



Notes on some poorly-known or neglected species of the genera *Beauverdia* and *Nothoscordum* (Amaryllidaceae)

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Resumo. Notas sobre algumas espécies pouco conhecidas ou negligenciadas dos gêneros *Beauverdia* e *Nothoscordum* (Amaryllidaceae)

Neste estudo são propostas novidades para táxons pertencentes aos gêneros *Beauverdia* e *Nothoscordum* que possuem inflorescência solitária. Todos os táxons estudados ocorrem na eco-região dos Campos, principalmente no Uruguai e arredores. *Beauverdia Sellowiana* é reconhecida como sinônimo de *Beauverdia hirtella*. *Beauverdia Felipponei* é reabilitada da sinonímia de *B. Sellowiana*, sendo proposto um lectótipo para esta espécie. *Beauverdia subsessilis* é reconhecida como espécie distinta de *B. hirtella* e *Nothoscordum Izaguirrae* é adicionado a sua sinonímia. *Nothoscordum Ostenii* é estabelecido como espécie válida, sendo adicionado a flora Brasileira e Argentina, sendo *Nothoscordum luteominus* adicionado a sua sinonímia. Todas as espécies listadas são descritas e ilustradas, sendo inferida informações sobre distribuição geográfica, habitat e relações taxonômicas.

Palavras chave: Alliioideae, Argentina, Brasil, Leucocoryneae, Monanthoscordum, Uniflorum, Uruguai.

Abstract. Notes on some poorly-known or neglected species of the genera *Beauverdia* and *Nothoscordum* (Amaryllidaceae).

In this study, novelties are proposed for taxa that have solitary flowers belonging to the genera *Beauverdia* and *Nothoscordum*. All taxa studied occur in the Campos eco-region, mainly in Uruguay and neighbors. *Beauverdia Sellowiana* is recognized as a synonym of *Beauverdia hirtella*. *Beauverdia Felipponei* is rehabilitated from the synonymy of *B. Sellowiana*, and a lectotype is proposed for this species. *Beauverdia subsessilis* is recognized as a distinct species from *B. hirtella* and *Nothoscordum Izaguirrae* is added to its synonymy. *Nothoscordum Ostenii* is established as a valid species, being added to the Brazilian and Argentine flora, and *Nothoscordum luteominus* is added to its synonymy. All listed species are described and illustrated, and information on geographic distribution, habitat and taxonomic relationships is inferred.

Keywords: Alliioideae, Argentina, Brazil, Leucocoryneae, Monanthoscordum, Uniflorum, Uruguay.

Nothoscordum Kunth (1843: 457-458) is a genus distributed from southern South America to southern North America, with an important center of diversity and endemism in north-eastern Argentina, southern Brazil and Uruguay (Sassone *et al.* 2014b). The number of species of *Nothoscordum* is uncertain, in view of the absence of a complete revision of the genus, but it is estimated between about 20 and more than 80 taxa. Within the genus *Nothoscordum*, species with solitary flowers presents the most difficult taxonomy, and Beauverd (1908) included these taxa under the section *Uniflorum* Beauverd (1908: 1007). Later, Herter (1943, 1956) placed

them under the genus *Beauverdia* Herter (1943: 507). On the other hand, Guaglianone (1972) positioned them under *Ipheion* Rafinesque (1837: 2) sect. *Hirtellum* Guaglianone (1972: 178). Crosa (1975) re-established species with solitary flowers in *Nothoscordum* and Ravenna proposed the subgenus *Monanthoscordum* Ravenna (1978: 142) to accommodate them. For Crosa (2006) the subgenus *Monanthoscordum* and the section *Uniflorum* lack taxonomic value, since they are polyphyletic groups, but clearly separated from *Ipheion*. On the other hand, Sassone *et al.* (2014a) rehabilitated *Beauverdia* and including taxa previously recognized under *Ipheion* sect. *Hirtellum*

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and *Nothoscordum* subg. *Monanthoscordum*. *Beauverdia* is a genus distributed in eastern and northeast Argentina, southern Rio Grande do Sul state, Brazil and Uruguay and encompasses only five species, which can be segregated from *Nothoscordum* by its solitary flowers with sessile or short peduncles, and curved scapes at fruit maturity (Sassone *et al.* 2014a, Deble 2021).

In this work, some species of the genera *Beauverdia* and *Nothoscordum* that present solitary flowers are studied. All species mentioned occurring in Pampean and Mesopotamic regions (following Cabrera 1976), which correspond to the eco-region of the Campos of the Grasslands of Rio de la Plata (RPG, sensu Soriano *et al.* 1992, Bilenca & Miñarro 2004).

Taxonomic treatment

The identity of Beauverdia Sellowiana

Triteleia Sellowiana Kunth (1843: 466) was described based on material collected by Friedrich Sellow “in Brasilia meridionalis ...”. Later, this species was transferred to the genus *Milla* Cavanilles (1793: 76), and subsequently to *Brodiaea* Smith (1810: 2) by Baker (1871, 1896). Herter (1943) placed *Triteleia Sellowiana* in *Beauverdia*, proposing the name *Beauverdia Sellowiana* (Kunth 1843: 466) Herter (1943: 509). Posteriorly, Traub (1949, 1963), treated this taxon under the genera *Ipheion* and *Tristagma* Poeppig (1833: 8), respectively. In the recent rehabilitation and revision of the genus *Beauverdia* this species was recognized as a valid taxon of *Beauverdia* (Sassone *et al.* 2014a). However, the single material mentioned for Brazil was the type, and the description presented by the authors is quite different from the morphological characteristics of the type material (see Sassone *et al.* 2014a: 773).

The comparison of the types of *Beauverdia hirtella* Kunth (1843: 465) and *B. Sellowiana* evidences both materials as belonging to the same species. The habit, shape and size of leaves, tepals, stamens and pistil are very similar. However, the type of *Beauverdia hirtella* presents scapes densely covered by 1-celled trichomes with a single straight cell, while in the holotype of *B. Sellowiana* the same trichomes are scarce. However, the variation in plant pilosity is frequent in *B. hirtella* even in individuals belonging to the same population. The pilosity difference

can be observed in the isotype of *B. Sellowiana* deposited at K herbarium, which displays more pilose scapes when compared with the holotype.

Beauverdia hirtella (Kunth) Herter, Boissiera 7:509.1943 subsp. *hirtella* Bas.: *Triteleia hirtella* Kunth. Enum. Pl. [Kunth] 4: 465.1843. ≡ *Milla hirtella* (Kunth) Baker, J. Linn. Soc., Bot. 11: 385. 1871. ≡ *Hookera hirtella* (Kunth) Kuntze, Revisio Generum Plantarum 2: 712. 1891. ≡ *Brodiaea hirtella* (Kunth) Baker, Gard. Chron. ser 3, 20: 459. 1896. ≡ *Nothoscordum hirtellum* (Kunth) Herter, Index Seminarum (Montevideo) 7: 12. 1926–27. ≡ *Ipheion hirtellum* (Kunth) Traub, Pl. Life (Stanford) 5: 50. 1949. ≡ *Tristagma hirtellum* (Kunth) Traub, Pl. Life (Stanford) 19: 61.1963. Type: URUGUAY. Montevideo: without specific place [voyage M. Gaudichaud sur le Bonite], April 1836 [1841], *M. Gaudichaud* (holotype: B 10 02477568 image seen! isotype P000852554 image seen! [p.p. left specimen]). Figures 1A, B.

= *Triteleia Sellowiana* Kunth, Enum. Pl. [Kunth] 4: 4.66. 1843. ≡ *Milla sellowiana* (Kunth) Baker, J. Linn. Soc. Bot. 11: 383. 1871. ≡ *Hookera Sellowiana* (Kunth) Kuntze, Revisio Generum Plantarum 2: 712. 1891. ≡ *Brodiaea Sellowiana* (Kunth) Baker, Gard. Chron. ser. 3, 20: 459. 1896. ≡ *Beauverdia Sellowiana* (Kunth) Herter. Boissiera 7: 510. 1943. ≡ *Ipheion Sellowianum* (Kunth) Traub, Pl. Life (Stanford) 5: 50. 1949. ≡ *Tristagma Sellowianum* (Kunth) Traub, Pl. Life (Stanford) 19: 61. 1963. Type: BRAZIL. Brasilia meridionalis [Rio Grande do Sul: ebenda von Alegrete über die Misiones durch den nördlichen Teil des Staates nach Porto Alegre], May–November 1826, *F. Sellow 3664* (holotype: B 10 0247567 image seen! isotypes: K000524640 image seen! K000524638 image seen!). **syn. nov.**
= *Nothoscordum canescens* Beauverd, Bulletin Herbiere Boissier, ser. 2, 8: 998. 1909.—Type: URUGUAY. Minas [Lavalaja]: “Depto. Minarum, in summo Monte Arequita, locis humidis, 18 Apr 1908 [August]” *C. Osten 5195* (holotype G00098878 image seen! isotype MVM 2899 [p.p.]!).

Geophyte 6–20 cm high above the soil. Bulb 8–15 × 7–15 mm, nearly spherical, simple, with strong alliaceous smell; outer cataphylls dark-brown, the innermost whitish. Roots thin, straw colored. Leaves at anthesis 3–10, spirally arranged; leaf sheaths 1.5–6 cm long, subterranean, straw-colored; leaf blades 40–180 × 0.9–2 mm, narrowly linear-filiform elliptic or broadly elliptic in cross-section, 0.9–2 × 0.2–0.6 mm, dark-green, erect-ascendant or ascendant reflexes, with 1-celled trichomes with uncinat cell, trichomes 110–120 µm long, margin thickened and rigid due to the presence of fibrous vascular bundles. Scapes 1–2, 3.5–13 cm long, subcylindrical, erect,

then curved at fruit maturity, with alliaceous smell when breaking, covered by 1-celled trichomes with straight terminal cell, trichomes 120–180 μm long. Bracts 2, ovate-elliptic, 6–10 \times 3.5–5.5 mm, shortly fused at base for 0.5–1 mm. Pedicels 2.5–5 mm long, glabrous. Inflorescence 1-flowered. Flowers 14–25 \times 7.5–10 mm, campanulate, golden-yellow, becoming ferruginous at the end of the anthesis, shiny, with a mild mint odor. Tepals 6 (3 + 3), golden-yellow, shortly fused at base for 0.5–2.5 mm, the outers ones, oblanceolate or elliptic, 12–18 \times 6–10, base abruptly narrowed in a claw; claws of the outer tepals 1–2 \times 0.5–1 mm;

the inners ones elliptic, blades 11–17 \times 3.5–8 mm; base abruptly narrowed in a claw; claws of the inner tepals 1–2 \times 0.5–1 mm; tepal middle nerves purplish-brown, conspicuous, thicker towards the base. Staminal filaments 8–11 mm long, connate at their bases for 1.4–2 mm, awl-shaped, translucent, yellowish; anthers 2–2.5 mm long, curved, pollen golden-yellow. Ovary obovate-oblong or oblong, 2.7–5 mm long; ovules 9–12 per locule; style yellow, 5–6.5 mm long, stigmatic portion capitate, greenish-yellow, shiny. Capsule obovate or obovate-oblong 7–10 \times 4–6 mm. Seeds 1.4–2 mm, black, shiny, tetrahedrally angled.

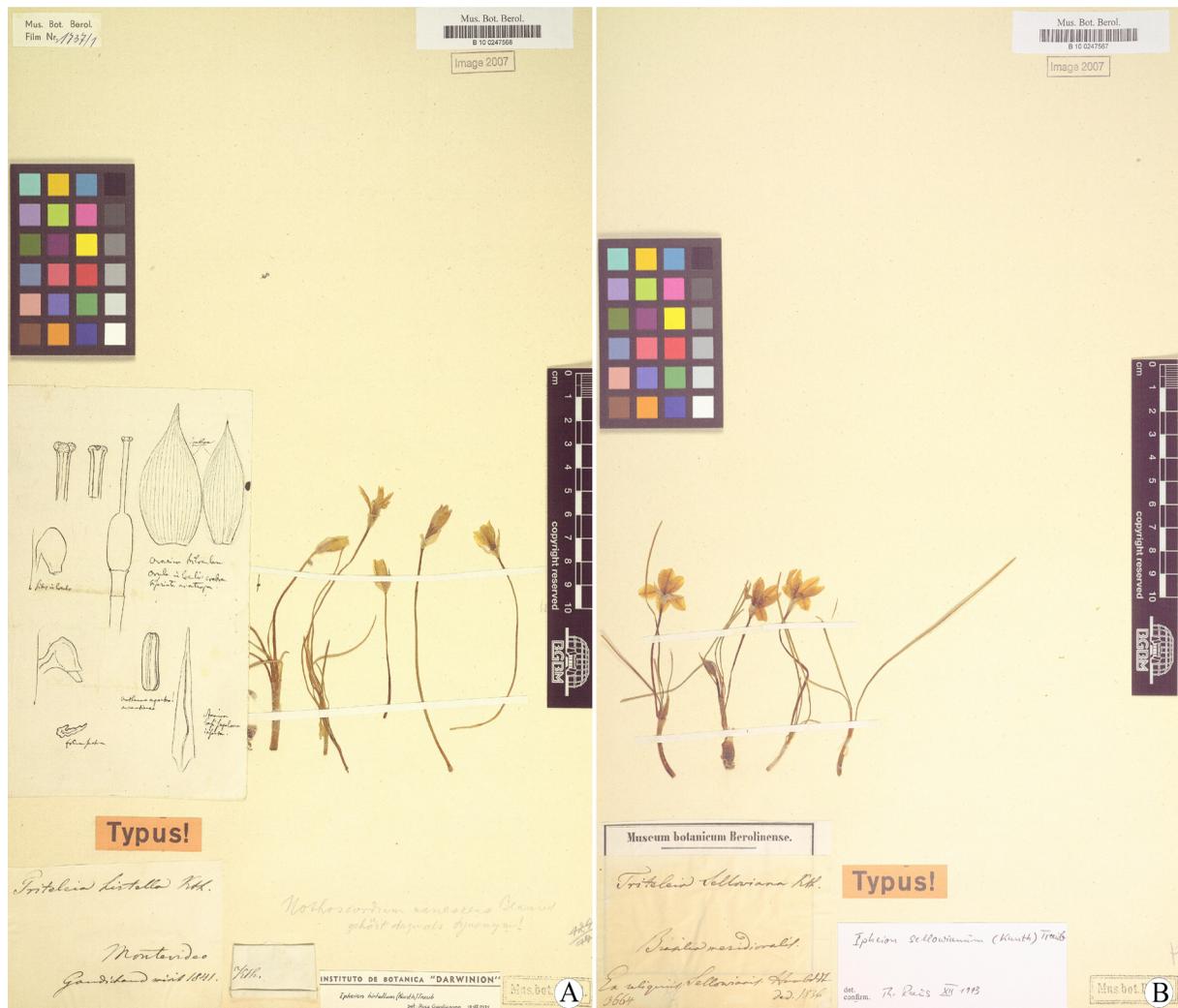


Figure 1. *Beauverdia hirtella* Kunth. A. The holotype of *Triteilea hirtella* deposited at [B Herbarium](#). B. The holotype of *Triteilea Sellowiana* deposited at [B Herbarium](#).

Etymology— From the Latin the diminutive form of the adjective *hirtus* meaning “hard-haired, rough”, a reference to the hairiness of the scapes and leaves.

Phenology— Flowering time April–July, fruiting time June–July. The flowers open around midday and close in the late afternoon, withering after two or three days.

Additional material examined: BRAZIL. Rio Grande do Sul: Aceguá, BR 473, no campo, 14 May 2017, *L.P. Deble et al.* 16988 (PACA!); Dom Pedrito, Serrinha, 18 May 2018, *L.P. Deble et al.* 18851 (PACA!); Santana do Livramento, estrada aeroporto, no campo, 16 June 2014, *L.P. Deble et al.* 15317 (PACA!). URUGUAY. Maldonado: Piriápolis, Cerro Inglés, inter saxa, floreis aureis, *C. Osten* 5499 (MVM); Sierra de las Ánimas, 5 June 1968, *P. Izaguirre et al. s.n.* (MVFA 2736!); Cerro Pan de Azúcar, 18 May 1973, *B. Rosengurt* 1845 (MVFA!); Cerro Arequita, May 1964, *Del Puerto et al.* 3479 (MVM!); Minas: Cerro Verdún, 18 May 1960, *P. Izaguirre* 1340 (MVFA); Cerro Verdún, 24 May 1959, *O. Crosa s. n.* (MVFA 2154); Montevideo: sur la Bonite, April 1836, *M. Gaudichaud* (holotype of *Tritelea hirtella* B100247568 photo!, isotype P00852554 photo!); April 1874 *M. Fruchard s.n.* (P018529166 image seen! p.p, mixed with *Beauverdia Felipponei*). Rivera: Cerro junto al Miriñaque, 3 May 1960, *B. Rosengurt* B-8180 (MVFA!); Rocha: *F. Felippone* 3491 (SI photo!); Without precise locality, *F. Sellow* 3664 (K00524638, left specimen photo!).

Distribution and Habitat— *Beauverdia hirtella* subsp. *hirtella* occurs in southeastern and northern Uruguay and southern Rio Grande do Sul state, Brazil. The plants grow on rocky grasslands and grasslands. The populations can contain many individuals, which bloom abundantly in late autumn and early winter and color winter landscapes of the region of occurrence. Individuals occur in the same environments as other *Beauverdia* species and are often sympatric with *B. Felipponei* (Beauverd 1921: 267) Herter (1943: 510) and *B. vittata* (Grisebach 1879: 318) Herter (1943: 511) and are often sympatric in southern Uruguay with Herter (1943: 511).

Discussion— *Beauverdia hirtella* subsp. *hirtella* is easily recognized by its bulbs and scapes with strong alliaceous smell, by its narrowly linear and erect-ascendant leaves, by its scapes with scarce to abundant 1-celled trichomes with straight cell, by its flowers with perigone composed by golden-yellow tepals, and by its stamens partially fused at the base.

The taxonomic delimitation of some single flowered taxa of *Nothoscordum* described by Beauverd

Gustave Beauverd (1867-1942) was an eminent Swiss botanist, which among other assignments, was curator of the Boissier Herbarium at Genève (Stafleu & Cowan 1976). He addressed several studies for the South America, including descriptions of genera and species existing in the region, especially for the Uruguay and neighbors. For *Nothoscordum*, Beauverd published three contributions to the knowledge of the genus, including

the description of fifteen new species and some varieties (Beauverd 1906, 1909, 1921). In this work, is treated the status of *Nothoscordum Felipponei* Beauverd (1921: 7), *N. Ostenii* Beauverd (1909: 996) and *N. subsessile* Beauverd (1909: 997).

Beauverdia Felipponei (Beauverd) Herter, Boissiera 7: 510. 1943. Bas.: *Nothoscordum Felipponei* Beauverd, Bulletin de la Societé Botanique de Genève 13: 7. 1921. ≡ *Brodiaea Felipponei* (Beauverd) Herter, Estudios Botánicos em la Región Uruguaya 4: 47. 1930. ≡ *Ipheion Felipponei* (Beauverd) Traub, Plant Life (Stanford) 5: 50. 1949. ≡ *Tristagma Felipponei* (Beauverd) Traub, Plant Life (Stanford) 19: 61. 1963. Typus: URUGUAY. Montevideo: Cerro, “*in saxosis, perigonio flavo nitidis dorso atropurpureo-vittatis vel pictis; tepala basi connata, folia canaliculate dorso haud carinata*”. Uruguay, Dep; Montevideo, Cerro *in saxosis*; leg Cornelius Osten” *C. Osten* 3620 et Cuchilla de Pereira [Pereyra], Montevideo mense Junii 1920 (...), leg. Cl. Dr. F. Felippone cui hoc *Nothoscordum* insignum dicatum est (exsicc. No. 3493). Lectotype (**here designated!**): URUGUAY. Montevideo: Cuchilla de Pereira, June [August] 1920, *F. Felippone* 3493 (G00098856! isolectotypes SI000426! MVM!). Figure 2.

Geophyte 3–8 cm high above the soil. Bulb 10–18 × 7–10 mm, nearly ovoid, simple, without alliaceous smell; outer cataphylls dark-brown, the innermost whitish. Leaves at anthesis 3–6, spirally arranged; leaf sheaths 2–3.5 cm long, subterranean, straw-colored; leaf blades 30–80 × 1.5–5 mm, narrowly lanceolate, concave in cross-section, 1.5–2.5 × 0.2–0.4 mm in the middle part, light-green, reflexes, glabrous, margin thickened and rigid due to the presence of fibrous vascular bundles, scariose. Scapes 1–3, 2.5–6 cm long, subcylindrical, erect, then curved at fruit maturity, glabrous. Bracts 2, ovate-elliptic, 8–10 × 3.5–4 mm, shortly fused at base for 1.5–2 mm. Pedicels 4–7 mm long, glabrous. Inflorescence 1-flowered. Flowers 18–25 × 6.5–8 mm, campanulate, yellow or golden-yellow, becoming ferruginous at the end of the anthesis, shiny, with a mild mint odor. Tepals 6 (3 + 3), golden-yellow, shortly fused at base for 0.5–1.5 mm, the outers ones, oblanceolate or elliptic, 14–22 × 8–10, base abruptly narrowed in a claw; claws of the outer tepals 1–2 × 0.5–1 mm; the inners ones elliptic, blades 13–22 × 7–9 mm; base abruptly narrowed in a claw; claws of the

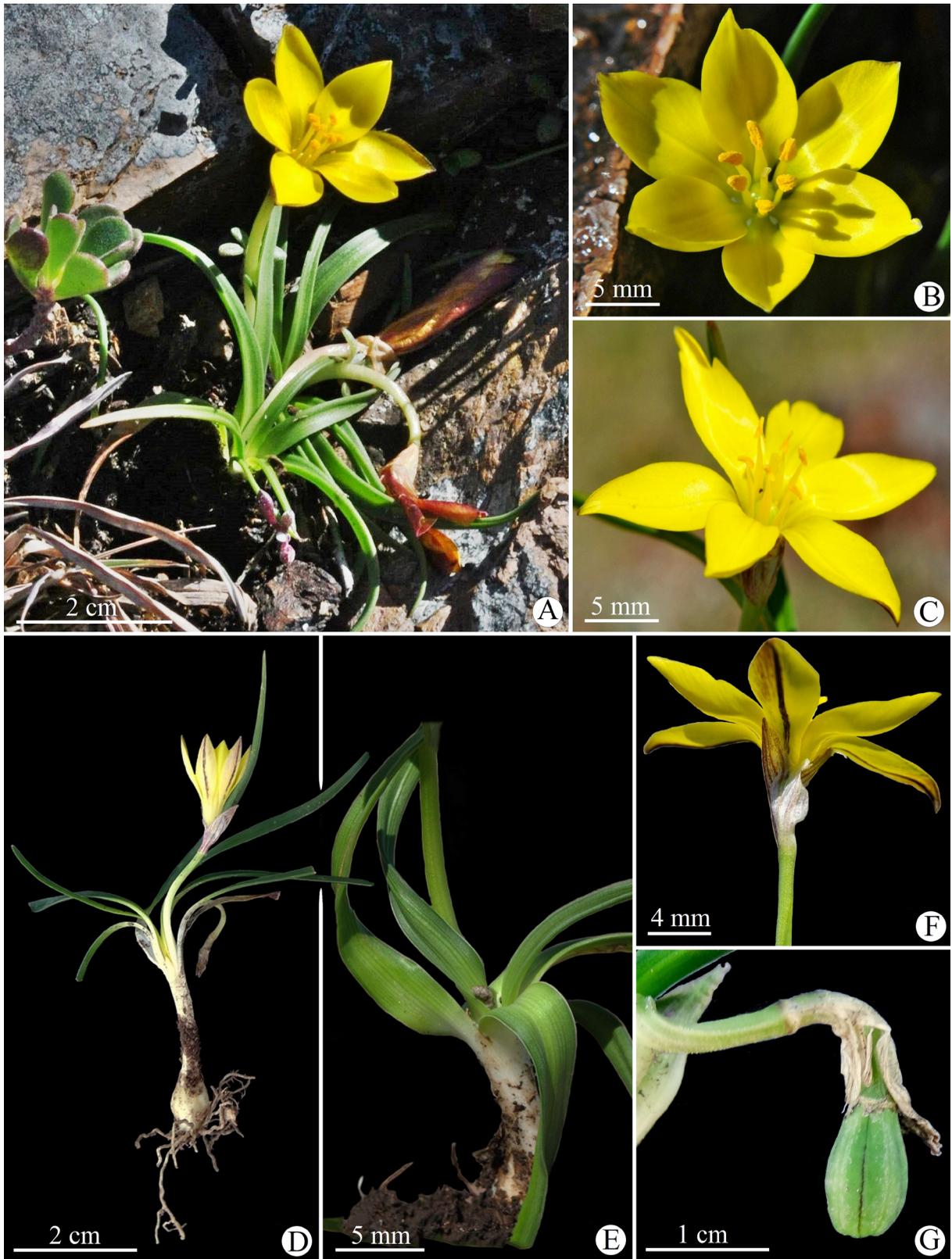


Figure 2. *Beauverdia Felipponei* Beauverd. A. Habit. B. Flor, upper view. C. Flower, inclined view. D. Plant removed from soil, showing the bulb and roots. E. Detail of leaves. F. Flower, lateral view. G. Capsule.

inner tepals 1–2 × 0.5–1 mm; tepal middle nerves purplish-brown, conspicuous, thicker towards the base. Staminal filaments 6–8 mm long, connate at their bases for 1.5–2 mm, awl-shaped, translucent, yellowish; anthers 2.5–3.5 mm long, curved, pollen golden-yellow. Ovary obovate-oblong, 3–4 mm long; ovules 12–24 per locule; style yellow, 5–8.5 mm long, stigmatic portion capitate, greenish-yellow, shiny. Capsule obclavate 7–11 × 4–5 mm. Seeds 2–3 mm, black, shiny, tetrahedrally angled.

Eponymy— Species dedicated to Florentino Felippone (1853–1939), Uruguayan physician, chemist and botanist, born in Paysandú and died in Montevideo (Dorr & Nicholson 2008).

Phenology— Flowering time April–September, fruiting time May–September. The flowers open around midday and close in the late afternoon, withering after two or three days. During more rigorous winters the species blooms more abundantly

Additional material examined: ARGENTINA. Buenos Aires: Parque Ledesma, without additional data, *S.J. Dickmann 20066* (SI044757!). URUGUAY. Lavalleya: “In summo Monte Arequita, locis humidis” 20 September 1920 *C. Osten 15249* (MVFA, p.p. mixed with *B. subsessilis*). Montevideo: *J. Arechavaleta y Balpardo 18* (K000524639 image seen!). Cerro, April 1926, *G. Herter 434a* (MVM! SI!). Montevideo: Cerro, “in saxosis” 31 July 1898, *C. Osten 3620* (G00098855! MVM!); *F. Felippone 5763* (SI044758! MVM!); *F. Felippone 3471* (SI044759!); *F. Felippone 6029* (SI044762!); April 1874 *M. Fruchard s.n.* (P018529166 image seen! p.p. mixed with *Beauverdia hirtella*). Soriano: Juan Jackson, 15 September 1940, *B. Rosengurt PE-4397* (MVFA! SI!).

Distribution and Habitat— *Beauverdia Felipponei* occurs in Southern Uruguay and northern Buenos Aires Province, Argentina. The populations grow in rocky places and stony grasslands and the bulbs often develop just above the rock, associated with mosses and scarce soil. This species occurs in the same environments of *B. hirtella* and *B. vittata*.

Discussion— *Beauverdia Felipponei* is easily recognized by its narrowly lanceolate and reflexes leaves, and by its glabrous and short scapes. The flowers, despite bigger, are very similar to the flowers of *Beauverdia hirtella* and *B. subsessilis*. However, *B. Felipponei* can be segregated of *B. hirtella* by absence of alliaceous smell, by its reflexes leaves, with narrowly lanceolate and expanded blades towards the base (vs. narrowly

linear and erect-ascendant leaves), and by its glabrous scapes, with up to 6 cm long (vs. pilose scapes, with up to 13 cm long). *Beauverdia Felipponei* differs from *B. subsessilis* by its bulbs simple, with thin roots (vs bulbs proliferous, with thickened roots and long horizontal rhizomes), by its reflexes leaves, with narrowly lanceolate and expanded blades towards the base (vs. narrowly linear and erect-ascendant leaves).

Guaglianone (1972: 188) synonymized *Beauverdia Felipponei* to *B. Sellowiana* and this criterion was followed in several works (e.g. Sassone *et al.* 2013, 2014a). One of the isotypes of *Beauverdia Sellowiana* deposited at K herbarium is the only material mentioned by Guaglianone (1972) that corresponds to the true *B. Sellowiana*, all the other material listed by her match to the type of *B. Felipponei* and this mistake was also reproduced by Giussani *et al.* (2014a) in the rehabilitation and revision of the genus *Beauverdia*.

The exsiccate at K herbarium consists of seven specimens, and the first exemplar from left to right is a specimen collected by Friedrich Sellow which is the isotype of *Triteleia sellowiana* and the others specimens are exemplars of *B. Felipponei* collected by José Arechavaleta y Balpardo in Uruguay, which may have motivated the misinterpretation of both taxa along the time.

Beauverdia subsessilis (Beauverd) Herter, Boissiera 7:510. 1943. Bas.: *Nothoscordum subsessile* Beauverd, Bulletin Herbier Boissier, ser. 2, 8: 997. 1909. ≡ *Ipheion subsessile* (Beauverd) Traub, Plant Life (Stanford) 5: 50. 1949. Typus: URUGUAY. Minas [Lavalleya]: “Depto. Minarum, in summo Monte Arequita, locis humidis, 18 Apr 1908 [August]” *C. Osten 5195b* (holotype G00191889 image seen! isotype MVM002899!). Figure 3.

= *Nothoscordum Izaguirreae* Crosa, Hickenia 3(61): 272. 2006. Typus: URUGUAY. Lavalleya: en pradera pastoreada, ubicada en la orilla del Río Santa Lucía, junto al puente del camino que pasa frente al cerro Arequita, 26 August 2001, *O. Crosa s.n.* (holotype MVFA 32803!) **Syn. nov.**

Geophyte 5–15 cm high above the soil. Bulb 7–14 × 7–14 mm, nearly spherical or ovoid, simple or proliferous, with horizontal rhizomes with a mild alliaceous smell when broken; outer cataphylls dark-brown, the innermost whitish. Roots thickened, with a mild alliaceous smell when broken, up to 12 cm long. Leaves at anthesis 3–14, spirally arranged; leaf sheaths 1.5–3 cm long, subterranean,

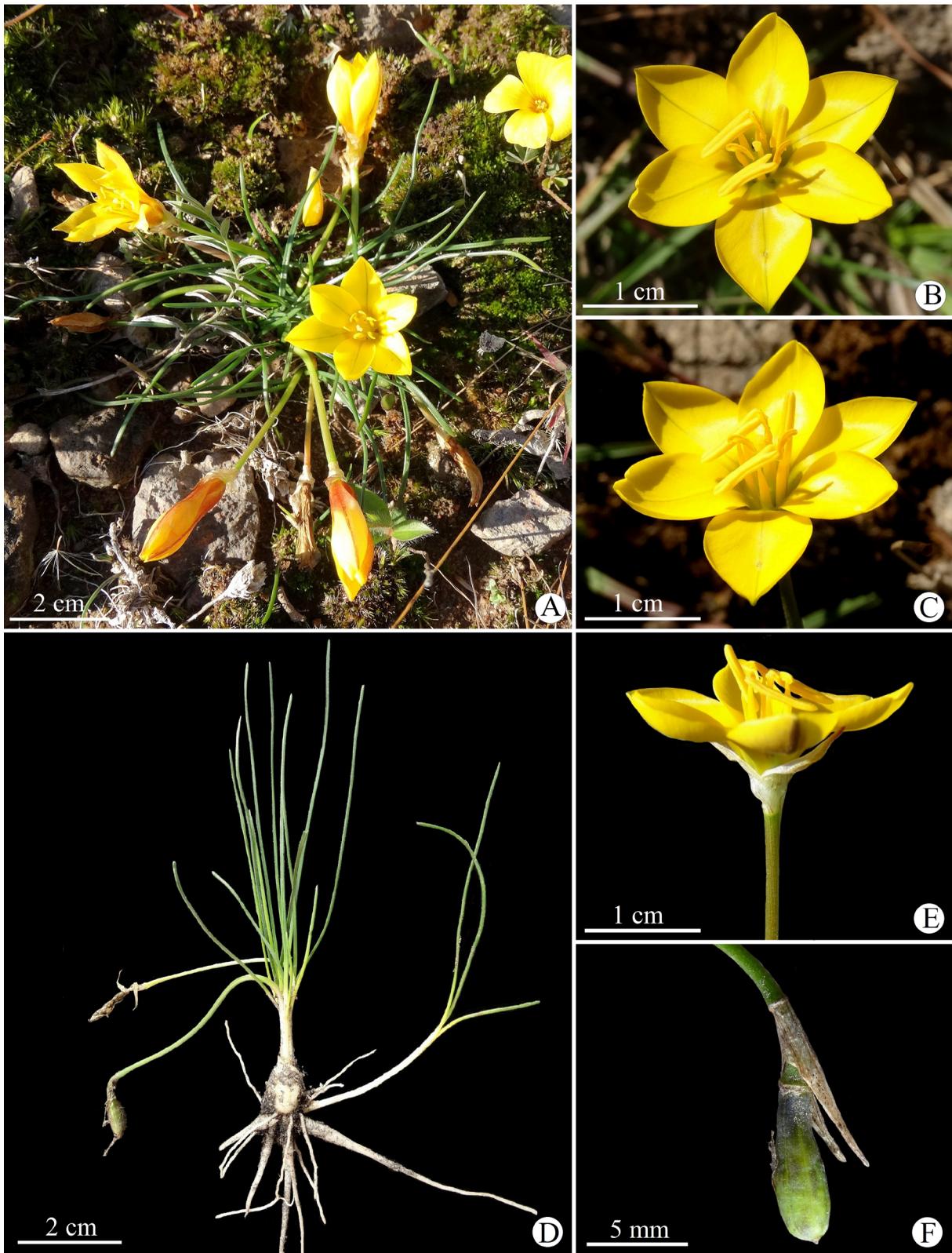


Figure 3. *Beauverdia subsessilis* Beauverd. A. Habit. B. Flor, upper view. C. Flower, inclined view. D. Plant removed from soil, showing the bulbs, rhizome and roots. E. Flower, lateral view. F. Capsule.

straw-colored; leaf blades 20–140 × 0.8–2 mm, narrowly linear-filiform, elliptic or narrowly elliptic in cross-section, 0.8–2 × 0.2–0.4 mm, dark-green, erect-ascendant or ascendant reflexes, glabrous, margin thickened and rigid due to the presence of fibrous vascular bundles. Scapes 1–4, 2.5–8 cm long, subcylindrical, erect, then curved at fruit maturity, glabrous. Bracts 2, ovate-elliptic, 6–10 × 2.5–3.5 mm, shortly fused at base for 1.5–2 mm. Pedicels 1.5–7 mm long, glabrous. Inflorescence 1-flowered. Flowers 12–25 × 5.5–7 mm, campanulate, golden-yellow, becoming ferruginous at the end of the anthesis, shiny, with a mild mint odor. Tepals 6 (3 + 3), golden-yellow, shortly fused at base for 0.5–2.5 mm, the outers ones, oblanceolate or elliptic, 12–20 × 6–9, base abruptly narrowed in a claw; claws of the outer tepals 1–2 × 0.5–1 mm; the inners ones elliptic, blades 11–18 × 4–8 mm; base abruptly narrowed in a claw; claws of the inner tepals 1–2 × 0.5–1 mm; tepal middle nerves purplish-brown, conspicuous, thicker towards the base. Staminal filaments 4–8 mm long, connate at their bases for 1–1.5 mm, awl-shaped, translucent, yellowish; anthers 2.5–3.5 mm long, curved, pollen golden-yellow. Ovary obovate-oblong or oblong, 3–4 mm long; ovules 8–14 per locule; style yellow, 5–8.5 mm long, stigmatic portion capitate, greenish-yellow, shiny. Capsule obclavate 7–11 × 4–5 mm. Seeds 1.8–3 mm, black, shiny, tetrahedrally angled.

Etymology— From the Latin *subsessilis* (sub = under + *sessilis* = sessile), a possible reference to the sessile or almost sessile flowers.

Phenology— Flowering time July–September, fruiting time August–October. The flowers open around midday and close in the late afternoon, withering after two or three days.

Additional material examined: URUGUAY. Lavalleja: Puente del Río Santa Lucía, próximo al Cerro Arequita, “en zona húmeda muy pastoreada, flor amarilla, con rizoma!!”, 22 September 1965, *Del Puerto et al. s.n.* (MVFA 2211!). “In summo Monte Arequita, locis humidis” 20 September 1920 *C. Osten 15249* (MVFA, p.p. mixe with *B. Felipponei*). Puente del Río Santa Lucía, Paso Roldán, en pradera muy pastoreada a orillas del río, 21 Sept 2001, *O. Crosa s.n.* (MVFA 32871), idem, 8 September 2014, *L.P. Deble et al. 13930* (PACA!).

Distribution and Habitat— *Beauverdia subsessilis* is narrowly endemic in Southern Uruguay, Lavalleja Department, where was found in low parts of Cerro Arequita region. The populations

grow in natural grassland areas, in shallow to deep soils, often in rock concavity where organic matter accumulates or along wetter areas of deep soils.

Discussion— *Beauverdia subsessilis* is easily recognized by its bulbs with longitudinal rhizomes and thicker roots. *Beauverdia subsessilis* differs from *B. hirtella* by its proliferous bulbs (vs. solitary) with longitudinal rhizomes and thicker roots (vs. without rhizomes and thin roots), and by its glabrous leaves and scapes (vs. pilose). *Beauverdia subsessilis* differs from *B. Felipponei* by its proliferous bulbs (vs. solitary) with longitudinal rhizomes and thicker roots (vs. without rhizomes and thin roots), and by its narrowly linear, erect-ascending leaves (vs. narrowly lanceolate, reflexes leaves).

Guaglianone (1972: 186) indicated that the holotype of *Nothoscordum subsessile* “consta de un solo ejemplar con hojas y escapo glabros, no obstante el bulbo presenta fuerte olor a ajo”. Thus, Guaglianone (1972) placed this species under *Beauverdia hirtella* and this criterion was followed by Sassone *et al.* (2014b). During the review of the MVM herbarium, institution that has a significant part of Osten’s collections, it was possible to analyze some exsiccates with the number *C. Osten 5195* that have abundant individuals and belong to different species of *Beauverdia*. In one of them, there are three specimens with leaves and scapes glabrous, and bulbs with longitudinal rhizome and thicker roots. This material there is a slightly discrepant indication of the type in relation to the date, which is indicated in the label “Depto. Minarum, in summo Monte Arequita, locis humidis, August 1908 *C. Osten 5195*”.

Nothoscordum Ostenii Beauverd, Bull. Herb. Boissier, ser. 2, 8: 996. 1909. Typus: URUGUAY. Paysandú: Los Molles, “Est Lawlor, Molles, in collibus lapidosis” 29 August 1898, *C. Osten 3611* (holotype G00191887! isotype SI000434!). Figure 4.

= *Nothoscordum luteominus* Ravenna, Onira Botanical Leaflets 8 (16): 63. 2003. Typus: ARGENTINA. Buenos Aires: Campana, 12 Oct 1953, *V.J. Mazzucconi 379* (BAB) **Syn. nov.**

Geophyte 4–10 cm high above the soil. Bulb 7–14 × 7–12 mm, nearly globose, simple, without alliaceous smell; outer cataphylls dark-brown, the innermost whitish. Leaves at anthesis 3–6, spirally arranged; leaf sheaths 1–2.5 cm long, subterranean,

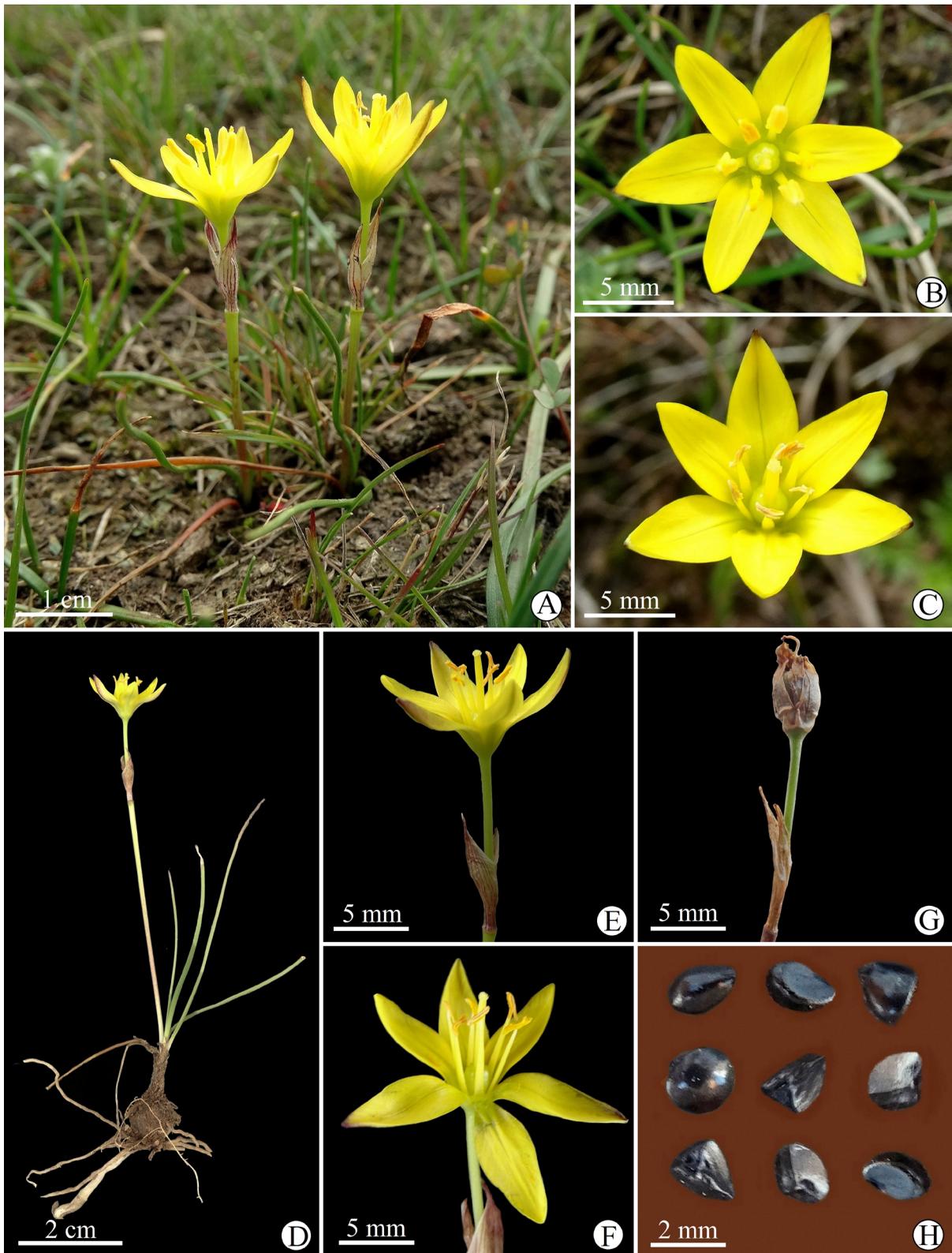


Figure 4. *Nothoscordum Ostenii* Beauverd. A. Habit. B. Flor, upper view. C. Flower, inclined view. D. Plant removed from soil, showing the bulb and roots. E. Flower, lateral view. F. Flower, with the tepal removed showing the pistil and stamens. G. Capsule. H. Seeds

straw-colored; leaf blades 20–120 × 0.3–0.8 mm, narrowly linear, quadrangular or rectangular in cross section, 0.3–0.8 × 0.2–0.4 mm, light-green, erect or ascending-erect, glabrous, margin thickened and rigid due to the presence of fibrous vascular bundles, scariose. Scapes solitary, 2.5–8 cm long, subcylindrical, erect at fruit maturity, glabrous. Bracts 2, ovate-elliptic, 7–10 × 3–4 mm, shortly fused at base for ca. 3–4 mm. Pedicels 5–18 mm long, glabrous. Inflorescence 1-flowered. Flowers 12–18 × 6.5–8 mm, broadly campanulate, yellow or golden-yellow. Tepals 6 (3 + 3), golden-yellow, shortly fused at base for 0.5–1.5 mm, the outers ones, lanceolate or elliptic, 10–15 × 4–5, base narrowed in a claw; the inners ones elliptic, blades 11–16 × 3–4 mm; base narrowed in a claw; tepal middle nerves purplish-brown or greenish-brown, conspicuous, thicker towards the base. Staminal filaments 6–8 mm long, free at their bases, awl-shaped, translucent, yellowish; anthers 2–2.5 mm long, curved, pollen golden-yellow. Ovary obovate-oblong, 3–3.5 mm long; ovules 8–12 per locule; style yellow, 6–7.5 mm long, stigmatic portion capitate, greenish-yellow, shiny. Capsule nearly ovoid 6–7 × 4–5 mm. Seeds ca. 2 mm, black, shiny, tetrahedrally angled.

Eponymy— Species dedicated to the German botanist Cornelius Osten (1863–1936), who emigrated to Uruguay in 1886 and worked with José Arechavaleta y Balpardo, at the National Museum of Natural History in Montevideo.

Phenology— Flowering time August–September, fruiting time September–October. The flowers open around midday and close in the late afternoon, withering after two or three days. One collection indicated May.

Additional material examined: BRAZIL. Rio Grande do Sul: Dom Pedrito, Estância da Serrinha, 29 August 2021, *L.P. Deble & B.P. Moreira 18851* (PACA!). URUGUAY. Montevideo: Cerro, 8 september 1899, *Hicken 02* (SI044967!). “Amer. Merid. OrnithogalumꞫ scapo bulbifloro, fl. lut., foliis lin”, 1767, *P. Commerson s.n.* (P01855270!). Atahualpa, August 1926, *G. Herter 437* (MVM0869! P02151436! P02151437!). Paysandú: ruta 26, 7 September 2015, *L.P. Deble et al. 17444* (PACA!).

Distribution and Habitat— *Nothoscordum Ostenii* is a rare species found in western and southern Uruguay, and north of Buenos Aires province, Argentina and recently found in north of Dom Pedrito municipality in southern Rio Grande do

Sul state, Brazil. The individuals grow on shallow soils, among delicate grasses. The specimens remain underground for most of the year. At the end of July, it emits leaves, the flowers appear in August and early September and the species ends its cycle at the end of September or early October.

Discussion— *Nothoscordum Ostenii* is a very peculiar species, which shows flowers solitary, like those found in *Beauverdia*, but the fruit does not become curved at maturity. By its general aspect the species is very close related to *N. montevidense*, but its perigone is bigger and the ovary displays only 4–8 ovules per locule (vs. 12–18). *Nothoscordum Ostenii* was treated as a doubtful species by Guaglianone (1972) and Sassone et al. (2014a), while Ravenna (2001) recognized this taxon as a synonym of *Nothoscordum hirtellum*. Afterwards, Ravenna (2003: 63) described *N. luteominus* from Buenos Aires province, Argentina. However, the habit and measurements of the type specimen of *N. luteominus* overlap the dimensions of *N. Ostenii*.

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Declaration of competing of interest

The author declare that he has no known competing financial interests or personal relationships that could have appeared to undermine the objectivity or integrity of the work reported in this paper.

References

- Baker, J.G. 1871. A Revision of the Genera and Species of Herbaceous Capsular Gamophyllous Liliaceae. *The Journal of the Linnean Society* 11: 349–437.
- Baker, J.G. 1896. The genus *Brodiaea* and its allies. *The Gardeners' chronicle: a weekly illustrated journal of horticulture and allied subjects*, ser. 3, 20: 459.
- Beauverd, G. 1906. Una Liliacée nouvelle de l'Uruguay. *Bulletin de L'Herbier Boissier*, 2a. sér, 6: 1011.
- Beauverd, G. 1908. Nouvelles espèces uruguayennes du genre *Nothoscordum* Kunth. *Bulletin de L'Herbier Boissier*, 2a. sér, 12: 994–1007.
- Beauverd, G. 1921. Plantes Nouvelles de l'Uruguay. *Bulletin de la Société botanique de Genève*, 2a. sér., 13–14: 267–271.

Deble, L.P., Notes on *Beauverdia* and *Nothoscordum*.

- Bilenca, D. & Miñarro, F. 2004. *Identificación de áreas valiosas de pastizal en las Pampas y Campos de Argentina, Uruguay y Sur de Brasil*. Fundación Vida Silvestre, Buenos Aires. 353 pp.
- Cabrera, A.L. 1976. *Regiones Fitogeográficas Argentinas. Enciclopedia Argentina de Agricultura y Jardinería* Tomo II, Fascículo 1. Acme, Buenos Aires, 85 pp.
- Cavanilles, A.J. 1793. *Icones et Descriptiones Plantarum 2*, Ex Regia typographia, Madrid. 83pp, pl. 101-200.
- Crosa, O. 1975. Las especies unifloras del género *Nothoscordum* Kunth y el género *Ipheion* Raf. de la tribu Alliaceae (Liliaceae). *Darwiniana* 19: 335-344.
- Crosa, O. 2006. *Nothoscordum Izaguirreae*, nueva especie uniflora de Alliaceae de Uruguay. *Hickenia* 3 (61): 271-275.
- Deble, L.P. 2021. *Beauverdia hirtella* subsp. *glabrata* (Amaryllidaceae) a new subspecies from Rio Grande do Sul State, Brazil. *Phytotaxa* 527 (1): 21-31.
- Dorr, L.J. & Nicolson, D.H. 2008. Taxonomic Literature: a selective guide to botanical publications and collections with dates, commentaries and types, Supplement VII: F-Frer. 469pp.
- Grisebach, A. 1879. Symbolae ad floram Argentinam : Zweite Bearbeitung argentinischer Pflanzen nach den auf Befehl der H. Nacional-Regierung der argentinischen Republik durch die Professoren Lorentz und Hieronymus veranstalteten Sammlungen, sowie den im Museum zu Göttingen aufbewahrten Herbarien anderer Naturforscher, besonders den durch Herrn Schickendantz in der Provinz Catamarca gesammelten Pflanzen. *Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen* 24: 1-345.
- Guaglianone, E.R. 1972. Sinopsis de las especies de *Ipheion* Raf. y *Nothoscordum* Kunth (Liliáceas) de Entre Ríos y regiones vecinas. *Darwiniana* 17: 159-242.
- Herter, W.G. 1943. *Beauverdia* genum novum Liliacearum. *Boissiera* 7: 505-512.
- Herter, W.G. 1956. Flora del Uruguay. *Revista Sudamericana de Botánica* 1: 216.
- Kunth, K.S. 1843. *Nothoscordum*. *Enumeratio plantarum omnium hucusque cognitarum: secundum familias naturales disposita, adjectis characteribus, differentiis et synonymis* 4: 457-464 . Doi: <https://doi.org/10.5962/bhl.title.67381>
- Poeppig, E.F. 1833. *Fragmentum Synopseos Plantarum Phanerogamum ab Auctore Annis MDCCCXXVII ad MDCCCXXIX in Chile lectarum*. Lipsiae [Leipzig], 33pp.
- Rafinesque, C.S. 1837. *Flora Telluriana Pars Prima. Introd. et Classific. Ad mantissima synoptica 2000 Nova Genera plantarum vel nov. ord. et spec. In orbis Tellurianum 2*. Printed for the author by H. Probasco. Philadelphia, 112 pp. doi <https://doi.org/10.5962/bhl.title.7751>
- Ravenna, P.F. 1978. Studies in the Alliaceae II. *Plant Life. Stanford, California* 34: 144.
- Ravenna, P.F. 2001. New species of *Nothoscordum* (Alliaceae) XVIII. *Onira Botanical Leaflets* 6 (4): 34-37.
- Ravenna, P.F. 2003. New species of *Nothoscordum* (Alliaceae) XXIV. *Onira Botanical Leaflets* 8 (16): 61-64.
- Sassone, A.B., Giussani, L.M. & Guaglianone, E.R. 2013. Multivariate studies of *Ipheion* (Amaryllidaceae, Allioideae) and related genera. *Plant Systematics and Evolution* 299: 1561-1575.
- Sassone, A.B., Giussani, L.M. & Guaglianone, E.R. 2014a. *Beauverdia*, a Resurrected Genus of Amaryllidaceae (Allioideae, Gilliesiaceae). *Systematic Botany* 39 (3): 767-775.
- Sassone, A.B., Arroyo-Leuenberger, S.C. & Giussani, L.M. 2014b. Nueva Circunscripción de la Tribu Leucocoryneae (Amaryllidaceae, Allioideae). *Darwiniana nueva serie* 2: 197-206.
- Smith, J.E. 1810. Characters of a Liliaceous Genus called Brodiaea. *Transactions of the Linnean Society of London*. London 10: 1-6.
- Soriano, A., León, R.J.C., Sala, O.E., Lavado, R.S., Deregibus, V.A., Cahuepé, O., Scaglia, A., Velazquez, C.A. & Lemcoff, J.H. 1992. Río de la Plata grasslands: 367-407. In: Coupland, R.T. (Ed.) *Ecosystems of the World. Natural Grasslands. Introduction and Western Hemisphere*. Elsevier, Amsterdam.
- Staffeu, F. A. & Cowan, R.S. 1976. Taxonomic Literature: a selective guide to botanical publications and collections with dates, commentaries and types, v. 1, A-G. Bohn, Scheltema & Holkema, Utrecht
- Traub, H.P. 1949. Amaryllid notes. *Plant Life. Stanford, California* 5: 50.
- Traub, H.P. 1963. *Tristagma* Poepp. *Plant Life. Stanford, California* 19: 60-61.