



Flora of Espírito Santo, Brazil

Flora of Espírito Santo: Lentibulariaceae

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Abstract

The present study comprises the taxonomic treatment of the Lentibulariaceae species in Espírito Santo state, as a continuation of a series of studies focused on the Flora of Espírito Santo. Herein we present an identification key, morphological descriptions, illustrations, distribution map, list of analysed material and comments about taxonomy and distribution of the species. We confirmed the occurrence of 16 species in Espírito Santo state, of which four are new records and only three are not found in protected areas.

Key words: carnivorous plants, Flora of Brazil 2020, *Genlisea*, taxonomy, *Utricularia*.

Resumo

O presente estudo compreende o tratamento taxonômico das espécies de Lentibulariaceae no estado do Espírito Santo, como continuação de uma série de estudos focados na Flora do Espírito Santo. Aqui, apresentamos uma chave de identificação, descrições morfológicas, ilustrações, mapa de distribuição, lista de material analisado e comentários em taxonomia e distribuição das espécies. No Espírito Santo, confirmamos a ocorrência de 16 espécies, das quais apenas três não são encontradas em áreas de proteção.

Palavras-chave: plantas carnívoras, Flora do Brasil 2020, *Genlisea*, taxonomia, *Utricularia*.

Introduction

The Lentibulariaceae family consists of ca. 360 species of carnivorous plants with worldwide distribution (Fleischmann & Rocca 2018). In Brazil, it is represented by the genera *Genlisea* (19 spp.) and *Utricularia* (71 spp.), the former with 12 endemic species and the latter with 22 (Guedes *et al.* 2020). These species are easily recognized by their herbaceous habit, stoloniferous, leaves disposed in a basal rosette or alternate in stolons, or modified into dichotomous capillary segments, inflorescences 1-flowered or racemose and by their bilabiate and spurred, tubular corolla (Taylor 1989; Simpson 2010; Fleischmann 2012). However, the traps are completely distinct and unique among all carnivorous plants (Fleischmann *et al.* 2018).

In *Genlisea*, the traps are known as rhizophylls, consisting of achlorophyllous tubular leaves, subterranean, with two distal arms, helically twisted, internally covered with introrse trichomes that direct the prey to a proximal digestive chamber (Płachno *et al.* 2007; Fleischmann 2012). On the other hand, in *Utricularia*, the traps are known as bladder-traps or utricles, comprising foliar vesicles that are hermetically sealed by an articulated door, adorned with dorsal and/or ventral appendages, and with touch-sensitive trichomes that trigger the active mechanism of suction in fractions of seconds (Adamec 2011; Vincent *et al.* 2011; Whitewoods *et al.* 2019).

Like several other carnivorous plants, Lentibulariaceae are usually found in open, sunny, wet habitats with acidic and nutrient-poor soils, and

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free of urban waste (Givnish *et al.* 1984; Jennings & Rohr 2011; Cross *et al.* 2020; Guedes & Alves 2020). The family includes species with different growth forms, ranging from terrestrials, lithophytes (rupicolous), helophytes (amphibians) to epiphytes, rheophytes (haptophytes), and hydrophytes (aquatic free-swimming) (Ellenberg & Mueller-Dombois 1967; Taylor 1989; Cook 1996).

As a continuation of a series of studies focused on the Flora of Espírito Santo, we present the taxonomic treatment of the Lentibulariaceae from the state. This study includes an identification key, morphological descriptions, illustrations, distribution maps, list of analysed exsiccatae and comments about taxonomy and distribution of the species.

Material and Methods

The collections from BHCB, CEN, CEPEC, CVRD, EAC, ESA, HUEFS, GH, JABU, JPB, K, MBM, MBML, MOBOT, NY, OUPR, R, RB, P, SAMES, SP, SPF, UFP, UPCB, US, VIC and VIES (acronyms according to Thiers, continuously updated) herbaria were analysed. All specimens and nomenclatural types were analysed either in person or through virtual herbaria. The morphological descriptions were based on the specimens from the study area and, when necessary, supplemented with additional material from other areas considered most representative. The morphological terminology followed Harris & Harris (2001), and Fleischmann (2012) and Taylor (1989) for group specific terms. Vegetation characterization followed Garbin *et al.* (2017).

The distribution maps (Fig. 1) were created using QGIS v.3.16.3 (<<http://www.qgis.org>>), based on cartographic data obtained from the IBGE website (<<http://www.ibge.gov.br>>) and verified coordinates from the labels of the examined material. The identification key was based on morphological characters that are observable in both fresh and dried material, considering that several herbarium specimens are incomplete (*i.e.*, usually lacking leaves and traps).

Results and Discussion

The Lentibulariaceae family in Espírito Santo state is represented by 16 species: *Genlisea aurea* Saint-Hilaire (1833: 429), *G. lobata* Fromm-Trinta (1989: 152), *Utricularia erectiflora* Saint-Hilaire & Girard (1838: 870), *U. foliosa* Linnaeus (1753: 18), *U. gibba* Linnaeus (1753: 18), *U. hydrocarpa* Vahl

(1804: 200), *U. longifolia* Gardner (1842: 545), *U. myriocista* Saint-Hilaire & Girard (1838: 869), *U. nelumbifolia* Gardner (1842: 505), *U. nephrophylla* Benjamin (1847: 247), *U. pusilla* Vahl (1804: 202), *U. reniformis* Saint-Hilaire (1830: 244), *U. subulata* Linnaeus (1753: 18), *U. tricolor* Saint-Hilaire (1833: 418), *U. tridentata* Sylvén (1908: 28), and *U. triloba* Benjamin (1847: 248).

These species were recorded in different moister environments of the Atlantic Forest phytogeographic domain, including phytophysiognomies of Dense Ombrophilous Forest, Seasonal Semideciduous Forest and open formations of *campos de altitude*, rocky outcrop vegetation (granitic inselbergs), *campos nativos* and *restingas* (Garbin *et al.* 2017). All records cited in Dutra *et al.* (2015) and Guedes *et al.* (2020) for the Espírito Santo state were in conformity, except *Genlisea violacea* Saint-Hilaire (1833: 431), which does not occur in the state, and *Utricularia amethystina* Salzm. ex Saint-Hilaire & Girard (1838: 870) and *U. poconensis* Fromm-Trinta (1985: 139), both being equivocal identifications that are actually *U. tridentata* and *U. hydrocarpa*, respectively.

Thus, in this study, four species were considered new records for the state: *U. hydrocarpa*, *U. pusilla*, *U. triloba* and *U. tridentata*. The first three species are fairly common and widely distributed in the country (Guedes & Alves 2020). On the other hand, *U. tridentata* was only known from Argentina, Uruguay, and in Brazil from the states of Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul and Santa Catarina (Taylor 1989; Guedes *et al.* 2020). This species has only one record in the state, on a creek edge in an area of *campos de altitude* (> 1.600 msl) at the northern portion of Caparaó National Park (Fig. 1). This record fills an important gap, confirming its occurrence in both sides of Caparaó National Park (Minas Gerais and Espírito Santo), and these are the northernmost currently known populations of the species.

The Caparaó National Park (CNP) presents great botanical richness, and it is located in the Serra do Mar ecoregion, considered one of the most endangered areas in the Atlantic Forest domain, threatened by predatory agriculture and farming, fires, deterioration of watercourses, uncontrolled tourism, hunting and expansion of mineral exploration (ICMBio 2015; Moreira *et al.* 2020). The area is composed by a vegetation mosaic of Dense Ombrophilous Forest, Seasonal Semideciduous Forest and open formations of

campos de altitude (Mazine & Souza 2008; ICMBio 2015). Besides *U. tridentata*, the CNP is home to three other species with narrow geographic distribution and endemic to Brazil: *G. aurea*, *U. nephrophylla* and *U. reniformis*, thus, it can be

considered an important site for the diversity, endemism and conservation of Lentibulariaceae in the state, as well as from a phylogenetic point of view and preservation of their evolutionary processes.

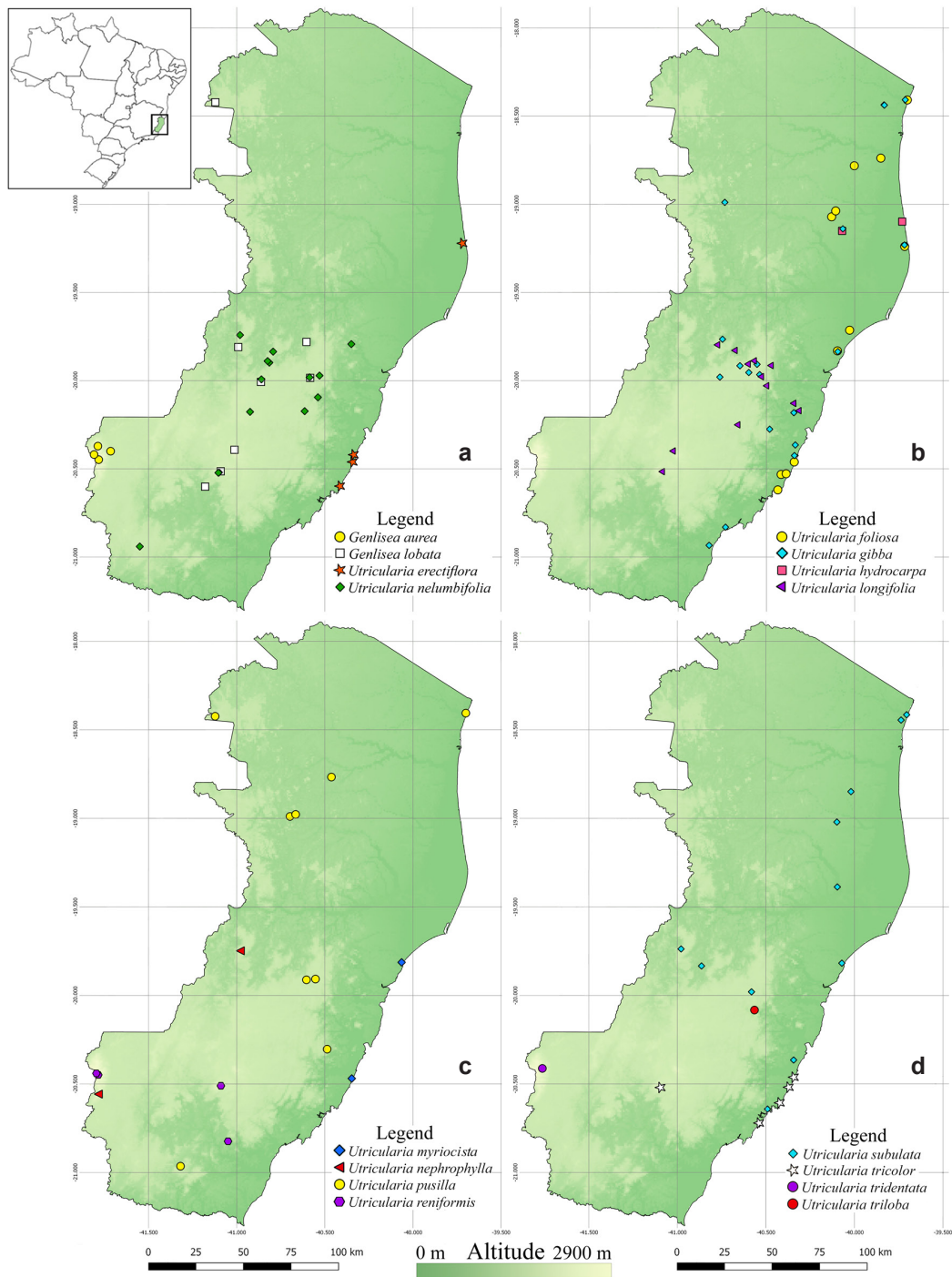


Figure 1 – Distribution map for the species of Lentibulariaceae in Espírito Santo state.

Genlisea aurea is found in rocky outcrops of *campos rupestres* and *campos de altitude* vegetation, in areas ranging from 350–2,500 msl, with disjunct distribution over 10 states of northeastern, central-western, southeastern and southern Brazil (Fleischmann 2012). In Espírito Santo state, however, it is known only from the Serra do Caparaó highlands (Fig. 1). *Utricularia nephrophylla* is known from few populations in Bahia, Minas Gerais, Rio de Janeiro and Espírito Santo (Taylor 1989; Guedes *et al.* 2020). Here we report another record further north-central in the state, in a granitic inselberg/rocky outcrop (Pedra do Caparaó) in the municipality of Itaguaçu (Fig. 1). *Utricularia reniformis*, on the other hand, is endemic to southern and southeastern Brazil (Taylor 1989; Guedes *et al.* 2020), and in Espírito Santo, it is known only from three granitic inselbergs/rocky outcrops ranging from 700 msl, in the municipality of Cachoeiro do Itapemirim, to 2,800 msl, in the Pico da Bandeira (Caparaó National Park) (Fig. 1).

Among the narrowly distributed species, *G. lobata* stands out for occurring only in highlands (800–1,800 msl) with *campos de altitude* vegetation, growing among *Sphagnum* spp. in boggy environments of granite/gneiss outcrops (Fleischmann 2012). In Espírito Santo state, this species was known only from populations at central and southern highlands (Fleischmann 2012), and here we report a record further north in the state, in a granitic inselberg/rocky outcrop surrounding the district of Santa Luzia do Azul, municipality of Água Doce do Norte (Fig. 1). There are populations known from Caparaó National Park, however, under Minas Gerais state territory (Fleischmann 2012).

Another area that can be considered important for the diversity of the family in the state is the Forno Grande State Park, which is home to five species: *G. lobata*, *U. longifolia*, *U. nelumbifolia*, *U. reniformis* and *U. tricolor*. The Forno Grande State Park is an area of Dense Ombrophilous Forest and *campos de altitude*, ranging from 1,000–2,200 msl, located in the municipality of Castelo (IDAF 2001). *Utricularia nelumbifolia* and *U. reniformis* stand out for their peculiar epiphytic growth form, inhabiting water filled leaf axils of *Vriesea* sp. and *Alcantarea* sp. (Bromeliaceae) (Taylor 1989). Both species are endemic to Brazil, *U. nelumbifolia* occurring only in southeastern Brazil, while *U. reniformis* has its distribution extended to southern Brazil (Guedes *et al.* 2020). In Espírito Santo, the only site where both species co-occur is at Forno

Grande State Park, *U. nelumbifolia* has records more concentrated in the central highlands of the state and only one record further south of Castelo (Fig. 1).

Utricularia longifolia and *U. tricolor* are species that can be found in both high- and lowlands, in areas of Ombrophilous Forest, Seasonal Semideciduous Forest, *campos rupestres* and *campos de altitude* (Taylor 1989; Zappi *et al.* 2003; Baleeiro *et al.* 2017; Guedes & Alves 2020). Besides the Forno Grande State Park, *U. tricolor* also occur in *restingas* in the municipality of Guarapari (Fig. 1). *Restingas* are coastal plains with pioneer formations, which are seasonally flooded habitats that present great richness of Lentibulariaceae species, and share several representatives found in *campos rupestres* and *veredas* from the Cerrado domain (Guedes *et al.* 2018; Guedes & Alves 2020). In Espírito Santo, these representatives are the widely distributed *U. erectiflora*, *U. foliosa*, *U. gibba*, *U. hydrocarpa*, *U. myriocista*, *U. pusilla* and *U. subulata* (Fig. 1).

Interestingly, *U. triloba* has only one record for the state, on a roadside in a Montane Dense Ombrophilous Forest area, in the municipality of Santa Leopoldina (Fig. 1). This is a fairly common and widespread species, frequently found sympatric with other congeners (Guedes & Alves 2020). Some fairly common species with only one to three records for the state (*U. hydrocarpa*, *U. myriocista*, *U. nephrophylla*, *U. reniformis*, *U. tridentata* and *U. triloba*) reinforce the need for a greater collection effort in several areas of low- and highlands in the state, with similar phytophysiognomies and conditions prone to the occurrence of the family.

It is also worth highlighting that 13 species were found in Conservation Units of Integral Protection and three in Units of Sustainable Use (Tab. 1). Only three species were not found in any protected areas, *U. erectiflora*, *U. myriocista* and *U. triloba*, all three in less than three localities throughout the state, but widely distributed with several populations in different environments in Brazilian territory and outside (Cross *et al.* 2020; Guedes & Alves 2020). On the other hand, *U. gibba* was found in 10 protected areas, this is one of the most common species with Pantropical distribution (Guedes & Alves 2020). Of all 16 species, *G. lobata* is classified as Endangered (EN) and *U. tridentata* as Vulnerable (VU) (CNCFlora 2020), *U. longifolia* is assessed as Near Threatened (NT) (Guedes & Alves 2020), and the remaining

Table 1 – Lentibulariaceae species found in Conservation Units in Espírito Santo and their conservation status. APA = Environmental Protection Area; APP = Permanent Protection Area; PARNA = National Park; PE = State Park; PM = City Park; REBIO = Biological Reserve; RN = Natural Reserve; RPPN = Private Reserve of Natural Heritage.

Species (Conservation Status)	Assessment Source	Conservation Unit of Integral Protection	Conservation Unit of Sustainable Use
<i>Genlisea aurea</i> (LC)	Cross <i>et al.</i> (2020)	PARNA Caparaó	–
<i>Genlisea lobata</i> (EN)	CNCFlora (2020); Guedes & Alves (2020)	PE Forno Grande	–
<i>Utricularia erectiflora</i> (LC)	IUCN (2020)	–	–
<i>Utricularia foliosa</i> (LC)	IUCN (2020)	PE Itaúnas, REBIO Sooretama	–
<i>Utricularia gibba</i> (LC)	IUCN (2020)	EB Santa Lúcia, PE Itaúnas, PM Recanto do Jacaré, REBIO Augusto Ruschi, REBIO Duas Bocas, REBIO Sooretama, RN Vale do Rio Doce	APA Mestre Álvaro, APP Lagoa Encantada, RPPN Vale do Sol
<i>Utricularia hydrocarpa</i> (LC)	IUCN (2020)	RN Vale do Rio Doce	–
<i>Utricularia longifolia</i> (NT)	Guedes & Alves (2020)	EB Santa Lúcia, PE Forno Grande, REBIO Augusto Ruschi	APA Mestre Álvaro
<i>Utricularia myriocista</i> (LC)	IUCN (2020)	–	–
<i>Utricularia neumbifolia</i> (LC)	IUCN (2020)	EB Santa Lúcia, PARNA Caparaó, PE Forno Grande	–
<i>Utricularia nephrophylla</i> (LC)	Cross <i>et al.</i> (2020)	PARNA Caparaó	–
<i>Utricularia pusilla</i> (LC)	IUCN (2020)	REBIO Augusto Ruschi	–
<i>Utricularia reniformis</i> (LC)	IUCN (2020)	PE Forno Grande	–
<i>Utricularia subulata</i> (LC)	IUCN (2020)	PE Itaúnas, REBIO Sooretama, RN Vale do Rio Doce	APP Lagoa Encantada
<i>Utricularia tricolor</i> (LC)	IUCN (2020)	PE Forno Grande, PE Paulo César Vinha	–
<i>Utricularia tridentata</i> (VU)	CNCFlora (2020)	PARNA Caparaó	–
<i>Utricularia triloba</i> (LC)	Cross <i>et al.</i> (2020)	–	–

are widely distributed species, classified as Least Concern (LC) (Cross *et al.* 2020; IUCN 2020).

Taxonomic treatment

Lentibulariaceae Rich., *in* Poiteau & Turpin, Fl. Paris. 1: 23. 1808.

Herbs carnivorous; terrestrial, helophytes, lithophytes, rheophytes, epiphytes or hydrophytes. Rhizoids and stolons usually present. Leaves aerial or submerged, laminar or capillary, simple or dichotomously branched, in a basal rosette or alternate on stolons, basifixed or peltate. Traps (rhizophylls or utricles) subterranean

or submerged. Inflorescence 1-flowered to racemose, scape glabrous, pilose and/or glandular; scales, bracts and bracteoles basifixed, peltate or subpeltate, free or basally connate. Flowers dichlamydeous, bisexual, zygomorphic; calyx dipentamerous, dialisepalous; corolla pentamerous, gamopetalous, tubular, bilabiate, spurred, palate gibbous or not. Androecium with two stamens, epipetalous, anther monotheical, dehiscence longitudinal. Gynoecium bicarpelar, ovary superior, placentation free-central, style short, stigma bilabiate. Fruit capsule, seeds numerous (Taylor 1989; Simpson 2010; Fleischmann 2012).

Identification key to the species of Lentibulariaceae in Espírito Santo state, Brazil

1. Calyx pentamerous..... 2
 2. Upper corolla lip entire, apex rounded; spur parallel to the lower lip 1.1. *Genlisea aurea*
 - 2'. Upper corolla lip bilobed, apices bifid; spur parallel to the pedicel 1.2. *Genlisea lobata*
- 1'. Calyx dimerous 3
 3. Leaves coriaceous 4
 4. Leaves peltate..... 2.7. *Utricularia nelumbifolia*
 - 4'. Leaves basifixed 5
 5. Lamina elliptical or narrowly obovate 2.5. *Utricularia longifolia*
 - 5'. Lamina reniform..... 2.10. *Utricularia reniformis*
 - 3'. Leaves membranaceous 6
 6. Lamina reniform..... 2.8. *Utricularia nephrophylla*
 - 6'. Lamina linear, spatulate, obovate, circular or capillary 7
 7. Sepals with margins involute 2.1. *Utricularia erectiflora*
 - 7'. Sepals with margins flat 8
 8. Bracteoles present 9
 9. Corolla 15–20 mm long, lower lip entire to shallowly 3-crenate; both sepals with margin hyaline..... 2.12. *Utricularia tricolor*
 - 9'. Corolla 6–10 mm long, lower lip distinctly trilobed; only the upper sepal with margin hyaline..... 2.13. *Utricularia tridentata*
 - 8'. Bracteoles absent..... 10
 10. Bracts basifixed 11
 11. Corolla pink, palate yellow 2.4. *Utricularia hydrocarpa*
 - 11'. Corolla yellow, palate sometimes with brown streaks 12
 12. Scape inflated, pedicel deflexed in fruits.... 2.2. *Utricularia foliosa*
 - 12'. Scape slim, pedicel ascending in fruits 2.3. *Utricularia gibba*
 - 10'. Bracts peltate or subpeltate 13
 13. Hydrophytes, scape inflated, glandular; bracts subpeltate; corolla magenta 2.6. *Utricularia myriocista*
 - 13'. Terrestrials or helophytes, scape slim, glabrous; bracts peltate; corolla yellow 14
 14. Sterile bracts present on the raceme axis; spur up to twice as long as the lower corolla lip 2.9. *Utricularia pusilla*
 - 14'. Sterile bracts absent on the raceme axis; spur as long as or slightly longer than the lower lip..... 15
 15. Sepals with nerves prominent, converging to the apex; lower corolla lip shallowly trilobed..... 2.14. *Utricularia triloba*
 - 15'. Sepals with nerves non-prominent, not converging to the apex; lower corolla lip deeply trilobed.... 2.11. *Utricularia subulata*

1. *Genlisea* A.St.-Hil., Voy. Distr. Diam. 2: 428. 1833.

Terrestrials, lithophytes or helophytes. Leaves aerial, laminar, simple, lamina obovate to obovate-spatulate, in a basal rosette, dense or sparse, covered or not with mucilage. Rhizophylls subterranean, tubular with two distal arms, helically twisted. Inflorescence racemose, erect, simple, lax or congest; scape flexible, thick or slim. Scales, bracts and bracteoles basifixed, free, margins entire. Calyx pentamerous, sepals

homomorphic, apex acute or obtuse, margins entire, nerves inconspicuous. Scape, scales, bracts, bracteoles, pedicels and sepals glabrous, subglabrous or pilose, trichomes simple and/or glandular. Corolla glabrous or irregularly pilose, trichomes simple and/or glandular, lips entire or lobed, palate gibbous or not; spur straight or curved, parallel to the lower lip (*G.* subgen. *Genlisea*) or to the pedicel (*G.* subgen. *Tayloria*). Capsule globose, glabrous or pilose, trichomes simple and/or glandular, dehiscence circumscissile (*G.* subgen.

Gentlisea) or bivalvate (*G.* subgen. *Tayloria*). Seeds prismatic or pyramidal.

1.1. *Gentlisea aurea* A.St.-Hil., Voy. Distr. Diam. 2: 429. 1833. Figs. 1a; 2a-d

Terrestrial or helophyte, 10–30 cm tall. Leaves in a dense rosette, usually covered with mucilage. Inflorescence lax or congest; scape 0.8–2.5 mm diam., thick. Scales and bracts 1.5–3 × 1–1.5 mm, ovate. Bracteoles 1–2.5 × 0.4–0.6 mm, lanceolate. Pedicels ascending in fruits. Sepals 2–4 × 1–2 mm, ovate, apex acute to obtuse. Scape, scales, bracts, bracteoles, pedicels and sepals pilose, trichomes glandular. Corolla 10–20 mm long, yellow, both faces glabrous, spur pilose, trichomes glandular, palate dark yellow; upper lip broadly ovate, entire, apex rounded, lower lip trilobed, apices rounded, palate gibbous; spur cylindrical to narrowly conical, as long as or longer than the lower lip, slightly curved, parallel to the lower lip, apex acute. Capsule 3–5 mm diam., globose, pilose, trichomes glandular, dehiscence circumscissile. Seeds ca. 0.3 mm long, pyramidal. **Examined material:** Iúna, Parque Nacional do Caparaó, arredores do Terreirão, 17.II.2000, fl., *V.C. Souza 23307* (VIES); Rancho dos Cabritos, 18.II.2000, fl. and fr., *V.C. Souza 23417* (ESA, RB); entre o acampamento Macieira e o Pico da Bandeira, 18.I.2019, fl., *H.L. Silva 258* (VIES); Serra do Caparaó, 25.IX.1929, fl., *Y.E.J. Mexia 4021* (NY, GH, US, P).

Gentlisea aurea is easily recognized by its dense rosette of leaves with mucilage, thick scape (0.8–2.5 mm diam.), yellow corolla with dark yellow palate, pilose spur (trichomes glandular), entire upper lip, trilobed lower lip with rounded apices, spur parallel to the lower lip and pedicels ascending in fruits. This species is endemic to Brazil and has two recognized varieties, *G. aurea* var. *minor* is cited to the states of BA, GO, MG, MT and TO, and *G. aurea* var. *aurea* is cited to BA, ES, MG, PR, RJ, SC and SP (Fleischmann 2012; Guedes *et al.* 2020). In Espírito Santo, *G. aurea* has records restricted to a southwestern highland (Fig. 1a) at the Caparaó National Park, in areas of *campos de altitude*.

1.2. *Gentlisea lobata* Fromm, Bradea 5: 152. 1989. Figs. 1a; 2e-h

Lithophyte, 7–16 cm alt. Leaves in a sparse rosette, not covered with mucilage. Inflorescence lax; scape 0.2–0.3 mm diam., slim. Scales and bracts 0.8–1.5 × 0.3–0.5 mm, oblong to lanceolate. Bracteoles 0.5–1 × 0.2 mm, linear to narrowly lanceolate. Pedicels strongly deflexed in fruits.

Sepals 1–1.3 × 0.4–0.5 mm, narrowly ovate to lanceolate, apex acute to obtuse. Scape, scales, bracts, bracteoles, pedicels and sepals pilose, trichomes simple and glandular. Corolla 6–9 mm long, white with purple streaks on the upper lip, abaxial face and spur pilose, trichomes simple and glandular, palate yellow and spur purple; upper lip bilobed, apices bifid, lower lip trilobed, apices bifid, palate gibbous; spur cylindrical, shorter than the lower lip, straight, parallel to the pedicel, apex obtuse. Capsule 2–3.5 mm diam., globose, pilose, trichomes simple and glandular, dehiscence bivalvate. Seeds 0.2–0.3 mm long, prismatic.

Examined material: Água Doce do Norte, Santa Luzia do Córrego Azul, 28.IV.2008, fl. and fr., *L. Kollmann 11014* (MBML). Castelo, Parque Estadual do Forno Grande, trilha para o Forninho, 17.VII.2008, fl. and fr., *R. Goldenberg 1166* (CEPEC, MBML, RB, UPGB), 26.III.2005, fl. and fr., *L. Kollmann 7592* (MBML), 9.IV.2009, fl. and fr., *R. Goldenberg 1428* (RB), afloramento por baixo do Mirante, 16.VII.2008, fl. and fr., *A.P. Fontana 5376* (CEPEC, MBML, RB, UPGB). Domingos Martins, Pedra Azul, BR-262, 16.VI.1984, fl. and fr., *O.J. Pereira 307* (VIES), 29.X.1987, fl. and fr., *O.J. Pereira 1336* (VIES). Itaguaçu, Serra do Sobreiro, Pedra do Caparaó, 10.IV.2004, fl. and fr., *A.P. Fontana 842* (MBML), 23.IV.2005, fl. and fr., *A.P. Fontana 1374* (MBML). Santa Leopoldina, Rio Bonito, 19.I.2002, fl. and fr., *L. Kollmann 5328* (MBML), radar Cindactar, 22.XII.2001, fl. and fr., *A.P. Fontana 276* (MBML). Santa Maria de Jetibá, Alto São Sebastião, 16.V.2005, fl. and fr., *A.P. Fontana 2118* (RB). Santa Teresa, 25 de Julho, Bela Vista, 29.IV.2005, fl. and fr., *L. Kollmann 7792* (MBML).

Gentlisea lobata is easily recognized by its sparse rosette of leaves without mucilage, slim scape (0.2–0.3 mm diam.), white corolla with purple streaks on the upper lip and purple spur, bilobed upper lip with bifid apices, trilobed lower lip with bifid apices, spur parallel to the pedicel and pedicels strongly deflexed in fruits. This species is endemic to Brazil and it is cited to the states of BA, ES and MG (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *G. lobata* has records in the northwestern, central and southern highlands (Fig. 1a), in areas of granitic inselbergs/rocky outcrops of and *campos de altitude*.

2. *Utricularia* L., Sp. Pl. 1: 18. 1753.

Terrestrials, helophytes, epiphytes, lithophytes, rheophytes or hydrophytes. Leaves aerial or submerged, laminar or capillary, simple or branched, basifixed or peltate, membranaceous or coriaceous, 1- or multinerved. Utricles (traps) ovoid or globose, stalked or sessile, glabrous or



Figure 2 – a-d. *Genlisea aurea* – a. flower (back view); b. bract and bracteoles; c. corolla (front view); d. capsule. e-h. *Genlisea lobata* – e. flower (lateral view); f. bract and bracteoles; g. corolla (front view); h. capsule. i-l. *Utricularia erectiflora* – i. utricle; j. inflorescence; k. bract and bracteoles; l. sepals. m-q. *Utricularia foliosa* – m. utricle; n. bract; o. sepals; p. corolla (front view); q. capsule. r-v. *Utricularia gibba* – r. utricle; s. bract; t. sepals; u. corolla (front view); v. capsule. w-a'. *Utricularia hydrocarpa* – w. utricle; x. lowermost cleistogamous flower; y. bract; z. sepals; a'. corolla (front view). b'-f'. *Utricularia longifolia* – b'. utricle; c'. leaf; d'. bract and bracteoles; e'. sepals; f'. corolla (front view). g'-j'. *Utricularia myriocista* – g'. utricle; h'. inflorescence; i'. bract; j'. sepals.

glandular, entrance basal (when adjacent to the stalk), terminal (when opposite to the stalk) or lateral (when in intermediate position), with or without appendages, dorsal and/or ventral, simple or branched. Inflorescence 1-flowered or racemose, erect, simple or branched, lax or congest, presence or absence of cleistogamous flowers; scape stiff or flexible, inflated or slim, glabrous or pilose. Scales and bracts similar, basifixed, peltate or subpeltate, margins entire or laciniate-denticulate. Sterile bracts present or absent on the raceme axis (between the pedicels). Bracteoles, when present, basifixed or peltate, free or basally connate to the bracts, margins entire or laciniate-denticulate. Pedicels cylindrical or compressed, winged or not, glabrous, ascending or deflexed in fruits. Calyx dimerous, usually accrescent; sepals usually heteromorphic, margins entire or denticulate, flat or involute, hyaline or not, nerves conspicuous or inconspicuous, prominent or not, converging to the apex or not. Corolla glabrous or minutely glandular, lips entire or lobed, lower lip flat or galeate, palate gibbous or not; spur straight or curved, parallel or perpendicular to lower lip. Capsule globose, ovoid or ellipsoid, dehiscence bivalvate, circumscissile or longitudinal. Seeds cylindrical, ellipsoid, globose, ovoid or discoid, winged or not, with or without irregular peripheral projections.

2.1. *Utricularia erectiflora* A.St.-Hil. & Girard, *Compte Rend. Hebd. Séances Acad. Sci., Ser. D.* 7(21): 870. 1838. Figs. 1a; 2i-l

Terrestrial or helophyte, 11–23 cm tall. Leaves aerial, laminar, simple, lamina linear, basifixed, membranaceous, 1-nerved. Utricles 0.6–0.8 mm long, globose, sessile, glandular, entrance basal, with two dorsal appendages, simple, reflexed. Inflorescence racemose, simple or branched, congest, absence of cleistogamous flowers; scape 0.4–0.8 mm diam., stiff, slim, glabrous. Scales and bracts 1.5–2 × 1–2 mm, ovate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles 1.5–2 × 0.4–0.5 mm, linear, basifixed, free, margins entire. Pedicels 1–2 mm long, cylindrical, winged, glabrous, ascending in fruits. Sepals ovate, margins entire, involute, non-hyaline, nerves inconspicuous, not converging to the apex; upper sepal 3–4 × 2.5–3 mm, apex acute to acuminate; lower sepal 3–4 × 3.5–4 mm, apex bifid. Corolla 8–10 mm long, yellow, glabrous; upper lip oblong, apex truncate, lower lip galeate, entire, palate non-gibbous; spur subulate, longer than the lower lip, curved, perpendicular to

the lower lip, apex acute. Capsule 2.8–3 × 1.8–2 mm, ovoid, dehiscence longitudinal. Seeds ca. 0.3 mm long, ovoid, non-winged, without peripheral projections.

Examined material: Guarapari, *A.F.C.P. Saint-Hilaire* (P holotype, K isotype). Linhares, Degredo, 15.III.2007, fl. and fr., *L.F.T. Menezes 1646* (SAMES, VIES). Vila Velha, Barra do Jucu, 28.IX.1999, fl. and fr., *C.N. de Fraga 490* (MBML); Interlagos, 6.VIII.2007, fl. and fr., *F.B.C. Souza 45* (VIES).

Utricularia erectiflora is easily recognized by its sepals with involute margins and inconspicuous nerves, yellow corolla with a galeate lower lip, oblong upper lip and winged pedicels. This species is widely distributed in the Neotropics, and in Brazil, it is cited to the states of AL, BA, CE, DF, ES, GO, MA, MT, PB, PE, PI, PR, RJ, RN, RR, SC, SE, SP and TO (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *U. erectiflora* has few records in the southeastern and northeastern lowlands (Fig. 1a), in areas of *campos nativos* and *restingas*.

2.2. *Utricularia foliosa* L., *Sp. Pl.* 1: 18. 1753.

Figs. 1b; 2m-q

Hydrophyte, 10–25 cm tall. Leaves submerged, capillary, dichotomously branched, membranaceous, 1-nerved. Utricles 1–2 mm long, ovoid, stalked, glabrous, entrance lateral, with two dorsal appendages, simple or branched. Inflorescence racemose, simple, lax, cleistogamous flowers absent; scape 3–5 mm diam., stiff, inflated, glabrous. Scales absent. Bracts 4–5 × 3–3.5 mm, ovate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles absent. Pedicels 10–20 mm long, compressed, non-winged, glabrous, deflexed in fruits. Sepals ovate, margins entire, flat, non-hyaline, nerves inconspicuous, not converging to the apex; upper sepal 2.8–3.2 × 2.5–3 mm, apex obtuse; lower sepal 3.5–4 × 2.8–3.2 mm, apex trifid. Corolla 10–15 mm long, yellow, glabrous, palate sometimes with brown streaks; upper lip broadly obovate, apex rounded, lower lip flat, bilobed, palate gibbous; spur conical, shorter than the lower lip, straight, parallel to the lower lip, apex obtuse to emarginate. Capsule 3–4 mm diam., globose, apparently indehiscent. Seeds ca. 1 mm long, discoid, winged, without peripheral projections.

Examined material: Aracruz, Barra do Riacho, 6.VII.1956, fl., *J.G.F.S. 39* (RB), 15.V.1990, *P.C. Vinha 1012* (CVRD, VIES); 8.VIII.2012, fl., *A.M. Assis 3330* (VIES). Conceição da Barra, Parque Estadual de Itaúnas, 7.IV.2014, fr., *W.O. Souza et al. 289* (VIES). Guarapari,

Parque Estadual Paulo César Vinha, 18.IV.1990, fl., *J.M.L. Gomes 1004* (VIES); Fazenda Bonanza, 18.V.2000, fl. and fr., *J.R. Pirani 4732* (CEN, HUEFS, RB, SPF); Lagoa do Milho, 19.XI.1987, fl., *O.J. Pereira 1370* (VIES); Setiba, 12.VII.1983, fl. and fr., *O.J. Pereira 206* (VIES). Linhares, 22.XI.1982, fl. and fr., *J.R. Pirani 198* (SP, SPF); 20.IV.2011, fl. and fr., *J. Meirelles 626* (CVRD, ESA, RB, SPF); Barra Seca, 7.III.1994, fl., *D.A. Folli 2236* (CVRD); Regência, 4.I.2007, fl. and fr., *M. Simonelli et al. 998* (VIES). São Mateus, 4.XI.1953, fl., *A.P. Duarte 3888* (RB); bairro Quadrado, próx. ao Rio São Mateus, 25.V.2011, fl., *M. Ribeiro 526* (SAMES); Rio Preto, 23.VI.2010, fl., *M.V. Amaral 13* (SAMES, VIES). Sooretama, Reserva Biológica de Sooretama, 20.I.2010, fl., *A.Q. Lobão 1564* (SAMES, VIES). Vila Velha, Lagoa do Milho, Barra do Jucu, 16.VI.1985, *M. Colledetti 355* (MBML).

Utricularia foliosa is easily recognized by its aquatic free-swimming growth form, absence of bracteoles, yellow corolla with a bilobed lower lip, broadly ovate upper lip, inflated scape and pedicels deflexed in fruits. This species is widely distributed in Africa and Americas, and in Brazil, it is cited to all the states (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *U. foliosa* is widely distributed (Fig. 1a) in permanent and temporary ponds and rivers, ranging from areas of Submontane Dense Ombrophilous Forest, Seasonal Semideciduous Forest to lowland areas of *campos nativos* and *restingas*.

2.3. *Utricularia gibba* L., Sp. Pl. 1: 18. 1753.

Figs. 1b; 2r-v

Hydrophyte, 5–15 cm tall. Leaves submerged, capillary, dichotomously branched, membranaceous, 1-nerved. Utricles 1–1.5 mm long, ovoid, stalked, glabrous or pilose, entrance lateral, with two dorsal appendages, branched. Inflorescence racemose, simple, lax, cleistogamous flowers absent; scape 0.5–1 mm diam., flexible, slim, glabrous. Scales and bracts 0.8–1 × 0.8–1 mm, semicircular, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles absent. Pedicels 10–15 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals with margins entire, flat, non-hyaline, nerves inconspicuous, not converging to the apex; upper sepal 2–2.5 × 1.5–2 mm, obovate, apex rounded; lower sepal 1.5–2 × 1.5–2 mm, circular, apex rounded. Corolla 6–8 mm long, yellow, glabrous, palate sometimes with brown streaks; upper lip broadly ovate to circular, apex rounded to slightly 3-crenate, lower lip flat, similar to the upper lip, but smaller, palate gibbous; spur conical, longer

than the lower lip, slightly curved, parallel to the lower lip, apex obtuse to emarginate. Capsule 2–3 mm diam., globose, dehiscence bivalvate. Seeds ca. 1 mm long, discoid, winged, without peripheral projections.

Examined material: Águia Branca, estrada para São Gonçalo, 14.III.2016, fl. and fr., *R.C. Forzza 8762* (RB), Parque Natural Municipal Recanto do Jacaré, 23.IV.2004, fl. and fr., *A.M. Assis 1014* (MBML). Aracruz, área 103 da Aracruz Celulose S.A., 27.X.1992, fl. and fr., *O.J. Pereira 3986* (VIES). Cariacica, Reserva Biológica Duas Bocas, fl. and fr., *C.N. Fraga 2331* (CEPEC, MBML, RB, UPCEB). Conceição da Barra, Floresta Nacional do Rio Preto, 6.II.2019, fl. and fr., *B.S. Mendes et al. 151* (VIES); 4.XII.2019, *R. Nichio-Amaral et al. 1091* (VIES); Parque Estadual de Itaúnas, 30.III.2000, fr., *O.J. Pereira 6139* (VIES). Linhares, Reserva Natural da Vale do Rio Doce, 16.VI.1998, fl. and fr., *D.A. Folli 3179* (CVRD); 13.III.2002, fl., *D.A. Folli 4209* (CVRD, MOBOT). Piúma, Lagoa da Piabanha, 23.I.1974, fl., *L.C. Abreu 01* (SP). Santa Cruz, 7.II.2000, fl., *F.A. Ferreira* (OUPR8593 e 8594). Santa Teresa, Estação Biológica Santa Lúcia, 21.XI.2015, fl. and fr., *M.O.O. Pellegrini 461* (RB); Jardim de Pedra, 1.II.2002, fl. and fr., *L. Kollmann 5472* (MBML); Reserva Biológica Augusto Ruschi, 19.II.2002, fl. and fr., *L. Kollmann 5572* (MBML); RPPN Vale do Sol, 17.I.2015, fl., *P.J. Coelho 131* (MBML); Serra do Gelo, nascente do Rio Santa Maria do Rio Doce, 16.VII.2003, fl., *A.M. Assis 943* (MBML); Vargem Alta, 2.VII.1985, fl., *W. Boone 558* (MBML). São Roque do Canaã, Alto Perdido, 24.VIII.2007, fl., *A.P. Fontana 3720* (MBML). Serra, Mestre Álvaro, 4.II.2011, fl., *A.M. Vago 53* (MBML); estrada entre Nova Almeida e Jacareipe, 19.VII.1973, fl. and fr., *D. Araújo 314* (RB). Sooretama, Lagoa do Macuco, 16.VII.1969, fl. and fr., *D. Sucre 5628* (RB). Vila Velha, APP Lagoa Encantada, Vale Encantado, 22.X.2018, fl. and fr., *R.T. Valadares 1910* (VIES); 30.VI.2014, fl., *R.T. Valadares 1210* (VIES); Barra do Jucu, Jaguarussu, 23.VIII.1991, fl., *O.J. Pereira 2384* (VIES); Morada do Sol, 23.VIII.2009, fl., *R.T. Valadares 871* (VIES).

Utricularia gibba is easily recognized by its aquatic free-swimming growth form, absence of bracteoles, yellow corolla with a broadly ovate to circular upper lip, rounded to slightly 3-crenate apex, lower lip similar to the upper lip, but smaller, slim scape and pedicels ascending in fruits. This species is Pantropical and, in Brazil, it is cited to all the states (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *U. gibba* is widely distributed (Fig. 1a) in permanent and temporary ponds and rivers, ranging from areas of Submontane Dense Ombrophilous Forest, Seasonal Semideciduous Forest to lowland areas of *campos nativos* and *restingas*.

2.4. *Utricularia hydrocarpa* Vahl, Enum. 1: 200. 1804. Figs. 1b; 2w-a'

Hydrophyte, 5–8 cm tall. Leaves submerged, capillary, dichotomously branched, membranaceous, 1-nerved. Utricles 1–2 mm long, ovoid, stalked, glabrous, entrance basal or lateral, with or without two dorsal appendages, simple or branched. Inflorescence racemose, simple, lax, lowermost flower cleistogamous; scape 0.8–1 mm diam., flexible, slightly inflated, glabrous. Scales, when present, and bracts 3–3.5 × 2–2.5 mm, ovate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles absent. Pedicels 3–10 mm long, compressed, non-winged, glabrous, deflexed in fruits. Sepals ovate, margins entire, flat, non-hyaline, nerves inconspicuous, not converging to the apex; upper sepal 2–3 × 1.5–2 mm, apex acute; lower sepal 2–3 × 1.5–2 mm, apex bifid. Corolla 8–10 mm long, pink, glabrous, palate yellow; upper lip broadly obovate to circular, apex rounded, lower lip flat, bilobed, palate gibbous; spur conical, shorter than the lower lip, straight, parallel to the lower lip, apex obtuse. Capsule 2–3 mm diam., globose, dehiscence circumscissile. Seeds ca. 0.8 mm long, discoid, non-winged, with irregular peripheral projections.

Examined material: Aracruz, na divisa com Linhares, 22.XI.1982, fl., *J.R. Pirani 194* (SP). Linhares, Reserva Natural da Vale do Rio Doce, 19.X.2000, fl. and fr., *D.A. Folli 3714* (CVRD, R).

Utricularia hydrocarpa is easily recognized by its aquatic free-swimming growth form, absence of bracteoles, pink corolla with a yellow palate, broadly obovate to circular upper lip, bilobed lower lip, slightly inflated scape, pedicels deflexed in fruits and cleistogamous lowermost flower. This species is widely distributed in the Neotropics, and in Brazil, it is cited to all the states but AC, DF, ES, RO, RS, SC and TO (Guedes & Alves 2020; Guedes *et al.* 2020). Here we report a new record for the state. In Espírito Santo, *U. hydrocarpa* has only two records (Fig. 1a), in permanent and temporary ponds and rivers, in areas of *campos nativos* and *restingas*.

2.5. *Utricularia longifolia* Gardner in Hook., London J. Bot. 1: 545. 1842. Figs. 1b; 2b'-f'

Terrestrial or lithophyte, 13–83 cm tall. Leaves aerial, laminar, simple, lamina elliptical to narrowly obovate, basifixed, coriaceous, multinerved. Utricles 1–1.2 mm long, ovoid, stalked, glandular, entrance basal, with two dorsal appendages, simple, reflexed. Inflorescence

racemose, simple or branched, lax or congest, absence of cleistogamous flowers; scape 2–3 mm diam., slightly stiff, slim, glabrous. Scales and bracts 2.5–3.5 × 1–2 mm, narrowly ovate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles 1.5–2 × 0.2–0.3 mm, linear, basifixed, free, margins entire. Pedicels 5–20 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals ovate, margins microscopically denticulate, flat, non-hyaline, nerves conspicuous, non-prominent, not converging to the apex; upper sepal 6–10 × 4–6 mm, apex acuminate; lower sepal 4–8 × 3–5 mm, apex acuminate bifid. Corolla 10–25 mm long, purple, glabrous, palate with one yellow crest; upper lip broadly ovate, apex truncate to rounded, lower lip flat, transversally elliptic, entire, palate gibbous; spur cylindrical, slightly longer than the lower lip, straight to slightly curved, parallel to the lower lip, apex bifid. Capsule 5–7 mm diam., globose, dehiscence longitudinal. Seeds ca. 0.5 mm long, pyramidal, non-winged, without peripheral projections.

Examined material: Castelo, Parque Estadual do Forno Grande, 12.X.2000, fl., *L. Kollmann 3180* (MBML); 4.IX.2004, fl., *L. Kollmann 6983* (MBML); 12.II.2008, fl. and fr., *L. Kollmann 10570* (CEPEC, MBML, RB, UPCEB). Domingos Martins, Califórnia, III.1917, fl. and fr., *P. von Luetzelburg 14025* (NY, US); Pedra Azul, 20.III.1983, fl., *G. Hatschbach 46890* (CEPEC, MBM, US); 19.X.1985, fl., *G. Hatschbach et al. 49960* (MBM, SP, US); 29.X.1987, fl. and fr., *O.J. Pereira 1335* (VIES). Fundão, Goiapaba-Açu, 13.X.2002, fl. and fr., *A.P. Fontana 418* (MBML). Itarana, Limoeiro do Caravaggio, 26.VII.2007, fl. and fr., *J. Rossini 667* (MBML). Santa Leopoldina, Pedra Branca, Serra Santa Lucia, 1.XI.2006, fl., *L.F.S. Magnago et al. 1558* (MBML). Santa Teresa, 29.VII.1990, fl. and fr., *O.J. Pereira 2164* (VIES); cabeceira do Rio Bonito, 24.XI.2004, fl. and fr., *L. Kollmann 7256* (MBML); Estação Biológica de Santa Lúcia, 23.II.2001, fl. and fr., *L. Kollmann 3570* (MBML); REBIO Augusto Ruschi, 10.X.2004, fl. and fr., *R.R. Vervloet 2622* (MBML); Serra do Gelo, nascente do Rio Santa Maria do Rio Doce, 16.VII.2003, fl., *A.M. Assis 922* (MBML); Vale do Canaã, 15.VIII.1985, fl. and fr., *W. Boone 674* (MBML). São Roque do Canaã, Alto Misterioso, 16.VII.2005, fl., *A.P. Fontana 1566* (MBML); 16.IX.2005, fl., *L. Kollmann 8314* (MBML); 7.XI.2007, fl., *L. Kollmann 10152* (MBML). Serra, APA do Mestre Álvaro, Estação Biológica, 21.XI.1982, fl., *J.R. Pirani 177* (P, SP, SPF).

Utricularia longifolia is easily recognized by its coriaceous, multinerved, elliptic to narrowly obovate leaves, purple corolla, palate with a yellow crest, transversally elliptic and entire lower lip, and sepals with microscopically denticulate margins.

This species is endemic to Brazil, and it is cited to the states of BA, ES, MG, RJ, SE and SP (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *U. longifolia* has records in the central and southern highlands and lowlands (Fig. 1a), in areas of granitic inselbergs/rocky outcrops and *campos de altitude*.

2.6. *Utricularia myriocista* A.St.-Hil. & Girard, *Compte Rend. Hebd. Séances Acad. Sci., Ser. D.* 7(21): 869. 1838. Figs. 1c; 2g'-j'

Hydrophyte, 5–8 cm tall. Leaves submerged, capillary, verticillate, branched, membranaceous, 1-nerved, apex bearing traps. Utricles 1–3 mm long, ovoid, stalked, glandular, entrance terminal, without appendages, with a central fascicle of stipitate-glandular trichomes. Inflorescence 1-flowered to racemose, simple, lax, absence of cleistogamous flowers; scape 2–3.5 mm diam., flexible, inflated, glandular. Scales absent. Bracts 2–2.5 × 1.5–2 mm, subpeltate, upper extremity obovate, lower extremity quadrate, margins entire. Sterile bracts absent on the raceme axis. Bracteoles absent. Pedicels 3–5 mm long, compressed, non-winged, glandular, ascending in fruits. Sepals with margins entire, flat, non-hyaline, nerves inconspicuous, not converging to the apex; upper sepal 3–4 × 2.5–3 mm, ovate, apex obtuse; lower sepal 3–4 × 3–3.5 mm, circular, apex truncate. Corolla 13–15 mm long, magenta, glabrous, palate white and yellow; upper lip broadly obovate, concave, apex rounded, lower lip flat, trilobed, lateral lobes saccate and middle lobe broader, palate non-gibbous; spur subulate, slightly longer than the lower lip, curved, parallel to the lower lip, apex acute. Capsule ca. 3.5 mm diam., globose, dehiscence longitudinal. Seeds ca. 0.8 mm long, globose, non-winged, with irregular peripheral projections.

Examined material: Aracruz, Barra do Riacho, 25.V.1956, fl., *J.G.F.S.* (RB 102251). Vila Velha, Morada do Sol, 23.VIII.2009, fl., *R.T. Valadares 870* (VIES).

Additional material: BRASIL. BAHIA: Salvador, Parque Metropolitano de Pituáçu, 12.VII.2018, fl. and fr., *F.M. Guedes 115* (UFP).

Utricularia myriocista is easily recognized by its aquatic free-swimming growth form, verticillate leaves bearing traps on the apex, inflated and glandular scape, subpeltate bracts, absence of bracteoles, magenta corolla with white and yellow palate, trilobed lower lip with saccate lateral lobes and broader middle lobe. This species is endemic to South America, and in Brazil, it is cited to the states of AM, AP, BA, ES, GO, MA, MG, MT, PA,

RR and SE (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *U. myriocista* has only two records (Fig. 1b) in coastal ponds in areas of *campos nativos* and *restinga*.

2.7. *Utricularia nelumbifolia* Gardner in Hook., *Icon. Pl.* 6: 505-506. 1843. Figs. 1a; 3a-e

Epiphyte, 55–115 cm tall. Leaves aerial, laminar, simple, lamina circular, peltate, coriaceous, multinerved. Utricles 1.5–2 mm long, ovoid, stalked, glandular, entrance lateral, with two dorsal appendages, simple, reflexed. Inflorescence racemose, simple, lax, absence of cleistogamous flowers; scape 3–5 mm diam., slightly stiff, slim, glabrous. Scales and bracts 3–6 × 1–2 mm, narrowly ovate to lanceolate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles, when present, 1.5–3 × 0.2–0.3 mm, linear, basifixed, free, margins entire. Pedicels 15–30 mm long, cylindrical, non-winged, glabrous, slightly deflexed in fruits. Sepals 6–18 × 5–15 mm, broadly ovate, apex acute, margins entire, flat, non-hyaline, nerves conspicuous, non-prominent, not converging to the apex. Corolla 25–40 mm long, pale lilac to purple, glabrous, palate with two yellow crests; upper lip broadly obovate, apex rounded, lower lip flat, trilobed, lateral lobes circular, middle lobe, diminutive, deltoid to obsolete, palate gibbous; spur subulate, longer than the lower lip, curved, parallel to the lower lip, apex acute. Capsule 8–12 × 6–10 mm, ovoid, dehiscence longitudinal. Seeds ca. 2 mm long, cylindrical, non-winged, without peripheral projections.

Examined material: Castelo, Parque Estadual do Forno Grande, 9.IX.2004, fl., *L. Kollmann 6981* (MBML); 12.VIII.1948, fl. and fr., *A.C. Brade 19256* (RB); 31.X.2012, fl., *T.B. Flores 1737* (RB); Pedregulho, estrada entre Balança e Rio Manso, 16.X.2008, fl., *C.N. Fraga 2259* (RB); Topo do Forninho 21.I.2009, fl., *C.N. Fraga 2372* (CEPEC, MBML, RB, UPCB). Domingos Martins, Pedra Azul, 11.VII.2006, fl. and fr., *A.P. Fontana 2201* (RB); 17.VII.2006, fl. and fr., *A.P. Fontana 2208* (RB). Ibiráçu, Lombardia, 6.V.2005, fl., *A.P. Fontana 1427* (MBML). Itaguaçu, Pedra do Capará, 23.IV.2005, fl., *A.P. Fontana 1370* (MBML); 6.VI.2007, fr., *A.P. Fontana 3510* (MBML). Itarana, São Sebastião, 5.IX.2012, fl., *L. Kollmann 12478* (MBML). Mimoso do Sul, Pico dos Pontões, Pedra do Pontão, 22.VI.2008, fl. and fr., *D.R. Couto 547* (MBML). Santa Leopoldina, Rio Bonito, 19.I.2002, fl., *L. Kollmann 5344* (MBML). Santa Maria de Jetibá, Pedra do Garrafão, 25.I.2004, fl., *M.V.S. Berger 132* (MBML); 9.VI.2006, fl., *A.P. Fontana 2178* (RB). Santa Teresa, Estação Biológica de Santa Lúcia, 12.VIII.2005, fl. and fr., *L. Kollmann 8222* (MBML); estrada para Alto Santo

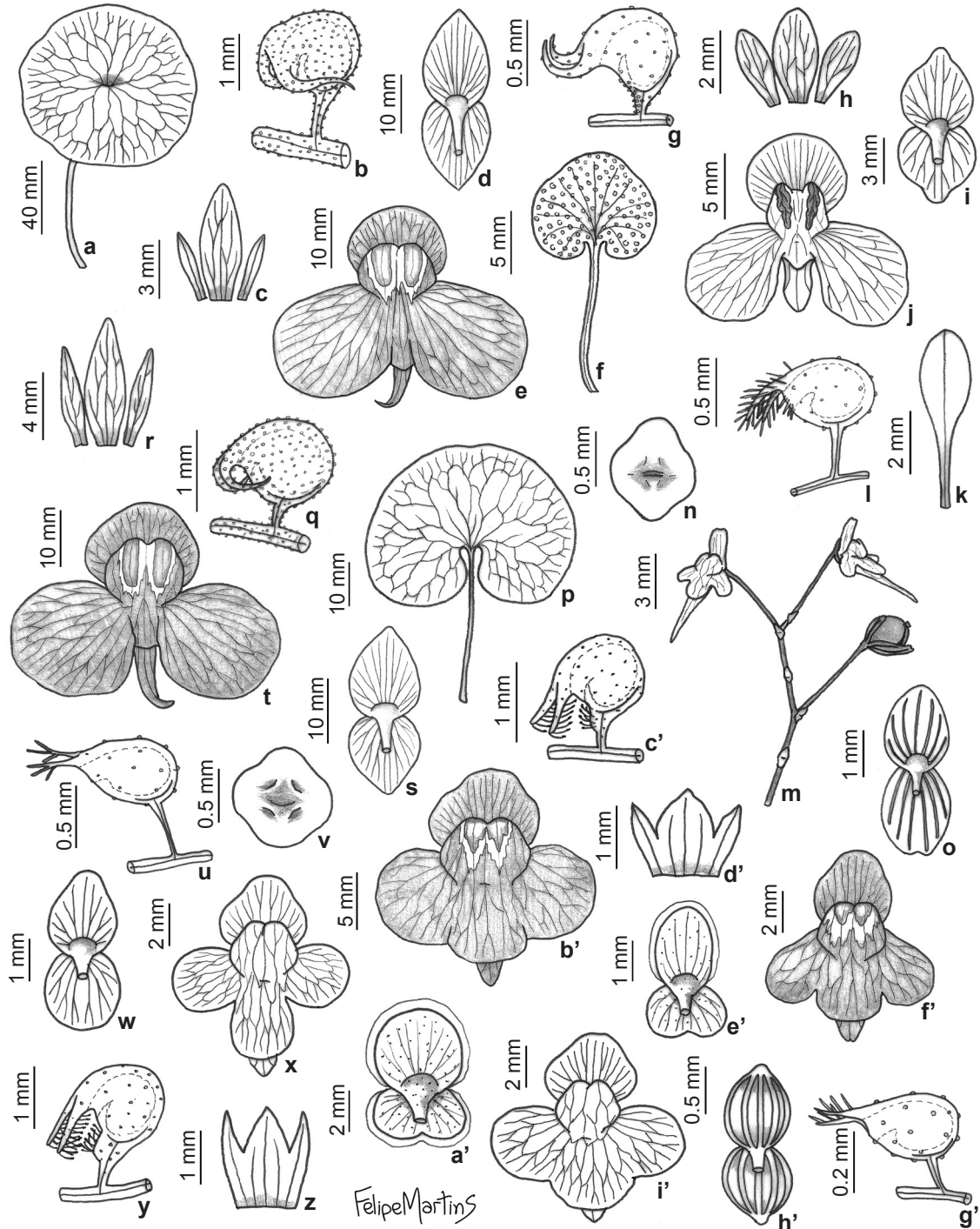


Figure 3 – a-e. *Utricularia nelumbifolia* – a. leaf; b. utricles; c. bract and bracteoles; d. sepals; e. corolla (front view). f-j. *Utricularia nephrophylla* – f. leaf; g. utricles; h. bract and bracteoles; i. sepals; j. corolla (front view). k-o. *Utricularia pusilla* – k. leaf; l. utricles; m. inflorescence; n. bract; o. sepals. p-t. *Utricularia reniformis* – p. leaf; q. utricles; r. bract and bracteoles; s. sepals; t. corolla (front view). u-x. *Utricularia subulata* – u. utricles; v. bract; w. sepals; x. corolla (front view). y-b'. *Utricularia tricolor* – y. utricles; z. bract and bracteoles; a'. sepals; b'. corolla (front view). c'-f'. *Utricularia tridentata* – c'. utricles; d'. bract and bracteoles; e'. sepals; f'. corolla (front view). g'-i'. *Utricularia triloba* – g'. utricles; h'. sepals; i'. corolla (front view).

Antônio, 10.VIII.1999, fl. and fr., *G. Martinelli 15638* (RB); Pedra Alegre, 20.VI.2000, fl., *V. Demuner 1192* (MBML); Luxemburgo, Pedra Preta, 15.III.2005, fl., *A.P. Fontana 1148* (MBML); 15.III.2005, fl. and fr., *L. Kollmann 7440* (MBML); Pedra da Onça, 16.IV.1986, fl., *H.Q.B. Fernandes 1917* (MBML); 16.V.2000, fl., *V. Demuner 1079* (MBML); Pedra Paulista, 2.VI.2004, fl. and fr., *R.R. Vervloet 2655* (MBML); radar Cindactar, 3.XI.2000, fl., *A.P. Fontana 54* (MBML); 22.XII.2001, fl. and fr., *A.P. Fontana 269* (MBML).

Utricularia nelumbifolia is easily recognized by its epiphytic growth form, growing inside bromeliad tanks (*Vriesea* sp. and *Alcantarea* sp.), its peltate and circular leaves, pale lilac to purple corolla, palate with two yellow crests, trilobed lower lip with circular lateral lobes and diminutive, deltoid to obsolete middle lobe. This species is endemic to southeastern Brazil and it is cited to the states of ES, MG, RJ and SP (Taylor 1989; Guedes *et al.* 2020). In Espírito Santo, *U. nelumbifolia* has records in the central and southern highlands (Fig. 1b), in areas of granitic inselbergs/rocky outcrops and *campos de altitude*.

2.8. *Utricularia nephrophylla* Benj. in Mart., *Fl. bras.* 10: 247. 1847. Figs. 1c; 3f-j

Terrestrial or lithophyte, 7–16 cm tall. Leaves aerial, laminar, simple, lamina reniform, basifixed, membranaceous, multinerved. Utricles 0.5–1 mm long, globose, stalked, glandular, entrance basal, with two dorsal appendages, simple, reflexed. Inflorescence 1-flowered to racemose, simple, lax, absence of cleistogamous flowers; scape 0.5–1 mm diam., flexible, slim, glabrous. Scales, when present, and bracts 2–3 × 1–1.5 mm, narrowly ovate to elliptic, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles 1.8–2.8 × 0.8–1.3 mm, narrowly ovate to elliptic, basifixed, free, margins entire. Pedicels 5–25 mm long, compressed, non-winged, glabrous, ascending in fruits. Sepals 4–6 × 2–4 mm, ovate, apex obtuse, margins entire, flat, non-hyaline, nerves conspicuous, non-prominent, not converging to the apex. Corolla 10–15 mm long, white to pale lilac, glabrous, palate with two yellow crests; upper lip ovate, apex truncate to emarginate, lower lip flat, trilobed, lateral lobes broadly obovate, middle lobe, diminutive, deltoid to obsolete, palate gibbous; spur cylindrical, shorter than the lower lip, curved, parallel to the lower lip, apex obtuse. Capsule 3–4 mm diam., globose, dehiscence longitudinal. Seeds ca. 0.6 mm long, globose, non-winged, with irregular peripheral projections.

Examined material: Itaguaçu, Serra do Sobreiro, Pedra do Caparaó, 23.IV.2005, fl., *A.P. Fontana 1375* (MBML).

Dores do Rio Preto, Parque Nacional do Caparaó, Cachoeira 2 Pilões, 22.III.2012, fl., *J. Kuntz 612* (ESA). **Additional material:** BRASIL. RIO DE JANEIRO: Rio de Janeiro, Parque Nacional da Tijuca, estrada do Redentor, 26.II.1996, fl. and fr., *F. Rivadavia 552* (SPF).

Utricularia nephrophylla is easily recognized by its terrestrial or lithophytic growth form, reniform leaves, white to pale lilac corolla, palate with two yellow crests, trilobed lower lip with broadly obovate lateral lobes and diminutive, deltoid to obsolete middle lobe. Besides this set of characters, it differs from the closely related species, *U. reniformis*, in its much smaller corolla (10–15 mm long vs. 30–40 mm long). This species is endemic to Brazil, it is cited to the states of BA, ES, MG and RJ (Taylor 1989; Guedes *et al.* 2020). In Espírito Santo, *U. nephrophylla* has only two records in the southwestern highlands (Fig. 1b), in wet rocks and waterfalls in areas of granitic inselbergs/rocky outcrops and *campos de altitude*.

2.9. *Utricularia pusilla* Vahl, Enum. 1: 202. 1804. Figs. 1c; 3k-o

Terrestrial or helophyte, 3–12 cm tall. Leaves aerial, laminar, simple, lamina spatulate to obovate, basifixed, membranaceous, 1-nerved. Utricles 0.5–1 mm long, ovoid, stalked, glandular, entrance lateral, with two dorsal appendages, simple, hispid. Inflorescence racemose, simple, lax, absence of cleistogamous flowers; scape 0.4–0.5 mm in diameter, flexible, slim, glabrous above and glandular below. Scales and bracts 0.8–1 × 0.8–1 mm, broadly ovate, peltate, margins entire. Sterile bracts present on the raceme axis. Bracteoles absent. Pedicels 2–4 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals ovate, margins entire, flat, non-hyaline, nerves conspicuous, prominent, not converging to the apex; upper sepal 1–2 × 0.8–1 mm, apex rounded; lower sepal 1.2–2 × 1–1.5 mm, apex emarginate. Corolla 5–7 mm long, yellow, glabrous; upper lip oblong, apex retuse to emarginate, lower lip flat, deeply trilobed, palate gibbous; spur subulate, up to twice as long as the lower lip, straight to curved, parallel to the lower lip, apex acute. Capsule 2.5–3 mm diam., globose, dehiscence longitudinal. Seeds ca. 0.2 mm long, ellipsoid, non-winged, without peripheral projections.

Examined material: Águia Branca, Santa Luzia, 4.VII.2007, fl. and fr., *R.R. Vervloet 2784* (MBML); 26.IV.2008, fl. and fr., *L. Kollmann 10927* (MBML). Água Doce do Norte, Santa Luzia do Córrego Azul, Pedra da Torre, 28.IV.2008, fl. and fr., *A.P. Fontana 5116* (MBML). Cariacica, condomínio rural Cantinho do Céu, 8.VI.1999, fl. and fr., *C.N. Fraga 441* (MBML).

Mimoso do Sul, Conceição do Muqui, Pedra dos Pontões, 5.I.2011, fl., *D.R. Couto 1788* (VIES). Nova Venécia, Serra de Baixo, Pedra da Torre, 18.II.2008, fl. and fr., *A.P. Fontana 4840* (CEPEC, MBML, RB, UPGB); 19.II.2008, fl. and fr., *A.P. Fontana 4860* (CEPEC, MBML, UPGB). Santa Teresa, Nova Lombardia, Reserva Biológica Augusto Ruschi, 13.I.2003, fl., *L. Kollmann 5885* (MBML); Vale do Canaã, 22.VIII.2007, fl. and fr., *A.P. Fontana 3715* (MBML).

Utricularia pusilla is easily recognized by its sterile bracts on the raceme axis (between the pedicels), peltate bracts and scales, absence of bracteoles, spatulate to obovate leaves, yellow corolla with deeply trilobed lower lip and subulate spur, up to twice as long as the lower, and sepals with conspicuous and prominent nerves, but not converging to the apex. This species is widely distributed in the Neotropics, and in Brazil, it is cited to all the states but AP, DF, ES, MS, RO, RS and SC (Taylor 1989; Guedes & Alves 2020; Guedes *et al.* 2020). Here we report a new record for the state. In Espírito Santo, *U. pusilla* is widely distributed (Fig. 1b) in granitic inselbergs/rocky outcrops, *campos de altitude* and *restingas*.

2.10. *Utricularia reniformis* A.St.-Hil., *Voy. Rio de Janeiro* 1: 224. 1830. Figs. 1c; 3p-t

Terrestrial or epiphyte, 20–80 cm tall. Leaves aerial, laminar, simple, lamina reniform, basifixed, coriaceous, multinerved. Utricles 0.8–1.5 mm long, globose, stalked, glandular, entrance basal, with two dorsal appendages, simple, reflexed. Inflorescence racemose, simple, lax, absence of cleistogamous flowers; scape 2–6 mm diam., slightly stiff, slim, glabrous. Scales and bracts 6–8 × 2–3 mm, narrowly ovate to elliptic, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles 4–6 × 0.6–1 mm, linear to narrowly lanceolate, basifixed, free, margins entire. Pedicels 10–40 mm long, compressed, non-winged, glabrous, slightly deflexed in fruits. Sepals 9–15 × 7–12 mm, ovate, apex obtuse, margins entire, flat, non-hyaline, nerves conspicuous, non-prominent, not converging to the apex. Corolla 30–40 mm long, purple, glabrous, palate with two yellow crests; upper lip broadly obovate, apex rounded or truncate, lower lip flat, trilobed, lateral lobes circular, middle lobe, diminutive, deltoid to obsolete, palate gibbous; spur subulate, longer than the lower lip, curved, parallel to the lower lip, apex acute. Capsule 5–8 mm diam., globose, dehiscence longitudinal. Seeds ca. 2 mm long, narrowly cylindrical, non-winged, with irregular peripheral projections.

Examined material: Cachoeiro de Itapemirim, Pedra do Cabrito, 28.III.2019, fl., *M.L. Brotto 3296* (MBM). Castelo, Parque Estadual do Forno Grande, 12.X.2000, fl., *L. Kollmann 3179* (MBML). Parque Nacional do Caparaó, entre o acampamento Macieira e o Pico da Bandeira, 18.I.2019, fl., *H.L. Silva 256* (VIES); Pico da Bandeira, 6.II.1985, *P.E. Berry 4537* (RB).

Additional material: BRASIL. RIO DE JANEIRO: Teresópolis, trilha para a Pedra do Sino, 13.XII.2015, fl. and fr., *V.F.O. Miranda 2049* (JABU).

Utricularia reniformis is easily recognized by its terrestrial or epiphytic growth form, growing inside bromeliad tanks (*Vriesea* sp.) like *U. nelumbifolia*, its reniform leaves, purple corolla, palate with two yellow crests, trilobed lower lip with circular lateral lobes and diminutive, deltoid to obsolete middle lobe. As aforementioned, it differs from the closely related species, *U. nephrophylla*, in its much larger corolla (30–40 mm long vs. 10–15 mm long). This species is endemic to southern and southeastern Brazil, and it is cited to the states of ES, MG, PR, RJ, RS, SC and SP (Taylor 1989; Guedes *et al.* 2020). In Espírito Santo, *U. reniformis* has few records in the southwestern highlands (Fig. 1a), in areas of granitic inselbergs/rocky outcrops and *campos de altitude*.

2.11. *Utricularia subulata* L., *Sp. Pl.* 1: 18. 1753. Figs. 1d; 3u-x

Terrestrial or helophyte, 5–10 cm tall. Leaves aerial, laminar, simple, lamina linear, basifixed, membranaceous, 1-nerved. Utricles 0.5–0.8 mm long, ovoid, stalked, glabrous to glandular, entrance lateral, with two dorsal appendages, branched. Inflorescence racemose, simple, lax, sometimes with cleistogamous flowers; scape 0.4–0.5 mm in diameter, flexible, slim, glabrous. Scales and bracts 0.8–1 × 0.8–1 mm, circular to ovate, peltate, margins entire. Sterile bracts absent on the raceme axis. Bracteoles absent. Pedicels 5–8 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals circular, margins entire, flat, non-hyaline, nerves conspicuous, non-prominent, not converging to the apex; upper sepal 1–2 × 1–2 mm, apex rounded; lower sepal 1.2–2.2 × 1.2–2.2 mm, apex rounded to truncate. Corolla 6–10 mm long, yellow, glabrous; upper lip ovate-deltoid, apex obtuse, lower lip flat, deeply trilobed, palate gibbous; spur subulate, as long as to slightly longer than the lower lip, straight to slightly curved, parallel to the lower lip, apex acute or 2–4-denticulate. Capsule 2–2.5 mm diam., globose, dehiscence longitudinal. Seeds ca. 0.2 mm long, ellipsoid, non-winged, without peripheral projections.

Examined material: Conceição da Barra, área 157 da Aracruz Celulose S.A., 15.IV.1992, fl. and fr., *O.J. Pereira 3305* (VIES); área 213 da Aracruz Celulose S.A., 24.III.1992, fl., *O.J. Pereira 3053* (VIES); estrada sentido Riacho Doce, 28.VIII.2012, fl., *T.B. Flores 1242* (ESA); Parque Estadual de Itaúnas, 18.XI.1999, fl. and fr., *C.N. Fraga 536* (MBML); 30.III.2000, fl., *O.J. Pereira 6100* (VIES); 15.VIII.2013, fr., *J.O. Machado 106* (VIES). Guarapari, 8.II.1985, fl., *O.J. Pereira 417* (VIES). Itaguaçu, Alto Limoeiro, 1.VI.1946, fr., *A.C. Brade 18513* (RB); Serra do Sobreiro, Pedra do Caparaó, 23.IV.2005, fl. and fr., *A.P. Fontana 1373* (MBML). Jaguaré, Giral, 17.I.2009, fl. and fr., *L. Kollmann 11457* (MBML). Linhares, 18.IV.2011, fl., *J.C. Lopes 220* (CVRD, ESA). Santa Teresa, cabeceira do Rio Bonito, 31.I.2002, fl. and fr., *L. Kollmann 5446* (MBML). Sooretama, Reserva Natural Vale, 13.V.2009, fl., *G.D. Colletta. 281* (ESA). Vila Velha, Alagados do Vale, 1.IX.2014, fl., *R.T. Valadares 1277* (VIES).

Utricularia subulata is easily recognized by its linear leaves, peltate bracts and scales, absence of bracteoles, yellow corolla with deeply trilobed lower lip and subulate spur, as long as to slightly longer than the lower lip, and sepals with conspicuous nerves, but non-prominent and not converging to the apex. This species is almost Pantropical, and in Brazil, it is cited to all the states but AC (Guedes & Alves 2020; Guedes *et al.* 2020). In Espírito Santo, *U. subulata* is widely distributed (Fig. 1b) in areas of granitic inselbergs/rocky outcrops, *campos de altitude*, *campos nativos* and *restingas*.

2.12. *Utricularia tricolor* A.St.-Hil., Voy. Distr. Diam. 2: 418. 1833. Figs. 1d; 3y-b'

Terrestrial or helophyte, 15–35 cm tall. Leaves aerial, laminar, simple, lamina obovate, basifixed, membranaceous, multinerved. Utricles 1.5–2 mm long, ovoid, stalked, glandular, entrance basal, with two dorsal appendages, simple, and a ventral chin-like projection, both dorsal and ventral structures covered with long inflexed glandular trichomes. Inflorescence 1-flowered to racemose, simple, lax, absence of cleistogamous flowers; scape 0.4–1.2 mm diam., flexible, slim, glabrous. Scales and bracts 1.5–2 × 1–2 mm, ovate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles 1.5–2 × 0.4–0.5 mm, lanceolate, basifixed, basally connate with the bracts, margins entire. Pedicels 5–15 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals with margins entire, flat, hyaline, nerves conspicuous, non-prominent, not converging to the apex; upper sepal 4–5 × 4–5 mm, broadly ovate to circular, apex rounded; lower sepal 2–2.5 × 3–4 mm, transversally

elliptic, apex emarginate. Corolla 15–20 mm long, lilac to purple, minutely glandular, palate white and yellow; upper lip broadly ovate, apex rounded, lower lip flat, entire to shallowly 3-crenate, palate gibbous; spur narrowly conical, as long as or slightly longer than the lower lip, curved, parallel to the lower lip, apex obtuse to emarginate. Capsule 3–4 mm diam., globose, dehiscence bivalvate. Seeds ca. 1 mm long, narrowly cylindrical, non-winged, without peripheral projections.

Examined material: Castelo, Parque Estadual do Forno Grande, 13.V.1949, fl., *A.C. Brade 19802* (RB). Guarapari, Nova Guarapari, 11.IX.1988, fl. and fr., *O.J. Pereira 1802* (VIES); Parque Estadual Paulo César Vinha, 25.III.1991, fl., *J.M.L. Gomes 1490* (VIES); 17.IV.1991, fl., *J.M.L. Gomes 1512* (VIES). Vila Velha, Interlagos, 15.XI.2007, fl., *F.B.C. Souza 92* (VIES); Lagoa do Milho, 20.VII.1973, fl., *D. Araújo 375* (RB); 14.I.1975, fl., *A.L. Peixoto 371* (RB); Ponta da Fruta, Setiba, 31.VIII.1982, fl., *O.J. Pereira 152* (VIES).

Utricularia tricolor is easily recognized by its obovate leaves, bracteoles basally connate to the bracts, lilac to purple corolla with white and yellow palate, minutely glandular, entire to shallowly 3-crenate lower lip, and narrowly conical spur, as long as or slightly longer than the lower lip. This species is endemic to South America, and in Brazil, it is cited to the states of BA, DF, ES, GO, MG, MT, MS, PR, RJ, RS, SC and SP (Taylor 1989; Guedes *et al.* 2020). In Espírito Santo, *U. tricolor* has records in the southeastern highlands and lowlands (Fig. 1b), in areas of granitic inselbergs/rocky outcrops, *campos de altitude* and *restingas*.

2.13. *Utricularia tridentata* Sylvén, Ark. Bot. 8: 28. 1909. Figs. 1d; 3c'-f'

Terrestrial or helophyte, 5–12 cm tall. Leaves aerial, laminar, simple, lamina broadly obovate to circular, basifixed, membranaceous, multinerved. Utricles 1–1.5 mm long, ovoid, stalked, glandular, entrance basal, with two dorsal appendages, simple, and a ventral chin-like projection, both dorsal and ventral structures covered with long inflexed glandular trichomes. Inflorescence 1-flowered to racemose, simple, lax, absence of cleistogamous flowers; scape 0.4–0.6 mm diam., flexible, slim, glabrous. Scales and bracts 1–1.5 × 0.5–1 mm, ovate, basifixed, margins entire. Sterile bracts absent on the raceme axis. Bracteoles 1–1.5 × 0.3–0.4 mm, lanceolate, basifixed, basally connate with the bracts, margins entire. Pedicels 5–10 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals with margins entire, flat, hyaline, nerves conspicuous, non-prominent, not converging

to the apex; upper sepal 2–2.5 × 1.5–2 mm, ovate to oblong, apex rounded; lower sepal 1–1.5 × 1.3–1.8 mm, transversally elliptic, apex emarginate. Corolla 6–10 mm long, lilac to purple, minutely glandular, palate white and yellow; upper lip ovate, apex rounded, lower lip flat, distinctly trilobed, palate gibbous; spur narrowly conical, slightly longer than the lower lip, curved, parallel to the lower lip, apex obtuse. Capsule 2–2.5 mm diam., globose, dehiscence bivalvate. Seeds ca. 0.5 mm long, ovoid, non-winged, without peripheral projections.

Examined material: Iúna, Parque Nacional do Caparaó, Rancho dos Cabritos, beira do Córrego José Pedro, 18.II.2000, fl., *V.C. Souza 23419* (ESA, RB).

Additional material: BRASIL. SANTA CATARINA: Campo Alegre, Campos do Quiriri, 17.XI.2012, fl. and fr., *C.V. Silva 23* (JPB).

Utricularia tridentata is easily recognized by its broadly obovate to circular leaves, bracteoles basally connate to the bracts, lilac to purple corolla with white and yellow palate, minutely glandular, distinctly trilobed lower lip, and narrowly conical spur, slightly longer than the lower lip. This species is endemic to South America, and in Brazil, it is cited to the states of MG, PR, RJ, RS and SC (Taylor 1989; Guedes *et al.* 2020). Here we report a new record for the state. In Espírito Santo, *U. tridentata* has only one record in a southwestern highland (Fig. 1b), on a creek edge in an area of *campos de altitude*.

2.14. *Utricularia triloba* Benj. in Mart., *Fl. bras.* 10: 248. 1847. Figs. 1d; 3g²-i¹

Terrestrial or helophyte, 3–13 cm tall. Leaves aerial, laminar, simple, lamina linear, basifixed, membranaceous, 1-nerved. Utricles 0.3–0.5 mm long, ovoid, stalked, glandular, entrance lateral, with two dorsal appendages, branched. Inflorescence racemose, simple, lax, sometimes with cleistogamous flowers; scape 0.1–0.2 mm in diameter, flexible, slim, glabrous. Scales and bracts ca. 1 × 0.6 mm, rhombic, peltate, margins entire. Sterile bracts absent on the raceme axis. Bracteoles absent. Pedicels 2–4 mm long, cylindrical, non-winged, glabrous, ascending in fruits. Sepals ovate, margins entire, flat, non-hyaline, nerves conspicuous, prominent, converging to the apex; upper sepal ca. 1 × 1 mm, apex acute; lower sepal ca. 1.2 × 1.2 mm, apex acute. Corolla ca. 10 mm long, yellow, glabrous; upper lip ovate, apex rounded, lower lip flat, shallowly trilobed, palate gibbous; spur subulate, slightly longer than the lower lip, straight, parallel to the lower lip, apex acute to 2–4-denticulate. Capsule 1.5–2 mm diam., globose,

dehiscence longitudinal. Seeds ca. 0.2 mm long, ovoid, non-winged, without peripheral projections. **Examined material:** Santa Leopoldina, Rio das Farinhas, 14.IV.2008, fl. and fr., *A.P. Fontana 4921* (MBML).

Utricularia triloba is easily recognized by its linear leaves, peltate bracts and scales, absence of bracteoles, yellow corolla with shallowly trilobed lower lip and subulate spur, slightly longer than the lower lip, and sepals with conspicuous and prominent nerves, converging to the apex. This species is widely distributed in the Neotropics, and in Brazil, it is cited to all the states but CE, ES, MA, PE, RO, RS and SC (Guedes & Alves 2020; Guedes *et al.* 2020). Here we report a new record for the state. In Espírito Santo, *U. triloba* has only one record (Fig. 1b) on a roadside in an area of Montane Dense Ombrophilous Forest.

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