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Rehabilitation of the South American genus *Sphenostigma* Baker (Iridaceae: Tigridieae)

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Abstract. Rehabilitation of the South American genus *Sphenostigma* Baker (Iridaceae: Tigridieae). *Sphenostigma* is rehabilitated from the synonymy of *Gelasine* Herbert based on distinctive characteristics of the perigonium and mainly by shape of the gynoecium, which has a wide stigmatic area perpendicular to the style branches. Six species and four subspecies are recognized, six of them constitute new combinations: *Sphenostigma Sellowianum* (Klatt) Baker (type of the genus), *S. caeruleum* Klatt, *S. giganteum* (Ravenna) Deble subsp. *giganteum*, *S. giganteum* subsp. *flexitepalum* (Ravenna) Deble, *S. paranaense* (Ravenna) Deble, *S. rigidum* (Ravenna) Deble, *S. uruguaiense* (Ravenna) Deble subsp. *uruguaiense*, and S. *uruguaiense* subsp. *orientale* (Ravenna) Deble. Lectotypes are designated for *Sphenostigma Sellowianum*, *S. giganteum* subsp. *flexitepalum* and *S. rigidum*. A neotype is proposed for *S. uruguaiense* subsp. *orientale*. A list of valid names and synonyms is provided.
Key words: *Gelasine*, South America, *Sphenostigma*, Taxonomy.

Resumen. Rehabilitación del género sudamericano *Sphenostigma* Baker (Iridaceae: Tigridieae).
Sphenostigma se rehabilita de la sinonimia de *Gelasine* Herbert basándose en las características distintivas del perigonio y principalmente en la forma del gineceo, que presenta una amplia área estigmática perpendicular a las ramas del estilo. Se reconocen seis especies y cuatro subespecies, seis de ellas constituyen nuevas combinaciones: *Sphenostigma Sellowianum* (Klatt) Baker (tipo del género), *S. caeruleum* Klatt, *S. giganteum* (Ravenna) Deble subsp. *giganteum*, *S. giganteum* subsp. *flexitepalum* (Ravenna) Deble, *S. paranaense* (Ravenna) Deble, *S. rigidum* (Ravenna) Deble y *S. uruguaiense* (Ravenna) Deble subsp *uruguaiense* y *S. uruguaiense* subsp. *orientale* (Ravenna) Deble. Se designan lectotipos para *Sphenostigma Sellowianum*, *S. giganteum* subsp. *flexitepalum* y *S. rigidum*. También se propone un neotipo para *S. uruguaiense* subsp. *orientale*. Además, se presenta una lista de nombres válidos y sinónimos.

Palabras clave: *Gelasine*, América del Sur, *Sphenostigma,* Taxonomía.

The genus *Sphenostigma* Baker (1877: 124) was described in <*Systema Iridacearum*>, being recognized in the tribe Xiphionideae, along with *Xiphion* Tourn. ex Miller (1754: 13xi) and *Cipura* Aublet (1775: 38), and distinguished by its <*stigmata parva integra cuneata denticulata, folia plicata*>. Baker recognized a single species, *Sphenostigma Sellowianum* (Klatt 1862: 557) Baker (1877: 124) [=*Gelasine caerulea* (Vellozo) Ravenna]. Subsequently, new taxa were proposed or transferred to *Sphenostigma* (e.g. Klatt 1882, Bentham & Hooker 1883; Baker 1892, Kraenzlin 1908, Foster 1945, Foster 1946, Foster 1950). Afterward, Ravenna (1977: 8) rescue *Sisyrinchium caeruleum* Vellozo, as a valid epithet antedating *Sphenostigma Sellowianum*, and treated the taxon as subordinate to *Gelasine* Herbert (1840: pl 3779). Later, the author justifies that <*their similar habit, and overlapping floral characters*> are the mainly reasons for reducing *Sphenostigma* to synonym of *Gelasine* (Ravenna 1984: 347). Ravenna's treatment was accepted until recently, when Chauveau *et al.* (2012) recognized *Gelasine caerulea* as appears unrelated to *G. elongata* (Graham) Ravenna, suggesting that the generic circumscription of the genus should be revised.

During the revision of *Gelasine*, I was able to verify important differences in the shape of the style and stigma branches of species related to *Gelasine caerulea*. Furthermore, these species have inner tepals that differ from the outer ones, making it possible to easily distinguish them from *Gelasine elongata* allies. In this way, the genus *Sphenostigma* is rehabilitated and a synopsis of valid species and synonyms is provided. The morphological data mentioned in the text and the

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terminology used follow Goldblatt & Manning (2008), Beentje (2010), Deble (2025) and Deble et al. (2025). The description of *Sphenostigma* is based on morphological characteristics of plants observed in natural habitat, cultivated specimens and on dry material. The taxonomic novelties and typifications are in accordance with the standards established by the International Code of Nomenclature for algae, fungi, and plants (Turland et al. 2025).

Taxonomic treatment

Sphenostigma Baker, Journal of the Linnean Society. Botany. London 16: 124. 1877. Figure 1

Description—Flowers actinomorphic, straight, fugacious, with a shallow or deep central depression, central depression forming a cupule. Tepals, 6, connivant at the base slightly adnate, purple, violet-blue, pale lilac to almost white. Outer tepals, 3, distinctly larger than the inner tepals; outer tepals blade oblanceolate or obovate-oblong, obtuse or spathulate apices, oblique, ascendant or erect-ascendant; outer tepals claw cuneate, glabrous. Inner tepals, 3, often close to each other, forming an urn; inner tepals blade ascendant-erect or erect, blade cucullate or folded, elliptic or oblanceolate, glabrous; inner tepals claw cuneate. Stamens, 3, positioned below at the apex of the style or more longer than the style branches. Staminal filaments entirely adnate in a conical column, or adnate for up to ¾ of total length, erect; anthers erect close to each other, connective narrowed, dehiscence longitudinal, which initiates the opening near at the apex; ochraceous to dark-blue thecae; pollen whitish, gray, blue or yellow. Ovary slightly angled or compressed, linear-oblong, trilocular, pluriovulate. Style filiform, thickened and 3-branched at top; branches erect-ascending or oblique, stigmatic portion dilated, reniform, transversal. Capsule oblong or obovate-oblong, angled, with thin walls. Seeds semispherical or nearly circular, strongly compressed, epidermis smooth or folded.

Plants herbaceous, bulbous, with fleshy roots, and nearly ovoid to oblong bulbs; cataphylls fleshy, the outermost brownish-orange or yellowish-brown, the innermost yellowish-orange or white-cream. Leaves greenish-yellow, green or bluish-green, plicate, rigid, with blade and leaf-sheath very different. Spathes pedunculate, 3–8-flowered; valves two, the outer one smaller or subequal than the inner one, both plicate in cross section. Pedicels terete, surrounded by a bracteole; bracteole flat, plicate or convolute, membranous and translucent or with shape and texture similar of the valves.

Typus: *Alophia Sellowiana* Klatt (1862: 557).

Geographic distribution and Habitat— The genus includes six species that occur in grasslands, mountainous places, and savannas formations, between 13º-34º South latitude. *Sphenostigma Sellowianum* displays the more ample geographic distribution, occurring in grasslands <Campos> and savannas <Cerrados> in northeastern Argentina (Misiones), southern Paraguay and southern and central-west Brazil. *Sphenostigma caeruleum, S. paranaense* and *S. rigidium* occur in High Grasslands <Campos de Altitude> along river banks in south and southeast Brazil, while *Sphenostigma giganteum* is endemic on <Cerrados>, in association with damp and waterlogged places in Central Brazil, and finally *Sphenostigma uruguaiense* has the southernmost distribution, being extremely rare, inhabiting pristine grasslands in the northern half of Uruguay and southern Rio Grande do Sul state, in Brazil.

Etymology— The Greek prefix *σφενο* (= cuneate) + the Greek substantive *στίγμα* (=stigma) in reference to wedge-shaped stigma, a distinctive characteristic that the type species of the genus possess, perceptibly especially when analyzing the style and style branches in dry material.

List of species, synonyms and types

1. **Sphenostigma Sellowianum** (Klatt) Baker, Journal of the Linnean Society, Botany 16: 124. 1877. Bas. *Alophia Sellowiana* Klatt, Linnaea Ein Journal für die Botanik in ihrem ganzen Umfange 31 (5): 557. 1962. Typus: BRAZIL. Without precise data <*F. Sellow 4633*> sensu Urban (1893): BRAZIL. Paraná: <im östlichen und mittleren Teile des Staates Paraná> March/October 1828 (Lectotypus **(hic locus designatus!)** BR0000006885113 image seen!). Figure 1(A-C).

= *Sisyrinchium caeruleum* Vellozo, Florae Fluminensis Icones 9: pl 66. 1831. ≡ *Gelasine caerulea* (Vellozo) Ravenna, Noticiario Mensual, Museo Nacional de Historia Natural. Santiago de Chile 249: 8. 1977. ≡ *Alophia coerulea* (Vellozo) Chukr, Flora Fanerogamica Estado São Paulo 3: 128. 2003 [non *Sphenostigma caeruleum* Klatt 1882: 29].

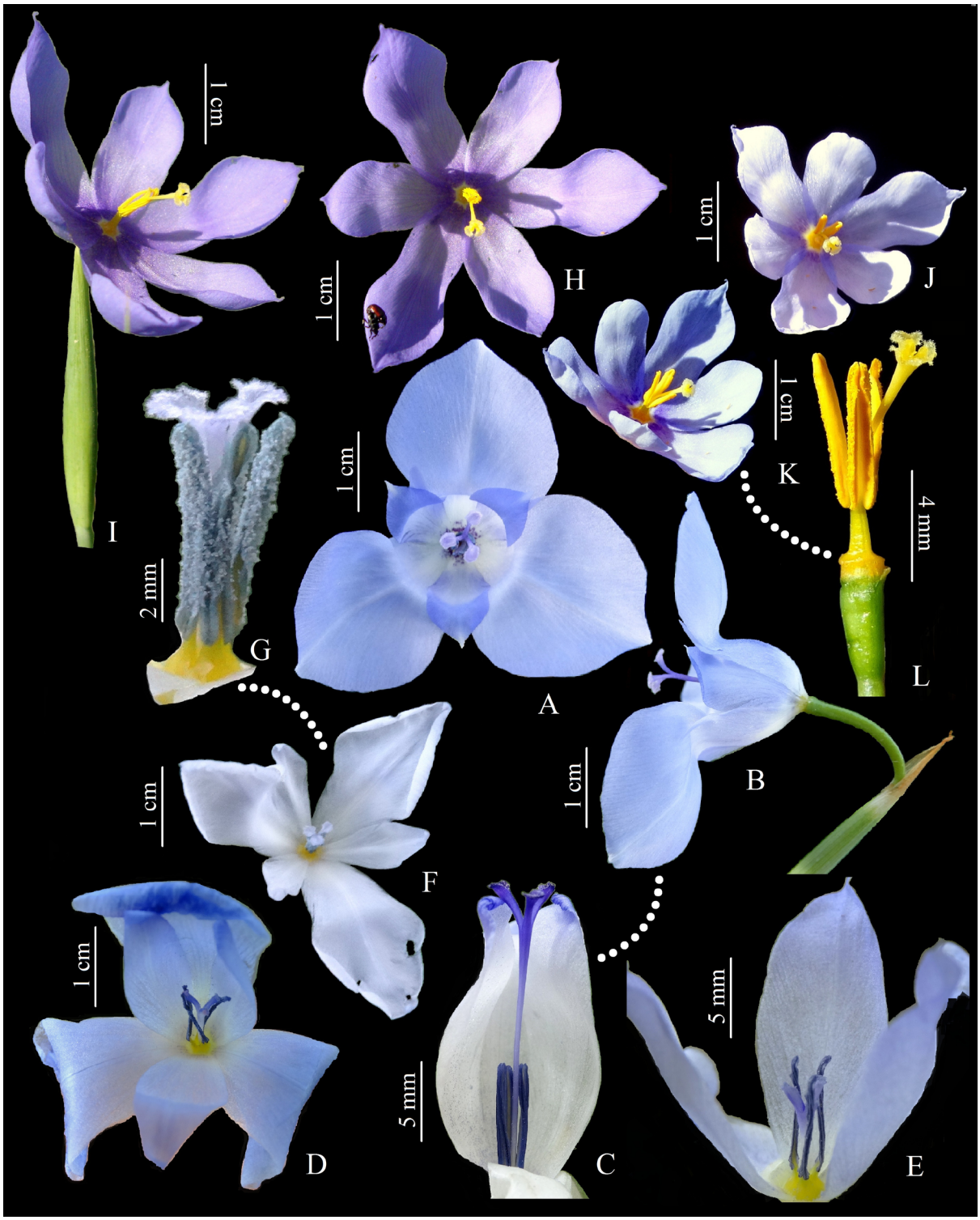

Figure 1. Floral diversity in *Sphenostigma*. A, Flowers of *S. Sellowianum*, upper view. B, Flowers of *S. Sellowianum*, lateral view. C, Androgynoecium and two inner tepals of *S. Sellowianum*. D, Flowers of *S. caerulea,* lateral view. E, Androgynoecium view of *S. caerulea*. F. Flowers of *S. rigidum*, upper view. G, Androgynoecium of *S. rigidum*. H, Flowers of *S. uruguaiense* subsp. *uruguaiense*, frontal view. I, Flowers of *S. uruguaiense* subsp. *uruguaiense*, lateral view. J, Flowers of *G. uruguaiense* subsp. *orientale*, frontal view. K, Flowers of *G. uruguaiense* subsp. *orientale*, lateral view. L, Androgynoecium of *G. uruguaiense* subsp. *uruguaiense*.

2. Sphenostigma caeruleum Klatt, Abhandlungen der Naturforschenden Gesellschaft zu Halle. Halle 15: 363. 1882. ≡ Gelasine caldensis Ravenna Noticiario Mensual, Museo Nacional de Historia Natural. Santiago de Chile 21 (249): 8. 1977. Typus: BRAZIL. Minas Gerais: Caldas, < Territ. Caldense prov. Minarum in paludosis>, October 1859 , *Regnell III.1217* (holotypus S06-6337 image seen! isotypi US00092697 image seen! US01327888 image seen!). Figure 1 (D-E).

3. Sphenostigma giganteum (Ravenna) Deble, comb. nov. Bas.: *Gelasine gigantea* Ravenna, Onira Botanical Leaflets (10) 13: 43. 2005. Typus: BRAZIL. Distrito Federal: <in proximis aëroporti urbi Brasilia> 18 January 1964, *P.F. Ravenna & E.P. Heringer 190* (UB, not localized, Herb. Rav., destroyed [see Deble 2024, García et al., 2024]).
urn:lsid:ipni.org:names:77375147-1

Observations—Ravenna (2005: 44) mentioned the holotype [typus] a collection performed by him with Ezechias Paulo Heringer, stored at the UB Herbarium, furthermore, Ravenna mentioned an additional isotype stored at Herbarium Ravenna <Herb. Rav.> (following Deble 2024, García et al. 2024 the material deposited at Herb. Rav. was destroyed). To date, it has not been possible to locate the material stored at the UB herbarium. Other vouchers have been mentioned and are available for typifications. Even so, in this case I have decided not to propose a lectotypification until all possibilities of finding the original collection have been exhausted.

3.1 Sphenostigma giganteum subsp. **flexitepalum** (Ravenna) Deble, comb. nov.. Bas. *Gelasine gigantea* Ravenna subsp. *flexitepala* Ravenna, Onira Botanical Leaflets (10) 13: 44. 2005. Typus: BRAZIL. Distrito Federal: <in Campus Universitatis Brasiliae> February 1964, *P.F. Ravenna 150* (Herb. Rav., destroyed [see Deble 2024, García et al., 2024]). Lectotypus **(hic locus designatus!)**: BRAZIL. Minas Gerais: Serra da Anta, cerrado, ca. 2km N of Paracatú, 700m a.s.l., 5 February 1970, *H.S. Irwin, E. Onishi, S.F. da Fonseca, R. Souza, R. Reis dos Santos & J. Ramos 26134* (NY00917382 image seen! isolectotypus UB00037113 image seen!).
urn:lsid:ipni.org:names:77375148-1

4. Sphenostigma paranaense (Ravenna) Deble, comb. nov. Bas.: *Gelasine paranaensis* Ravenna, Onira Botanical Leaflets (10) 13: 42. 2005. Typus: BRAZIL. Paraná: Tijucas do Sul, rincão, 21 October 1977, *G. Hatschbach 40442* (holotypus MBM060803!).
urn:lsid:ipni.org:names:77375149-1

5. Sphenostigma rigidum (Ravenna) Deble, comb. nov. Bas.: *Gelasine rigida* Ravenna, Boletín de la Sociedad Argentina Botanica 10: 315. 1965. Typus: BRAZIL. Minas Gerais: <in campis montuosis ad mun. Novae Limae (km 56 ad viae Belo Horizonte – Río de Janeiro) in proximus locibus Serra do Itatiaia (prope Ouro Prêto), et caet> 12 January 1963, *P.F. Ravenna 178* (holotypus Herb. Rav. destroyed [see Deble 2024, García et al., 2024]). Lectotypus **(hic locus designatus!)**: BRAZIL. Minas gerais: Carandaí, Hermílio Alves, January 1941 [Carandaí, km 418, 25 November 1946], A.P. Duarte 5080 [620] (RB00627425 image seen!). Figure 1 (F-G).
urn:lsid:ipni.org:names:77375150-1

Observations—Ravenna (1965: 315) mentioned the holotype [typus] a collection of his own, stored at the <Herb. Rav.>, as mentioned by Deble (2024) and García et al. (2024) the material was destroyed, making it necessary to choose another type. Previous studies have already adopted this criterion and taxa described by Ravenna, whose mentioned materials are deposited only at the Herb. Rav. have been typified (e.g., Gil 2012, Deble & Alves 2017a, Deble & Alves 2017b, Deble & Alves 2020, Gil et al. 2019, Gil et al. 2021a, Gil et al. 2021b). In the case of *Gelasine rigida*, Ravenna mentioned an additional collection, carried out by Aparício Duarte and deposited at RB Herbarium, which should have priority for typification. Although the collection number mentioned by Ravenna differs from the information on the material's record stored in the RB herbarium, it was assumed that this material is a lectotype, since Ravenna himself identifies it as a new species, on a handwritten fragment of paper, the collection number is shown as 620, but the <6> is incomplete and could suggest the number <5> and the <2> appears blurred and could suggest the number <8>, thus Ravenna may have been led to recognize the number as 580, instead of 620, and it is presumed that it was mistakenly published as 5080. It should also be considered that in the first half of the 1940s, the collections number of Duarte had not yet reached at number 1,000.

Table 1. A comparison of selected characters differing among the genera *Ennealophus*, *Gelasine*, *Lethia*, *Salpingostylis* and *Sphenostigma*.

Character/ Genus	*Ennealophus* R.Br.	*Gelasine* Herbert	*Lethia* Ravenna	*Salpingostylis* Small	*Sphenostigma* Baker
Roots	thin, persistent	fleshy, crumbly	thin, persistent	thin, persistent	fleshy, persistent or crumbly
Bulbs	ovoid with papery cataphylls, the outer cataphylls darker, the inner cataphylls stramineous or white-cream	oblong or obconic with fleshy cataphylls, the outer cataphylls dark-brown, the inner cataphylls yellowish-orange or reddish-orange	conic with papery cataphylls, the outer cataphylls darker, the inner cataphylls stramineous or greenish-white	ovoid with papery cataphylls, the outer cataphylls dark-brown, the inner cataphylls stramineous	ovoid or oblong with fleshy cataphylls, the outer cataphylls brownish-orange or yellowish-brown, the inner cataphylls cream or yellowish-orange
Leaf texture	soft	rigid	soft	soft	rigid
Cauline-leaf	more developed than the basal leaves, generally longer than the inflorescence	shorter than the basal leaves, well developed	shorter than the basal leaves, often bracteiform	shorter than the basal leaves, bracteiform	shorter than the basal leaves, well developed
Spathes	spathes with twisted valves during the end of flowering and fruiting, making the flower pedicel visible; outer and inner valves subequal in length both plicate in cross-section	spathes with bracts that remain intact during fruiting; outer and inner valves subequal in length, the outer plicate, the inner curved or plicate in cross-section	spathes with bracts that remain intact during fruiting; outer valves shorter than the inner valves, both plicate in cross-section	spathes with bracts that remain intact during fruiting; outer valves with up ⅔ of the length of the inner valves; outer plicate, the inner convolute in cross-section	spathes with bracts that remain intact during fruiting; outer valves with ⅔ or up to ¾ of the length of the inner valves; outer plicate, the inner convolute in cross-section
Bracteole	present	present	absent	absent	present
Perigone	with a central dome-shaped elevation, with the outer tepals longer than the inner ones, inner tepals cucullate, with a recurved apex, lipidic trichomes in a layer at apex of the claw of inner tepals	campanulate. Outer and inner tepals subequal in shape and size, lipidic trichomes absent.	with a central dome-shaped elevation, with the outer tepals longer than the inner ones, inner tepals cucullate, with a recurved apex, lipiidic trichomes in a layer at apex of the claw of inner tepals	spreading, nearly disciform. Outer and inner tepals subequal in shape and size, lipidic trichomes absent.	with a central dome-shaped depression, Outer tepals longer than the inner ones; inner tepals curved or cucullate, with a recurved apex, lipidic trichomes absent
Stamens	filaments adnate in a bottle shaped column, anthers, oblique or slightly porrect, adnate at the base of the style-branches, with ca. of ½ of the length of the filaments; broad connective	filaments adnate in a conic column, anthers longer than the filaments, free, slightly porrect; narrow connective	filaments adnate in a conic column, anthers longer than the filaments, erect and adnate at the base of the style-branches; broad connective	filaments obclavate, adnate only at the base, anthers longer than the filaments, free, slightly porrect; narrow connective	filaments adnate in a conic column, anthers longer than the filaments, erect and adnate at the base of the style-branches; narrow connective
Style	slender towards the base, with style branches thickened, end in stigmatic portion deeply lobed in several crests	filiform, with style branches filiform with terminal stigmatic portion oblique, curved at top	slender towards the base, with short and thickened style branches, stigmatic portion in two ear-shaped lobes	slender towards the base, with style branches thickened, end in stigmatic portion oblique, broad and curved, emarginate at top	slender towards the base, with style branches thickened, end in a transversal dilated, reniform or almost circular, stigmatic portion
Geographic distribution	along the Andes of Ecuador, Peru, Bolivia and Argentina, and also in subtropical forests of the Andean slopes, between 1,000 and more than 3,000m above sea level	in Campos and Pampas of the Southeast South America in Rio Grande do Sul state (Brazil), Uruguay and Argentina	dry savannas formations <Cerrado and Caatinga> in Northeast Brazil (north Minas Gerais, Bahia, Pernambuco and Paraiba states)	grasslands areas associated to pine woods in Central Florida, USA	grasslands <Campos> and savannas <Cerrados> in north-eastern Argentina (Misiones province), southern Paraguay and southern and central-west Brazil and Uruguay

6. Sphenostigma uruguaiense (Ravenna) Deble, comb. nov. Bas. Gelasine uruguaiensis Ravenna, Nordic Journal of Botany 4 (3): 348. 1984. Typus: URUGUAY. Durazno: Culta in Bonaria ex bulbis in arenosis prope Molles civit, Durazno Uruguay collectis, *P.F. Ravenna 5* (holotypus Herb. Rav., destroyed (see Deble 2024, Garcíal et al., 2024), isotypus MVM, not found!). Figure 1 (H-I).
urn:lsid:ipni.org:names:77375151-1

Observations—Ravenna (2005: 44) mentioned the holotype [typus] a collection performed by him stored at <Herb. Rav.> (following Deble 2024, García et al. 2024 the material deposited at Herb. Rav. was destroyed). To date, it has not been possible to locate the additional material cited in the protologue <Uruguay, Durazno, Molles, 20 October 1901, C. Osten 4304>, stored at MVM, NY and SI Herbaria. In this way, I have decided not to propose a typification until all possibilities of finding the Osten's collection have been exhausted.

Sphenostigma uruguaiense subsp. **orientale** (Ravenna) Deble, comb. nov. Bas.: Gelasine uruguaiensis Ravenna subsp. orientalis Ravenna, Nordic Journal of Botany 4 (3): 349. 1984. Typus: URUGUAY. Cerro Largo: Culta in Bonari ex bulbis ad Bella Vista et Puente de Piedra civit. Cerro-Largo Uruguay collectis November 1959, *P.F. Ravenna 6* (holotypus Herb. Rav. destroyed., isotypus MVM not localized). Neotypus **(hic locus designatus!)**: URUGUAY. Cerro Largo: Puente de Piedra, en campo prístino, muy rara, 14 October 2025, *L.P. Deble & B.P. Moreira 23023* (ICN!) Figure 1 (J-L).
urn:lsid:ipni.org:names:77375152-1

Excluded species:
Sphenostigma goospedianum R.C. Foster, Contributions from the Gray Herbarium of Harvard University 171: 27. 1950. *Gelasine goospediana* (R.C. Foster) Celis & Goldblatt, Monographs in Systematic Botany from the Missouri Botanical Garden 127: 1271. 2014.

Discussion

Based on the morphological analysis, it is evident that *Sphenostigma* is distinguished from *Gelasine*, as it was merged by Ravenna (1977, 1984). The comparison of *Gelasine elongata* with species allied to *Sphenostigma Sellowianum* [=*Gelasine caerulea*] demonstrates important morphological differences in the arrangement of the tepals and androgynoecium, as consequence, the key for the identification of the genera of Iridaceae, Iridoideae elaborated by Goldblatt & Manning (2008: 196-199) and for the recognition of the South American genera of Iridaceae, Tigridieae proposed by Deble (2021: 42-43, 2025: 18-19) do not serve to identify *Gelasine elongata*. Characteristics of the bulbs, leaves and spathes align *Sphenostigma* with Tigridieae clade B (Chauveau et al. 2012, Deble 2025, Deble et al. 2025). Within Clade B, *Sphenostigma* is morphologically similar to *Ennealophus* Brown (1909: 361), *Lethia* Ravenna (1986: 587), *Gelasine* and *Salpingostylis* Small (1931: 161), although it can be easily segregated from these genera by a number of morphological characteristics, such as stamens with anthers more longer than the filaments, inner tepals with absentia of one-celled lipidic trichomes, and style branches erect-ascending or oblique, end in stigmatic portion dilated, reniform or nearly circular, transversal (see Table 1).

Sphenostigma differs from *Ennealophus,* mainly the species of the subgenus *Actine* Ravenna (1983: 234), by its cauline-leaves shorter than the inflorescence (vs. developed cauline-leaves, exceeding the inflorescence), by its spathes with bracts that remain intact during fruiting (vs. spathes with twisted valves during the end of flowering and fruiting, making the flower pedicel visible), by its glabrous inner tepals (vs. inner tepals with a layer of lipidic trichomes at the apex of the claw), by its stamens with erect anthers, longer than the filaments (vs. stamens with oblique anthers, with filaments at least twice as long as the anthers), and by its style branches ending in a transversal dilated, reniform or almost circular, stigmatic portion (vs. stigmatic portion deeply lobed in crests).

Sphenostigma differs from the monotypic genus *Lethia* by its developed spathes, with the flower pedicel containing a protective bract that surrounds the pedicel and the base of the ovary (vs. reduced spathes, with the flower pedicel lacking a protective bract), by its linear-oblong ovary that develops into oblong or obovate-oblong capsules (vs. obovate ovary that develops into obovate or almost spherical capsules), and stamens with oblong anthers, with a narrow connective (vs. rectangular anthers, with a wide connective).

From the monotypic North American genus *Salpingostyis*, *Sphenostigma* readily differs by

its perigone with tepals forming a central dome-shaped depression (vs. perigone with tepals spreading), by its stamens with ribbon-like filaments, adnate in an obconical column for ¾ or more of the total length (vs. obclavate filaments, adnate only at the base) and by its style branches ending in a transversal dilated, reniform or almost circular, stigmatic portion (vs. terminal stigmatic portion oblique, broad and curved, emarginate at top).

Sphenostigma is closely related to *Gelasine*, being practically indistinguishable in its vegetative aspect. Both genera have bulbs with thick cataphylls of brownish-orange or yellowish-orange coloration, rigid leaves with similar leaf anatomy, since them have bundles of lignified fibers associated with the vessels and leaf margin, and plicate spathes with bracts involving the base of the flower pedicels. However, these two genera can be separated by important flower and fruit characteristics. *Sphenostigma* has a perigone with tepals forming a central dome-shaped depression (except in *S. uruguaiense*), with the outer tepals longer than the inner ones, having their distal half curved, spreading, or oblique, while the inner tepals are curved or cucullate, with a recurved apex (vs. perigone lacking central depression, with outer and inner tepals similar in shape and size, oblique or slightly curved, forming a campanulate perigone). The stamens of *Sphenostigma* and *Gelasine* are similar, although the structure of the androgynoecium is different, since in *Sphenostigma* the stamens have erect anthers, with the apex attached to the most distal part of the style, which is the same length as the stamens or much longer (vs. slightly erect stamens, with a free apex and a shorter style than stamens with oblique, small branches arranged between the anthers).The style in *Sphenostigma* displays style branches ending in a transversal dilated, reniform or almost circular, stigmatic portion, while in *Gelasine* the style shows style branches filiform with terminal stigmatic portion oblique, curved at top. Furthermore, the capsules in *Sphenostigma* are oblong or obovate-oblong, with thin walls, and the seeds are semispherical or nearly circular, strongly compressed (vs. capsules obovate or widely elliptic, with thickened walls, and seeds are triangular or obconic, angled).

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Declaration of conflicts of interest/competing Interests

The author declares 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.

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