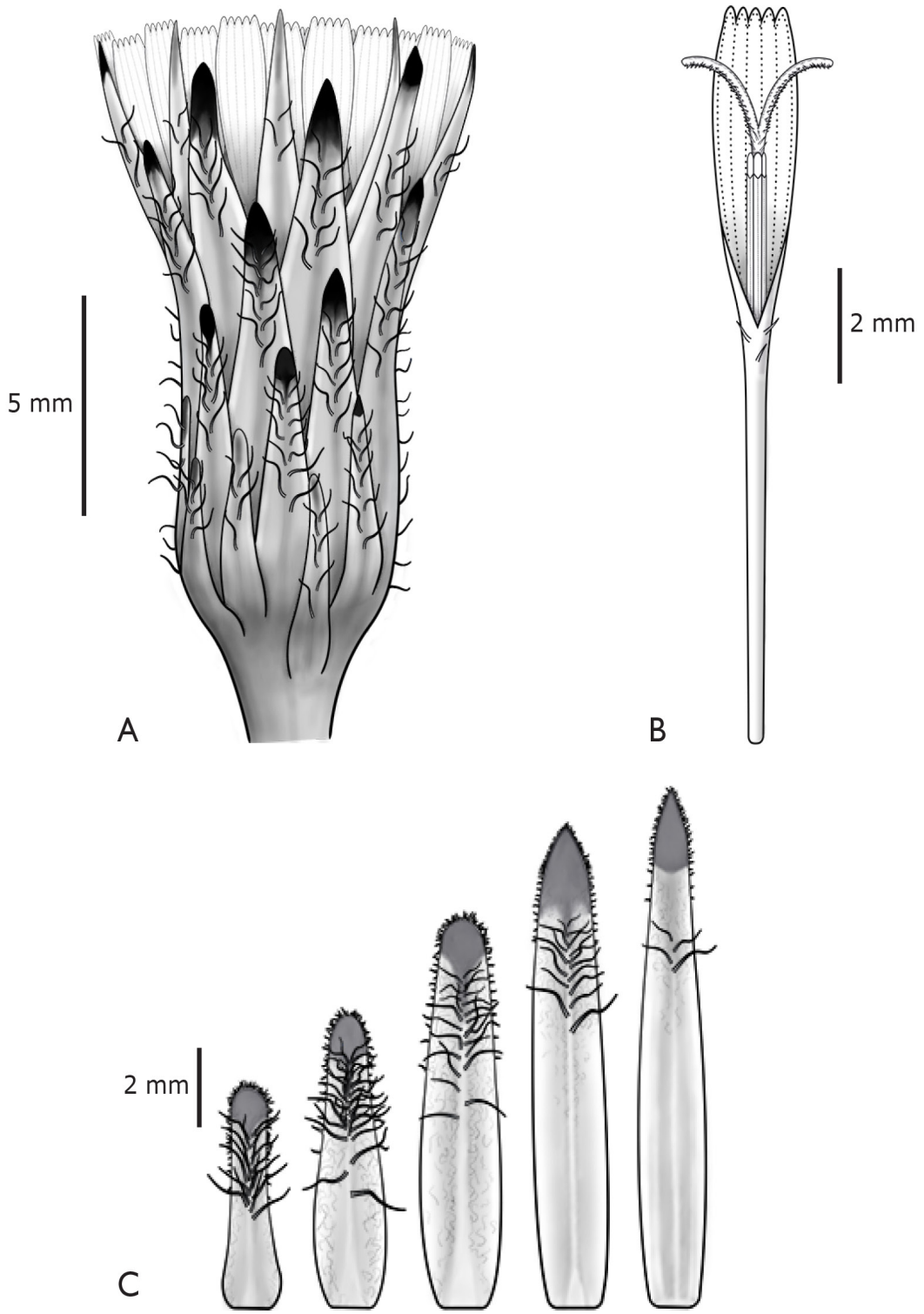

Fig. 13. *Hypochaeris grisebachii*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *V. Valtierra & P. Pañella 337* (MVFA).

Fig. 14. *Hypochaeris grisebachii*. **A, B,** habit (a flowering capitulum of *H. megapotamica* is present towards the top right corner of A). **C,** basal rosette. **D-F,** flowering capitula. **G,** cypsela. **H,** detail of scales on cypsela. A, B, D, by V. Valtierra, *V. Valtierra & P. Pañella 337* (MVFA); C, by P. Pañella, *P. Pañella 58* (MVFA); F, from *A. Mailhos & P. Pañella 321* (MVFA); G, H, from *B. Rosengurtt 3607* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Cauline leaves absent or few at the base of the stems and gradually becoming bracts, alternate, sessile, 22-125 × 2-12 mm, narrowly obovate or elliptical to linear, entire to pinnatipartite, base attenuate base, apex acute, hirsute on both sides, penninervate, herbaceous, concolorous, margin flat, entire or slightly dentate, ciliate; lobes oblong or deltoid, 2-5 × 2-7 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 75-385 mm, puberulous; bracts 3 to 8 along the peduncles, 4-14 × 0.5-2 mm, narrowly ovate to linear. Involucres 12-17 × 7-9 mm in flowering, 17-21 mm in fruiting, campanulate; phyllaries free, graded in size, arranged in 4 to 5 series; outer phyllaries 4.8-6 × 0.9-1.6 mm, narrowly ovate, base acute, apex subacute, green or violaceous at the apex, glabrous adaxially, somewhat puberulous and glabrous to densely hirsute on the midvein abaxially, uninervate, membranaceous, margin ciliate towards the apex; inner phyllaries 12.3-16.2 × 1.6-2.5 mm, narrowly ovate or oblong, base acute or rounded, apex acute, subacute or rounded, green or violaceous at the apex, glabrous adaxially, somewhat puberulous and glabrous to hirsute on the midvein abaxially, palmatinervate, membranaceous, margin ciliate towards the apex. Receptacles paleaceous, convex, scrobiculate; paleae 14.8-19 × 1.2-1.7 mm, linear, base rounded or truncate, apex attenuate, filiform, glabrous, membranaceous, margin entire or with few subapical teeth, somewhat ciliate towards the apex. Florets 149 to 168, perfect, equal to or slightly longer than the involucres; corollas ligulate, 8.9-13.4 mm, yellow, those on the margin with a longitudinal reddish stripe abaxially, loosely villous to almost glabrous at the apex of the tube, tubes 5.2-7.9 mm, ligules 3.4-6 × 1.1-2 mm, obovate or elliptical, lobes 5, 0.2-0.7 mm, triangular, apex acute; anteropodium present, anthers 2.5-3 mm, base sagittate, connective appendage ovate or oblong, apex acute or rounded; styles 8.7-10.8 mm, style branches 1.5-2.2 mm, linear, villous on the abaxial surface. Cypselae monomorphic, 7.9-13.2 mm, fusiform, beaked, beak (3.7-)4.8-9.1 mm, body 3.4-4.6 mm, terete, with 5 longitudinal grooves, 15-veined, scaly, dark brown, carpopodium present. Pappus homomorphic, 1-seriate, 7.5-10.3 mm, composed of 20 to 25 plumose, whitish bristles.

Additional iconography. Cabrera (1937: 195, fig. 10); Urtubey et al. (2019: 158, fig. 69).

Distribution and habitat. Argentina (Buenos Aires) (Urtubey et al., 2019), and Uruguay, where it occurs in the departments of Canelones, Cerro Largo, Durazno, Florida, Maldonado, Paysandú and Tacuarembó (Fig. 10). *Hypochaeris grisebachii* lives in grasslands of low or medium height, on sandy, stony, or clayey soils. It has also been found on roadsides and in somewhat degraded pastures, so it seems to tolerate a certain degree of disturbance.

Phenology. Flowering from the beginning of October to the end of November; fruiting from mid-October to mid-December.

Taxonomic notes. *Hypochaeris grisebachii* is characterized by its unbranched stems, hirsute leaves long-attenuated at the base, puberulous peduncles, involucres with an ashen-green coloration in the field, phyllaries with patent trichomes on the midvein, corollas barely exserted from the involucres, with tubes slightly longer than ligules, and dark brown, long-beaked cypselae, with extremely short scales.

Because of the hirsute indumentum on leaves and phyllaries it can resemble *Hypochaeris megapotamica* or some specimens of *H. rosengurttii*. *Hypochaeris megapotamica* can be distinguished by its peduncles with long, patent trichomes (vs. puberulous peduncles), corollas shorter than the involucre (vs. corollas barely longer than the involucre), with tubes much longer than ligules (vs. tubes slightly longer than ligules) and light brown cypselae villous along the beak (vs. dark brown cypselae with glabrous or sparsely scaly beaks).

H. rosengurttii can be distinguished by its corollas which are very exserted from the involucre (vs. corollas barely longer than the involucre), with tubes shorter than ligules (vs. tubes slightly longer than ligules) and short-beaked cypselae, villous along the beak and light brown (vs. dark brown cypselae with glabrous or sparsely scaly beaks which are longer than the bodies).

Observations. *Hypochaeris grisebachii* is not very well represented in national herbaria.

Urtubey et al. (2019) reported that they were not able to locate any populations in the field throughout its known distribution. Fortunately, in the course of this revision, five new populations of *H. grisebachii* have been discovered in Uruguay, in the departments of Canelones, Durazno, Florida and Tacuarembó.

Urtubey et al. (2019) included in the examined material for this species two specimens from the MVFA herbarium (*E. Marchesi 574* and *E. Marchesi 657*) that show capitula with corollas which are very exserted from the involucre with tubes clearly shorter than ligules. This indicates that these specimens belong to *Hypochaeris rosengurttii* and not to *H. grisebachii*, a species that also shows dense hirsute indumentum on the phyllaries.

Representative examined material

URUGUAY. **Canelones.** Canelón Chico, Paso Cuello, 29-X-1936, *B. Rosengurtt B389* (MVFA). **Cerro Largo.** Palleros, 5-XII-1937, *A. Gallinal et al. PE1565* (MVFA). **Durazno.** Estancia INSUA, 33° 19' 27.0'' S, 55° 54' 29.6'' W, 30-X-2020, *V. Valtierra & P. Pañella 337* (MVFA). **Florida.** Secretariado Uruguayo de la lana, 33° 52' 12.37'' S, 55° 34' 19.74'' W, 20-X-2021, *P. Pañella 58* (MVFA). **Maldonado.** Sierra de las Ánimas, 24-XI-1917, *C. Osten 11600a* (MVM). **Paysandú.** Agronomía, 6-XI-1937, *B. Rosengurtt B2166b* (MVM 5943). **Tacuarembó.** Arbolito, campo de López, 32° 05' 12.2'' S, 55° 56' 28.8'' W, 28-X-2022, *A. Mailhos & P. Pañella 321* (MVFA).

6. Hypochaeris megapotamica Cabrera, Notas Mus. La Plata, Bot. 2: 192, f. 9. 1937, "*Hypochoeris"*. TYPE: Argentina, Buenos Aires, Elizalde, 15-XI-1930, *A. L. Cabrera 1523* (lectotype LP 060415-A [003249]! designated by Cabrera, Revista Mus. La Plata, Bot. 4: 406. 1941, and Freire & Iharlegui, Darwiniana 38: 322. 2000; isolectotypes LP 009763 [003250]!, LP 060415-B [003251]!). Figs. 15 and 16.

Herbaceous hemicryptophytes 7-70 cm tall, laticiferous; stems 1 to 7, erect, unbranched or slightly branched at the base, cylindrical, striated, sericeous and hirsute. Basal leaves alternate, rosette-forming, sessile, 32-310 × 3-55 mm, narrowly obovate, entire to pinnatisect, base attenuate, apex acute, loosely scabrous to hirsute on both sides, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate; lobes oblong, ovate or narrowly ovate, 4-26 × 2-22 mm, apex acute or obtuse, margin entire or dentate. Cauline leaves present, reduced towards the apex of stems, alternate, sessile, 18-115(-255) × 2-25(-70) mm, the proximal ones narrowly obovate and pinnatipartite, becoming narrowly elliptic or ovate and entire in the distal portion of the stems, base obtuse or truncate, apex acute, scabrous to hirsute on both sides, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate; lobes narrowly ovate, 5-30 × 2-14 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 55-470 mm, scabrous to hirsute and sericeous; bracts 4 to 8 on the peduncles, 3.3-27 × 0.6-2 mm, narrowly ovate or oblong to linear. Involucres 13-27 × 3-11 mm in flowering, 26-39 mm in fruiting, cylindrical or campanulate; phyllaries free, graded in size, arranged in 4 to 5 series; outer phyllaries 3.4-7.8 × 0.8-1.9 mm, ovate or narrowly ovate, base acute, apex subacute, violaceous dorsally, rarely green, glabrous adaxially, sericeous, usually also hirsute or scabrous on midvein abaxially, uninervate, membranaceous, margin ciliate towards apex; inner phyllaries 13.1-25.3 × 1.4-3.2 mm, narrowly ovate, base acute or obtuse, apex acute or subacute, violaceous, rarely green, glabrous adaxially, sericeous or puberulous abaxially, sometimes loosely scabrous on the midvein, palmatinervate, membranaceous, margin ciliate towards apex. Receptacles paleaceous, flat or slightly convex, scrobiculate; paleae 16.5-23.8 × 1.2-1.8 mm, linear, base truncate, apex attenuate, filiform, with some short trichomes on the apex, membranaceous, margin entire or with a pair of subapical teeth. Florets 37 to 116, perfect, shorter than the involucres; corollas ligulate, 10-15.2 mm, yellow, those on the margin sometimes with a longitudinal reddish abaxial stripe, loosely villous at the apex of the tube, sometimes glabrous, tubes 6.9-10.8 mm, ligules 3.1-5.2 × 0.8-1.8 mm, narrowly elliptic, lobes 5, 0.2-0.7 mm, ovate, apex acute; anteropodium present, anthers 1.5-2.2 mm, base sagittate, connective appendage oblong or elliptical, apex obtuse or rounded; styles 9.7-14.4 mm, style branches 1.3-2.1 mm, linear, villous on the abaxial surface.

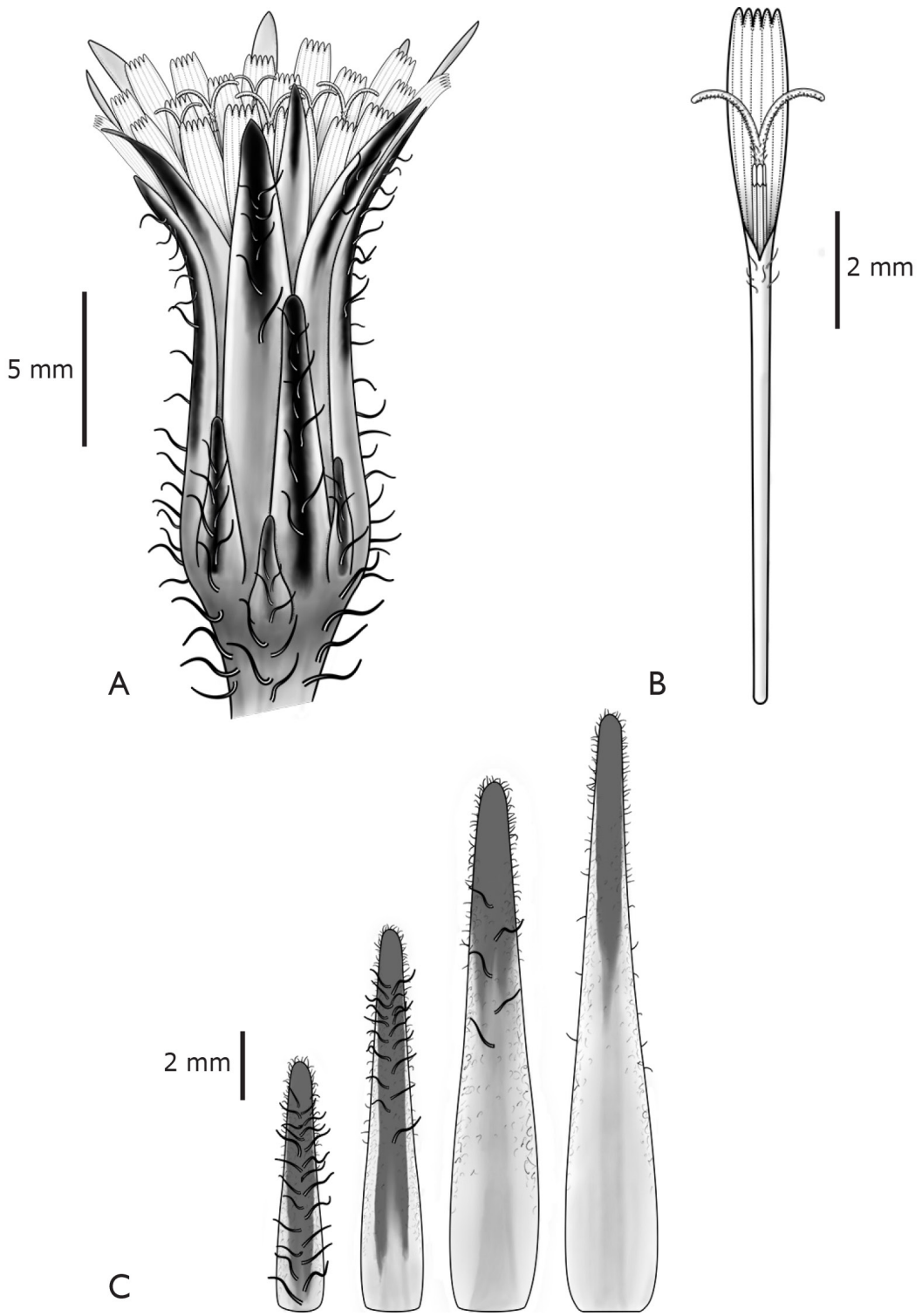

Fig. 15. *Hypochaeris megapotamica*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A from *A. Mailhos 33* (MVFA); B, C, from *M. B. Berro 44* (MVFA).

Fig. 16. *Hypochaeris megapotamica*. **A,** habit. **B,** basal leaf. **C,** root. **D, E,** flowering capitula. **F,** closed capitulum with developing cypselae. **G,** fruiting capitulum. **H,** cypsela. **I,** detail of scales on cypsela. H, I, from *E. Marchesi & P. Ferrés s.n.* (MVFA 14185). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Cypselae monomorphic, 10.4-16.2 mm, fusiform, beaked, beak 5.7-10.8 mm, body 4.7-6.9 mm, terete, with 5 Longitudinal grooves, 15-veined, scaly on the body and densely villous on grooves and along the beak, light brown to stramineous, carpopodium present. Pappus homomorphic, 1-seriate, 11-15.2 mm, composed of 27 to 36 plumose, whitish bristles.

Additional iconography. Cabrera (1937: 193, fig. 9); Cabrera (1974: 524, fig. 314); Urtubey et al. (2019: 155, fig. 68).

Common names. "Achicoria de campo", "Radicheta" (*A. Teisseire 4540*, MVM).

Distribution and habitat. Argentina (Buenos Aires, Corrientes, Entre Ríos), Brazil (Rio Grande do Sul, Santa Catarina) (Urtubey et al., 2019), and Uruguay, where it occurs in the departments of Canelones, Colonia, Cerro Largo, Flores, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Rivera, Rocha, Salto, San José, Soriano and Tacuarembó (Fig. 17). It is a common species in grasslands across the country, particularly on sandy soils. It is also common in ruderal environments, such as flowerbeds and roadsides.

Phenology. Flowering from mid-September to the end of December; fruiting from the end of September to the beginning of January.

Taxonomic notes. *Hypochaeris megapotamica* is characterized by having unbranched stems or stems slightly branched at the base, corollas shorter than the involucres, with ligules shorter than tubes, and long beaked, light brown cypselae, densely villous along the beak. Hirsute indumentum is commonly present on stems, leaves and phyllaries.

Hypochaeris megapotamica very closely resembles *H. pampasica*, which differs by its cypselae with beaks of equal or shorter length than the bodies (vs. beaks longer than the bodies). *Hypochaeris megapotamica* is also similar to *H. rosengurttii* which may be distinguished by its corollas very exserted from the involucre (vs. corollas not exserted), with tubes shorter than ligules (vs. tubes longer than ligules), and cypselae with beaks shorter than the bodies (vs. beaks longer than the bodies).

Representative examined material

URUGUAY. **Canelones.** Cuchilla Alta, al noreste del pueblo, 34° 47' 31.50'' S, 55° 29' 17.00'' W, 30-X-2020, *F. Haretche 1388* (MVJB 32100). **Cerro Largo.** Palleros, 4-XII-1937, *A. Gallinal et al. PE1362* (MVFA). **Colonia.** Unspecified locality, 1913, *A. Teisseire 4540* (MVM). **Durazno.** Ruta frente a aeropuerto, 33° 21' 50.2'' S, 56° 30' 39.9'' W, 13-X-2018, *M. Bonifacino et al. 6574* (MVFA). **Flores.** Río Yi entre arroyo Matanzas y Carpintería, 26-XI-1936, *B. Rosengurtt B528b* (MVFA). **Florida.** Rincón de Santa Elena, río Yi, 2-XI-1946, *B. Rosengurtt & A. Gallinal 5729* (MVFA, MVM 12241). **Lavalleja.** Villa Serrana, 11-XI-1956, *B. Arrillaga 601* (MVFA). **Maldonado.** Punta Negra, 34° 53' 49.8'' S, 55° 13' 47'' W, 13-X-2018, *M. Bonifacino et al. 6558* (MVFA). **Montevideo.** Cerro de Montevideo, 26-X-1968, *O. Lema & H. Rodríguez s.n.* (MVFA 7366). **Paysandú.** Estancia El Mirador, 9-X-1961, *O. Del Puerto 313* (MVFA). **Rivera.** Ruta 29 entre Miriñaque y Minas de Corrales, 31° 31' 48.8'' S, 55° 35' 50.9'' W, 14-X-2018, *M. Bonifacino et al. 6595* (MVFA). **Rocha.** Parque Santa Teresa, 17-XII-1969, *B. Rosengurtt s.n.* (MVFA 11149). **Salto.** Espinillar, 29-XI-1975, *O. Del Puerto s.n.* (MVFA 12531). **San José.** Sierra Mahoma, 21-X-1966, *P. Izaguirre et al. s.n.* (MVFA 2624). **Soriano.** Vera, 18-X-1899, *M. Berro 44* (MVFA). **Tacuarembó.** Gruta de los Cuervos, 3-XI-1990, *E. Marchesi & D. Bayce s.n.* (MVFA 19960b). **Treinta y Tres.** Cañada Sauce del Yerbal, 33° 3' 40'' S 54° 30' 24'' W, 2-XI-2018, *M. Bonifacino & A. Rossado 6706* (MVFA).

7. **Hypochaeris pampasica** Cabrera, Revista Mus. La Plata, Bot. 4: 395, f. 129. 1941, "*Hypochoeris*". TYPE: Argentina, Buenos Aires, Pellegrini, 28-XI-1940, *A. L. Cabrera 6947* (lectotype LP 039225 [003256]! designated by Freire & Iharlegui, Darwiniana 38: 323. 2000; isolectotypes LP 060419 [003257]!, LP 067561 [003255]!, SI 28608 [000905]!). Figs. 18 and 19.

Herbaceous hemicryptophytes 7-35 cm tall, laticiferous; stems 1 to 7, erect or decumbent, unbranched or slightly branched at the basal and central portions, cylindrical, striated, sericeous and hirsute.

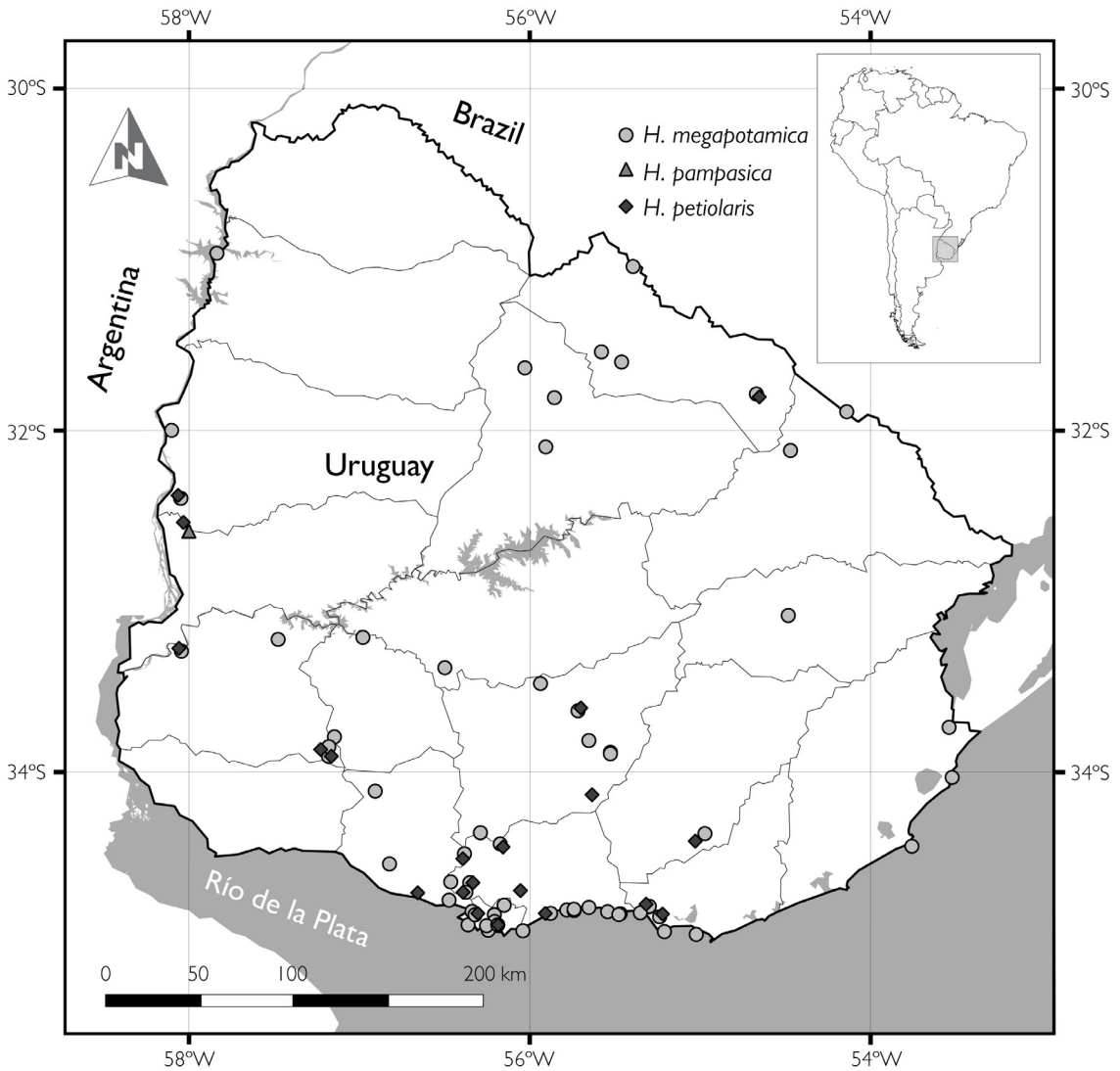

Fig. 17. Distribution of *Hypochaeris megapotamica*, *H. pampasica* and *H. petiolaris* in Uruguay.

Basal leaves alternate, rosette-forming, sessile, 40-150 × 9-33 mm, narrowly obovate, entire to pinnatisect, base attenuate, apex acute or obtuse, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate; lobes ovate or oblong, 4-14 × 2-20 mm, apex acute, obtuse or rounded, margin entire or slightly dentate. Cauline leaves present at least at the base of stems, reduced towards the apex, alternate, sessile, 18-117 × 5-35 mm, the proximal ones narrowly obovate, becoming narrowly elliptic or ovate in the distal portion of the stems, entire to pinnatipartite, base obtuse or truncate, apex acute, scabrous to hirsute adaxially, hirsute on the midvein abaxially, penninervate, herbaceous, concolorous, margin flat, entire, ciliate; lobes narrowly ovate or oblong, 4-17 × 1-12 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 40-150 mm, scabrous to hirsute and sericeous; bracts 1 to 3 on the peduncles, 4.1-14 × 1.4-1.5 mm, ovate or narrowly ovate to linear. Involucres 16-22 × 6-9 mm in flowering, 28-29 mm in fruiting, cylindrical or campanulate;

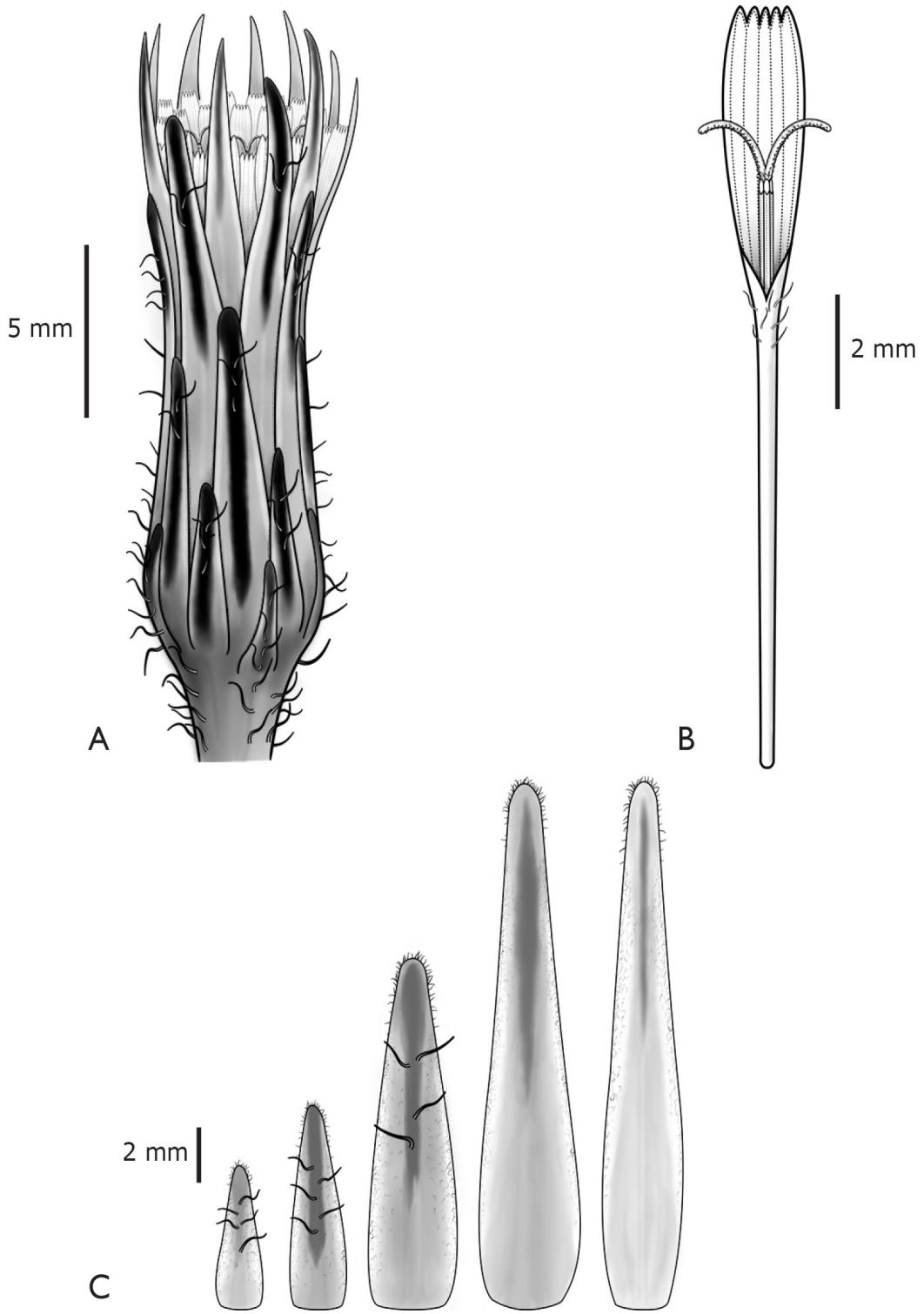

Fig. 18. *Hypochaeris pampasica*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *A. Mailhos 82* (MVFA).

Fig. 19. *Hypochaeris pampasica*. **A,** habitat, "blanqueal" in Río Negro, Uruguay. **B,** habit. **C,** basal leaf. **D, E,** flowering capitula. **F,** cypsela. **G,** detail of scales on cypsela. A, C, D, E, *A. Mailhos 82* (MVFA); B, F, G, *A. Mailhos 84* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

phyllaries free, graded in size, arranged in 4 to 5 series; outer phyllaries 4.1-5.7 × 1.5-1.9 mm, ovate or narrowly ovate, base obtuse, apex subacute, violaceous dorsally, adaxially glabrous, abaxially scabrous on the midvein and puberulous towards the margins, uninervate, membranaceous, margin ciliate towards the apex; inner phyllaries 17.8-19 × 2-3.1 mm, narrowly ovate, base truncate, apex acute or subacute and violaceous, adaxially glabrous, abaxially puberulous on the margins towards the apex, palmatinervate, membranaceous, margin ciliate towards the apex. Receptacles paleaceous, flat, scrobiculate; paleae 17.6-22.5 × 1.2-1.8 mm, linear, base acute or obtuse, apex attenuate, filiform, with some short trichomes on the apex, membranaceous, margin entire or with up to three subapical teeth. Florets 53 to 82, perfect, shorter than the involucres; corollas ligulate, 9.7-13.5 mm, yellow, those on the margin sometimes with a longitudinal reddish abaxial stripe, loosely villous at the apex of the tube, sometimes glabrous, tubes 6-8.4 mm, ligules 3.7-5.2 × 1-1.5 mm, narrowly elliptic, lobes 5, 0.3-0.5 mm, ovate, apex acute; anteropodium present, anthers 1.7-2.3 mm, base sagittate, connective appendage oblong, apex acute, obtuse or rounded; styles 9.5-10.9 mm, style branches 1.4-2.2 mm, linear, villous on the abaxial surface. Cypselae monomorphic, 9.5-13.9 mm, fusiform, beaked, beak 3-6.9 mm, body 5.7-7.6 mm, terete, with 5 longitudinal grooves, 15-veined, scaly on the body and densely villous on the grooves and along the beak, brown to light brown or stramineous, carpopodium present. Pappus homomorphic, 1-seriate, 11.3-14 mm, composed of 28 to 33 plumose, whitish bristles.

Additional iconography. Cabrera (1941: 396, fig. 129); Cabrera (1974: 516, fig. 308); Urtubey et al. (2019: 152, fig. 66).

Distribution and habitat. Argentina (Buenos Aires, Catamarca, Chubut, Córdoba, Entre Ríos, La Pampa, La Rioja, Mendoza, Salta, San Juan, San Luis) (Urtubey et al., 2019), and Uruguay, where it has been found in "blanqueales" (areas characterized by halomorphic soils) in the department of Río Negro (Fig. 17). It lives in halomorphic soils.

Phenology. Flowering and fruiting in spring, from the end of September.

Taxonomic notes. *Hypochaeris pampasica* can be recognized by its hirsute indument on stems, leaves and phyllaries, unbranched or slightly branched stems, corollas shorter than the involucres, with ligules shorter than tubes, and light brown cypselae with villous beaks equal to or shorter than the bodies.

Hypochaeris pampasica closely resembles *H. megapotamica* (see comments under this species) although it is rare to find specimens of *H. megapotamica* with branched stems along the basal and the middle portions. In the known population of *H. pampasica* in Uruguay it is common to see individuals with such characteristics intermingled with individuals with unbranched stems.

Hypochaeris pampasica may also be confused with *H. rosengurttii* in the fruiting state, since the general appearance of the plant and of the cypselae is very similar between both species. The main difference lies in its corollas not exserted from the involucre (vs. very exserted in *H. rosengurttii*). In the absence of florets, the most useful way to distinguish them is the environment in which they grow: *H. pampasica* occurs in sandy soils (Urtubey et al., 2019) while *H. rosengurttii* inhabits rocky or stony areas.

Observation. This is the first formal record of this species for Uruguay. Cabrera (1974) indicated its presence in the country but without referring to any herbarium specimens. Given the existence of collections in Argentina very close to the border with Uruguay, in Concordia (Entre Ríos) and Martín García Island, its presence in this country is not surprising and it is likely that in addition to Río Negro it may also be found in other places with sandy soils in other departments of western Uruguay.

Representative examined material

URUGUAY. **Río Negro.** Estancia Las Cadenas, 32° 31' 17.8'' S, 58° 02' 17.3'' W, 26-IX-2021, *A. Mailhos 82* (MVFA). Estancia Las Cadenas, 32° 31' 22.4'' S, 58° 02' 12.0'' W, 27-IX-2021, *A. Mailhos 84* (MVFA).

8. Hypochaeris petiolaris (Hook. & Arn.) Griseb., Symb. Fl. Argent. 218. (Abh. Königl. Ges. Wiss. Göttingen 24: 218.) 1879. *Seriola petiolaris* Hook. & Arn., Companion Bot. Mag. 1: 31. 1835. *Achyrophorus petiolaris* (Hook. & Arn.) DC., Prodr. 7(1): 94. 1838. TYPE: Argentina, "Buenos Ayres", 1825, *J. Tweedie s.n.* (lectotype K [000035231]! designated by Cabrera, Not. Mus. La Plata, Bot. 2: 199. 1937; isolectotype E [00322650]!). Figs. 20 and 21.

Herbaceous hemicryptophytes 5-45 cm tall, laticiferous; stems 1 to 14, erect or decumbent, simple or slightly branched basally, cylindrical, striated, sericeous, sometimes also scabrous. Basal leaves alternate, rosette-forming, sessile, 20-115 × 3-28 mm, narrowly obovate, entire to pinnatisect, base attenuate, apex acute, glabrous or scabrous on the midvein abaxially, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate or not; lobes ovate or oblong, 3-14 × 1-12 mm, apex acute, margin entire or dentate. Cauline leaves absent or few, generally reduced, alternate, sessile, 10-70 × 1-15 mm, linear or narrowly ovate, entire to pinnatipartite, base obtuse or truncate, apex acute, glabrous or scabrous on the abaxial midvein, penninervate, herbaceous, concolorous, margin flat, entire or dentate; lobes oblong to linear, 2-8 × 0.5-1 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 45-160(-315) mm, sericeous, sometimes also scabrous; bracts 1 to 5 on the peduncles, 1.6-23 × 0.6-1.1 mm, narrowly ovate to linear. Involucres 8-17 × 3-8 mm in flowering, 14-22 mm in fruiting, cylindrical or campanulate; phyllaries free, graded in size, arranged in 3 to 4 series; outer phyllaries 2.8-4.5 × 1-2 mm, ovate, base obtuse, apex subacute, greenish or dark on the apex and midvein, adaxially glabrous, abaxially sericeous or puberulous, rarely scabrous to densely hirsute, uninervate, membranaceous, margin ciliate towards the apex; inner phyllaries 7.4-16.6 × 1.4-2.8 mm, narrowly ovate, base obtuse, apex acute or subacute, greenish or dark at the apex, adaxially glabrous, abaxially sericeous or puberulous, rarely scabrous to hirsute on midvein, palmatinervate, membranaceous, margin ciliate towards the apex. Receptacles paleaceous, convex, scrobiculate; paleae 10.9-18.4 × 0.7-1.3 mm, narrowly ovate or oblong to linear, base obtuse or truncate, apex attenuate, filiform, with some short trichomes on the apex, membranaceous, margin entire or with a pair of subapical teeth. Florets 34 to 145, perfect, slightly shorter, equal to, or slightly longer than the involucre; corollas ligulate, 5.6-11.5 mm, yellow, those on the margin with a longitudinal reddish abaxial stripe, glabrous, tubes 3-7.5 mm, ligules 2.1-4.1 × 0.8 -1.2 mm, elliptical, lobes 5, 0.2-0.4 mm, triangular, apex acute; anteropodium present, anthers 1.2-1.7 mm, base sagittate, connective appendage oblong, apex rounded; styles 5.1-10.5 mm, style branches 0.7-1.3 mm, linear, villous on the abaxial surface. Cypselae monomorphic, 5.9-10.5 mm, fusiform, beaked, beak 2.3-5.5 mm, body 3.3-5 mm, terete, with 5 longitudinal grooves, 15-veined, scaly, dark brown, carpopodium present. Pappus homomorphic, 1-seriate, 6.6-10 mm, composed of 19 to 25 plumose, stramineous or whitish bristles.

Additional iconography. Cabrera (1974: 525, fig. 315); Urtubey et al. (2019: 145, fig. 62).

Distribution and habitat. Argentina (Buenos Aires, Catamarca, Chubut, Córdoba, Entre Ríos, La Pampa, San Luis, Santa Fé, Río Negro, Tucumán) (Urtubey et al., 2019), and Uruguay, where it occurs in the departments of Canelones, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, San José and Soriano (Fig. 17). *Hypochaeris petiolaris* frequently inhabits low grasslands but also grows on slopes or in the lower stratum of woody savannas.

Phenology. Flowering from the end of September to the end of November; fruiting from late October to mid-December.

Taxonomic notes. *Hypochaeris petiolaris* is characterized by having unbranched or slightly branched stems, usually glabrous leaves (trichomes, when present, only occur along the margin and/or the abaxial midvein), corollas slightly shorter, equal to, or slightly longer than the involucres, with tubes longer than ligules, and dark brown cypselae with beaks shorter, subequal, or slightly longer than the bodies, with scales prominent on the body and sparse and reduced along the beak.

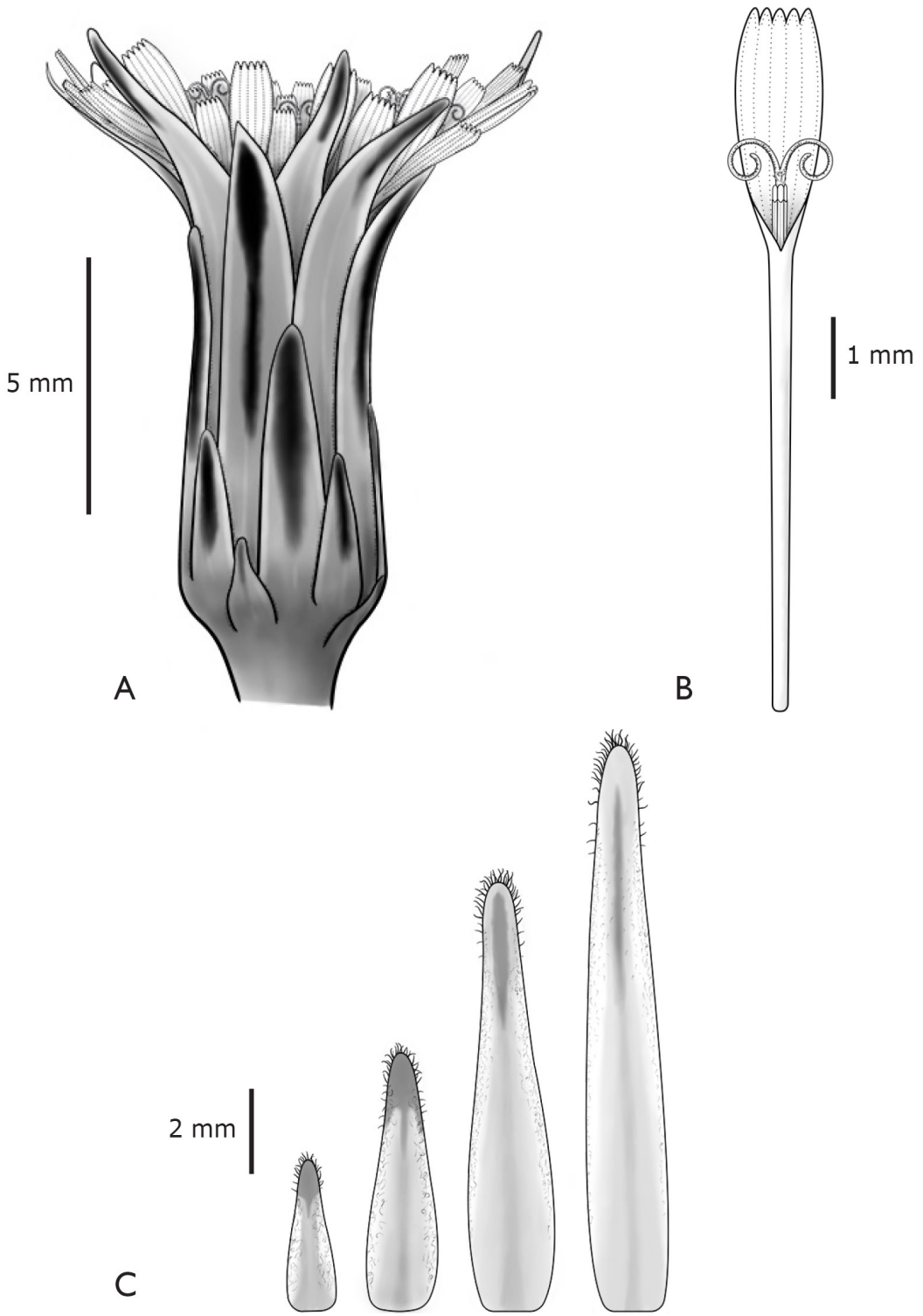

Fig. 20. *Hypochaeris petiolaris*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A, from *A. Mailhos 81* (MVFA); B, C, from *O. Del Puerto et al. s.n.* (MVFA 6386).

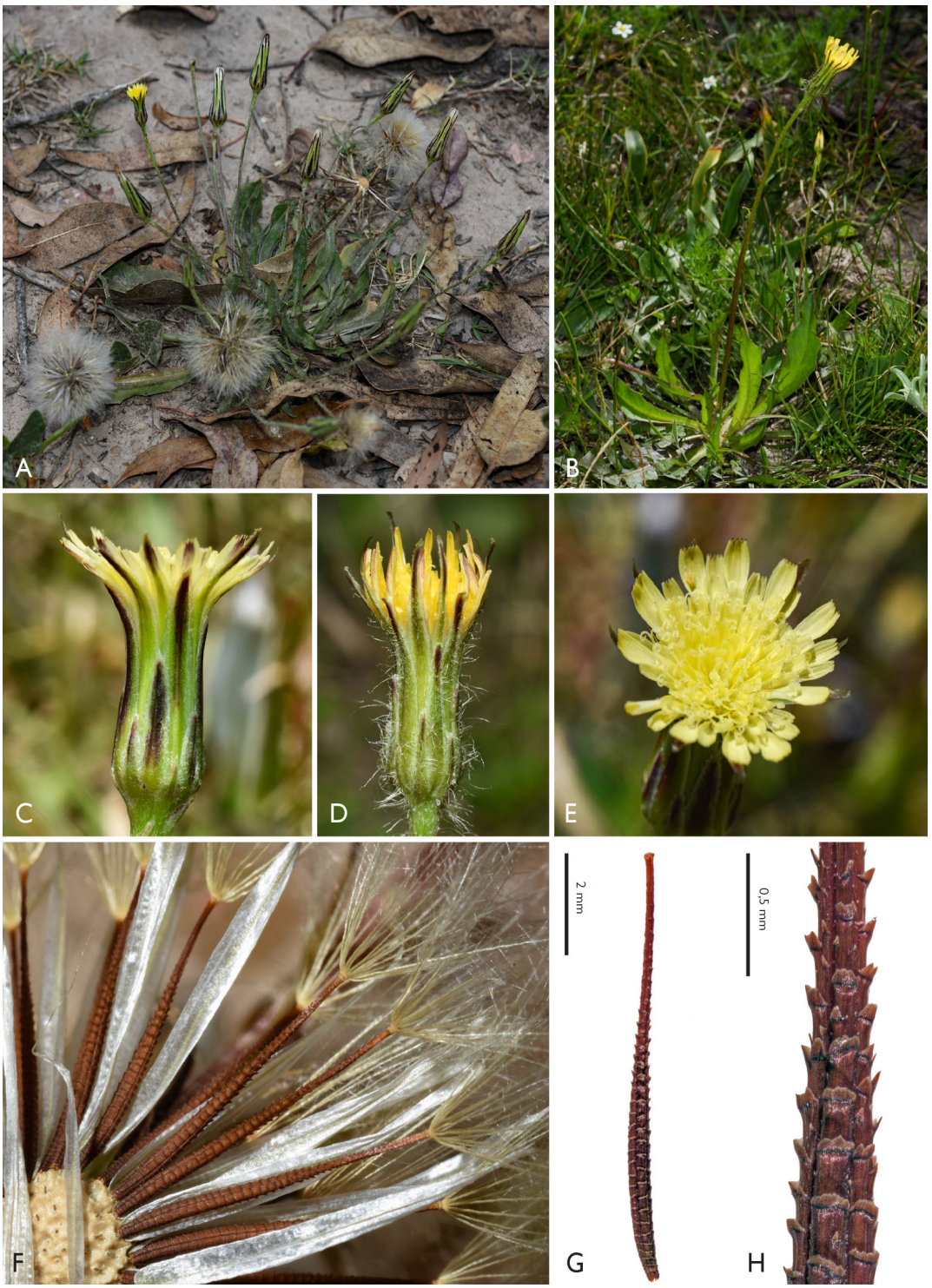

Fig. 21. *Hypochaeris petiolaris*. **A, B,** habit. **C-E,** flowering capitula. **F,** fruiting capitulum. **G,** cypsela. **H,** detail of scales on cypsela. B, D, *A. Mailhos 81* (MVFA); G, H, *O. Del Puerto & Codina s.n.* (MVFA 9837). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Hypochaeris petiolaris may resemble *H. megapotamica* which can be distinguished by its generally more robust appearance, with scabrous or hirsute indumentum on the surface of the leaves (vs. glabrous or mostly glabrous leaves), and long-beaked cypselae, villous on the beak, and light brown (vs. dark brown cypselae with beaks subequal to the bodies, sparsely scaly on the beak). *Hypochaeris petiolaris* can also be confused with *H. tropicalis*, which is very similar in appearance when flowering, but can be distinguished from by its deeply pinnatisect leaves with narrow or linear segments (vs. entire or divided leaves with ovate or oblong segments) and light brown cypselae with very short or absent beaks (vs. dark brown, conspicuously beaked cypselae).

Observation. *Hypochaeris petiolaris* is considered a priority species for conservation in Uruguay according to the SNAP ("Sistema Nacional de Áreas Protegidas") under criterion 2 (rare species, rarely collected, with no recorded populations) (Marchesi et al., 2013).

Representative examined material

URUGUAY. **Canelones.** Cerrillos, 20-XI-1970, *O. Del Puerto & Codina s.n.* (MVFA 9837). **Florida.** Casupá, 20-X-1964, *O. Del Puerto 3687* (MVFA). **Lavalleja.** Penitente, XI-1933, *F. Rosa Mato s.n.* (MVM 828). **Maldonado.** Cerro Pan de Azúcar, 19-XI-1938, *B. Rosengurtt B2693b* (MVFA). **Montevideo.** Lecocq, 2-XI-1960, *B. Rosengurtt B7775a* (MVFA). **Paysandú.** Agronomía, 6-XI-1937, *B. Rosengurtt B2166a* (MVFA, MVM 5943). **Río Negro.** Estancia Las Cadenas, 32° 31' 11.3'' S, 58° 02' 19.6'' W, 26-IX-2021, *A. Mailhos 81* (MVFA). **Rivera.** San Pedro, 10-XII-1936, *A. Gallinal et al. PE376* (MVFA). **San José.** Entre Paso Mauricio y Libertad, 27-X-1967, *O. Del Puerto et al. s.n.* (MVFA 6386). **Soriano.** Juan Jackson, Monzón-Heber, parcela 5B, 23-XI-1937, *A. Gallinal et al. PE1180 ½* (MVFA, MVM 5939).

9. Hypochaeris rosengurttii Cabrera, Notas Mus. La Plata, Bot. 3: 150. f. 3. 1938 "*Hypochoeris"*. TYPE: Uruguay, Florida, Cerro Colorado, XII-1936, *B. Rosengurtt 262* (holotype, LP 060418 [003261]!). Figs. 22 and 23.

Herbaceous hemicryptophytes 7-20 cm tall, laticiferous; stems 1 to 14, erect or decumbent, simple or slightly branched basally, cylindrical, striated, scabrous to hirsute, sometimes also puberulous to pubescent. Basal leaves alternate, rosette-forming, sessile, 25-145 × 4-39 mm, narrowly obovate to linear, entire to pinnatisect, base attenuate, apex acute, scabrous to hirsute mainly on the midvein on both sides, sometimes also puberulous, penninervate, herbaceous, concolorous, margin flat, generally entire, sometimes dentate, ciliate or not; lobes ovate or oblong, 2-18 × 1-8 mm, apex acute, margin entire or slightly dentate. Cauline leaves absent or few, alternate, sessile, 16-125 × 1-12 mm, narrowly obovate or ovate to linear, entire to pinnatifid, base acute, apex acute or attenuate, scabrous to hirsute, mainly on the midvein on both sides, sometimes also puberulous, penninervate, herbaceous, concolorous, margin flat, entire; lobes narrowly ovate or oblong, 3-4.5 × 0.5-2 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 55-180 mm, scabrous to hirsute, also puberulous to pubescent towards the apex; bracts 4 to 7 on the peduncles, 3-12 × 0.5-1.2 mm, narrowly ovate to linear. Involucres 11-20 × 4-11 mm in flowering, 17-21 mm in fruiting, campanulate; phyllaries free, graded in size, arranged in 4 or 5 series; outer phyllaries 3.4-6.4 × 1-1.8 mm, narrowly ovate, base obtuse, apex acute or subacute, green to dark green or violaceous on the entire surface or only at the apex and/or midvein, adaxially glabrous, abaxially puberulous to pubescent on margins and glabrous or scabrous to densely hirsute on midvein, uninervate, membranaceous, margin ciliate; inner phyllaries 10.8-19.7 × 1.7-2.9 mm, narrowly ovate, base rounded or truncated, apex acute, green to dark green or purplish towards the apex, adaxially glabrous, abaxially pubescent towards the apex and glabrous or scabrous on midvein, palmatinervate, membranaceous, margin ciliate towards the apex. Receptacles paleaceous, convex, scrobiculate; paleae 15.5-20.7 × 1-1.7 mm, linear, base truncate, apex attenuate, filiform, with some short trichomes on the apex, membranaceous, entire margin or with a pair of subapical teeth. Florets 28 to 73, perfect, much longer than the involucres; corollas ligulate, 12.5-23.8 mm, yellow, those on the margin with a longitudinal white or reddish abaxial stripe, villous at the apex of the tube, tubes 4.5-9.1 mm,

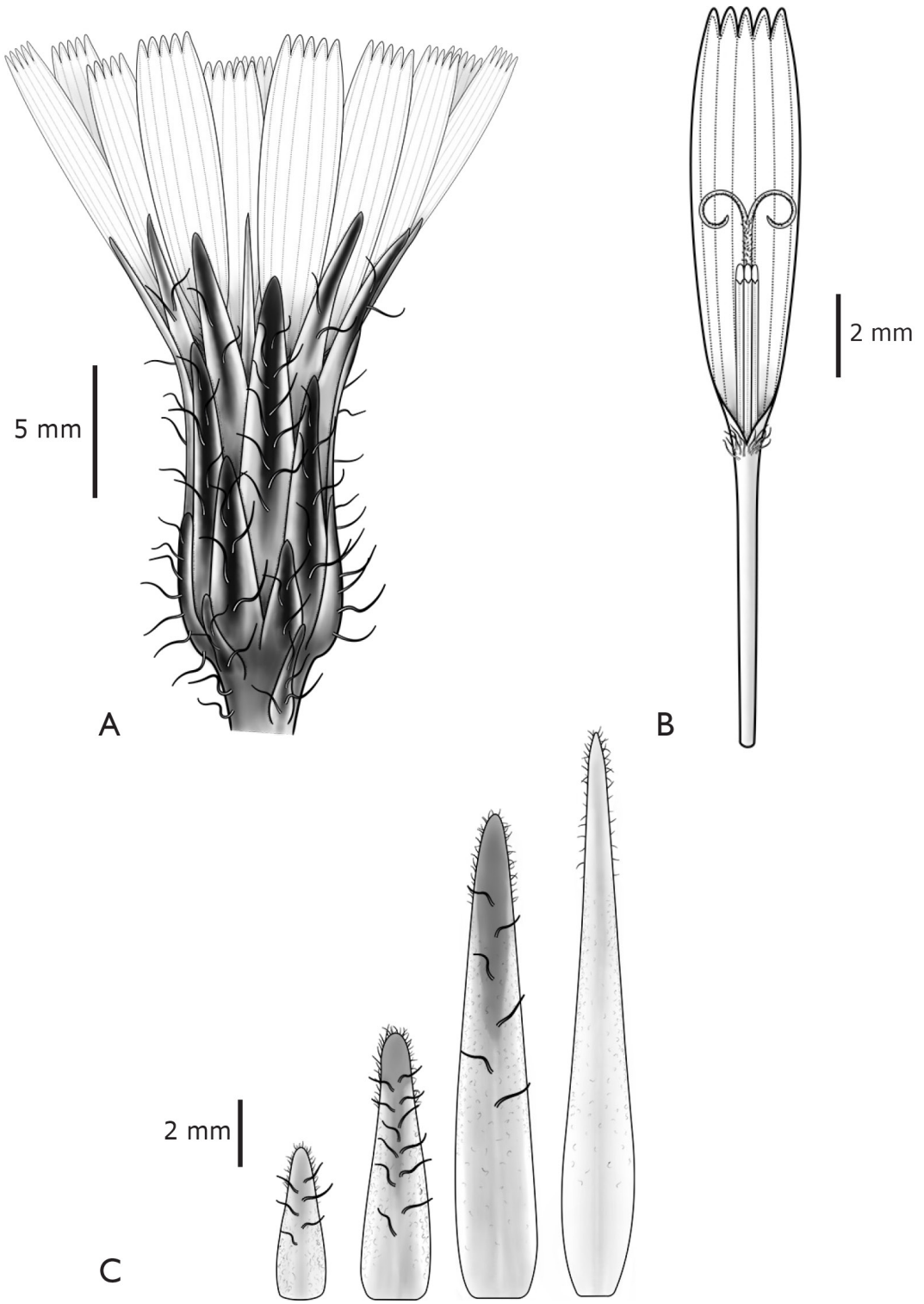

Fig. 22. *Hypochaeris rosengurttii*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A, from *A. Mailhos 61* (MVFA); B, C, from *A. Mailhos 62* (MVFA).

Fig. 23. *Hypochaeris rosengurttii*. **A,** habitat, rocky grassland in Sierra de las Ánimas, Maldonado, Uruguay. **B, C,** habit. **D,** basal rosette. **E-G,** flowering capitula. **H,** fruiting capitulum. **I,** cypsela. **J,** detail of scales on cypsela. B, E, *A. Mailhos 61* (MVFA); C, F, I, J, *A. Mailhos 62* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

ligules 8-14.7 × 1.8-3.2 mm, narrowly elliptical, lobes 5, 0.4-0.7(-1.2) mm, triangular, apex acute; anteropodium present, anthers 3.8-5.6 mm, base sagittate, connective appendage ovate or oblong, apex acute or rounded; styles 9.9-15.3 mm, style branches 1.7-2.8 mm, linear, villous on the abaxial surface. Cypselae monomorphic, 6.7-13 mm, fusiform, beaked, beak 2.4-6 mm, body 4-7.5 mm, terete, with 5 longitudinal grooves, 15-veined, scaly on the body, villous on grooves and along the beak, brown to stramineous, carpopodium present. Pappus homomorphic, 1-seriate, 8-12 mm, composed of 22 to 33 plumose, stramineous or whitish bristles.

Additional iconography. Cabrera (1938: 153, fig. 3).

Distribution and habitat. Argentina (Buenos Aires), Brazil (Rio Grande do Sul), and Uruguay, where it occurs in the departments of Cerro Largo, Colonia, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, San José, Tacuarembó and Treinta y Tres (Fig. 24). *Hypochaeris rosengurttii* inhabits sunny places in rocky or stony grasslands, often on slopes and hilltops.

Phenology. Flowering from mid-October to mid-December; fruiting from late October to late December.

Taxonomic note 1. *Hypochaeris rosengurttii* is characterized by having unbranched stems or scarcely branched at the base, corollas very exserted from the involucres, with ligules longer than tubes, and short-beaked, brown or stramineous cypselae, with villous beaks.

Hypochaeris rosengurttii can be confused with specimens of *H. variegata* with unbranched stems, but these differ by their phyllaries with markedly tomentose and whitish margins (vs. phyllaries with puberulous or pubescent margins, not conspicuously whitish), and by their dark-colored, long-beaked cypselae, glabrous or sparsely scaly along the beak (vs. cypselae with beaks shorter than the bodies, villous, and brown or stramineous). *Hypochaeris rosengurttii* is also similar to *Hypochaeris pampasica* in the fruiting state (see comments under this species).

Hypochaeris rosengurttii is a highly variable species in terms of the appearance of its leaves and involucres, even within the same population. The leaves can be entire or pinnatisect and almost glabrous or hirsute, while phyllaries may vary from barely puberulous to densely hirsute, greenish or purple only at the apex or along the entire abaxial surface.

Taxonomic note 2. Cabrera (1938) described this species based on material from Uruguay, and later defined the variety *Hypochaeris rosengurttii* var. *pinnatifida* (Speg.) Cabrera based on specimens from the hill ranges of Buenos Aires, Argentina (Cabrera, 1941). In that study, Cabrera indicated that the main difference between both varieties lies in the degree of division of the leaves: entire or dentate in the type variety and lobed to pinnatisect in *H. rosengurttii* var. *pinnatifida*. Cabrera also indicated differences in the size of the capitula, but the range values of this trait overlap for both varieties.

During the course of this revision, we noticed that leaf division is a highly variable character and lacks taxonomic value in this species, with entire and pinnatisect leaves found in individuals of the same population, or sometimes even in the same individual. This does not mean, however, that both varieties should be treated as synonyms. The close inspection of the original descriptions of both varieties reveals a third difference between them: the color of the corollas in *Hypochaeris rosengurttii* var. *pinnatifida* is described as very pale yellow ("amarillo muy pálido"), while in the type variety it is simply described as yellow. Cabrera did not rely in this difference because probably he either did not personally see Uruguayan populations or thought the color variation to be a not very reliable and maybe subjective character. According to the information available on herbarium labels and photos available online of Argentinean plants of this species, together with the information present on specimens on Uruguayan herbaria as well as our own field observations, we confirm that there is indeed a clear and consistent difference in the color of the corollas between plants from both countries, which supports their treatment as two different taxonomic entities.

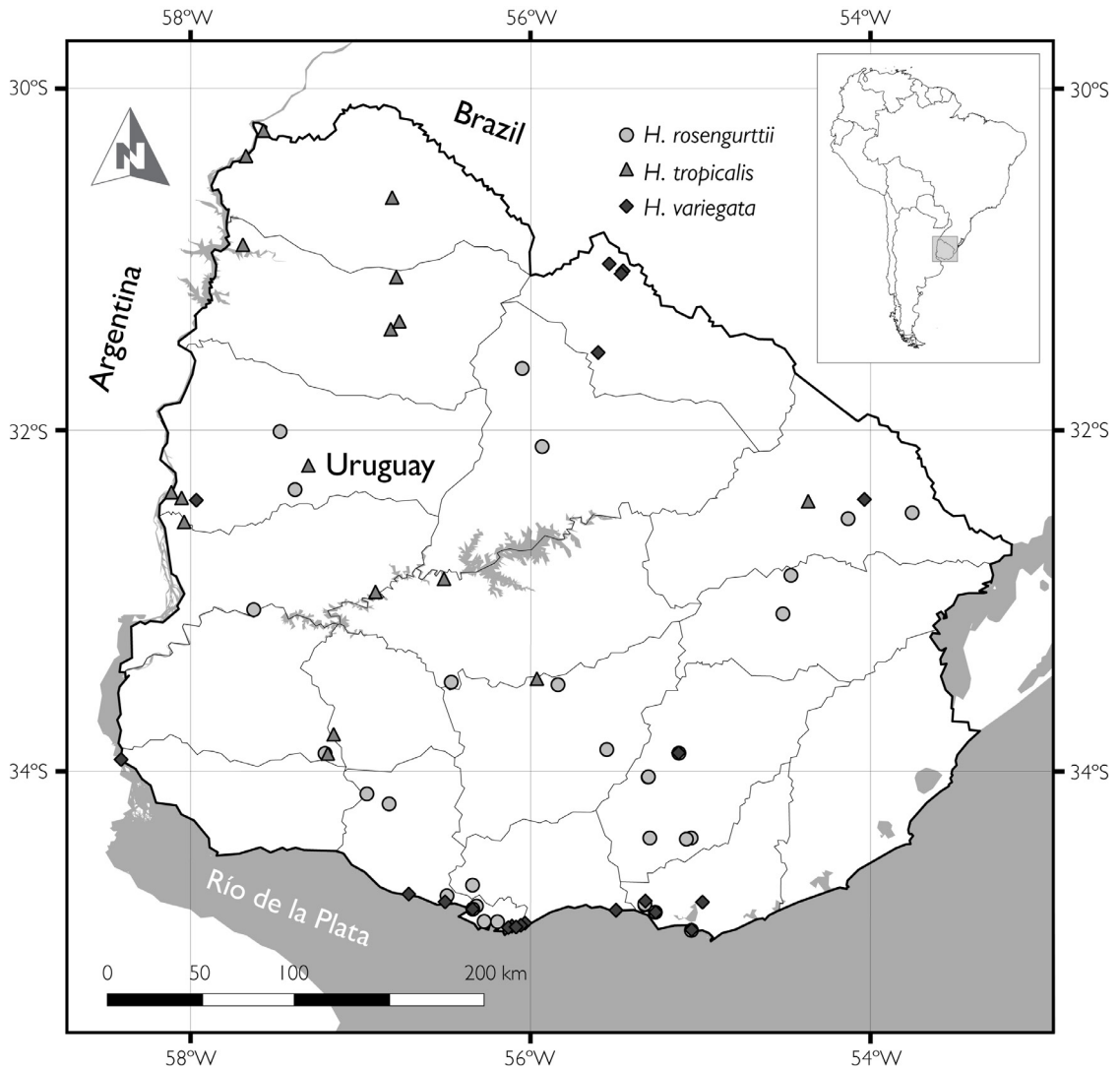

Fig. 24. Distribution of *Hypochaeris rosengurttii*, *H. tropicalis* and *H. variegata* in Uruguay.

Taxonomic note 3. Azevêdo-Gonçalves & Matzenbacher (2005a, 2006, 2007) synonymized the type variety of *Hypochaeris rosengurttii* under *H. lutea*, a species until then known only from southeastern Brazil and eastern Paraguay, while at the same time elevating *H. rosengurttii* var. *pinnatifida* to species rank under the name *H. neopinnatifida*. After exhaustive analysis of numerous herbarium specimens and digitized images, as well as the original descriptions of both species, we consider that this synonymy is erroneous and that *H. rosengurttii* should be maintained as a separate species from *H. lutea*.

Azevêdo-Gonçalves & Matzenbacher (2005a) state that they found no consistent differences between *Hypochaeris rosengurttii* var. *rosengurttii* and *H. lutea* when it comes to the indumentum, the size of cauline leaves and the size of capitula. This is true, those characters are of little taxonomic utility due to the plasticity they usually show; however, other characters allow to consistently differentiate both entities.

Hypochaeris lutea very frequently has branched stems in the distal half (vs. unbranched stems or stems branched once near the base in *H. rosengurttii*, very rarely branched at the middle portion). Although this is true for the vast majority of specimens, some individuals of *H. lutea* may produce unbranched stems. Regardless of this minor overlap, both species can also be differentiated by the scales of the cypselae. In *Hypochaeris lutea* cypselae have extremely short transverse scales, giving them an almost smooth appearance, and leaving the beak bare, while in *H. rosengurttii* the cypselae have very prominent scales and a conspicuously villous beak all the way up to the apex, "densely papillose" according to Cabrera (1938) (Fig. 23I, J; Fig. 25).

Additionally, there are habitat differences between both entities: *Hypochaeris lutea* is strongly associated with humid or swampy sites in elevated areas (Matzenbacher, 1998; Azevêdo-Gonçalves & Matzenbacher, 2007), while *H. rosengurttii* is found in dry, stony or rocky environments, along hill ranges or at sea level.

Finally, *Hypochaeris lutea* has an extended flowering period, ranging from July to March (Azevêdo-Gonçalves & Matzenbacher, 2007; Urtubey et al., 2019), in contrast to *H. rosengurttii*, which flowers only from October to mid-December.

Taxonomic note 4. Tremetsberger et al. (2006) claim to have corroborated through the use of AFLP markers that *Hypochaeris lutea sensu* Azevêdo-Gonçalves & Matzenbacher (which includes *H. rosengurttii* var. *rosengurttii*) is not closely related to *H. neopinnatifida* (= *H. rosengurttii* var. *pinnatifida*), thus endorsing the synonymy between *H. lutea* and *H. rosengurttii* var. *rosengurttii* proposed by Azevêdo-Gonçalves & Matzenbacher (2005a). However, this conclusion is problematic, since said study only incorporated a single specimen of *H. lutea sensu* Cabrera from the Porto Alegre region in Rio Grande do Sul (ICN 063890!). In order to correctly support the synonymy, specimens corresponding to the name that was synonymized (i.e., *H. rosengurttii* var. *rosengurttii*) should have also been included in the analysis. As it stands, Tremetsberger et al. (2006) showed that *H. lutea sensu* Cabrera is not related to *H. neopinnatifida*, but not that *H. rosengurttii* var. *rosengurttii* isn't.

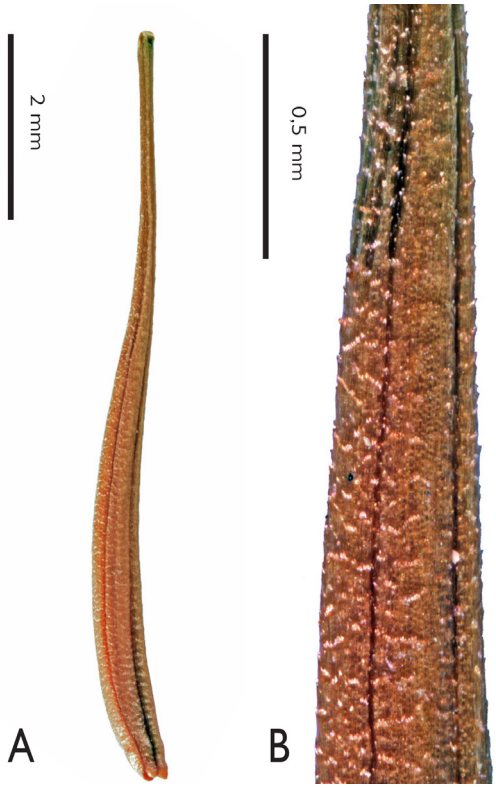

Fig. 25. *Hypochaeris lutea*. **A,** cypsela. **B,** detail of scales on cypsela. A, B, from *B. Rosengurtt & O. Del Puerto 8752* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Observation. *Hypochaeris rosengurttii* is considered a priority species for conservation in Uruguay according to the SNAP under criterion 1 (species endemic to the Uruguayan region) (Marchesi et al., 2013).

Representative examined material

URUGUAY. **Cerro Largo.** Ruta 26 km 48.5, 17-XI-1987, *E. Marchesi et al. s.n.* (MVFA 19171). **Colonia.** Unspecified locality, 1913, *A. Teisseire 4543* (MVM). **Florida.** Rincón de Santa Elena, arroyo Mansavillagra, XI-1946, *B. Rosengurtt & A. Gallinal 5754* (MVFA). **Lavalleja.** Camino a caída del Penitente, 2-XI-1994, *D. Bayce et al. s.n.* (MVFA 24077). **Maldonado.** Punta Ballena, 15-XII-1963, *E. Marchesi 657* (MVFA). **Maldonado.** Sierra de las Ánimas, 3-XI-1963, *E. Marchesi 574* (MVFA). **Montevideo.** Parque Lecocq, 27-X-1961,

B. Arrillaga 982b (MVFA). **Paysandú.** Ruta 90, entre cañada Francisquito y Cueva del Tigre, estancia El Refugio, 15-XI-1991, *E. Marchesi & P. Armand-Ugón s.n.* (MVFA 20692). **Río Negro.** Río Negro y arroyo Yapeyú, campo El Jabalí, 25-X-1993, *E. Marchesi & P. Armand-Ugón s.n.* (MVFA 22407). **San José.** Sierra de Mahoma, 34° 06' 55.6" S, 56° 57' 35.7" W, 28-X-2020, *A. Mailhos 62* (MVFA). **Tacuarembó.** Gruta de los Cuervos, 3-XI-1990, *E. Marchesi & D. Bayce s.n.* (MVFA 19960a). **Treinta y Tres.** Paisaje Protegido Quebrada de los Cuervos, 32° 50' 08.3" S, 54° 27' 32.3" W, 7-XI-2018, *A. Mailhos & C. Pérez 41* (MVFA).

10. Hypochaeris tropicalis Cabrera, Bol. Soc. Argent. Bot. 10: 191, f. 10. 1963, "*Hypochoeris"*. TYPE: Paraguay, Paraguarí, Ybytymi, 13-X-1952, *J. E. Montes 12991* (lectotype, LP 907236 [003263]! designated by Freire & Iharlegui, Darwiniana 38: 323. 2000; isolectotypes LP 907254 [003264]!, K [000035248]!). Figs. 26 and 27.

Hypochaeris tropicalis var. *australis* Cabrera, Bol. Soc. Argent. Bot. 10: 194, f. 11. 1963, "*Hypochoeris"*. TYPE: Argentina, Corrientes, Mercedes, 14-X-1961, *T. M. Pedersen 6129* (holotype LP [003267]!).

Herbaceous hemicryptophytes 6-30 cm tall, laticiferous; stems 1 to 9, erect or decumbent, simple or slightly branched at the basal or middle portions, cylindrical, striated, scabrous to hirsute and puberulous. Basal leaves alternate, rosette-forming, sessile, 20-170 × 3-35 mm, linear or narrowly elliptic, entire to pinnatisect, base attenuate base, apex acute, hirsute on the abaxial midvein, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate or not; lobes narrowly ovate, oblong or obovate to linear, 3-31 × 1-4 mm, apex acute, margin entire. Cauline leaves absent or few, reduced towards the apex of stems, alternate, sessile, 8-70 × 1-14 mm, linear or narrowly ovate, proximal ones pinnatisect, distal ones entire, base obtuse, apex acute, glabrous to puberulous on both sides, abaxial midvein sometimes hirsute, penninervate, herbaceous, concolorous, margin flat, entire or with some teeth towards the base, ciliate or not; lobes narrowly ovate, 2-8 × 0.5-2 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 23-117 mm, scabrous to hirsute and puberulous; bracts 0 to 3 on the peduncles, 2.3-10 × 0.5-1.1 mm, ovate to linear. Involucres 9-17 × 3-7 mm in flowering, 15-18 mm in fruiting, cylindrical; phyllaries free, graded in size, arranged in 3 or 4 series; outer phyllaries 2.5-4.6 × 0.8-1.9 mm, ovate or narrowly ovate, base obtuse, apex subacute or rounded, greenish or dark at the apex and midvein, adaxially glabrous, abaxially puberulous to tomentose on margins uninervate, membranaceous, margin ciliate; inner phyllaries 10.5-13.3 × 1.6-2.8 mm, narrowly ovate, base acute, apex acute or subacute, greenish or dark at the apex and midvein, glabrous on both sides or puberulous to tomentose on the margin abaxially, palmatinervate, membranaceous, margin ciliate. Receptacles paleaceous, flat, scrobiculate; paleae 8.7-13.9 × 1-1.5 mm, narrowly ovate or elliptic, base obtuse, apex attenuate, filiform, with some sparse, short indumentum abaxially, membranaceous, margin entire or with a couple of subapical teeth. Florets 13 to 29, perfect, equal to or slightly longer than the involucres; corollas ligulate, 8.1-10.8 mm, yellow, those on the margin with a longitudinal reddish abaxial stripe, glabrous, tubes 4.9-6.7 mm, ligules 2.7-4.6 × 0 .8-1.3 mm, elliptical, lobes 5, 0.2-0.5 mm, triangular, apex acute; anteropodium present, anthers 1.4-2.2 mm, base sagittate, connective appendage oblong or ovate, apex acute or rounded; styles 8-10.5 mm, style branches 1.1-1.8 mm, linear, villous on abaxial surface. Cypselae monomorphic, 5-7.6 mm, fusiform, beak absent or reduced, up to 1 mm, terete, with 5 longitudinal grooves, 15-veined, scaly, villous at the apex, brown to light brown or stramineous, carpopodium present. Pappus homomorphic, 1-seriate, 8.3-10.4 mm, composed of 24 to 32 plumose, stramineous or whitish bristles.

Additional iconography. Cabrera (1963: 192, 194, figs. 10, 11); Urtubey et al. (2019: 160, fig. 70).

Distribution and habitat. Argentina (Corrientes, Entre Ríos, Misiones), Brazil (Río Grande do Sul), Paraguay (Itapúa, Presidente Hayes) (Urtubey et al., 2019), and Uruguay, where it is found in the departments of Artigas, Cerro Largo, Flores, Florida, Paysandú, Río Negro, Salto and Soriano (Fig. 24).

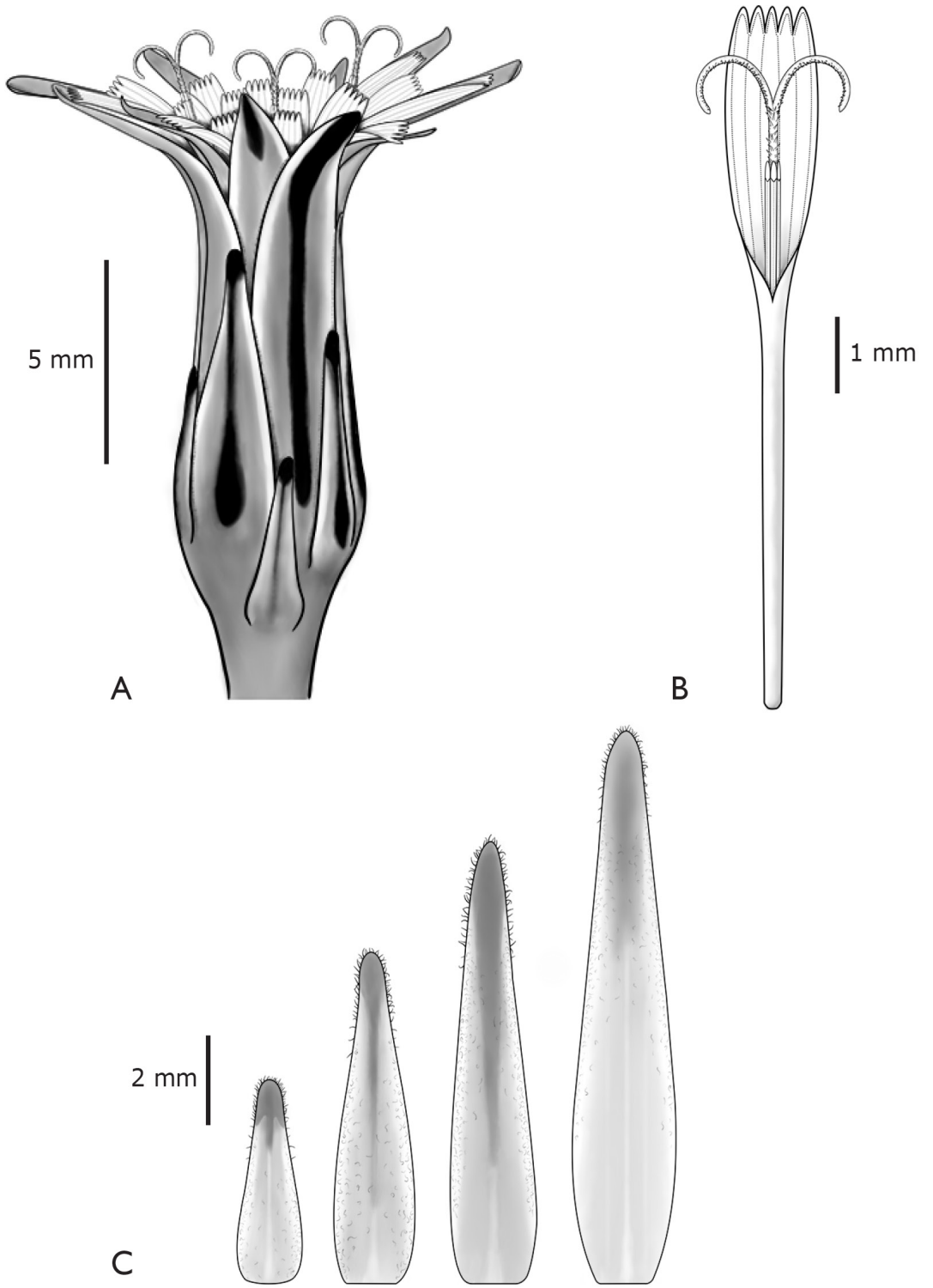

Fig. 26. *Hypochaeris tropicalis*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *A. Rossado 546* (MVFA).

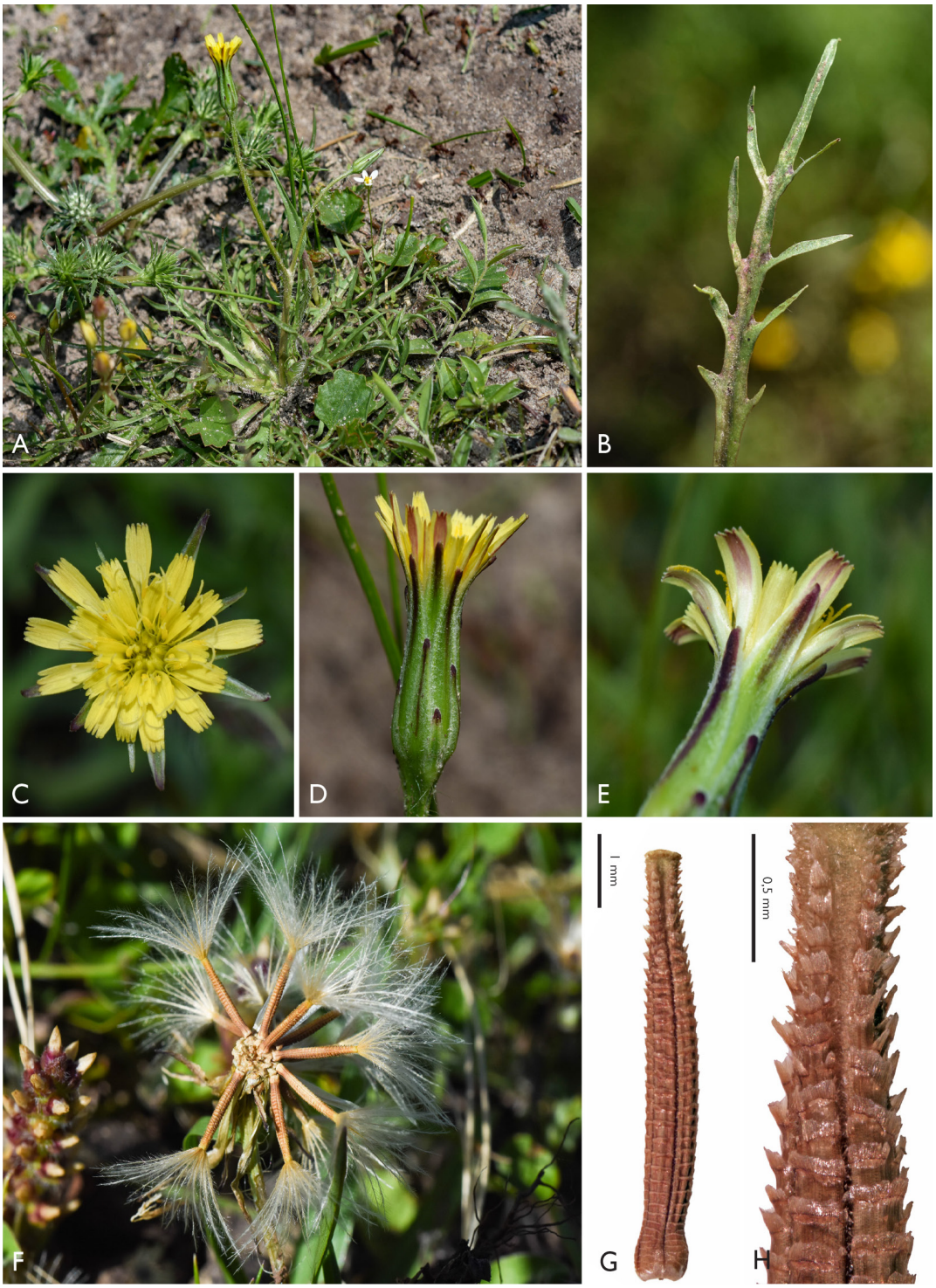

Fig. 27. *Hypochaeris tropicalis*. **A,** habit. **B,** basal leaf. **C-E,** flowering capitula. **F,** fruiting capitulum. **G,** cypsela. **H,** detail of scales on cypsela. G, H, *B. Arrillaga et al. 1720* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Hypochaeris tropicalis inhabits sparse or stony grasslands, as well as halomorphic soils on the edges of "blanqueales". It is the most frequent species of the genus in basaltic areas from northern Uruguay.

Phenology. Flowering and fruiting from mid-September to the end of December.

Taxonomic notes. *Hypochaeris tropicalis* is characterized by having unbranched or somewhat branched stems, pinnatisect basal leaves with narrowly oblong to linear segments (when present, entire leaves are generally the first leaves produced by the plant, with subsequent ones becoming pinnatisect), with trichomes present only along the abaxial midvein, corollas slightly shorter to slightly longer than the involucres, corolla tubes somewhat larger than ligules, and light brown cypselae with reduced or absent beaks.

Representative examined material

URUGUAY. **Artigas.** Arroyo Cuaró Chico, paso del Ombú, cerca de Paguero, 30° 37' 13'' S, 56° 48' 40'' W, 22-XII-2018, *A. Rossado et al. 546* (MVFA). **Cerro Largo.** Ruta Melo, bañado Medina, 20-X-1957, *B. Rosengurtt B6646* (MVFA). **Durazno.** Camino a planta UPM, 31° 35' 18.9'' S, 55° 37' 41.3'' W, 12-XI-2021, *A. Mailhos et al. 101* (MVFA). **Flores.** Santa Adelaida, 21-XI-1937, *B. Rosengurtt 1150* (MVFA). **Florida.** Rincón de Santa Elena, Cueva del Tigre, 2-XI-1946, *B. Rosengurtt* & *A. Gallinal PE5728* (MVFA). **Paysandú.** Cerca del autódromo, 32° 20' 51.2'' S, 58° 06' 49.2'' W, 15-X-2018, *M. Bonifacino et al. 6627* (MVFA). **Río Negro.** Próximo a Palmar de Porrúa, 32° 55' 54.8'' S, 56° 54' 31.1'' W, 15-X-2018, *M. Bonifacino et al. 6656* (MVFA). **Salto.** Ruta 31 a 95 km de Tacuarembó, rumbo a Salto, 17-XI-1995, *M. Bonifacino s.n.* (MVFA 25170). **Soriano.** Monzón-Heber, 19-XI-1937, *A. Gallinal et al. PE773a* (MVFA).

11. Hypochaeris variegata (Lam.) Baker, Fl. Bras. 6(3): 333. 1884. *Hieracium variegatum* Lam., Encycl. 2: 362. 1786. *Apargia variegata* (Lam.) Willd., Sp. Pl. 3: 1553. 1800. *Leontodon variegatus* (Lam.) Poir., Encycl. Suppl. 3: 455. 1814. *Achyrophorus variegatus* (Lam.) Sch. Bip., Nov. Actorum Acad. Caes. Leop.-Carol. German. Nat. Cur. 21: 119. 1845. *Hypochaeris variegata* var. *typica* Speg., Contr. Fl. Sierra Vent. 39. 1896, *nom. invalid*. TYPE: Uruguay ("Paraguay"), "E. Bonavia, circa Montevideo", 16-28-II-1767 (Bougainville, 1772), *P. Commerson s.n.* (lectotype P [03780547]! designated by Urtubey et al., Syst. Bot. Monogr. 106: 146. 2019). Figs. 28 and 29.

Hypochaeris variegata var. *glaucescens* Speg., Contr. Fl. Sierra Vent. 39. 1896. TYPE: Argentina, Buenos Aires, Sierra de la Ventana, XI-1895, *C. Spegazzini s.n.* (holotype LP, not seen).

Hypochaeris variegata var. *nana* Speg., Contr. Fl. Sierra Vent. 39. 1896. TYPE: Argentina, Buenos Aires, Sierra de la Ventana, XI-1895, *C. Spegazzini s.n.* (holotype LP [000096]!).

Herbaceous hemicryptophytes 15-50 cm tall, laticiferous; stems 1 to 6, erect, simple or slightly branched in the basal ⅔, cylindrical, striated, pubescent to tomentose, generally also scabrous to hirsute. Basal leaves alternate, rosette-forming, sessile, 40-175 × 12-40 mm, obovate or narrowly obovate, generally entire, pinnatipartite, base attenuate, apex acute or obtuse, glabrous or scabrous to hirsute on the midvein on both sides, sometimes also scabrous on the margins adaxially, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate or not; lobes oblong or deltoid, 4-15 × 3-10 mm, apex acute, obtuse or rounded, margin entire or with small teeth. Cauline leaves absent or few and reduced or bract-like, sessile, 27-75 × 7-20 mm, ovate to narrowly ovate or obovate, entire to pinnatipartite, base truncate, apex acute, glabrous or scabrous on the abaxial midvein and/or towards the adaxial margin, penninervate, herbaceous, concolorous, margin flat, entire or dentate, ciliate; lobes narrowly ovate or deltoid, 3-6 × 2-4 mm, apex acute, margin entire. Capitula homogamous, terminal, solitary, peduncles 65-250 mm, scabrous to hirsute, and pubescent to tomentose; bracts 1 to 9 on peduncles, 3-25 × 1-4 mm, narrowly ovate to linear. Involucres 10-20 × 7-15 mm in flowering, 16-23 mm in fruiting, campanulate; phyllaries free, graded in size, arranged in 4 or 5 series; outer phyllaries 3.6-8 × 1.1-2.1 mm, narrowly ovate or oblong,

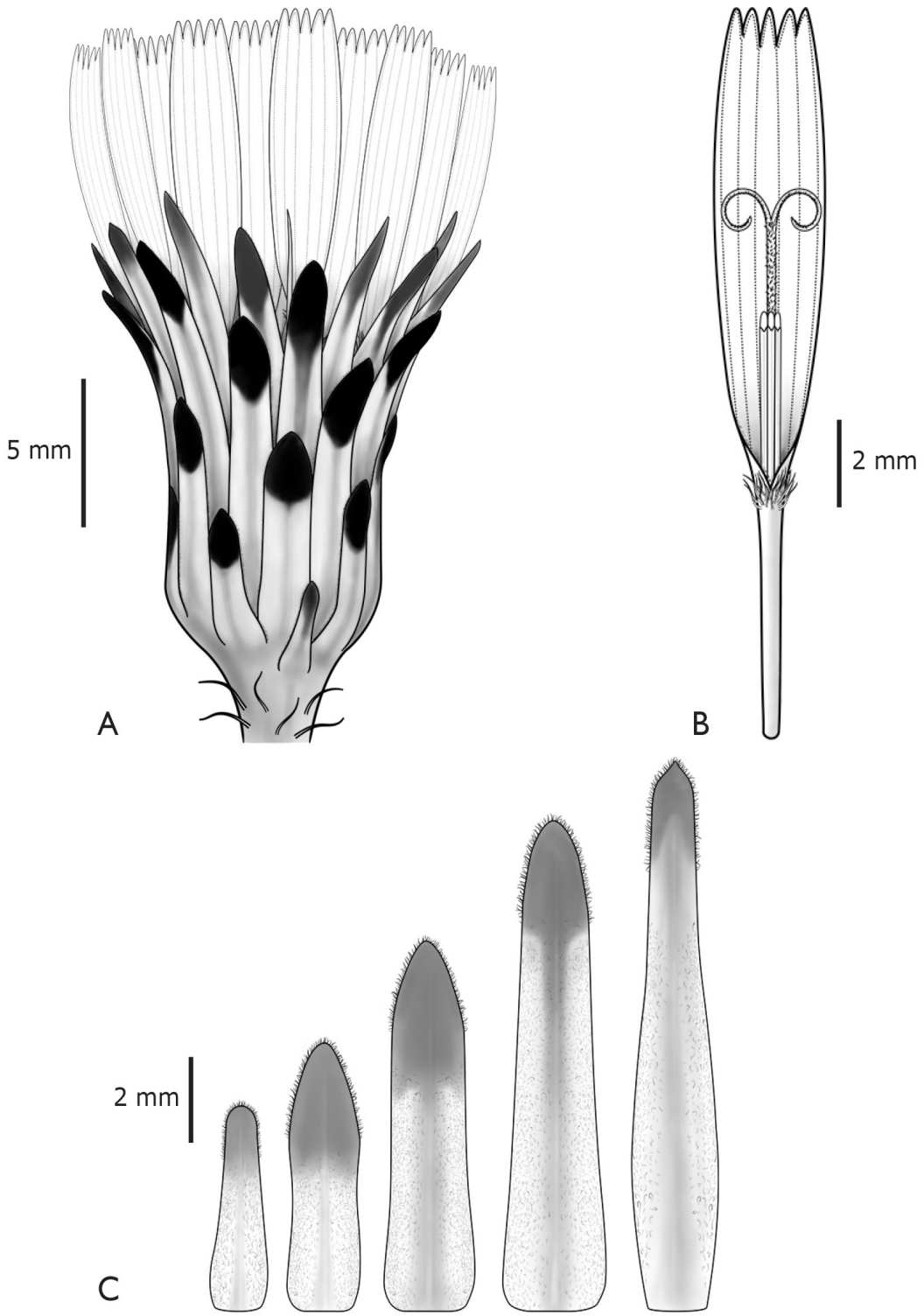

Fig. 28. *Hypochaeris variegata*. **A,** capitulum. **B,** floret (ovary and pappus not represented). **C,** phyllaries. A-C, from *M. Bonifacino et al. 6588* (MVFA).

Fig. 29. *Hypochaeris variegata*. **A,** habit. **B,** basal rosette. **C-E,** flowering capitula. **F,** capitulum with hirsute phyllaries, Pan de Azúcar population, Maldonado, Uruguay. **G,** fruiting capitulum. **H,** cypsela. **I,** detail of scales on cypsela. F, *A. Mailhos & A. Rossado 51* (MVFA); H, I, *O. Del Puerto & J. Millot 605* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

base truncate, apex obtuse or rounded, dark at the apex, adaxially glabrous, abaxially puberulous to tomentose on margins, glabrous on apex and midvein, rarely with long trichomes on the midvein, uninervate, membranaceous, margin ciliate; inner phyllaries 12.5-18 × 1.8-2.9 mm, narrowly ovate, base rounded or truncate, apex acute, dark at the apex, adaxially glabrous, abaxially pubescent to tomentose on subapical margins, palmatinervate, membranaceous, margin ciliate. Receptacles paleaceous, slightly convex, scrobiculate; paleae 10.1-18.7 × 1.2-2 mm, narrowly ovate to linear, base truncate, apex attenuate, filiform, glabrous, membranaceous, margin entire or with few subapical teeth. Florets 47 to 179, perfect, much longer than the involucres; corollas ligulate, 9.3-24.8 mm, yellow, those on the margin with a white, reddish or purple abaxial longitudinal stripe, villous at the apex of the tube, tubes (3,2-)5,4-9,1 mm, ligules (6,1-)8.5-15.7 × 1.4-3.3 mm, narrowly elliptic, lobes 5, 0.2-0.8 mm, triangular, apex acute; anteropodium present, anthers 3.1-5.3 mm, base sagittate, connective appendage oblong, apex acute or rounded; styles (8,1-)11.2-15.5 mm, style branches 1.5-2.7 mm, linear, villous on the abaxial side. Cypselae monomorphic, 7.5-11.4 mm, fusiform, beaked, beak 4-7.2 mm, body 3.3-5 mm, terete, with 5 longitudinal grooves, 15-veined, scaly, brown to dark brown, carpopodium present. Pappus homomorphic, 1-seriate, 6.8-9.6 mm, composed of 20 to 28 plumose, stramineous or whitish bristles.

Additional iconography. Cabrera (1974: 523, fig. 313); Urtubey et al. (2019: 148, fig. 64).

Common names. "Diente de león" (Herter, 1930; Del Puerto et al., 1990), "Amargón" (Herter, 1930).

Distribution and habitat. Argentina (Buenos Aires, Entre Ríos, La Pampa, Misiones), Brazil (Rio Grande do Sul) (Urtubey et al., 2019), and Uruguay, where it occurs in the departments of Canelones, Cerro Largo, Colonia, Lavalleja, Maldonado, Montevideo, Paysandú, Rivera and San José (Fig. 24). *Hypochaeris variegata* inhabits rocky or stony places, sandy slopes, frequently on coastal rocks or hilltops.

Phenology. Flowering from mid-October to the end of November; fruiting from early November to early December.

Taxonomic notes. *Hypochaeris variegata* is characterized by its unbranched or slightly branched stems, campanulate involucres, wide phyllaries with whitish tomentose pubescence on the margins, with glabrous and usually dark apices that are obtuse or rounded, corollas very exserted from the involucres, with ligules longer than tubes, and long-beaked dark brown cypselae. In recently opened capitula, the corollas usually have an orange hue.

At the top of Pan de Azúcar hill (Maldonado) there is a large population that stands out because of their hirsute phyllaries along the midvein, being identical in all other aspects to typical *Hypochaeris variegata* specimens (Fig. 29F). This is in sharp contrast with the typical phyllaries with a glabrous midvein that characterize the species, this being the only population with such variation reported up to the writing of this article.

Observation. The specimen *Berro 7700* (MVFA) consists of plants with flowering capitula dated March 1914 on the label. This is unusual given that all other herbarium records, field observations, and existing literature place the flowering period of this species strictly within the spring months or at most at the very beginning of the summer. In the absence of additional evidence to support this record, it is presumed that the date indicated on the label is erroneous.

Representative examined material

URUGUAY. **Canelones.** Cuchilla Alta, 34° 47' 54.20'' S, 55° 29' 31.50'' W, 4-XI-2017, *F. Haretche 1154* (MVJB 30568). **Cerro Largo.** Ruta 26 km 14, 22-XI-1968, *O. Lema et al. s.n.* (MVFA 8008). **Colonia.** Punta Gorda, 30-X-1969, *O. Del Puerto & E. Marchesi s.n.* (MVFA 8883). **Lavalleja.** Polanco, 28-X-1968, *O. Del Puerto & E. Marchesi s.n.* (MVFA 7593). **Maldonado.** Cerro Pan de Azúcar, 12-XI-1970, *O. Del Puerto et al. s.n.* (MVFA 9692). **Montevideo.** Carrasco, XI-1901, *M. Berro 1301* (MVFA). **Paysandú.** Arroyo Rabón, Porvenir, 27-XI-1975, *B. Rosengurtt 11707* (MVFA). **Rivera.** Ruta 29 entre Miriñaque y

Minas de Corrales, 31° 31' 48.8'' S, 55° 35' 50.9'' W, 14-X-2018, *M. Bonifacino et al. 6588* (MVFA). **San José.** Barrancas de Kiyú, 10-XI-1992, *R. Brescia & P. Grum s.n.* (MVFA 22628).

Hybrid taxa

The occurrence of natural hybrids between *Hypochaeris* species is a known phenomenon (Parker, 1975; Wulff, 1992; Azevêdo-Gonçalvez & Matzenbacher, 2005b). Specifically, within the species present in Uruguay the following hybrids have been reported: *Hypochaeris glabra* × *H. radicata* (Parker, 1975); *H. albiflora* × *H. chillensis* (Wulff, 1992; Azevêdo-Gonçalvez & Matzenbacher, 2005b); *H. chillensis* × *H. megapotamica* (Wulff, 1992; Azevêdo-Gonçalvez & Matzenbacher, 2005b); and *H. albiflora* × *H. megapotamica* (Azevêdo-Gonçalvez & Matzenbacher, 2005b). In all cases, these hybrids were characterized by their intermediate morphology between the parent species, low pollen viability, and low or no seed production (Parker, 1975; Wulff, 1992; Azevêdo-Gonçalvez & Matzenbacher, 2005b). In particular, the production of viable seeds occurs mainly as a result of backcrosses with one of the parent species, the resulting individuals being in some cases completely interfertile with them. In this way, it is postulated that through these hybridization phenomena an introgression of genes from one species to another may be taking place, resulting in the high morphological variability that is observed in several of these species (Parker, 1975; Wulff, 1992).

In the course of this revision, two individuals of hybrid origin were found in the field, in each case occurring in places where both parental species were abundant, and expressing intermediate morphological characters between them. The hybrid between *Hypochaeris albiflora* and *H. chillensis* (Fig. 30; *D. Hagopián 43*, MVFA) conforms to the descriptions presented by Azevêdo-Gonçalvez & Matzenbacher (2005a, b). It is a plant with a general appearance very similar to *H. albiflora* but with very pale-yellow corollas instead of the typical white. Additionally, phyllaries in budding capitula frequently had their apices free and not adpressed to the innermost phyllaries, something typical of *H. chillensis*. The production of cypselae was consistent with that reported by Wulff (1992): 0-3% of the florets in a head produce developed cypselae.

The second hybrid found is a cross between *Hypochaeris albiflora* and *H. petiolaris* (Fig. 31; *A. Mailhos 83*, MVFA), a combination not reported so far. Once again, the most distinctive feature of this hybrid is the presence of pale-yellow corollas, being in all other aspects very similar to small individuals of *H. albiflora*. Some of the young capitula are slightly nutant, something typical of *H. petiolaris* and several species of *H.* ser. *Pampasica*. It was not possible to observe fruiting capitula of these plants, but the production of viable cypselae should be expected to be extremely low or null.

Given their low genetic divergence (Samuel et al., 2003), hybridization events are likely to be frequent in natural populations of many *Hypochaeris* species, especially considering that it is normal to find several species growing in close proximity. In cases where a species with white corollas hybridizes with another with yellow corollas, hybrids are easy to detect because of their intermediate-colored corollas, but when both parental species have corollas of the same color this would not be so obvious. In particular, although no hybrids between species from *H.* ser. *Pampasica* have been detected so far, it can be assumed that they likely exist with a certain degree of prevalence in natural populations but have gone unnoticed due to the very close morphology among species of this group.

Doubtful names

Hypochaeris microcephala (Sch.Bip.) Cabrera, Not. Mus. La Plata, Bot. 2: 200. 1937. *Achyrophorus microcephalus* Sch.Bip., Comm. Bot. 27 (Jahresber. Pollichia 16-17: 59). 1859. *Hypochaeris brasiliensis* var. *microcephala* (Sch.Bip.) Baker, Fl. Bras. 6(3): 334. 1884. *Hypochaeris* × *microcephala* (Sch.Bip.) Azevêdo-Gonç. & Matzenb., Hoehnea 32(3): 362. 2005, *nom. invalid*. TYPE: Brasil, "In Brasilia meridionali ab Rio Pardo", X-XI-1823, *F. Sellow s.n.* (holotype, P!).

Seriola brasiliensis var. *parviflora* Hook. & Arn., Comp. Bot. Mag. 1: 30. 1835. TYPE: Argentina, "Buenos Ayres and Banda Orientale", 1825, *J. Tweedie s.n.* (lectotype K [000035240]! designated by Cabrera, Not. Mus. La Plata, Bot. 2: 200. 1937; isolectotype E [00322672]!).

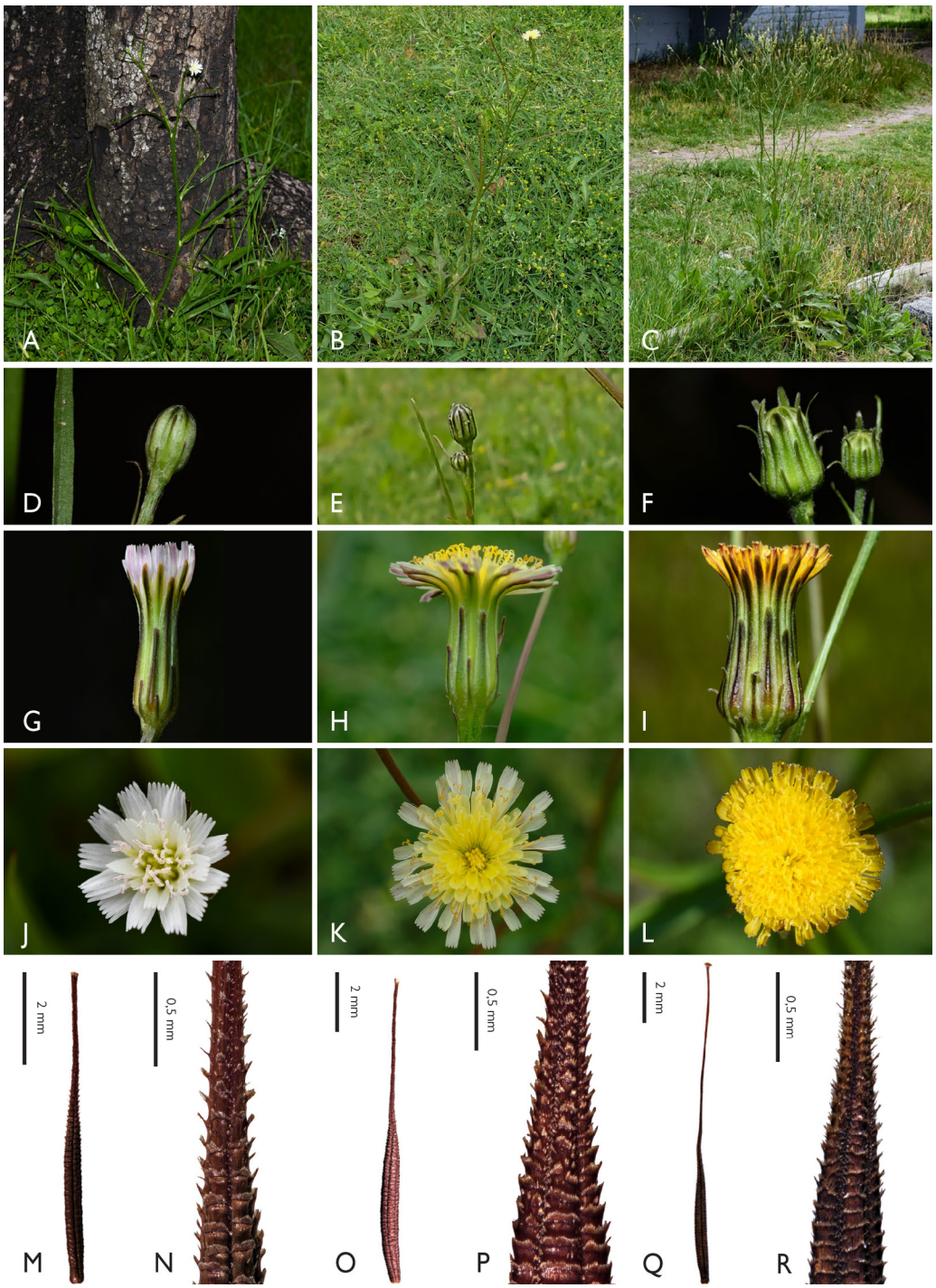

Fig. 30. Hybrid between *Hypochaeris albiflora* and *H. chillensis* and comparison with both parental species. **A-C,** habits; A, *H. albiflora*; B, hybrid; C, *H. chillensis.* **D-F,** budding capitula; D, *H. albiflora*; E, hybrid; F, *H. chillensis*. **G-L,** flowering capitula; G, J, *H. albiflora*; H, K, hybrid; I, L, *H. chillensis*. **M-R,** cypselae and detail of scales; M, N, *H. albiflora*; O, P, hybrid; Q, R, *H. chillensis*. B, E, H, K, by D. Hagopián; B, E, H, K, O, P, *D. Hagopián 43* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Fig. 31. Hybrid between *Hypochaeris albiflora* and *H. petiolaris* and comparison with both parental species. **A-C,** habits; A, *H. albiflora*; B, hybrid; C, *H. petiolaris*. **D-I,** flowering capitula; D, G, *H. albiflora*; E, H, hybrid; F, I, *H. petiolaris*. B, E, H, *A. Mailhos 83* (MVFA); C, F, I, *A. Mailhos 81* (MVFA). Color version at https://www.ojs.darwin.edu.ar/index.php/darwiniana/article/view/1161/1320

Hypochaeris microcephala is the type species *H.* ser. *Microcephala*, and is morphologically very close to *H. albiflora* and *H. chillensis*. It is distinguished from the first because this species has white corollas, while in *H. microcephala* they are yellow, but is considered practically identical in all other aspects and very difficult to differentiate in the absence of flowering heads (Cabrera, 1941; Urtubey et al., 2019). From *H. chillensis* it has been traditionally distinguished by the shape of the involucre, which is campanulate or cylindrical-campanulate in this species and cylindrical in *H. microcephala* (Cabrera, 1941; Urtubey et al., 2019).

In the course of this revision, we found the separation between *Hypochaeris chillensis* and *H. microcephala*, based on the shape of the involucre, to be ambiguous due to the existence of numerous intermediate forms between strictly cylindrical and campanulate involucres. Even among the plants that make up the type material of *H. microcephala* and its synonyms, some variations can be appreciated. This, coupled with

the enormous morphological variability exhibited by *H. chillensis* (see comments under this species) prevents the accurate application of this character.

Among all examined specimens for this study, none could be unequivocally identified as *Hypochaeris microcephala*. All specimens from *H.* ser. *Microcephala* with markedly cylindrical involucres either had white corollas and thus belonged to *H. albiflora*, or the color of the corollas was not specified on the label, but in no case did the label indicate that they were yellow. Similarly, plants observed in the field that best fit the descriptions and type material of *H. microcephala* turned out to be hybrids, or, more frequently, specimens of *H. chillensis* growing under adverse conditions or in places such as sidewalks, where stems were periodically trampled or mowed (see comments under this species).

Azevêdo-Gonçalvez & Matzenbacher (2005a, b) proposed that *Hypochaeris microcephala* is in fact a natural hybrid between *H. albiflora* and *H. chillensis*, on the basis that they always found it growing in close proximity to these two species, it presents intermediate morphological characters between both, and rarely produces developed cypselae. Although the existence of hybrids between *H. albiflora* and *H. chillensis* is well documented (Wulff 1992), there is no conclusive evidence that indicates that the name *H. microcephala* should be applied to these hybrids. An important detail that escaped Azevêdo-Gonçalvez & Matzenbacher's study (2005b) is that in the protologue of *Achyrophorus microcephalus* the corollas are described as pale yellow ("floris pallide flaventis"), a color highly suggestive of hybrids between a species with white corollas and another with yellow corollas (see discussion on hybrids above). While this can be taken as evidence in favor of the hypothesis of the hybrid origin of *H. microcephala*, the holotype of this species shows a capitulum with developed cypselae, which would oppose this hybrid hypothesis. It should be noted, however, that this type specimen consists of three distinct plants, so the possibility that it might be a mixed gathering should be considered, especially since it is very common for several *Hypochaeris* species to grow in close proximity. In the original material of the heterotypic synonym *Seriola brasiliensis* var. *parviflora* there are no mature capitula with cypselae and no reference is made to the color of the corollas on the label or description.

Tremetsberger et al. (2006) state, based on a phylogeny with AFLP markers, that all sampled specimens from Buenos Aires (Argentina) and southern Brazil (they did not sample specimens from Uruguay) previously identified as *Hypochaeris chillensis* actually correspond to *H. microcephala* or to hybrids between *H. chillensis* and *H. microcephala*. According to their analysis, the only true populations of *H. chillensis* among those sampled were those from the provinces of Córdoba and Jujuy in Argentina. However, the phylogenetic relationship between these "pure" populations, those identified as *H. microcephala*, and those of the hybrids could not be resolved, since in the resulting phylogeny they form a polytomy together with two other species of *H.* ser. *Microcephala*.

All of this seems to indicate that this small group of species might be going through an active process of reticulated evolution, facilitated by hybridizations and subsequent introgressions of genetic material from one species to another, which could explain their high degree of morphological variation, as was postulated by Wulff (1992). Additional and more exhaustive studies that sample populations throughout the entire distribution range of these species are required in order to resolve relationships and identities within this group, or to at least provide a better understanding of their evolutionary dynamics.

In view of all of the above, we choose to treat the name *Hypochaeris microcephala* as doubtful until new studies shed light on its true identity and specific relationship with *H. chillensis*, meanwhile referring to Uruguayan plants from this group as *H. chillensis* (the older name) in a wider sense.

Excluded taxa

Hypochaeris lutea (Vell.) Britton, Ann. New York Acad. Sci. 7: 153. 1893. *Prenanthes lutea* Vell., Fl. Flumin. 350. 1829. TYPE: Fl. Flumin. Icon. 8: tab. 91. 1831 (lectotype! designated by Azevêdo-Gonçalvez & Matzenbacher, Compositae Newslett. 42: 2. 2005).

Hypochaeris lutea was considered present in Uruguay as a result of considering *H. rosengurttii* as one of its synonyms (see comments under this species). By undoing this synonymy, *H. lutea* is excluded from Uruguay, occurring exclusively in southern Brazil and eastern Paraguay.

Urtubey et al. (2019) cite six specimens from the herbarium of the National Museum of Natural History in Paris (P) under examined material from this species from Uruguay. These specimens do indeed belong to *Hypochaeris lutea*, but the labels of five of them clearly indicate that they come from Brazil (*Saint-Hilaire D525*, *C1 927*, *C1 1124*, *C2 1822*, *B2 2411*; barcodes 03747806!, 03747809!, 03747807!, 03747805!, 01168130! respectively). The label on the *Saint-Hilaire 2024* specimens (P 03747796! and P 03747810!) is the only one that reads "Banda Oriental del Uruguay", the old name for the República Oriental del Uruguay. However, it should be noted that the boundary between Brazil and Uruguay at that time ("1816-1821", from label) was not clearly defined, and part of what was considered "Banda Oriental" currently belongs to the state of Rio Grande do Sul, Brazil, therefore it is not certain that this plant was collected in Uruguayan territory as recognized today.

In any case, there are collections of *Hypochaeris lutea* in localities of Rio Grande do Sul not too far from the current border with Uruguay (ca. 100 km away), so it is entirely possible that this species could be discovered in this country in the future, potentially in wetlands in the Rivera and Cerro Largo departments.

Hypochaeris neopinnatifida (Speg.) Azevêdo-Gonç. & Matzenb., Pesquisas Bot. 57: 158. 2006. *Hypochaeris variegata* var. *pinnatifida* Speg., Contr. Fl. Sierra Vent. 40. 1896. *Hypochaeris rosengurttii* var. *pinnatifida* (Speg.) Cabrera, Revista Mus. La Plata, Bot. 4: 393, f. 128. 1941, "*Hypochoeris*". *Hypochaeris pinnatifida* (Speg.) Azêvedo-Gonç. & Matzenb., Comp. Newslett. 42: 2. 2005, *nom. illegit.,* non *H. pinnatifida* Cirillo ex Ten., 1831 (= *H. cretensis* [L.] Bory & Chaub.). TYPE: Argentina, Buenos Aires, Sierra de la Ventana, XI-1895, *C. Spegazzini s.n.* (holotype, LP [000097]!).

Hypochaeris variegata var. *acutibracteata* Speg., Contr. Fl. Sierra Vent. 39. 1896. TYPE: Argentina, Buenos Aires, Sierra de la Ventana, XI-1895, *C. Spegazzini s.n.* (holotype, LP [000095]!).

There are gatherings made by Fruchard (P 03780451!) and Gay (P 03780449!) from Montevideo hosted at P that have been identified as *Hypochaeris rosengurttii* var. *pinnatifida*, and others from Saint-Hilaire from "Banda Oriental" (P 03780450!, P 03780453!; see comments under *H. lutea* above). These specimens were likely assigned to this variety because of their deeply divided leaves, but as discussed under *H. rosengurttii*, this trait lacks taxonomic value when comparing both varieties of this species. The unequivocal character that differentiates them is the color of the corollas (bright yellow in the type variety vs. pale yellow in *H. rosengurttii* var. *pinnatifida*), information that is not specified on any of the labels of these specimens at P. In the course of this study, numerous populations of *H. rosengurttii* were observed in the field throughout Uruguay (including populations from Montevideo), and in all of them the color of the corollas was golden yellow (Fig. 23E-G). Likewise, in none of the herbarium specimens from Uruguay reviewed in this study is the color described as pale yellow. In light of this, it seems safe to assume that these specimens hosted at P all belong to *H. rosengurttii* var. *rosengurttii*, thus excluding *H. neopinnatifida* from the country.

Nomenclatural note. If *Hypochaeris rosengurttii* is recognized as a species, there are no nomenclatural reasons that justify the treatment of *H. rosengurttii* var. *pinnatifida* at species rank as *H. neopinnatifida*. Given the differences stated above (pale yellow vs. bright yellow corollas) and their disjunct distribution, there is no doubt that it represents a distinct entity from the typical form of *H. rosengurttii*. Whether these differences are enough to consider them separate species or just varieties within a single species is uncertain. Future studies aimed at accurately resolving the relationship between both entities may provide new evidence to justify the use of one name over the other.

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Appendix. Expanded list of examined material. Numbers followed by a semicolon refer to the number assigned to each species in the present treatment.

Albarracín & Sastre *s.n.* (2; MVJB 24241, 24242) **Amoroso** *s.n.* (4; Herb. Osten 14661 - MVM) **Arechavaleta** *s.n.* (3; MVM) *s.n.* (11; MVM) *96* (3; MVM) **Arrillaga** *41* (2; MVFA) *135* (6; MVFA) *304*, *320* (3; MVFA) *419* (1; MVFA) *982a* (8; MVFA) **Arrillaga et al.** *s.n.* (3; MVFA 2332) *1720* (10; MVFA)

Bayce et al. *s.n.* (3; MVFA 26420) **Berro** *1395* (4; MVFA) *2075*, *3120* (10; MVFA) *3122* (3; MVFA) *3560* (6; MVFA) *4072* (4; MVFA) *4548* (11; MVFA) *5717* (1; MVFA) *6763* (2; MVFA) *7005* (3; MVFA) *7261* (2; MVFA) *7700* (11; MVFA) *7701* (1; MVFA) *8159* (6; MVFA) *8277* (11; MVFA) *8278*, *8351*, *8368* (2; MVFA) **Bonifacino & Rossado** *6685* (9; MVFA) **Bonifacino & Speroni** *s.n.* (1; MVFA 28780) **Bonifacino et al.** *6559* (1; MVFA) *6569* (6; MVFA) **Brescia & Marchesi** *s.n.* (9; MVFA 16567) **Brescia et al.** *s.n.* (6; MVFA 22093) **Brussa & Grela** *s.n.* (3; MVJB 25538) *s.n.* (6; MVJB 25540) **Brussa & Muñoz** *s.n.* (2; MVJB 24813)

Caldevilla *511* (3; MVM) **Callero** *228* (2; MVJB 23053) **Callero & Ferreyro** *32, 70* (1; MVJB) **Codina** *s.n.* (4; MVFA 10822) *s.n.* (6; MVFA 10821) **Costa** *s.n.* (3; MVFA 6642) *s.n.* (9; MVFA 6600, 6677, 6681) *s.n.* (11; MVFA 6683)

Del Puerto *s.n.* (2; MVFA 10318, 10998) *s.n.* (3; 5350, 9956, 12243, 12511, 14515, 14644) *s.n.* (4; MVFA 6861, 9963, 11974, 11975) *s.n.* (6; MVFA 9442, 13029) *312* (1; MVFA) *313A* (3; MVFA) *654*, *2240* (6; MVFA) *3000* (3; MVFA) *5357*, *5358a* (1; MVFA) *9712* (4; MVFA) *9715* (6; MVFA) *9939* (4; MVFA) **Del Puerto & Berreta** *s.n.* (3; MVFA 15630) **Del Puerto & Borsani** *5556* (4; MVFA) **Del Puerto & Codina** *s.n.* (3; MVFA 9801) *s.n.* (6; MVFA 9827, 9836) **Del Puerto & Marchesi** *s.n.* (1; MVFA 7529, 7694, 8967) *s.n.* (3; MVFA 7598, 7668, 11346, 11392, 15929) *s.n.* (6; MVFA 7669) *s.n.* (9; MVFA 7563, 7606, 7611) *s.n.* (10; MVFA 11444) *5247* (1; MVFA) **Del Puerto & Millot** *605* (11; MVFA) *622a* (6; MVFA) **Del Puerto & Rosengurtt** *9268* (6; MVFA) *9711*, *9712* (1; MVFA) **Del Puerto et al.** *s.n.* (4; MVFA 9670) *s.n.* (6; MVFA 9676) *s.n.* (11; MVFA 9663) **Delfino** *s.n.* (6; MVJB 20016, 23651)

Ferrés *s.n.* (3; MVFA 12945, 12965) *s.n.* (6; MVFA 17930) **Figueredo** *s.n.* (6; MVJB 24814, 24815)

Gallinal et al. *PE16* (3; MVFA) *PE24* (8; MVFA) *PE29* (6; MVFA) *PE40* (8; MVFA) *PE71*, *PE98a* (6; MVFA) *PE98b* (8; MVFA) *PE105*, *PE152*, *PE166a* (6; MVFA) *PE166b* (8; MVFA) *PE188* (6; MVFA) *PE219* (1; MVFA) *PE274*, *PE292* (6; MVFA) *PE331* (3; MVFA) *PE332* (6; MVFA) *PE383* (3; MVFA) *PE453*, *PE510* (6; MVFA) *PE550* (8; MVFA) *PE597*, *PE672* (3; MVFA) *PE680* (1; MVFA) *PE680 ½* (6; MVFA) *PE764* (1; MVFA) *PE773b* (8; MVFA) *PE862* (6; MVFA) *PE883* (1; MVFA) *PE890* (6; MVFA) *PE941* (1; MVFA) *PE954*, *PE984*, *PE1032* (6; MVFA) *PE1049* (4; MVFA) *PE1104* (6; MVFA) *PE1181* (3; MVFA) *PE1182* (1; MVFA, MVM) *PE1281*, *PE1352* (3; MVFA) *PE1467* (6; MVFA) *PE1632*, *PE1709*, *PE1804* (3; MVFA) *PE1807* (6; MVFA) *PE1849* (5; MVFA) *PE1915* (6; MVFA) *PE1976* (3; MVFA) *PE1977*, *PE2044*, *PE2061* (6; MVFA) *PE2194*, *PE2243* (8; MVFA) *PE2395*, *PE2459* (6; MVFA) *PE2494*, *PE2736* (3; MVFA) *PE2889*, *PE3016* (6; MVFA) *PE3242*, *PE3243* (8; MVFA) *PE3563* (6; MVFA) *PE3607* (5; MVFA) *PE3835* (8; MVFA) *PE3836*, *PE3912*, *PE3948*, *PE4038*, *PE4201* (6; MVFA) *PE5267* (6; MVFA, MVM) *PE5412* (3; MVFA) *262 ½* (5; MVFA) *764 ½* (1; MVFA) *1179* (6; MVFA, MVM) *1180*, *2289*, *2289 ½* (6; MVFA) *3668a* (3; MVFA) *3668b* (8; MVFA) **Gibert** *s.n.* (4; MVM) *s.n.* (6; MVM) *s.n.* (11; MVM) *79* (11; MVM) *806*, *946* (4; MVM) *985* (1; MVM) *1383* (9; MVM) **Grela** *1241* (11; MVJB)

Haretche *897* (11; MVJB 29646) *1155* (6; MVJB) *1386* (5; MVJB) *1387* (3; MVJB)

Izaguirre *36* (1; MVFA) *309*, *315* (3; MVFA) **Izaguirre et al.** *s.n.* (1; MVFA 2628) *s.n.* (6; MVFA 2589, 9544) *s.n.* (11; MVFA 7626)

Legrand *228* (11; MVM) *1228* (2; MVM) *1232* (6; MVM) *1283*, *1296* (1; MVM) *1302* (6; MVM) *1329* (1; MVM) *1345* (3; MVM) *1381* (2; MVM) *1549*, *1941* (1; MVM) *2215* (2; MVM) *2335* (11; MVM) *2520* (6; MVM) *2712* (1; MVM) *2718*, *2757* (3; MVM) *3123* (6; MVM) *3220* (2; MVM) *3572* (3; MVM) *3576* (6; MVM) *3577* (1; MVM) *3579*, *4008* (2; MVM) *4315* (1; MVM) *4465* (6; MVM) *4519* (10; MVM) **Lema** *s.n.* (1; MVFA 7828) *s.n.* (5; MVFA 6759) **Lema & Rodríguez** *s.n.* (11; MVFA 7405) **Lema et al.** *s.n.* (4; MVFA 7958, 7963, 8075, 8109) **Lombardo** *s.n.* (1; MVJB 5021, 7318) *s.n.* (2; MVJB 486, 3406, 5015) *s.n.* (3; MVJB 413, 5018) *s.n.* (4; MVJB 470, 3409, 5014) *s.n.* (6; MVJB 499, 602, 10958) *s.n.* (8; MVJB 369, 469) *s.n.* (9; MVJB 365) *536* (4; MVJB) *551* (1; MVJB) *563* (2; MVJB) *784* (6; MVJB) *989* (4; MVJB) *1019A* (9; MVJB) *1330* (1; MVJB) *1389*, *1413*, *1443*, *1549* (3; MVJB) *1997* (1; MVJB) *1999* (2; MVJB) *2000* (9; MVJB) *2001* (1; MVJB) *2002* (3; MVJB) *2003* (1; MVJB) *2004* (8; MVJB) *2005* (1; MVJB) *2006*, *2007A* (6; MVJB) *2007B*, *3223* (9; MVJB) *3224*, *3225*, *3580* (1; MVJB) *3774* (3; MVJB) *4773* (1; MVJB) *5601*, *5603* (4; MVJB) *6293* (6; MVJB) *6294* (8; MVJB) *6344A* (4; MVJB) *6344B* (2; MVJB) *6351* (4; MVJB) **Lombardo & Marchesi** *s.n.* (3; MVJB 561, 2083) **Lombardo et al.** *s.n.* (3; MVFA 10977)

Mailhos *26* (2; MVFA) *27*, *33* (6; MVFA) *39* (3; MVFA) *47*, *61* (9; MVFA) **Mailhos & Hagopián** *46* (2; MVFA) *325* (3; MVFA) *326* (4; MVFA) **Mailhos & Pañella** *90* (5; MVFA) *102*, *103* (11; MVFA) *329* (6; MVFA) **Mailhos & Rossado** *51* (11; MVFA) *52*, *53* (9; MVFA) **Mailhos et al.** *92* (9; MVFA) **Marchesi** *s.n.* (3; MVFA 10058) *s.n.* (9; MVFA 6488, 26990) *s.n.* (11; MVFA 6486) *372* (2; MVFA) *704* (4; MVFA) *1400* (11; MVFA) **Marchesi & Del Puerto** *s.n.* (3; MVFA 9057) **Marchesi & Ferrés** *s.n.* (6; MVFA 14172, 14185) *s.n.* (9; MVFA 14240) **Masciadri** *s.n.* (2; MVJB 20015) **Medina** *38* (2; MVM) **Millot** *756* (6; MVFA) *762*, *792* (1; MVFA)

Olano *s.n.* (1; MVFA 8705) **Osorio** *389* (2; MVM) *473* (4; MVM) *517* (2; MVM) *680* (3; MVM) **Osten** *3707* (2; MVM) *3916* (1; MVM) *3969* (11; MVM) *4197* (6; MVM) *4366* (3; MVM) *4367* (10; MVM) *5215* (3; MVM) *6402* (11; MVM) *8716* (1; MVM) *11600b* (8; MVM) *11600c* (6; MVFA) *14751* (2; MVM) *21741* (1; MVM) *22017* (6; MVM) *22289*, *22330*, *22341* (1; MVM)

Pañella *55* (10; MVFA) *62* (5; MVFA) *63* (9; MVFA) **Petrini** *s.n.* (1; MVFA 9776)

Rodríguez et al. *s.n.* (4; MVFA 8150) **Rosa Mato** *s.n.* (8; MVM 9765) *86* (3; MVM) *152* (1; MVM) *326*, *457*, *484* (2; MVM) *600* (1; MVM) *1517* (2; MVM) *1806* (1; MVM) *1827*, *1919* (2; MVM) **Rosengurtt** *s.n.* (3; MVFA) *B279* (9; MVFA) *B335*, *B416* (6; MVFA) *B528a* (4; MVFA) *B528c* (1; MVFA) *B721 ½* (6; MVFA) *B1207* (11; MVFA) *B1289* (4; MVFA) *B1291* (6; MVFA) *B1306*, *B2166 ½* (4; MVFA) *B2166 ¼* (6; MVFA, MVM 5943) *B2166c* (10; MVFA) *B2692* (4; MVFA) *B2693a* (6; MVFA) *B3181* (1; MVFA) *B3182*, *B5217*, *B5218* (6; MVFA) *B6652* (9; MVFA) *B6748* (6; MVFA) *B6748 ½* (9; MVFA) *B7775b* (9; MVFA) *1104* (6; MVFA, MVM) *1310* (2; MVFA) *3564a* (3; MVFA) **Rosengurtt & Del Puerto** *B8662* (9; MVFA) **Rosengurtt et al.** *B1999* (3; MVFA) **Rossado & Bonifacino** *485* (9; MVFA) **Rossado et al.** *541*, *547* (3; MVFA)

s.c. *s.n.* (1; MVFA 9162) *82* (1; MVFA) **Schroder** *18413* (1; MVM)

Teisseire *4544* (1; MVM)

Zilliani et al. *s.n.* (1; MVFA 20293)