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Diana Rodrigues Santos

ERIOCAULACEAE FROM QUADRILÁTERO FERRÍFERO: Endemism, threats and commented list of species

Belo Horizonte

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Versão Final

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Dr. Alexandre Salino - orientador (Universidade Federal de Minas Gerais) - Aprovada

Dra. Fabiane Nepomuceno Costa (Universidade Federal dos Vales do Jequitinhonha e Mucuri)- Aprovada

Dr. João Renato Stehmann (Universidade Federal de Minas Gerais)- Aprovada

Dra. Lívia Echternacht Andrade (Universidade Federal de Ouro Preto) - coorientadora - Aprovada

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A vida é assim: esquenta e esfria,
aperta e daí afrouxa,
sossega e depois desinquieta.
O que ela quer da gente é coragem

Guimarães Rosa

Resumo

Eriocaulaceae são monocotiledôneas de distribuição Pantropical, facilmente reconhecidas pelas suas inflorescências em capítulos e flores unissexuais. Tem como principal centro de diversidade e endemismo os Campos Rupestres da Cadeia do Espinhaço. O Quadrilátero Ferrífero (QF) localiza-se adjacente à Cadeia do Espinhaço, ao sul. Encontra-se no ecotone entre o Cerrado e a Mata Atlântica, e seus principais tipos vegetacionais são as florestas, os Campos Rupestres quartzíticos e os ferruginosos. Este trabalho provê o levantamento florístico de Eriocaulaceae para o QF, baseado em trabalhos de campo e em estudos taxonômicos associados às coleções em herbário. Oitenta espécies de Eriocaulaceae foram inventariadas para o QF, destas 30 são endêmicas para o QF, 8 conhecidas apenas pelo material tipo. O Campo Rupestre quartzítico abriga 71 espécies, das quais 42 são endêmicas deste litotipo, e 38 espécies habitam os Campos Rupestres ferruginosos, das quais 9 são endêmicas. Todas as espécies endêmicas do QF estão categorizadas em algum nível de ameaça de acordo com a IUCN e 8 possivelmente estão extintas. Novas populações das espécies previamente consideradas extintas ou conhecidas apenas por coletas históricas foram redescobertas. Propomos 3 novos sinônimos para Eriocaulaceae; *Paepalanthus atrovaginatus* Ruhland = *Paepalanthus damazioi* Beauverd, *Paepalanthus vestitus* Ruhland = *Paepalanthus undulatus* Ruhland and *Paepalanthus plantagineus* (Bong.) Körn. = *Paepalanthus pallidus* Silveira

Palavras-chave: Conservação, florística, taxonomia, Campo Rupestre ferruginoso, Campo Rupestre quartizítico.

Abstract

Eriocaulaceae are monocots of Pantropical distribution, easily recognized by their inflorescences in capitula and unisexual flowers. Its main center of diversity and endemism is the Campo Ruspestre of the Espinhaço Range. The Quadrilátero Ferrífero (QF) is adjacent to the Espinhaço Range to the south. It is an ecotone between the Cerrado and the Atlantic Forest, and the main vegetation types are the forests, the quartzitic and the ferruginous Campo Rupestre. This work provides the floristic survey of Eriocaulaceae in the QF, based on fieldwork and taxonomic study associated with herbarium collections. Eighty species were inventoried, of which 30 are endemic to the QF, and 8 are known from the type material only. The quartzitic Campo Rupestre hosts 71 species, of which 42 are endemic to it, and the ferruginous Campo Rupestre has 38 species, 9 of which endemic. All the endemic species to the QF are categorized under some threat level according to the IUCN and 8 are possibly extinct. Nevertheless, new populations of species previously considered as extinct or known only from historical collections have been rediscovered. We propose 3 new synonyms for Eriocaulaceae; *Paepalanthus atrovaginatus* Ruhland = *Paepalanthus damazioi* Beauverd, *Paepalanthus vestitus* Ruhland = *Paepalanthus undulatus* Ruhland and *Paepalanthus plantagineus* (Bong.) Körn. = *Paepalanthus pallidus* Silveira.

Keywords: Conservation, floristic, taxonomy; ferruginous Campo Rupestre, quartzitic Campo Rupestre.

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Sumary

Introduction

Eriocaulaceae Martinov are monocotyledons included in Poales (APG IV; Chase *et al.* 2016) with about 1400 species and 10 genera Giulietti *et al.* (2012). The family is easily recognized by unissexual flowers in capituliform inflorescences Giulietti & Hensold (1990). Ruhland (1903) defined two subfamilies: Eriocauloideae Ruhland, with diplostemonous flowers and glandular petals, and Paepalantoideae Ruhland, with isostemonous flowers and eglandular petals. In Brazil, there are 633 species in eight genera, of which 554 are endemic to the country (Sano *et al.* 2020). It is a pantropical family, but mostly diversified in the Campo Rupestre of the Espinhaço Range, in Minas Gerais and Bahia, Brazil, and in the Venezuelan Tepuis (Giulietti & Hensold 1990).

The Quadrilátero Ferrífero (QF) is located at the south of the Espinhaço Range, in a transition zone between two Brazilian *hotspots*, the Atlantic Forest and the Cerrado, both considered as priority areas for conservation of global biodiversity (Myers *et al.* 2000). Vegetation is composed of a mosaic of phytophysiognomies, under the influence of these biomes, combined with great variation in climate, topography, geology, lithology, and altitude (Jacobi & Carmo 2008). Phytophysiognomies include from dense semidecidual Atlantic Forest, Cerrado *stricto sensu* and, ecotonal vegetation, to open areas of Campo Rupestre (Jacobi *et al.* 2007; Jacobi & Carmo 2008; Messias & Carmo 2015). The Campo Rupestre of QF can be quartzitic, granitic or ferruginous (Jacobi *et al.* 2007). This last type is a very rare formation in the world, locally known

as *Canga,* with an unique biodiversity, threatened by the exploitation of iron ore (Dorr 1964; Jacobi & Carmo 2008).

During the last decades, floristic surveys were carried out in the QF, mainly in the Itacolomi and the Ouro Branco State Parks. In the Itacolomi State Park, 16 species of Eriocaulaceae were recorded by Messias *et al.* (2017). In addition, taxonomic treatments of some angiosperm families were published for the Itacolomi State Park: Asteraceae Bercht. & J. Presl. (Almeida *et al.* 2014), Bromeliaceae A. Juss. (Coser *et al*. 2010), Fabaceae Lindl. (Dutra *et al*. 2005, 2008a, 2008b, 2009, 2014; Lima *et al.* 2007, 2010), Myrtaceae Juss. (Bünger *et al.* 2012), and Orchidaceae A. Juss. (Alves 1990; Batista *et al.* 2004). The flora of the Serra de Ouro Branco accounts for Melastomataceae A. Juss. (Hemsing 2018), Myrtaceae (Santos & Sano 2012), Poaceae Barnhart (Longhi-Wagner & Welker 2012), and Orchidaceae (Vieira 2017). There is also a species checklist for the Serra do Caraça (Augsten 2015) and a study of endemicity in the QF by Borsali (2012).

The previous studies of Eriocaulaceae in the QF is limited to the Checklist of Eriocaulaceae from the Cangas (Echternacht *et al.* 2012), the Itacolomi and Lavras Novas flora (Rodrigues 2019, unpubl.) and to the flora of Caraça (Soldevila & Echternacht, submitted). There is also the flora of the Serra de Ouro Branco (Ramos 2004, unpubl.). In the neighboring Espinhaço Range, there are the published floras of Eriocaulaceae from Serra do Cipó: *Actinocephalus* (Körn.) Sano (Sano 1998), *Eriocaulon* L. e *Leiothrix* (Körn.) Ruhland (Giulietti 1978), *Syngonanthus* Ruhland (Parra 1998), *Paepalanthus* Mart. subg. *Xeractis* (Hensold 1998). The present study aims to produce a commented checklist of Eriocaulaceae from the Quadrilátero Ferrífero, with an interactive key,

photographs, information and comments on distribution, and conservation status of the endemic species.

Material and Methods

Study Area

The Quadrilátero Ferrífero comprises about 7.000 square kilometers, located in the central portion of Minas Gerais, between the state capital Belo Horizonte, at north, and the historical city of Ouro Preto at southeast (Door 1964; Dorr 1969). It is called 'quadrilátero' because of its quadrangular relief, with more or less straight mountains (serras); 'ferrífero' refers to the relative predominance of iron in the geological constitution of the highest portions. Many local names are given and here below we describe the relief considering the main mountains (Fig. 1). The northern portion is delimited by the mountains of Itatiaiuçú at west, passing by Serra do Curral eastwardly, until Serra da Piedade; the western border is formed by the Serras da Moeda and Itabirito, from north to south; the southern limit, from west to east, is composed of the Serra de Ouro Branco, Itacolomi, and Lavras Novas; the eastern is the most tortuous limit, composed from south to north of the Serra de Ouro Preto, Serra do Caraça, and Serra do Garimpo; in the central portion, we have the Serra do Gandarela (Fig. 1). For biogeographic and conservationist purposes, the Quadrilátero Ferrífero is sometimes considered as the southern part of the Espinhaço Range (Gontijo 2008), but geological origin is distinct in time and orogeny. The QF has its older rocks from the Archean,

around 3.0 to 2.5 bya (Uhlein & Noce 2012), while the Espinhaço range dates back to the Paleoproterozoic (1.75 bya, Alkmim 2012).

Predominant climate is CWA, in accordance with the classification of Koppen (1928), characterized as mesothermic, with two well defined seasons: rainy summer and dry winter (Alvares *et al.* 2014). Altitude varies between 600 m to 2,069 m (Pico do Sol, Serra do Caraça), with an average of 1000 meters. Annual average temperature is around 20°C, with precipitation ranging between 1,300 mm and 2,100 mm per year (Ruchkys *et al*. 2012). However, the mountainous relief with high slopes favors climate heterogeneity.

The Quadrilátero Ferrífero is located in between two biomes: the Atlantic Forest to the east and the Cerrado to the west. Rocks forming these mountains are very resistant and old, especially quartzite and itabirite (which is mostly iron), protruding in the highest portions and forming the Campos Rupestres. Valleys are mainly formed by the Rio das Velhas Supergroup (3.0 to 2.5 bya) and the highest parts by the Minas Supergroup (2.5 to 2.0 bya); each of these are divided into many formations, enhancing a very complex geological structure (Uhlein & Noce 2012).

Geodiversity plus the climatic and topographic diversity, under different influences of the Atlantic Forest and Cerrado, forms many phytophysiognomies, such as forest, gallery forests, grasslands, shrublands, swamps, and others (Jacobi *et al.* 2007; Jacobi & carmo 2008; Carmo 2010; Messias & Carmo 2015). Each of these phytophysiognomies contain microhabitats formed by infinite combinations of exposed rock surfaces, pools and fissures, ephemeral small ponds, soil-filled depressions, steps and crevices, monocotyledonous mats, cave entrances, among others

(Jacobi *et al.* 2007; Badia *et al.* 2021). All these variables contribute to an astonishing biodiversity (Silveira *et al.* 2016).

The study area was delimited in accordance with the Atlas Digital Geoambiental of the Quadrilátero Ferrífero, available from the Instituto Prístino (https://institutopristino.org.br/atlas/quadrilatero-ferrifero/). We delimited 16 main areas (Fig. 1), which correspond to the larger mountains, which may have sub-localities. The name of the areas are compiled based on the toponymies of the main mountains, following the cartography in 1:50.000 scale, Acuruí SF-23-X-A-III-2 (1977); Belo Horizonte SE-23-Z-C-VI-3 (1979); Caeté SE-23-Z-C-VI-4 (1977); Catas Altas SF-23-X-B-I-1 (1975); Itabirito SF-23-X-A-III-3 (1985); Mariana SF-23-X-B-I-3 (1976); Ouro Branco SF-23-X-A-VI-2 (1975); Ouro Preto SF-23-X-A-III-4 (1985) & Rio Acima SF-23-X-A-III-1 (1977) of the Instituto Brasileiro de Geografia e Estatística (IBGE), on (https://portaldemapas.ibge.gov.br/portal.php#homepage), especially those currently cited in the voucher labels.

Species list:

The list of species started with a compilation of records available in Specieslink (CRIA 2022), using the filters of municipality and toponyms. Data was exported to Brahms for treatment. We updated this list following the accepted names in the Flora e Funga do Brazil (Sano *et al.* 2020; http://floradobrasil.jbrj.gov.br/). Many records were not originally georeferenced; in the cases that

specimen labels had notes on localities, we attributed coordinates using Google Earth (https://www.google.com.br/intl/pt-BR/earth/) and Google Maps (https://www.google.com.br › maps › preview).

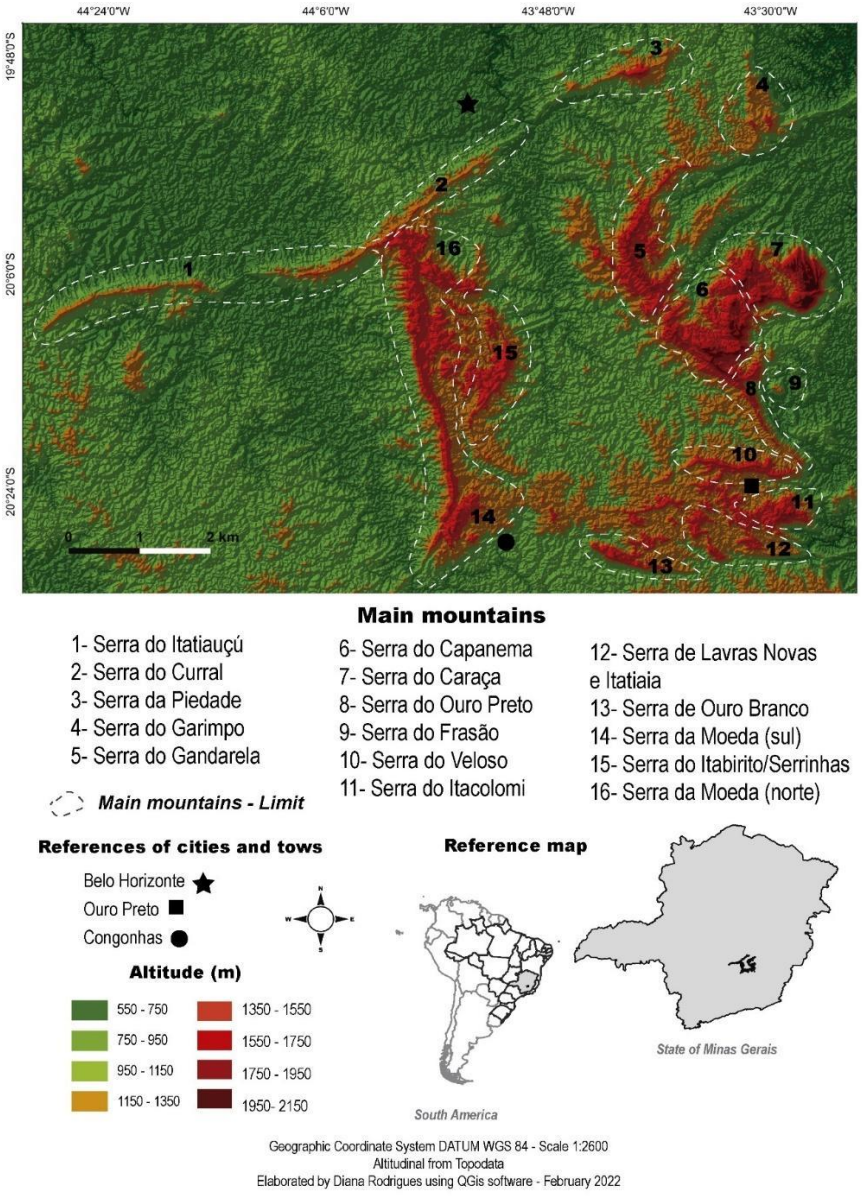

Figure 1: Map of Quadrilátero Ferrífero with the main mountains, numbered 1 to 16 clockwise. (1) Serra do Itatiaiuçu (2) Serra do Curral (3) Serra da Piedade (4) Serra do Garimpo (5) Serra do Gandarela Serra do Capanema (7) Serra do Caraça (8) Serra do Ouro Preto (9) Serra do Frasão, (10) Serra do Veloso (11) Serra do Itacolomi (12) Serra de Lavras Novas (13) Serra de Ouro Branco (14) Serra da Moeda (sul) (15) Serra do Itabirito (16) Serra da Moeda (norte).

Taxonomic study in herbaria and fieldwork

Most of this research was conducted during the pandemic of COVID-19 and the preventive social isolation strongly affected the mobility to the field and herbaria, as well as the access to laboratory infrastructure. Virtual herbaria were consulted all along the development of this study, especially the collections in B, ESA, G, HUEFS, HUFU, IAN, NY, R, SPF, and VIC (acronyms according to Thiers, continuously updated). Most of the Quadrilátero Ferrífero records are hosted in BHCB and OUPR, whose physical collections were studied from May 2021 to February 2022. All Eriocaulaceae specimens from Quadrilátero Ferrífero present in BHCB and OUPR were analyzed. Undetermined specimens and dubious determinations were revised, using specialized literature and comparison with determined specimens. They were studied under stereomicroscope, especially the flowers, which were rehydrated and dissected. We use identification keys and descriptions available in protologues, floras, and the taxonomic reviews (Giulietti 1984; Hensold 1997; Sano 1999; Parra 2000; Trovó 2010; Echternacht 2012; Watanabe 2015; Earl 2017; Andrino *et al.* 2020; Costa & Sano 2020; Chagas *et al.* 2020; Echternacht & Parra 2020; Echternacht & Watanabe 2020; Giulietti 2020).

Fieldwork was realized in the Serra do Itacolomi (April and May 2018), in the Serra do Frasão (October 2021), and in the Serra da Moeda and Serra do Gandarela (November 2021). We photographed the specimens in their habitat, then we collected them, took geographic coordinates and notes on locality, habitat, conservation status and population attributes. Specimens were

herborized using the methods described in Fidalgo & Bonini (1989), deposited in BHCB, with duplicates sent to OUPR.

For each species we provide information on its whole distribution, as well as its occurrences in the 16 main areas of the Quadrilátero Ferrífero (Fig. 1), and habitat information. Species distribution were consulted on the basis of the available taxonomic reviews (previously cited) and the collaborative work Flora e Funga do Brasil (Andrino *et al.* 2020; Costa & Sano 2020; Chagas *et al.* 2020; Echternacht & Parra 2020 Echternacht & Watanabe 2020; Giulietti 2020), cross checking with SpeciesLink records and our personal herbaria and field notes. Whenever possible, specimen label informations were used to infer the area of occurrence, habitat, population size, and conservation conditions. In some cases, aspects of sediments attached to the roots of the dried specimens allowed us to identify soils properties: reddish fragments of ferruginous soils, sand of quartzose soils, or clay. Species were categorized as “endemic” and “not endemic” to the Quadrilátero Ferrífero. For the endemic species whose conservation status were not yet evaluated by CNCFlora (Martinelli & Morais 2013), we calculated the ‘area of occupancy’ (AOO) and the 'extent of occurrence’ (EOO) using GeoCat (http://geocat.kew.org/editor), then we followed the IUCN criteria in order to access the categories of threatened species (IUCN 2022). We mentioned the heterotypic synonyms whose type material come from the QF. We cited for each species a voucher collected by one of the research participants whenever available, or we cited the most recent voucher. The other analyzed vouchers are listed as supplementary material.

We created an interactive key for the species using the Xper3 online (www.xper3.fr). Easy visualization features were prioritized in the elaboration of a descriptive model that gathers morphological characteristics raised through the protologues, floras, and the previously cited taxonomic reviews, together with our laboratory and field observations.

Results

Checklist, richness and endemism

Eighty species of Eriocaulaceae were recorded in the Quadrilátero Ferrífero (Tab. 1), and the most representative genera are: *Paepalanthus* (49 species), *Actinocephalus* and *Leiothrix* (8 species each), *Syngonanthus* (7), *Eriocaulon* and *Comanthera* (4 species each). Of these, 30 species are endemic to the QF and 46 have their type specimens from the QF. Eight species are known from the type collection only: *Paepalanthus brevicaulis* Silveira, *Paepalanthus cacuminis* Ruhland, *Paepalanthus chloropus* Silveira, *Paepalanthus garimpensis* Silveira, *Paepalanthus langsdorffii* (Bong.) Ruhland, *Paepalanthus xiphophyllus* Ruhland, *Syngonanthus lanceolatus* Silveira, and *Syngonanthus pulcher* Ruhland. New records were identified to four species previously known also from the type or historic collections only: *Paepalanthus argillicola* Silveira, *Paepalanthus atrovaginatus* Ruhland, *Paepalanthus clausseni* Hensold and *Paepalanthus desperado* Ruhland.

It is notable that most diversity of Eriocaulaceae is concentrated in the Campo Rupestre vegetation over the mountains of the Minas Supergrup and not in the Forest vegetation that predominates on the valleys of the Rio das Velhas Supergroup. Considering the 80 species found in the QF, 71 inhabit the quartzitic Campo Rupestre and 42 are endemic to this lithotype, whereas 38 inhabit the ferruginous Campo Rupestre, being 9 exclusives to the ferruginous soils. The most rich of the mountains is Serra do Caraça (36 species), followed by its neighbour Serra do Capanema (29), Serra de Lavras Novas (27), Serra do Itacolomi (24), Serra do Itabirito/Serra das Serrinhas (24), Serra da Moeda (24), Serra do Gandarela (18), Serra do Ouro Branco (17), Serra do Veloso (16), Serra do Garimpo (15), Serra da Piedade (10), Serra do Itatiaiuçu (4), Serra do Curral (3), and Serra do Frasão (2).

Considering the 30 species endemic to the QF, only six of them had been evaluated by CNCFlora (2021): *Actinocephalus falcifolius*, *Leiothrix gomesii* Silveira, *P. garimpensis*, *Paepalanthus hydra* Ruhland, *P. langsdorfii*, and *P. xiphophyllus*. *Paepalanthus amoenus* (Bong.) Körn. and *Paepalanthus decussus* Körn. had the IUCN criteria applied by Trovó (2010), and *Actinocephalus giuliettiae* Sano, by Echternacht *et al.* (2011). Herein we had to reevaluate *L. gomessi*, which was considered as Deficient Data (DD) by CNCFlora (2011) and as Probably Extinct (EX) by COPAM-MG (1997), due the discovery of new populations. In according with IUCN (2022) criteria, *Actinocephalus camptophyllus* (Ruhland) F.N.Costa & P.T.Sano, *A. falcifolius*, *L. gomesii*, *P. amoenus, P. argillicola, P. blepharocnemis*, *P. hydra*, *Paepalanthus leucoblepharus, P. magalhesii*, *P. spixianus*, *P. suffruticans* are considered Endangered, *A.*

giuliettiae, P. atrovaginatus, P. batatalensis, P. caepititius, P. clausenii, P. decussus, P. desperado, P. diplobetor, P. moedensis, P. vestitus are considered Critically endangered and *P. brevicaulis, P. cacuminis, P. chloropus, P. garimpensis, P. langsdorffii, P. xiphophyllus, S. lanceolatus, S. pulcher* Probably extinct.

We proposenew synonyms: *Paepalanthus magalhaesii* Silveira as the accept name for *Paepalanthus gomesii* Silveira, *Paepalanthus vestitus* Ruhland for *Paepalanthus undulatus* Ruhland, and *Paepalanthus plantagineus* (Bong.) Körn. for *Paepalanthus pallidus* Silveira.

We followed the names accepted in the Flora e Funga do Brasil (Sano *et al.* 2020), with two exceptions: We considered *Paepalanthus blepharocnemis* Mart. ex Körn. as an accepted name, following the species concept proposed by Picanço (2018), that better defines the morphotypes present in the QF; we use the name *Paepalanthus falcatus* instead of *Paepalanthus pedunculatus*, because of the priority of publication.

The interactive key is available at https://www.xper3.fr/xper3GeneratedFiles/publish/identification/5851548746965733171/mkey.html, and can be accessed by computer or mobile device. The descriptive model is composed of 35 characters with their respective states, which can vary from 2 to 5 depending on the characteristic (supplementary material).

TABLE 1: Species list of Eriocaulaceae from the Quadrilátero Ferrífero in the following areas (presence= 1, absence=0)**: 1 -** Serra do Itatiaiuçu, **2 -** Serra do Curral, **3** - Serra da Piedade, **4** - Serra do Garimpo, **5** - Serra do Gandarela, **6 -** Serra do Capanema, **7 -** Serra do Caraça, **8 -** Serra do Ouro Preto, **9 -** Serra do Frasão, **10 -** Serra do Veloso, **11 -** Serra do Itacolomi, **12 -** Serra de Lavras Novas, **13 -** Serra de Ouro Branco, 1**4 -** Serra da Moeda (sul), **15 -** Serra do Itabirito, **16 -** Serra da Moeda (norte), **17** - Quartzitic Campo Rupestre, **18** - Ferruginous Campo Rupestre. **Bold font** - endemic species from the QF. **Asterisk -** Species known from the type only.

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	***17***	***18***
Total of species for area	4	3	10	15	18	29	36	21	2	16	24	27	17	22	24	20	71	38
Actinocephalus bongardii	0	0	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1
A. camptophyllus	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1
A. divaricatus	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
A. falcifolius	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0
A. giuliettiae	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
A. ithyphyllus	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
A. polyanthus	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	1
A. ramosus	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Comanthera centauroides	0	0	0	0	1	1	1	0	0	0	0	1	1	0	1	0	1	1
C. cipoensis	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
C. elegantula	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
C. nivea	0	0	0	0	1	1	1	1	0	1	1	0	0	0	1	0	1	1

Eriocaulon cinereum	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	1
E. crassiscapum	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
E. ligulatum	0	0	0	0	1	1	1	1	0	0	1	1	0	1	1	0	1	1
E. modestum	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0
Leiothrix crassifólia	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
L. curvifolia	0	0	0	0	0	1	1	0	0	1	1	1	1	0	0	0	1	0
L. flagellaris	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
L. flavescens	0	0	0	0	0	1	1	1	0	0	1	1	1	1	0	1	1	1
L. gomesii	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0
L. longipes	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
L. mucronata	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0
L. vivípara	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	0	1	1
Paepalanthus amoenus	0	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1
P. argillicola	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
P. atrovaginatus	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
P. batatalensis	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
P. blepharocnemis	1	1	0	0	1	0	0	0	0	1	0	1	1	1	0	1	1	1
*P. brevicaulis**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
*P. cacuminis**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
P. caespititius	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0

P. calvus	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
P. chloropus *	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
P. ciliolatus	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1	0
P. clausenii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
P. conduplicatus	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	1	0
P. decussus	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
P. desperado	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
P. dianthoides	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1
P. diplobetor	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
P. elongatus	1	0	0	0	1	1	1	0	0	0	1	1	1	1	1	1	1	1
P. erectifolius	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0
P. exiguus	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	1	1
P. falcatus	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
P. fastigiatus	0	0	0	0	1	1	0	0	0	0	0	1	0	1	1	0	1	0
P. flaccidus	0	0	1	1	1	0	1	1	0	0	1	1	0	1	1	0	1	1
P. freyreissii	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	0	1	1
*P. garimpensis**	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
P. hydra	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1
*P. langsdorffii**	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
P. leucoblepharus	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1

P. lundii	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
P. macropodus	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	1	0
P. magalhaesii	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0
P. manicatus	1	0	1	0	0	1	1	1	0	1	1	0	1	1	1	1	1	1
P. melaleucus	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
P. moedensis	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0
P. minutulus	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
P. mollis	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1	1
P. paulinus	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
P. planifolius	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1
P. plantagineus	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	1
P. pubescens	0	0	0	1	1	1	0	1	0	1	0	1	0	1	1	1	1	1
P. scirpeus	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1
P. scleranthus	0	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	1	0
P. sphaerocephalus	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0
P. spixianus	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1
P. suffruticans	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
P. vellozioides	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	1	1	1
P. vestitus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
P. vaginatus	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0

P. xiphophyllus *	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Syngonanthus anthemiflorus	0	0	0	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0
S.caulescens	0	0	0	0	0	0	1	1	0	1	1	1	0	0	1	0	1	0
S. gracilis	0	0	0	1	0	0	1	1	0	0	1	1	1	1	1	1	1	1
*S. lanceolatus**	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
S. nitens	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	0
*S. pulcher**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
S. widgrenianus	0	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	1	1

Discussion

The Quadrilátero Ferrífero with its 80 species, can be considered unique and quite rich in Eriocaulaceae. The Serra do Cipó (*sensu lato*) has 168 species (Ramos 2017), but epresents a much broader area than the QF, especially considering the area of occupancy of the Campo Rupestre, the main vegetation for Eriocaulaceae. In the Serra do Cipó, the Campo Rupestre covers continuously and large areas, while they are quite discontinuous in the QF, forming kind of vegetation islands between 900 and 1,900 m a.s.l. (Jacobi & Carmo 2008). In addition, the Campos Rupestres of the QF are much more degraded compared to those in the Serra do Cipó, due to more intensive human pressure, especially by mining activities, being classified as medium and high vulnerability, taking into account the loss of habitat (Carmo 2010). Sonter *et al.* (2014) estimate

that there may be a loss of 35% of the native vegetation of Campo Rupestre between 2010 and 2030 in QF.

Echternacht *et al.* (2012) inventoried 27 species of Eriocaulaceae from the ferruginous Campo Rupestre of the QF, here we found 11 species more to this habitat. *Leiothrix. gomesii*, *P. argillicola, P. batatalensis, P. gomesii* (= *P. magalhesii*), *P. moedensis,* and *P. pallidus* (= *P. plantagineus* were considered as probably extinct because of the lack of records in the past100 years ago COPAM-MG 1997; Carmo *et al.* 2018, Echternacht *et al.* 2012). We excluded from this list *P. flaviceps*, because of the localization "Rio das Pedras" was not retrieved for the QF. Through the fieldworks in the last decades plus the updated identifications realized here, we discovered new populations of species previously considered as probably extinct: *L. gomesii, P. argillicola, P. batatalensis, P. magalhaesii* by COPAM-MG (Echternacht *et al.* 2012; Carmo *et al.* 2018), and others not cited by COPAM but that were not collected during the last century (*P. clausenii*, *P. desperado,* and *Paepalanthus vestitus*) .

The richer mountains are also those with the larger areas of quartzitic Campo Rupestre, phytophysiognomy already known for the richness of Eriocaulaceae species (Giulietti 1997). These mountains stand out also in terms of the number of endemic species, hosting 15 endemic species in total. Important factor is that the Serra do Caraça and part of Serra do Capanema are protected, respectively, as the Reserva Particular do Patrimônio Natural (RPPN) Santuário do Caraça (sustainable use), and as part of the Parque Nacional Serra do Gandarela (strict protection), showing the importance of these conservation units of public and private initiatives to the nature

conservation. The Serra de Lavras Novas, on the other hand, despite being adjacent to two conservation units, the Parque Estadual do Itacolomi and the Monumento Natural Estadual do Itatiaia, is not included by any of them and therefore is more exposed to habitat degradation.

Despite the majority of species being found in the quartzitic Campo Rupestre (71), the Ferruginous Rocky Outcrops represent an important habitat for the evolution of species that lives with toxic metals. The ferruginous Campo Rupestre represent an important habitat for the evolution of species that lives with toxic metals. These sites may be colonized by the pseudometallophytes species, that tolerate high level of heavy metals but can be found in other habitats, by eumetallophytes, which present mechanisms of resistance and/or tolerance to heavy metals, and by and the hyperaccumulator species, that concentrate high levels of heavy metals in their tissues (Whiting *et al.* 2004). In Eriocaulaceae there are a record of hyperaccumulation of heavy metals in *Paepalanthus* and *Eriocaulon*, especially in inflorescences and leaves (Porto & Silva, 1989; Furtado *et al.* 2016). These species have morphological, anatomical and physiological adaptations, and are capable of tolerating limitans factors, such as water deficit, low fertility, high concentration of oxidized iron, low water retention, in addition to accentuated daily thermal amplitudes, frequent fire incidence, high sun exposure, and constant winds (Vincent 2004; Jacobi *et al.* 2007; Santos & Varajão 2014).

Among the 9 species that are found exclusively in the Ferruginous Rocky Outcrops of the QF, *Actinocephalus divaricatus* (Körn.) Sano, *Actinocephalus ramosus* (Wikstr.) Sano, Eriocaulon cinereum R. Br., and *Paepalanthus calvus* Körn, are found inhabiting quarzitic soils in other

locations outside the QF (Sano 1999; Trovó & Sano 2010; Chagas 2017). It is important to emphasize that in the QF, the Quartzitic and Ferruginous rocks are side by side (Alkmim & Marshak 1998; Klein & Ladeira 2000), so the conservation of one habitat interfere on the conservation of the other.

Conservationist strategies are developed to preserve the species and currently about 42.5 % of the Campo Rupestre (ferruginous and non-ferruginous) in the QF are located within protected areas (of sustainable use and strict protection). However, the Campo Rupestre in the QF is particularly fragmented, and it is possible that this value is underestimated. Considering the high level of microendemism in the Campo Rupestre, many rare and threatened species are outside protected areas. Currently, all endemic species of Eriocaulaceae in QF fit the most serious threat categories: 12 are “Endangered”, 10 are “Critically endangered”, and 8 are probably extinct.

Commented list

1. ***Actinocephalus bongardii*** (A.St.-Hil.) Sano, Taxon 53 (1): 100. 2004. *Eriocaulon bongardii* A.St.-Hil., Voy. distr. Diam. 2: 444. 1833. Type:—BRAZIL. Minas Gerais: "in arenosis montibus Serra Lenheira et de St. Joze", *Riedel 289* (LE).

Distribution and habitat: not endemic. *Actinocephalus bongardii* is one of the species most widely distributed of the genus. It occurs from Piauí to São Paulo, including the Campo Rupestre along the Espinhaço Range, and in disjunct areas in Goiás and Tocantins (Sano 1999). In the

Quadrilátero Ferrífero, it is one of the most widespread species, occurring from the Serra da Piedade, Serra do Garimpo, Serra do Gandarela, Serra do Capanema, Serra do Caraça, Serra do Ouro Preto, Serra de Lavras Novas, Serra do Itacolomi, Serra de Ouro Branco, Serra da Moeda, and Serra do Itabirito. It grows in various habitats, in open grasslands, Cerrado and Campo Rupestre, usually found within temporarily flooded plains and along drainages. The population of this species is abundant, found in both preserved and anthropized areas.

Selected specimens examined: BRAZIL. Minas Gerais. Mariana. Parque Estadual do Itacolomi, 20°24'51.4"S, 43°26'57.3"W, 6/IV/2018, *D. Rodrigues et al. 23* (OUPR).

2. ***Actinocephalus camptophyllus*** (Ruhland) F.N. Costa & Sano. *Paepalanthus camptophyllus* Ruhland, Pflanzenr. 13 (IV.30): 174. 1903. Type:—BRAZIL. Minas Gerais: "Morro da Carapuça bei Caraça", June 1884, *Glaziou 15520* (B).

= *Paepalanthus bongardii* Kunth, Enum. Plant. 3: 519. 1841. Type:—BRAZIL. [Minas Gerais]: In umbr. arenosis S. da Piedade, September 1824, *Riedel s.n.* (LE).

= ***Actinocephalus camptophyllus*** var. ***gracilis*** (Ruhland) F.N. Costa & Sano, ***Paepalanthus camptophyllus*** var. ***gracilis*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 175. 1903. Type:—BRAZIL. Prov. Minas Geraes, Serra de Capanema, September 1893, *Schwacke 9440* (B).

Fig. 2A

Distribution and habitat: endemic. *Actinocephalus camptophyllus* is endemic to the Quadrilátero Ferrífero, occurring especially in the Serra do Caraça and the adjacent Serra do Capanema, and in the Serra da Piedade. There are records from other regions, such as Grão Mogol, Datas, and Capitólio, but according with Andrino *et al.* (2021) they are misidentifications. It grows on slopes, among quartzitic or ferruginous outcrops, in sunny or shaded sites. *Actinocephalus camptophyllus* var. *gracilis* occurs exclusively in Serra do Capanema, and can be differentiated because of narrower, laxer leaves.

Conservation status: *Actinocephalus camptophyllus* is considered as "Endangered", following criteria B1a (i,ii,iii) and B2b (i,ii,iii) of the IUCN (2022).

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN do Santuário do Caraça, 20°08'01.2"S 43°26'52.9"W, 2000 m, 26/VII/2009, *L. Echternacht et al. 2076* (OUPR).

3. ***Actinocephalus divaricatus*** (Bong.) Sano, Taxon 53 (1): 102. 2004. *Eriocaulon divaricatum* Bong., Mém. Acad. Imp. St.-Petersbourg, Ser. 6, Sci. Math. 1:621, 641. tab. 3. 1831. Type:—BRAZIL. Minas Gerais: "Hab. in arenosis Serra da Lapa", *Riedel 1048* (LE).

Distribution and habitat: not endemic. *Actinocephalus divariatus* occur in the Espinhaço Range, especially in the Diamantina region, extending to Grão Mogol to Abaíra municipality in Bahia. In the Quadrilátero Ferrífero on single voucher *BHCB 60071* was found, identified by Dr. Sano, from

the ferruginous Campo Rupestre, in the mining property of Samarco, in Mariana, without geographic coordinates.

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Samarco, 10/XII/2000, *A.E. Brina* (BHCB 60071).

4. ***Actinocephalus falcifolius*** (Körn.) Sano, Taxon 53 (1): 102. 2004. *Paepalanthus falcifolius* Körn., in Martius Fl. Bras. 3 (1): 327. tab 45. 1863. Type:—BRAZIL. MINAS GERAIS: "Crescit in campis prov. Minarum", *Martius 880* (M).

Fig. 2B-C

Distribution and habitat: endemic. *Actinocephalus falcifolius* is endemic to the Serra de Lavras Novas, Serra do Itacolomi plus Serra de Ouro Branco, southeastern Quadrilátero Ferrífero. It grows in open grasslands, over sandy soils, in Campo Rupestre of quartzitic formation. The populations are punctual, with a few dozen individuals, and can be sympatric with other species of the genus such as *A. bongardii* and *A. polyanthus*.

Conservation status: *Actinocephalus falcifolius* is considered as “Endangered” (EN), according to criteria B1ab (i,ii,iii) and 2ab (i,ii,iii) (CNCflora 2014),

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Parque Estadual do Itacolomi, 20°26'15.9"S, 43°26'40.6"W, 06/IV/2018, *D. Rodrigues et al. 31* (OUPR).

5. ***Actinocephalus giuliettiae*** Sano, Phytotaxa 23:31. 2011. Type:—BRAZIL. Minas Gerais: Itabirito, “Serra de Capanema, Mina de Capanema”, 12 March 2009, *L. Echternacht 1944* (SPF).

Fig. 2D

Distribution and habitat: endemic. *Actinocephalus giuliettiae* is *micro-endemic* to Serra do Capanema, in the Itabirito municipality (Echternacht *et al.* 2011). It grows in open areas, over sandy soils, in quartzitic Campo Rupestre. The only known population is composed of few individuals, within a mining propriety (Echternacht *et al.* 2011).

Conservation status: *Actinocephalus giuliettia*e is not yet evalued by CNCflora; in the protologue, the authors accessed criteria B2a and C2ai, classifying this species as “Critically endangered” (CR) Echternacht *et al.* (2011).

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, Serra de Capanema, 20°13'10.0"S, 43°34'42.0"W, 12/III/2009, *L.A. Echternacht et al. 1944* (BHCB).

6. ***Actinocephalus ithyphyllus*** (Mart.) Sano, *Eriocaulon ithyphyllum* Mart., Herb. fl. bras. 24(2): 275. 1841. Type:—BRAZIL. Minas Gerais: uncertain locality, "In ferruginosos ad Capao, Pires, et Serra do Caraqa rel., prov. Minarum", s.d., Pohl herb.fl. bras. 482(1) (BR).

Distribution and habitat: not endemic. The geographic distribution of *Actinocephalus ithyphyllus* is restricted to the Espinhaço Range and the QF in Minas Gerais. There are records from Itambé do Mato Dentro and Serro, but the only record from the QF is the type collection, from (probably Serra do) Pires, and Serra do Caraça (Sano 1999).

7. ***Actinocephalus polyanthus*** (Bong.) Sano, Taxon 53 (1): 103. 204. *Eriocaulon polyanthum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 622, 639. tab. 2. 1831. Type:—BRAZIL. Minas Gerais: "In pratis humidis glareosis Serra da Lapa", September 1824, *Riedel 1065* (B).

Distribution and habitat: not endemic. *Actinocephalus polyanthus* is the most widespread species of the genus, reflectin in a large morphological variation (Sano 1999). In the QF it occurs from Serra do Caraça, Serra do Capanema, extending to Ouro Preto (Serra do Itacolomi, Serra de Lavras Novas and Serra do Veloso), Serra de Ouro Branco, Serra da Moeda, and Serra do Itabirito. It form the punctual populations among the grasses, growing over sandy to gravelly soils, in quartzitic as well as ferruginous Campo Rupestre. It can be sympatric with other species of the genus as *A. bongardii* and *A. falcifolius*.

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Parque Estadual do Itacolomi, 20°26'25.5"S, 43°26'55.5"W, 06/IV/2018, *D. Rodrigues et al. 29* (OUPR).

8. ***Actinocephalus ramosus*** (Wikstr.) Sano, Taxon 53 (1): 104. 2004. *Eriocaulon ramosum* Wihstr., Kongl. Svenska Vetensk. Acad. Handl. 1: 76 tab. 3. 1820. Type: BRAZIL:—"Hab. Brasilia". *Freyreiss s.n.* (LE).

Distribution and habitat: not endemic. *Actinocephalus ramosus* is widely distributed in the Espinhaço Range from Bahia to Minas Gerais, and in disjunct coastal areas in Bahia and Espirito Santo (Sano 1999). In the Quadrilátero Ferrífero it was collected over the ferruginous Campo Rupestre, over gravelly soils, in the Serra da Piedade. Considering the few records from the QF, the species is probably infrequent in this region.

Selected specimens examined: BRAZIL. Minas Gerais: Caeté, Serra da Piedade, 19°49'23.3"S, 43°41'07.5"W, 11/I/1996, *V.C. Souza et al. 10134* (BHCB; OUPR).

9. ***Comanthera centauroides*** (Bong.) L.R. Parra & Giul., Taxon 59 (4): 1143. 2010. *Eriocaulon centauroides* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 635. 1831. Type:—BRAZIL. Minas Gerais: "in pratis humidis paludosis Serra da Lapa", *Riedel 1063* (LE).

   = ***Syngonanthus squarrosus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 278. 1903. Comanthera squarrosa (Ruhland) L.R.Parra & Giul., Taxon 59 (4): 1144. 2010.Type:—BRAZIL. Minas Gerais: Catas Altas, "Caraça, dans le campo sec", 10 june 1884, *A. Glaziou 15541* (B).

= ***Syngonanthus caracensis*** Silveira, Floral. Mont.: 392, fig. 251. 1928. Type:—BRAZIL. Minas Gerais: Catas Altas, "in campis siccis arenosisque in Serra do Caraça", april 1906, *Silveira 430* (R).

= ***Syngonanthus caracensis*** var. ***glabrescens*** Silveira, Floral. Mont.: 393. 1928. Type:—BRAZIL. Minas Gerais: "In campis prope Serra da Moeda", july 1906, *Silveira 797* (R).

Distribution and habitat: not endemic. *Comanthera centauroides* is abundant in quartzitic Campo Rupestre of the Espinhaço Range, in Bahia and Minas Gerais. It occurs also in the Restingas in Rio de Janeiro (Echternacht 2012; Echternacht *et al.* 2015). In the Quadrilátero Ferrífero, it occurs in the Serra do Gandarela, Serra do Capanema, Serra do Caraça, Serra de Lavras Novas, Serra de Ouro Branco, and Serra do Itabirito. It forms abundant populations in grasslands, with sandy humid soils, in quartzite Campo Rupestre, also in less frequency in the ferruginous Campo Rupestre, especially in temporarily flooded plains and marshes.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, Serra do Caraça, 20°07'00.0"S, 43°27'00.0"W, 1700 m, 15/VI/2008, *L. Echternacht & T.V. Bastos s.n.* (BHCB 166500).

10. ***Comanthera cipoensis*** (Ruhland) L.R. Parra & Giul., Taxon 59 (4): 1143. 2010. *Syngonanthus cipoensis* Ruhland in Engler, Pflanzenr. 13 (IV.30): 278. 1903. Type:—BRAZIL. Minas Gerais: "Serra do Cipó", July 1896, *Sena in Herb. Schwacke 12288* (B).

Distribution and habitat: not endemic. *Comanthera cipoensis* is restricted to the Serra do Cipó, in the Espinhaço Range, and to the Serra do Garimpo, northeastern QF (Echternacht 2012; Echternacht *et al.* 2015). According to the coordinates on the labels, the specimens were collected nearby, it is probably a punctual population, growing in open grasslands, over sandy quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Barão de Cocais, Serra do Garimpo, 19°53'46"S, 43°31'24"W, 15/III/2009, *L.A. Echternacht & T.V. Bastos 1955* (BHCB).

11. ***Comanthera elegantula*** (Ruhland) L.R. Parra & Giul., Taxon 59 (4): 1139. 2010. *Syngonanthus elegantulus* Ruhland in Engler, Pflanzenr. 13 (IV.30): 273. 1903. Type:—BRAZIL. Minas Gerais: "São João del Rei", 22 April 1888, *Glaziou 17840* (B).

Distribution and habitat: not endemic. *Comanthera elegantula* occurs in Minas Gerais, from Serra do Cabral and Diamantina (north of the Espinhaço Range) to Serra do Garimpo (north of the QF), and Serra da Mantiqueira (Parra 2010). However, there are few records from the QF, all from the Serra do Garimpo, where it probably forms a punctual population, growing in open grasslands, oversandy soils in quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Barão de Cocais, Serra Cambotas, 19°51'32"S, 43°32'08"W, 20/III/2017, *M.O. Pivari et al. 1760* (BHCB).

12. ***Comanthera nivea (***Bong.) L.R. Parra & Giul., Taxon 59 (4): 1141. 2010. *Eriocaulon niveum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 635. Tab 37. 1831. Type:—BRAZIL. Minas Gerais: Tiradentes, "In arenosis siccis S. St. Jozé", June 1824, *Riedel 294* (LE).

Distribution and habitat: not endemic. *Comanthera nivea* has disjunct distribution in the Restingas of Rio de janeiro and Espírito Santo, and in Minas Gerais from the Espinhaço Range to the south, reaching the high peaks of Serra da Mantiqueira (Parra 2010; Trovó *et al.* 2015). In the QF it occurs in the Serra do Gandarela, Serra do Capanema, Serra do Caraça, the mountains in Ouro Preto (Serra do Ouro Preto, Serra do Veloso, and Serra do Itacolomi), and the Serra do Itabirito. It forms abundant populations associated with sandy soils in quartzitic and ferruginous Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°08'18.4"S, 43°27'19.3"W, 1789 m, 07/X/2008, *L. Echternacht & C. Chaussidon 1642* (BHCB).

13. ***Eriocaulon cinereum*** R. Br, Prodr. Fl. Nov. Holland 259. 1810. Type:—AUSTRÁLIA. "Carpentaria Island", 1802, *R. Brown 5823* (BM).

Distribution and habitat: not endemic. *Eriocaulon cinereum* has pantropical distribution, occurring in Asia, Africa, America, Australia, and Europe (Chagas 2017). In Brazil it occurs in the North (Pará, Roraima), Northeast (Bahia, Piauí, Rio Grande do Norte), Midwest (Goiás, Mato Grosso), and Southeast (Minas Gerais, São Paulo) (Chagas *et al.* 2020). Chagas (2017) refers to

the occurrence of this species for the ferruginous Campo Rupestre in Carajás (PA). In the QF it occurs in Catas Altas, Mina Fazendão (base of Serra do Caraça), Serra do Capanema, Serra do Itabirito, and northern Serra da Moeda. It Grows in open areas, humid places, around ponds. It forms in the QF punctual populations, restricted to some areas of *Cangas*, and all records are localized in mining areas that could be exploited in the near future.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, Mina Fazendão, 20°09'33.0"S, 43°24'56.0"W, 872 m, 22/II/2013, *E. Miranda et al. 913* (BHCB).

14. ***Eriocaulon crassiscapum*** Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. (1): 628. 1831. Type:—BRAZIL. Minas Gerais: "In paludibus inter os Prados et Barbacena", June 1824, *Riedel 296* (LE).

Distribution and habitat: not endemic. *Eriocaulon crassiscapum* occurs in Northeast (Bahia), Midwest (Mato Grosso do Sul), Southeast (Minas Gerais, São Paulo), and South (Paraná) (Chagas *et al.* 2020), Growing over humid sandy or argillaceous soils, in the border of streams or Veredas (Chagas 2017). In the QF it is known from Passadéz and Cachoeira das Andorinhas in the Ouro Preto region, close to Serra do Veloso, but has not been collected in the past fifty years. The voucher does not provide information about habitat and population, except for a reference to a humid site.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Cachoeira das Andorinhas, 15/IX/1976, *J. Badini s.n.* (OUPR 13383).

15. ***Eriocaulon ligulatum*** (Vell.) L.B. Sm. (1939: 5). *Dupatya ligulata* Vell., Fl., Flumin. 36 (1899). Type:—BRAZIL. [illustration] Prancha original do Florae Fluminensis depositada na Seção de Manuscritos da Biblioteca Nacional do Rio de Janeiro e posteriormente publicada em Vellozo, Fl. Flumin. Icones1: t.86, 1831.

Distribution and habitat: not endemic. *Eriocaulon ligulatum* occurs in the Southwest of Brazil, in Espirito Santo, Minas Gerais, São Paulo, and possible also in Rio de Janeiro (Chagas *et al.* 2020). In the QF, it is distributed from Serra do Gandarela, Serra do Capanema, Serra do Caraça, Serra do Itacolomi, Serra de Lavras Novas, southern Serra da Moeda, and Serra do Itabirito. It forms abundant populations, in open vegetation, seasonally flooded places, over quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 25/XI/2020, 20°06'25.4"S 43°29'23.9"W, 1254m, *A. Soldevila & P. Vanucci 338* (OUPR).

16. ***Eriocaulon modestum*** Kunth, Enum. Pl. 3: 547. 1841. Type:—BRAZIL. “Insula S. Catharinae”, 1835, *C. Gaudichaud 103* (B).

Distribution and habitat: not endemic. *Eriocaulon modestum* is widespread in South America (Argentina, Brazil, and Uruguai) (Chagas 2017). It is an aquatic plant, rooting in organic soils in the bottom of lagoons and watercourses, where its leaves are submerged and the inflorescence are emergent (Chagas 2017). In the QF it is known from the Serra do Ouro Preto, Serra do Itatiaia, and Serra de Lavras Novas, in Ouro Preto municipality, in quartzitic Campo Rupestre, but has not been collected in the past fifty years.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Falcão, 08/VI/1977, *J. Badini s.n.* (OUPR 13116).

17. ***Leiothrix crassifolia*** Ruhland, in Engler Pflanzenr. 13 (IV.30): 228. 1903. *Eriocaulon crassifolium* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 634. 1831. Type:—BRAZIL. Minas Gerais: Serra da Lapa, 25 January 1825, *Riedel 1413* (LE).

Distribution and habitat: not endemic. *Leiothrix crassifolia* occurs along the Espinhaço Range in Minas Gerais, being mostly abundant in the Serra do Cipó and Diamantina regions (Giulietti 1984; Giulietti 2020). In the QF it is restricted to the northeast, recorded from Serra do Garimpo (Serra do Cambotas), which is the closest quartzitic Campo Rupestre to the Serra do Cipó. The few collections from the QF suggests the species forms punctual populations, inhabiting open grasslands over quartzitic sandy soils.

Selected specimens examined: BRAZIL. Minas Gerais: Barão de Cocais, Serra do Cambotas, 19°52'11", 43°31'23"W, 18/I/2018, *J.A.M. Souza et al. 222* (BHCB).

18. ***Leiothrix curvifolia*** (Bong.) Ruhland, in Engler, Pflanzenr. 13 (IV.30): 228. 1903. *Eriocaulon curvifolium* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. (1): 634. 1831. Type:—BRAZIL. Minas Gerais: Serra da Lapa, November 1824, *Riedel 1031* (LE).

Distribution and habitat: not endemic. *Leiothrix curvifolia* is widely distributed in the Espinhaço Range and in the QF, from Serra do Cipó to Ouro Preto (Giulietti 1984; Giulietti 2020). In the QF it occurs in the mountains of the Serra do Caraça, Serra do Capanema, and Serra de Ouro Branco, being mostly frequent in the Ouro Preto region, Serra de Lavras Novas, Serra do Itacolomi, and Serra do Veloso. It forms abundant populations, occurring especially in open grasslands, over sandy humid soils, in the border of watercourses, in the quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Parque Estadual do Itacolomi, 20°26'24.4"S, 43°26'53.2"W, 6/IV/2018, *D. Rodrigues et al. 30* (OUPR).

19. ***Leiothrix flagellaris*** (Guill.) Ruhland, in Engler, Pflanzenr. 13 (IV.30): 237. 1903. *Eriocaulon flagellare* Guill., in Deless. Ic. Sel. iii. 60. 1837. Type:— BRAZIL. Minas Gerais: “Serra do Frio”, 1 January 1833, *Vauthier 65* (P).

Distribution and habitat: not endemic. *Leiothrix flagellaris* is endemic to the Espinhaço Range plus QF, occurring from north (Grão Mogol) to south (Ouro Preto), including Diamantina, where it is mostly frequent (Giulietti 2020). This species is known in the QF for two records, deposited in OUPR [*M.A. Lisboa s.n* (OUPR 13119); *J. Badini s.n.* (OUPR 5740)], the first from Lavras Novas and the other without information about locality. These are old collections, recently identified through the herbarium studies realized in the present work. In this last case we attributed the location to the QF because it was collected by *J. Badini*, who worked especially in this region. There is no information about habitat, but this species typically inhabits quartzitic Campo Rupestre, over sandy soils. Lavras Novas is intensively visited and collected and the fact that the species was not recorded in the last fifty years suggests that it may be locally threatened or probably extinct.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Lavras Novas, *M.A. Lisboa s.n.* (OUPR 13119).

20. ***Leiothrix flavescens*** (Bong.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 231. 1904. *Eriocaulon flavescens* Bong. Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. (1): 628. 1831. Type:—BRAZIL. Minas Gerais: Pico do Itacolomi, August 1824, *Riedel 1479* (LE).

= ***Leiothrix flavescens*** var. ***parvifolia*** Moldenke, Phytologia 24: 498. 1972. Type:—BRAZIL. Minas Gerais: 10 km west of Barão de Cocais, 23 January 1971, *Irwin et al. 28946* (LL) (synonymized in Giulietti & Hensold 1991).

Distribution and habitat: not endemic. *Leiothrix flavescens* is widespread in South America, occurring in Brazil, French Guiana, Guyana, Suriname, Peru, and Venezuela (Giulietti 1984; Giulietti & Hensold 1991). In Brazil, it is widely distributed in Northeast (Bahia), Southeast (Minas Gerais, São Paulo and Rio de Janeiro), and South (Paraná, Santa Catarina and Rio Grande do Sul). In QF, it occurs in the Serra da Moeda, Serra do Capanema, Serra do Caraça, Serra do Ouro Preto, Serra do Itacolomi, Serra de Lavras Novas, and Serra de Ouro Branco. It forms abundant populations, especially in the mountains of Ouro Preto and Serra de Ouro Branco, growing in open grasslands, over humid sandy soils, in seasonally flooded plains and in the border of watercourses, on quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Parque Estadual do Itacolomi, 20°26'20.1"S, 43°30'32.4"W, 04/V/2018, *D. Rodrigues et al. 35* (OUPR).

21. ***Leiothrix gomesii*** Silveira, Floralia Montium (1): 289. 1928. *Leiothrix hirsuta* var. *magalhaesii* Silveira, Flora e Serra Mineiras 71. 1908. Type:—BRAZIL. Minas Gerais: “In campis seccus in Serra de Capanema”, *F. M. Gomes*, March 1893, “et *Alv. Sil.*”, April 1906, in Herb. *Silveira 526* (R).

Fig. 2E

Distribution and habitat: endemic. *Leiothrix gomessi* was known from historical collections only, and in the past decades it was recovered in the Serra do Caraça, Serra do Capanema, and Dom Bosco region, in Ouro Preto municipality. It forms punctual populations that grow in open grassland, over sandy humid soils, in quartzitic Campo Rupestre.

Conservation status: *Leiothrix gomesii* was considered as "extinct" in the Red List of Minas Gerais (COPAM-MG 1997) and as "Data deficient" (DD) according to CNCflora (2011). We reassessed the IUCN criteria considering the discovery of new populations. According to IUCN (2022) criteria, *L. gomesii* is considered "Endangered" (EN), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, Serra do Caraça, 20°06'42.0"S, 43°26'40.0"W, 2087 m, 01/III/2009, *L. Echternacht et al. 1938* (BHCB).

22. *Leiothrix longipes* Silveira, Floralia Montium 1: 303 tab. 190. 1928. Type:—BRAZIL. Minas Gerais: "in campis arenosis in Serra do Cipó", June 1918, *Dr. J. Michaeli 228* (R).

Distribution and habitat: not endemic. *Leiothrix longipes* occurs from the Espinhaço Range, in Diamantina, Serra do Cipó, where it is less frequent, to Serra Cabeça de Boi in Serra do Cipó (Giulietti 1984; Giulietti 2020). In the QF it is known for two records from Serra do Caraça. It

inhabits the sandy organic soils, in open grasslands, over quartzitic Campo Rupestre, where it is probably is rare, forming small populations.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°06'43"S, 43°26'55"W, 25/IV/2009, *C.T. Oliveira et al. 411* (BHCB).

23. ***Leiothrix mucronata*** (Bong.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 232. 1903. *Eriocaulon mucronatum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. (1): 626. tab 19. 1831. Type:—BRAZIL. Minas Gerais: Serra da Lapa, *Riedel 1411* (LE).

= ***Leiothrix curvifolia*** var. ***setacea*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 234. 1903. Type:—BRAZIL. Minas Gerais: Ouro Preto, Pico do Itacolomi, 14 February 1884, *Glaziou 15543* (P).

Distribution and habitat: not endemic. *Leiothrix mucronata* occurs in the Espinhaço Range and QF, from Serra do Cipó to Ouro Preto (Giulietti 2020). It is very similar to *L. curvifolia* and could be differentiated by its smaller stature (12 cm tall), spathes larger than the leaves and mucronate leaves (Giulietti 2020). In the Quadrilátero Ferrífero it is mostly frequent in the Serra do Garimpo, Serra do Caraça, and Taquaral in Ouro Preto, which probably refer to the old Taquaral farm, currently Bairro Taquaral between Serra do Ouro Preto and Serra do Itacolomi. It probably forms punctual populations, growing in sandy soils in quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°08'04"S, 43°27'48"W, 1918m, 8/XII/2008, *C.T. Oliveira et al. 232* (BHCB).

24. ***Leiothrix vivipara*** (Bong.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 238. 1903. *Eriocaulon viviparum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. (1): 632. tab 28. 1831. Type:—BRAZIL. Minas Gerais: Serra da Piedade, December 1824, *Riedel 582* (LE).

= ***Leiothrix vivipara*** var. ***augusta*** Ruhland Ruhland in Engler, Pflanzenr. 13 (IV.30): 238. 1903. Type:—BRAZIL. Minas Gerais: Serra do Caraça, 15 June 1884, *Glaziou 15515* (K). (synonymized in Govaerts 2020).

Leiothrix curvifolia var. ***setacea*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 234. 1903. Type:—BRAZIL. Minas Gerais: Ouro Preto, Pico do Itacolomi, 14 February 1884, Glaziou 15543 (P).

Distribution and habitat: not endemic. *Leiothrix vivipara* is distributed in the Espinhaço Range and QF, from Datas to Serra do Caraça, more abundantly in Serra do cipó (Giulietti 2020). In the QF it occurs from Serra da Piedade, extending to Serra do Caraça, Serra do Capanema, Serra do Ouro Preto, and Serra do Itacolomi. The populations of Caraça and Capanema grows in open grasslands, over argillaceous and sandy soils, under quartzitic Campo Rupestre, in high altitudes. The species also occurs in the ferruginous Campo Rupestre, with a population recorded in the

Alegria mining complex (property of Vale S.A.), from Serra de Ouro Preto to the border of Serra do Caraça.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°05'39.9"S, 43°28'53.0"W, 03/XI/2020, *A. Soldevila & P. Vanucci 308* (OUPR).

25. ***Paepalanthus amoenus*** (Bong.) Koern, in Martius Fl. Bras. 3 (1): 316. tab 42. 1863. *Eriocaulon amoenum* Bong. Mém. Acad. Imp. Sci. St.-Pétersbourg, Ser. 6 Sci Math. 1: 637. 1831. Type:—BRAZIL. Minas Gerais: "In glareosis graminosis pr. Capanema, February 1825, *Riedel* (LE).

Fig. 2F

Distribution and habitat: endemic. *Paepalanthus amoenus* is the most widely distributed endemic species in the Quadrilátero Ferrífero, occurring from north (Serra do Curral) to south (Serra de Ouro Branco); from all the studied mountains, records are absent only from Serra do Itatiaucú, Serra do Frasão, and Serra do Veloso. It grows both in quartzitic and ferruginous Campo Rupestre, associated with sandy to gravelly soils, humid or not. The populations of this species are abundant, occupying different habitats from open grasslands, transition areas, and Cerrado.

Conservation status: According to IUCN (2001), *Paepalanthus amoenus* is considered as "Endangered" (EN), criteria (B1a, B1b, B2a) (Trovó 2010).

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, Serra do Gandarela. 20°11'45.0"S 43°40'06.0"W, 11/VI/2017, *L. Echternacht & T. V. Bastos 2747* (OUPR).

26. *Paepalanthus argillicola* Silveira, Floralia Montium (1): 108. tab 67. 1928. Type:—BRAZIL. Minas Gerais: "In pralis humidis argillosisque in serra da Moeda", May 1910, *A. Silveira 571* (R).

Distribution and habitat: endemic. *Paepalanthus argilicola* is endemic from Serra da Moeda, with confirmed occurrences in Mina Capão Xavier, Lagoa Grande [Lagoa dos ingleses] and in Mineração Casa de Pedra (sub-localities in the Serra da Moeda). It grows over argillaceous soils in swampy areas, exclusively under ferruginous Campo Rupestre. It was known from the type material and a historical collection only, but reviewing the BHCB collection, we identified four new records [*Mendes & Brina s.n.* (BHCB 107391); *Rezende* 1860; *Tameirão Neto* 3440; and *Werneck* 68]. Analyzing the label notes we infer that populations are punctual in mining properties, which may constitute constant threat.

Conservation status: *Paepalanthus argillicola* is considered "Endangered" (EN) in accordance with IUCN (2022), B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, Sítio Lagartixa, 20°18'5.62" S, 43°55'58.11" W, 1260m, 02/II/2007, *S.G. Rezende 1860* (BHCB).

27. ***Paepalanthus atrovaginatus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 156. 1903. Type:—BRAZIL. Minas Gerais "Auf dem Gipfel der Serra do Frasão, 1100m" , 31 March 1901, *Schwacke 14329.*

= ***Paepalanthus damazioi*** Beauverd, Bull. Herb. Boissier ser. 2 (8): 292, tab 11. 1908. Type:—BRAZIL. Minas Gerais: "Serra do Frasao, près Arraial de Antônio Pereira, sur les rochers", 21 March 1907, *Damazio 1844. Syn. nov.*

Distribution and habitat: endemic. *Paepalanthus atrovaginatus* is endemic to the Serra do Frasão, in Ouro Preto municipality. The population was found in the higher regions, growing over sandy humid soils, under rocks, in an especially preserved site, where high rocks work as a barrier against fire and invasive species. Ruhland (1903) described *Paepalanthus atrovaginatus* based in *Schwacke 14329.* In 1908 Beauverd described *Paepalanthus damazioi* based in *Damazio 1844*. In both cases the species are known from historical collections from Serra do Frasão only. This is a locality of difficult access and there are no recent records of botanical expeditions out there. We performed in November 2021 a fieldwork to the area and we found a small population of *P. atrovaginatus*. Analyzing the historical specimens [*Schwacke s.n* (BHCB 543); *Damazio s.n* (OUPR 12539)] together with the recent collected one (*Rodrigues 44*), we observe as diagnostic characters the spathulate leaves and mostly remarkable the blackish spathes, which is uncommon in *Paepalanthus*. Considering that types of *P. atrovaginatus* and *P. damazioi* are from the same locality, flowering in the same month, and that we could observe the type locality populations,

with consistent diagnostic characters, we propose here *P. atrovaginatus* an accepted name for *P. damazioi*.

Conservation status: *Paepalanthus atrovaginatus* is considered as “Critically endangered” (CR), in accordance to IUCN (2022), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Serra do Frasão, 20°15'29.7"S 43°29'27.6"W, 29/X/2021, *D. Rodrigues et al. 44* (OUPR).

28. *Paepalanthus batatalensis* Silveira, Floralia Montium 1: 77. tab 45. 1928. Type:—BRAZIL. Minas Gerais: “ In campis prope Capanema et in Serra do Batatal”, April 1905, *Silveira 340.*

Fig. 3G-H

Distribution and habitat: endemic. *Paepalanthus batalensis* is restricted to the ferruginous Campo Rupestre of the Serra do Capanema, eastern QF. It is known from two collections only, the type material and a recent collection (cited below). The last register was found inside a mining property (Vale S.A) that could be destroyed for exploitation in the future.

Conservation status: *Paepalanthus batatalensis* is considered as “Critically endangered” (CR) in accordance to IUCN (2022), critéria B1a (i,ii, iii) and B1b (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, Área da Vale do Rio Doce, 20°13'10.0"S 43°23'44.2"W, 12/III/2009, 1726m, *L.A. Echternacht et al. 1945* (BHCB).

29. ***Paepalanthus blepharocnemis*** Mart. ex Körn, in Martius Fl. Bras. 3(1): 376. 1863. Type:—BRAZIL. Minas Gerais: “Villa Rica”, *Sellow* (BR).

= ***Paepalanthus michaeili*** Silveira, Floralia Montium 1: 39. tab 19. 1928. Type:—BRAZIL. Brasil. Minas Gerais: "prope Congonhas do Campo, in campis montis ferruginosi Mascote, December 1912, *Silveira 605* (B).

Fig. 3I

Distribution and habitat: endemic. *Paepalanthus blepharocnemis* is endemic to the QF, forming abundant populations from Serra do Itatiaiuçu, Serra do Curral, Serra do Gandarela, Serra de Lavras Novas, Serra do Veloso, Serra de Ouro Branco, to Serra da Moeda. It inhabits open grasslands, in both the ferruginous and the quartzitic Campo Rupestre. *Paepalanthus blepharocnemis* is part of the *Paepalanthus aequalis* species complex, of difficult delimitation. Körnicke (1863) describes *Paepalanthus blepharocnemis* var. α (scapes more than twice longer than the leaves), and var. β (leaves and scapes of similar height). These varieties however are not published accordingly with the International Code of Nomenclature for algae, fungi, and plants, because names composed of non-Latin symbols are not valid (Art. 32.1, Turland *et al.* 2018). Ruhland (1903) synonymized *P. aequalis* in *P. blepharocnemis* and considered that the two varieties are one. Picanço (2018) analyzed specimens included in the *P. aequalis* complex and considered *P. blepharocnemis* an accepted name, because it better represents the morphotypes

studied from the QF, while *P. aequalis* better represent morphotypes from the Mantiqueira region. In addition, *Paepalanthus michaeli* Silveira is proposed as a synonym of *P. blepharocnemis* (Picanço 2018).

Conservation status: *Paepalanthus blepharocnemis* is considered "Endangered" (EN) in accordance with IUCN (2022), B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais. Santa Bárbara. Serra do Gandarela, 20°07'17.0"S, 43°39'02.0"W, 1436m, 25/VI/2017, *L. Echternacht et al. 2754* (OUPR).

30. *Paepalanthus brevicaulis* Silveira, Floraria Montium 1: 28 tab 12. 1928. Type:—BRAZIL. Minas Gerais: " In campis arenosis in Serra da Moeda", August 1926, *A. Silveira 705* (R).

Distribution and habitat: *Paepalanthus brevicaulis* in known for the type only from Serra da Moeda, west of Quadrilátero Ferrífero. In according to protologue it inhabits the sandy soils, probably in open areas. Despite the fieldworks we failed to collected it.

Selected specimens examined: BRAZIL. Minas Gerais: Serra da Moeda, VIII/1926, *Silveira 705* (R) [on-line photo].

31. ***Paepalanthus cacuminis*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 205. 1903. Type:—BRAZIL. Minas Gerais: " In cac. M. Cachoeira do Campo, 1500 m.", 21 April 1901, *Schwacke 14405* (B).

Distribution and habitat: endemic. *Paepalanthus cacuminis* is known from the type specimen plus another historical record from Cascabulho farm, between Serra de Lavras Novas and Serra do Itacolomi, in Ouro Preto. According to the last register (cited below), it is a little frequent species, growing over humid soils. This place has been intensively collected over the past years and the fact that the species was never rediscovered may indicate that it has become rare or even extinct.

Selected specimens examined: BRAZIL. Minas Gerais. Ouro Preto. Fazenda do Cascabulho. 17/I/1942, *M. Magalhães 1095* (BHCB).

Paepalanthus caespititius Mart. ex Körn, in Martius Fl. Bras. 3(1): 365. 1863. Type:—BRAZIL. Minas Gerais: "crescit in prov. Minarum ad Cachoeira do Campo, *Martius 1082* (B).

Distribution and habitat: endemic. *Paepalanthus caespititius*, is endemic to the QF and until recently it was known from type collection only. However, a new population was discovered in 2019, from the Área de Proteção Ambiental Cachoeira das Andorinhas (APA - Cachoeira das Andorinhas), Ouro Preto municipality. It inhabits shady places, in sandy soils, over the rocks of quartzite formation.

Conservation status: *Paepalanthus caespititius* is considered as "Critically endangered" (CR) in accordance with IUCN (2022), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, APA Estadual Cachoeira das Andorinhas. 07/IX/2019, *L.G. Pedrosa 1923* (OUPR).

32. ***Paepalanthus calvus*** Körn., In Martius Fl. Bras. 3(1): 391. 1863. Type:—BRAZIL. Minas Gerais: "crescit in prov. Minarum alt 7000 ped, *Langsdorff. s.n* (B).

= ***Paepalanthus multicostatus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 148. 1903. Type:—BRAZIL. Minas Gerais: Serra da Piedade, June 1893, *A. Glaziou 20532* (B). (synonymized in Trovó & Sano 2010).

Distribution and habitat: not endemic. *Paepalanthus calvus* occurs in eastern Brazil, in the Atlantic Forest domain, in the Serra da Mantiqueira, a frontier region among the states of São Paulo, Minas Gerais, and Rio de Janeiro (Trovó *et al.* 2015), including the Parque Estadual do Ibitipoca Ferreira *et al.* (2011). Its occurrence in the QF can be considered a disjunction related to the synonymy with *P. multicostatus*, which type comes from the QF, in the ferruginous Campo Rupestre of the Serra da Piedade.

Selected specimens examined: BRAZIL. Minas Gerais: Caeté, Serra da Piedade, 26/XI/1933, *H.L.M. Barreto 2541* (BHCB).

33. *Paepalanthus chloropus* Silveira, Floralia Montium 1: 24. tab 9. 1928. Type:—BRAZIL. Minas Gerais: "In campis argillosis prope Serra da Moeda", July 1926, *A. Silveira 809* (R).

Distribution and habitat: *Paepalanthus chloropus* is known from the type only, growing over argillaceous soils, in the ferruginous Campo Rupestre from the Serra da Moeda. We emphasize its similarity with *P. blepharocnemi*s, that occurs too in Serra da Moeda, due the thick stem and lanceolate leaves; however, morphometric studies and the analysis of the flowers are necessary to confirm if taxa are synonyms, and we have seen only photos of the type specimen.

Selected specimens examined: BRAZIL. Minas Gerais: Serra da Moeda, VII/1926, *Silveira 809* (R) [online - photo].

34. *Paepalanthus ciliolatus* Ruhland in Engler, Pflanzenr. 13 (IV.30): 174. 1903. Type:—BRAZIL. Minas Gerais: "Cachoeira de Caraça", 13 June 1884, *Glaziou 15527* (B).

= ***Paepalanthus albociliatus*** Silveira, Fl. Serr. Min. 40: tab 14. 1908. Type:—BRAZIL. MINAS GERAIS: "Serra de Ouro Branco", February 1905, *Silveira 269* (R).

Distribution and habitat: not endemic. *Paepalanthus ciliolatus* occurs in the Espinhaço Range, from Cabeça de Boi region (Itambé do Mato Dentro municipality), extending southwardly to the

QF, in the Serra do Caraça, Serra de Ouro Branco, and Serra de Lavras Novas. It is from the punctual and small populations, growing in sandy humid soils, in quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°04'12.7"S, 43°29'17.6"W, 1052m, 12/XI/2020, *A. Soldevila & P. Vanucci 339* (OUPR).

35. ***Paepalanthus clausenii*** Hensold, Syst. Bot. Monogr. 23: 106. 1988. Type:—BRAZIL. Minas Gerais: August-April 1840, *Claussen 129* (BR).

Distribution and habitat: endemic. *Paepalanthus clausseni* is endemic from the Serra do Itabirito, with some misidentifications from Serra do Caraça, probably due the similarity with *Paepalanthus mollis* Kunth. It probably forms a punctual and small population, adjacent to the mining area. It inhabits open grassland, over humid sandy soils, in quartzitic Campo Rupestre. Hensold (1988) described *Paepalanthus clausseni* based on *Claussen 172*. There is no information about locality on this specimen, but Ruhland (1903) assigned it to "Pico d'Itabira" [currently Pico do Itabirito]. Hensold (1988) mentioned the similarity with *P. mollis* var. *mollis*, which has shorter stem, which is restricted to rosette (*vs.* elongate stem), larger flowers, and often larger capitula. Through the analysis of herbarium collection from Pico de Itabirito and proximities, we confirmed Hensold´s notes, observing the diagnostic features. Therefore, our study contributes to enlarge the collection of the species, identifying three new specimens to it.

Conservation status: *Paepalanthus clausenii* is considered as “Critically endangered” (CR), according to IUCN 2022, B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, RPPN Cata Branca, 20°14'23.0"S 43°51'14.0"W, 1332m, 06/III/2018, *J.A.M. Paiva et al. 1719* (BHCB, OUPR).

36. *Paepalanthus conduplicatus* Körn, in Martius, Fl. bras., 3 (1): 414. 1863. Type:—BRAZIL. Minas Gerais: "crescit prope Caraça", December, *Sellow s.n.* (B).

Distribution and habitat: not endemic. *Paepalanthus conduplicatus* occurs from the Diamantina plateau, as its northern limit, in the Espinhaço Range, throughout the Serra do Cipó, to the QF, in the south. In the QF, it occurs in the Serra de Lavras Novas, Serra do Capanema, and Serra do Caraça. Especially in the Serra do Caraça form the punctual an abundant population, in other localities punctual and smaller populations are known. It grows in marshes or humid sandy soils, in quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°07'55.1"S, 43°30'42.4"W, 1790m, 24/XI/2020, *A. Soldevila & P. Vanucci 336* (OUPR).

37. *Paepalanthus decussus* Körn, in Martius Fl. Bras. (3)1: 318. 1863. Type:—BRAZIL. Minas Gerais: “Cachoeira”. *Claussen s,n* (BR).

Distribution and habitat: endemic. *Paepalanthus decussus* is known from two records only. Besides the type, another specimen (*Messias 1963)* was found in quartzitic Campo Rupestre, in Bento Rodrigues, close to the Serra do Ouro Preto, southern Quadrilátero Ferrífero. Trovó (2010) related an occurrence of infertile plants in this region in 2009, when he visited the same previously collected area with Dr. Messias and Dr. Echternacht. The plant was among rocky outcrops and herbaceous vegetation, over sandy soil. We are not sure if this area was flooded by the dam break that in 2015 devastated Bento Rodrigues and the Rio Doce valley with mining mud.

Conservation status: *Paepalanthus decussus* in accordance with IUCN (2001) is considered as "Critically endangered" (CR) (criteria B1a, B1b, B2a) (Trovó 2010).

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Bento Rodrigues, 4/IV/2008, *M.C.T.B. Messias et al. 1963* (OUPR).

38. ***Paepalanthus desperado*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 138. 1903. Type:— BRAZIL. Minas Gerais: "Serra de Lavras Novas", 13 December 1895, *Schwacke 12046* (B).

Distribution and habitat: endemic. *Paepalanthus desperado* was known from the type material, from Serra de Lavras Novas, collected in 1895, and by two additional records, one from Serra de Santo Antônio (*Mello-Barreto 5301*), in Andrelândia municipality, south of Minas Gerais, and the other from Serra do Cipó (*Irwin 27519*), whose identification does not correspond to the specimens studied here. Through the review in herbaria a new population was recovered after 110 years, in

the type locality. Due to the lack of records, we assume the species is rare, growing over sandy soils on slopes, partially shaded, in quartzitic Campo Rupestre.

Conservation status: *Paepalanthus desperado* is considered as "Critically endangered" (CR) in accordance to IUCN (2022), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Serra do Buieié ou Serrinha [Lavras Novas], 20°28'36.0"S, 43°32'15.0"W, 1454m, 04/V/2005, *L.A. Echternacht et al. 1636* (BHCB).

39. ***Paepalanthus dianthoides*** Mart. in Martius Fl. Bras.3 (1): 339 (1863). Type:—BRAZIL. Minas Gerais: 1832, *Ackermann s.n* (BR).

Distribution and habitat: not endemic. *Paepalanthus dianthoides* occurs in northeastern QF, especially in the Serra do Garimpo, Serra do Caraça, and Serra de Ouro Preto, with a disjunct record from the Espinhaço Range, in Felício dos Santos. The populations of Serra do Garimpo and Serra do Caraça grows in open grassland, over sandy soils, in quartzitic Campo Rupestre, while the population of Serra de Ouro Preto is within ferruginous Campo Rupestre, in the Alegria mining complex (Vale S.A.).

Selected specimens examined: BRAZIL. Minas Gerais: Barão de Cocais, [Serra do Garimpo] Mina do Baú, 19°53'37.1"S, 43°30'10.0", 15/III/2009, *L. Echternacht & T.V. Bastos 2013* (OUPR).

40. ***Paepalanthus diplobetor*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 134. 1903. Type:—BRAZIL. MINAS GERAIS: "Campo de São Sebastião, bei Ouro Preto", 24 June 1884, *Glaziou 15539* (B).

Fig. 3J

Distribution and habitat: endemic. *Paepalanthus diplobetor* is micro-endemic to the Serra das Camarinhas, situated in the APA Cachoeira da Andorinhas, close to the Serra do Veloso, in Ouro Preto municipality. The population is composed of tens of individuals, forming mats under the shades of quartzitic boulders, over sandy soils of a Campo Rupestre embedded within the Atlantic Forest. The place is constantly visited, especially by climbers that use the boulders for sport.

Conservation status: *Paepalanthus diplopetor* is considered "Critically endangered" (CR) according to IUCN (2022), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Serra das Camarinhas, 20°23'31.9"S, 43°30'14.5"W, 19/X/2017, *C.C.V. Badia et al. 40* (OUPR).

41. ***Paepalanthus elongatus*** (Bong.) Körnicke, in Martius Fl. Bras. 3 (1): 312. 1863. *Eriocaulon elongatum* Bong. Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 630 tab 41. 1831.

Type:—BRAZIL. MINAS GERAIS: “In arenosis saxosisque Serra de Lenheira prope St. Juão D’El Rey”, June 1824, *L. Riedel 290* (B).

Distribution and habitat: not endemic. *Paepalanthus elongatus* is widely distributed in North (Tocantins), Northeast (Bahia), Mideast (Goiás and Distrito Federal), and Southeast (Minas Gerais and São Paulo) of Brazil (Andrino *et al.* 2020). Trovó (2018) assigned the populations from Minas Gerais to *P. elongatus* var. *elongatus*, but admit that further investigations are necessary. In the QF, it is widely distributed, from Serra do Itatiaiuçu, Serra do Gandarela, Serra do Capanema, Serra do Caraça, Serra de Lavras Novas, Serra de Ouro Branco, Serra do Itabirito, and the whole Serra da Moeda. It forms abundant populations, growing in open grasslands, over humid sandy to organic soils, in quartzitic Campo Rupestre and, less frequently also in ferruginous Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Santa Bárbara, Serra do Gandarela, 20°07'36.0"S, 43°39'20.0"W, 1425m, 25/VI/2017, *Echternacht et al. 2752* (BHCB).

42. *Paepalanthus erectifolius* Silveira, Fl. Serr. Min. 1: 51. 1908. Type:—BRAZIL. Minas Gerais: “In partis siccis in Serra do Cipó”, April 1905, *Silveira 367* (R).

Distribution and habitat: not endemic. *Paepalanthus erectifolius* is widely distributed, *occurring* in the Espinhaço Range in Minas Gerais and Bahia, and also in the QF, where it is known from Serra do Caraça, Serra do Itabirito, and north of Serra da Moeda. It forms small populations with

a few dozen individuals, over gavelly to sandy soils, humid or not, organic or not, in quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°07'25"S, 43°28'12"W, 1272 m, 03/VI/2012, *L. Echternacht & A. Diaz 2241* (BHCB)

43. ***Paepalanthus exiguus*** (Bong.) Körn., in Martius Fl. Bras. 3 (1): 314. 1863. *Eriocaulon exiguum* Bong. Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 627 tab 59. 1831. Type:—BRAZIL. Bahia: "In graminosis humidis, Ilheos", *Riedel s.n* (LE).

Distribution and habitat: not endemic. *Paepalanthus exiguus* is endemic of Minas Gerais (Andrino *et al*. 2020). In QF it occurs on the southeast, being mostly frequent in the mountains of Ouro Preto (Serra do Itacolomi, Serra de Lavras Novas, APA Cachoeira das Andorinhas and Morro São Sebastião, close to Serra do Veloso), where it grows over sandy humid soils, in quartzitic Campo Rupestre. In addition, it grows also in the ferruginous Campo Rupestre, in humid places on the border of sazonal lagoons, in the mining areas of Serra do Ouro Preto and Mina de Fazendão, in the border of Serra do Caraça. It forms abundant populations, on the open vegetation of Campos Rupestres, frequently associated with moss mats.

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Parque Estadual do Itacolomi, 20°25'50.1"S, 43°27'17.3"W, 6/IV/2018, *D. Rodrigues et al. 28* (OUPR).

44. *Paepalanthus falcatus* Körn (1863: 387). Type:—BRAZIL. Minas Gerais: “Serra da Lapa”, November, *Riedel s.n* (B).

Distribution and habitat: not endemic. Bongard (1831) described the basionim *Eriocaulon falcatum* based in *Riedel s.n* from Serra Lapa, later synonymized in *Paepalanthus falcatus* by Koernicke (1863). Ruhland (1903) cited *Paepalanthus pedunculatus* based on the same specimen. Since Ruhland (1903), *P. pedunculatus* is used as an accepted name, but considering that it is a homotypic synonym with *P. falcatus*, according with the priority of publication principle (ICN, Turland *et al.* 2018), the latter should be the accepted one. *Paepalanthus falcatus* is a quite variable species, whose delimitation is not clear, making it difficult to delimit its occurrence area. In the Quadrilátero Ferrífero we found one voucher only, from Serra do Gandarela.

Selected specimens examined: BRAZIL. Minas Gerais: Santa Bárbara, Serra do Gandarela, 20°07'36.0"S, 43°39'20.0"W, 1425 m, 25/VI/2017, *L. Echternacht et al. 2749* (OUPR).

45. *Paepalanthus fastigiatus* (Bong.) Körn. In Martius Fl. Bras. (Martius) 3 (1): (386: 1863). *Eriocaulon fastigiatum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 624 tab 60. 1831. Type:—BRAZIL. Minas Gerais: “petrosis super Serra de S. Jozé”, *Riedel 288* (LE).

Distribution and habitat: not endemic. *Paepalanthus fastigiatus* is described from “Serra de S. Jozé”, currently Serra de São José, in Tiradentes municipality, a neighboring mountain belonging

to the Mantiqueira Range, at the south of the QF. In the QF it is known from a few records only, being a rare species with isolated individuals, inhabiting the quartzitic Campo Rupestre, over sandy soil among herbaceous vegetation, in Serra do Gandarela, Serra do Capanema, Serra de Lavras Novas, south of Serra da Moeda, and Serra do Itabirito.

***Selected specimens examined*:** BRAZIL. Minas Gerais: Santa Bárbara, Serra do Gandarela, 20°07'40.0"S, 43°39'05.0"W, 1426 m, 8/VII/2012, *L. Echternacht et al. 2265* (BHCB).

46. *Paepalanthus flaccidus* (Bong.) Kunth, Enum. Pl. 3: 511. 1841. *Eriocaulon flaccidum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 636. 1831. Type:—BRAZIL. São Paulo: "Brasilia, s.d., *Riedel 1034* (B).

Distribution and habitat: not endemic. *Paepalanthus flaccidus* is widely distributed in the Midwest (Goiás) and Southeast (Minas Gerais and São Paulo) of Brazil (Andrino *et al.* 2020). In the QF it is mostly frequent around Ouro Preto and Mariana (Serra do Itacolomi, Serra de Lavras Novas, and Serra de Ouro Preto), also in Serra da Piedade, Serra do Garimpo, Serra do Gandarela, Serra do Caraça, Serra do Itabirito, and south of Serra da Moeda. In spite of being widely distributed, populations are small and isolated, in open grasslands, over organic, sandy to argillaceous soils, in marshes, on the border of lagoons or streams, both in quartzitic and ferruginous Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Parque Estadual do Itacolomi, 20°25'37.6"S, 43°27'14.2"W, 6/IV/2018, *D. Rodrigues et al. 24* (OUPR).

47. *Paepalanthus freyreissii* (Thunb.) Körn., in Martius Fl. Bras. 3 (1): 370. 1863. *Eriocaulon freyreysii* Thunb., Pl. Bras. Dec. I (7): 2 tab 1. 1817. Type:—BRAZIL. Minas Gerais: "In paludibus montis Itacolumi", August 1824, *Riedel 445* (K).

Distribution and habitat: not endemic. *Paepalanthus freyreissii* occurs from the Serra do Ibitipoca (Mantiqueira Range), to the QF and Serra do Cipó, northwardly. In the QF, most records are from the mountains around Ouro Preto and Mariana (Serra do Itacolomi, Serra de Lavras Novas, and Serra do Ouro Preto), and there are also records from Serra do Itabirito and Serra do Caraça. The populations are punctual, growing in open grassland close to streams, or in shaded gallery forests, always in humid places in quartzitic and ferruginous Campo Rupestre. The populations in the Cangas were found within a mining complex in the Serra de Ouro Preto, that might be explored in the near future.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Parque Estadual do Itacolomi, 6/II/2020, *L.G. Pedrosa 2573* (OUPR).

48. *Paepalanthus garimpensis* Silveira, Floraria Montium 1: 251 tab 167. 1928. Type:—BRAZIL. Minas Gerais: "in Serra do Garimpo inter Caeté Santa Bárbara", April 1909, *Silveira 557* (R).

Distribution and habitat: endemic. *Paepalanthus garimpensis* is known from the type collection only Silveira (1928), from the Serra do Garimpo, northeast QF. Hensold (1988) states that it is probably a hybrid between *P. dianthoides* and *P. mollis.* Considering the habitat of *P. dianthoides* and *P. mollis*, and the formation the most species of Eriocaulaceae from Serra do Garimpo was found in quartzitic Campo Rupestre, possibly it inhabits humid sandy soils in riparian forest. Dr. Echternacht was in Serra do Garimpo in 2008 and found there only *P. dianthoides*, failing in recollecting *P. garimpensis*; she found the area quite degraded, intensely affected by fire, cattle grazing, and invasive species.

Conservation status: *Paepalanthus garimpensis* is considered as "Probably extinct" in accordance with the List of Minas Gerais COPAM-MG (1997) and "Data deficient" (DD) CNCflora (2012).

Selected specimens examined: BRAZIL. Minas Gerais: Caeté, Serra do Garimpo, IV/1909, *Silveira 557* (R) [on-line photo].

49. *Paepalanthus hydra* Ruhland, in Engler, Pflanzenr. 13 (IV.30): 202. 1903. Type:—BRAZIL. Minas Gerais: "In arenosis humidis Serra de Lavras Novas", 3 December 1895, *W. Schwacke 12040* (B).

= ***Paepalanthus corymboides*** var. **epilosus** Ruhland, in En in Engler, Pflanzenr. 13 (IV.30): 205. 1903. Type:—BRAZIL. Minas Gerais: "in Campis elevatis ad Lavras Novas", 26 May 1901, *Schwacke 14524* (B).

Fig. 3K

Distribution and habitat: endemic. *Paepalanthus hydra* is endemic from the Quadrilátero Ferrífero, being most frequent in Serra de Lavras Novas, Ouro Preto municipality, with occurrences extending to Serra de Ouro Branco and southern Serra da Moeda, in Congonhas municipality. There is a sterile specimen (photo seen in SpeciesLink [HDJF 3107]) misidentified as *P. hydra* from Serra do Capanema, that is probably *P. corymboides*. It grows in open grasslands, over sandy soils, in quartzitic Campo Rupestre. The population in Congonhas inhabit ferruginous Campo Rupestre, in a mining property.

Conservation status: *Paepalanthus hydra* is considered as “Endangered” (EN) according to IUCN (2001), criteria B1ab (i,iii,iv) CNCflora (2011).

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Lavras Novas, 11/XI/2015, 20°28'53.7"S, 43°31'19.1"W, 1298m, *L. Echternacht & T.V. Bastos 2643* (OUPR).

50. *Paepalanthus langsdorffii* (Bong) Körn, in Martius Fl. Bras. 3 (1): 338. 1863. *Eriocaulon langsdorffii* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 632 tab 51.

1831. Type:—BRAZIL. Minas Gerais: "in umbrosis montis Itacolumi", August 1824, *Riedel 396* (B).

Distribution and habitat: endemic. *Paepalanthus langsdorfii* is known from the type collection only, from "montis Itacolumi", collected by Riedel in Serra do Itacolomi, Ouro Preto Municipality, southeastern QF. Hensold (1988) mentioned the similarity with *P. dianthoides* and that it is probably a rare species. Described "in umbrosis", i.e., from shaded places, it is possible that this species inhabits the understory of forest areas or riparian forests, although this is a rare habitat for Eriocaulaceae. However, as all the other species of *P.* subg. *Xeractis* grows in quartzitic Campo Rupestre, these shaded places might correspond to forest patches within the Campo Rupestre or among the tall rocks surrounding the Itacolomi peak. The Itacolomi State Park is an area of easy access, intensively collected by botanists; we have made intense searches for this species there, and nevertheless it was never recorvered, indicating that it is probably extinct.

Conservation status: *Paepalanthus langsdorfii* is considered as "Probably extinct" (PE) in accordance with the List of Minas Gerais COPAM-MG (1997) and Data deficient (DD) CNCflora (2011).

Selected specimens examined: BRAZIL. Minas Gerais: [Ouro Preto]. In umbrosis montis Itacolumi, VIII/1824, *Riedel 396* (B) [on-line photo].

51. ***Paepalanthus leucoblepharus*** Körn, in Martius Fl. Bras. 3 (1): 388. 1863. Type:—BRAZIL. Minas Gerais: *Riedel s.n.*

= ***Paepalanthus globosus*** Ruhland, in Engler, Pflanzenr. 13 (IV.30): 143. 1903. Type:—BRAZIL. Minas Gerais: "Serra de Capanema près de Caraça", 20 February 1884, *Glaziou 15537* (B).

Fig. 3L-M

Distribution and habitat: endemic. *Paepalanthus leucoblepharus* is currently considered endemic to Serra do Caraça and Serra do Capanema, well collected in the highest altitudes. It forms abundant populations especially in the Caraça region, growing in open grasslands, oversandy to gravely soils, in quartzitic Campo Rupestre. In 1903, Ruhland described *Paepalanthus globosus* from Serra do Capanema, neighbor to Caraça. Soldevilla & Echternacht (submitted) proposed *P. leucoblepharus* as a synonym of *P. globosus*, as both names have types from the same locality and are morphologically similar.

Conservation status: *Paepalanthus leucoblepharus* is consider as “Endangered” (EN) in accordance with IUCN (2022), criteria B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. MINAS GERAIS: Catas Altas, RPPN Santuário do Caraça, 20°07'48.2"S, 43°30'52.4"W, 1696 m, 24/XI/2020, *A. Soldevila, & P. Vanucci, 335* (OUPR).

52. ***Paepalanthus lundii*** Körn, in Martius Fl. Bras. 3 (1): 385. 1863. Type:—BRAZIL. Minas Gerais: "auf Campos, an feuchten Stellen, Sümpfen und ihren Rändern beim Berge Arara-Coara entlang dem Flusse Tieté und bei Villa Franca", May - June, *Riedel 2204* (B).

Distribution and habitat: not endemic. *Pepapalanthus lundii* occurs mainly in São Paulo, with some records from Triângulo Mineiro and a questionable occurence in Goiás (Andrino *et al*. 2020). In the Quadrilátero Ferrífero there is one record only for this species, from Camarinhas, Ouro Preto municipality, close to Serra do Veloso.

Selected specimens examined*:* BRAZIL. Minas Gerais: Ouro Preto, Camarinhas, 05/XII/2003, *M.C.T.B. Messias 912* (BHCB).

53. ***Paepalanthus macropodus*** Ruhland, in Engler, Pflanzenr. 13 (IV.30): 212. 1903. Type:—BRAZIL. Minas Gerais: "bei Stª Rita", February 1893, *Schwacke 9230* (B).

Distribution and habitat. not endemic. *Paepalanthus macropodus* occurs in the Espinhaço Range, from Diamantina at north, extending southward to the QF, where it is restricted to the southeast, forming punctual populations especially in the Serra do Itacolomi and Serra de Lavras Novas, extending to Serra de Ouro Branco, where it is less frequent. It grows over humid soils, in hillside forest, in the border of riparian forests, on quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Lavras Novas, 8/XI/2018, *L.G. Pedrosa 993* (OUPR).

54. ***Paepalanthus magalhaesii*** Silveira, Fl. Serr. Min. 43. 1908. Type:—BRAZIL. Minas Gerais: "In Serra do Capanema", March 1893, *F. M. Gomes 823*, in *Herbarium Silveira 413* (R).

≡ ***Paepalanthus gomesii*** Silveira, Floralia Montium 1: 67. tab 39. 1928. Type:—BRAZIL. Minas Gerais: "In Serra do Capanema", March 1893, *F. M. Gomes* in *Herbarium Silveira 413* (R).

Fig. 3N-O

Distribution and habitat: endemic. *Paepalanthus magalhaesii* is endemic to the Quadrilátero Ferrífero, occurring in the Serra do Gandarela and neighboring mountains. It inhabits open grasslands and seems to tolerate some anthropization, as the impact of frequent fire. It grows over sandy to gravelly soils of quartzite formation, where it forms abundant populations.

Conservation status: *Paepalanthus magalhesii* is considered as “Endangered” (EN) according to criteria B2ab (i,ii,iii) of the IUCN (2022).

Selected specimens examined: BRAZIL. Minas Gerais: Santa Bárbara, Serra do Gandarela. 20°07'46.0"S, 43°39'04.0"W, 1425m, 25/VI/2017, *L. Echternacht et al. 2751* (OUPR).

55. ***Paepalanthus manicatus*** Poulsen ex Malme, Bih. Kongl. Svenska Vetensk.-Akad. Handl. 27 (11): 28. 1902. Type:—BRAZIL. Minas Gerais: "Caldas. Pedra Branca, loco humido", 18 January - May 1873, *Regnell III 1267 ½* (S).

Distribution and habitat: not endemic. *Paepalanthus manicatus* is widely distributed from the Northeast (Bahia and Piauí), Midwest (Goiás), and Southeast Brazil (Minas Gerais and São Paulo) (Andrino *et al.* 2020). In Minas Gerais, it occurs in the Espinhaço Range, from Serra de Grão Mogol at north, to Serra do Cipó, QF, and Serra da Mantiqueira to the south, from where the type comes. In the Quadrilátero Ferrífero is widely distributed in Serra do Itatiaiuçu, Serra da Piedade, Serra de Capanema, Serra do Caraça, Serra do Ouro Preto, Serra do Itacolomi, Serra do Veloso, Serra de Ouro Branco, Serra da Moeda and Serra do Itabirito. It occurs in quartzitic and ferruginous Campo Rupestre, but it is mostly common in the last one, inhabiting humid places, frequently on the rock shadows or on the border of riparian forests, over sandy to organic humid soils.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Parque Estadual do Itacolomi, 4/II/2020, *L.G. Pedrosa 2578* (OUPR).

56. ***Paepalanthus melaleucus*** (Bong.) Kunth, Enum. Pl. [Kunth] 3: 510. 1841. *Eriocaulon melaleucum* Bong. Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 629. 1831. Type:—BRAZIL. Bahia: *Riedel s.n.* (G).

= ***Paepalanthus corymboides*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 204. 1903. *Eriocaulon corymbosum* Bong. Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 629 (1831). Type:—BRAZIL. Minas Gerais: "Serra do Caraça", March 1892, *E. Ule 2725* (B).

Distribution and habitat: endemic. *Paepalanthus melaleucus* was described by Bongard (1831) based on a specimen from Minas Gerais (Riedel *s.n.*), with the basionym *Eriocaulon melaleucum*. However, the only indoubtful type specimen was seen by Dr. Echternacht in OXF; all other materials collected by Riedel are attributed by Körnicke to Bahia. This is weird, because no other specimen was recorded from Bahia and the other collections of this species are from Minas Gerais. We assume here that there was a mislabeling of Körnicke atributting this species to Bahia and that the species should be considered as endemic to the QF; its records from outside the QF currently at SpeciesLink are misidentifications. In the Quadrilátero Ferrífero it occurs especially in the Serra do Caraça, extending Serra do Capanema and other mountains around Ouro Preto e Mariana.

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Propriedade Horto da Alegria, 20°08'51.0"S, 43°41'17.0"W, 1004m, 3/VII/2018, *J.A.M. Paiva et al. 1806* (BHCB).

57. ***Paepalanthus moedensis*** Silveira, Floralia Montium 1: 234. tab 156. 1928. Type:—BRAZIL. Minas Gerais: "Serra da Moeda", May 1910, *Silveira 572* (R).

Fig. 4P

Distribution and habitat: endemic. *Paepalanthus moedensis* is endemic to the Serra da Moeda, western QF, inhabiting open grasslands over quartzitic soils. It was known from the type and a collection by *T.S.M. Grandi & P.M. Andrade* 947 in 1982 and another by *R.R. Pena* (BHCB 11628) in 1987, which remained unidentified until 2017. After 30 years uncollected, new populations were found in 2017 (*J.A.M. Souza et al.* 142 and154) and 2018 (*A.S. Quaresma A.S. & P.B. Meyer* 908), the last localized in Capitão do Mato mining. Vouchers *Grandi 947* and *Quaresma* 908 were collected in the same locality, Morro do Chapéu in Nova Lima municipality, which is part of the Serra da Moeda and an important place for the species conservation of species, however, we tried to return to this locality but it is a mining property with restricted access.

Conservation status: *Paepalanthus moedensis* is considered as "Critically endangered" (CR), according to criteria B1ab (i,ii,iii) and B2ab (i,ii,iii) (IUCN 2022).

Selected specimens examined: BRAZIL. Minas Gerais: Brumadinho, Serra da Moeda, 20°06'54" S 43°59'33" W, 9/XI/2017, *J.A.M. Souza, et al. 154* (BHCB).

58. ***Paepalanthus minutulus*** Mart. ex Körn. in Martius Fl. Bras. 3 (1): 359 1863. Type:—BRAZIL. Minas Gerais: "In prov. Minarum prope Sabará, Congonhas do Campo", March and May, *Martius s.n.*

Distribution and habitat: not endemic. *Paepalanthus minutulus* is considered endemic to Minas Gerais in the Flora do Brasil 2020 (Andrino *et al.* 2020). It is morphologically similar to

Paepalanthus subtilis Miq., a widespread species. A taxonomic review should investigate if these species are synonyms and if there are misidentified records. In speciesLink (CRIA 2022) there are several records from North and Northeast states that should be further investigated. In the QF it is known from the type material and other few records (*Hensold 415* and *Magalhães 434*). The voucher and *Hensold 415* from Caeté and *Magalhães G.M. 434* from Serra do Brucutú, close to Serra do Garimpo. The Hensold's collection is identified by her as a *P. minutulus* and the duplicate identified as *P. subtilis* without determiner; they were both analyzed from photos and we reinforce the identification as *P. minutulus*. It grows over moss mats, over humid sandy soils, in quartzitic Campo Rupestre. Magalhães mentioned that the species is frequent Serra do Brucutú, but 79 years have passed since that collection, and a mining enterprise was implemented at the site, which may have made the species rare or even extinct in this site.

Selected specimens examined: BRAZIL. Minas Gerais: Caeté, 15 KM from Barão de Cocais, road Caeté, 15º55'20" S 43º34'20" W, 11/I/1982, *N. Hensold 415* (BHCB).

59. *Paepalanthus mollis* Kunth, Enum. Pl. [Kunth] 3: 507. 1841. var. ***mollis*.** Type:—BRAZIL. Minas Gerais: "in monte Itacolumi," *Sellow* (B).

Distribution and habitat: endemic. *Paepalanthus mollis* var. *mollis* is endemic to the QF, occurring in the Serra do Capanema, Serra do Caraça, where it is most common, Serra do

Itacolomi, and Serra do Veloso. It forms abundant populations over humid sandy to gravelly soils, over quartzitic Campo Rupestre, on the border of riparian forests.

Selected specimens examined: BRAZIL. Minas Gerais. Ouro Preto. APA Cachoeira das Andorinhas, 20°08'05.3"S, 43°27'04.9"W, 2075m, 22/VII/2016, *L. Echternacht & T.V. Bastos 1617* (BHCB).

60. ***Paepalanthus paulinus*** Ruhland, in Engler, Pflanzenr. 13 (IV.30): 215. 1903. Type:—BRAZIL. Minas Gerais: "Serra do Cipó", June 1901, *Sena & Schwacke 14550* (B).

Distribution and habitat: not endemic. *Paepalanthus paulinus* is restricted to the Espinhaço Range and QF, in Minas Gerais, from Serra do Cipó, where it is most frequent, extending to the Serra do Garimpo. In the QF it is known for one single collection (mentioned below), from Serra do Garimpo, growing in open areas, over gravelly soils.

Selected specimens examined: BRAZIL. Minas Gerais: Barão de Cocais, Serra do Garimpo 4/V/1984, *N. Hensold 788* (MBM) [photo online].

61. ***Paepalanthus planifolius*** (Bong.) Körn, in Martius Fl. Bras. 3 (1): 413. 1863. *Eriocaulon planifolium* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 629. 1831.

Type:—BRAZIL. Minas Gerais: “in umbrosis humidiusculis montis Itacolumi”, August 1824, *Riedel 395* (B).

Distribution and habitat: not endemic. *Paepalanthus planifolius* is widely distributed in Midwest (Distrito Federal and Goiás), Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro and São Paulo) and South (Paraná, Rio Grande do Sul and Santa Catarina) of Brazil (Andrino *et al*. 2020). In the QF it is widely distributed in Serra do Gandarela, Serra do Capanema, Serra do Caraça, Serra do Ouro Preto, Serra do Itacolomi, Serra de Lavras Novas, Serra do Ouro Branco, Serra da Moeda, and Serra do Itabirito. It can be found in the most variable habitats, preserved or anthropized, in open grasslands and riparian forests, forming large populations in the marshy or humid areas, over sandy to gravelly soils, especially in quartzitic Campo Rupestre and, less frequently, in ferruginous Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, APA Cachoeira das Andorinhas, 20°22'12.0"S, 43°30'14.0"W, 1390m, 26/VII/2016, *L. Echternacht & T.V. Bastos 2699* (OUPR).

62. *Paepalanthus plantagineus* (Bong.) Körn, in Martius Fl. Bras. (Martius) 3(1): 369. 1863. *Eriocaulon plantagineum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 625 (1831). Type:—BRAZIL. Minas Gerais: “montis Itacolumi”, August, *Riedel 439* (B).

= ***Paepalanthus pallidus*** Silveira, Fl. Serr. Min. 1: 44 tab 15. 1908. Type:—BRAZIL. MINAS GERAIS: "In aridis fissuris saxi ferruginosi, Canga manganezifera, dicta, locis abruptis. Prope manso in vicinia urbis Ouro Preto". December 1906, *J.C. da Costa Sena 458* (R). *syn nov.*

Fig. 4Q-R

Distribution and habitat: endemic. *Paepalanthus plantagineus* is endemic to the Quadrilátero Ferrífero, occurring in the Serra do Itacolomi, where is most frequent, Serra do Veloso, Serra do Frasão, and Horto da Alegria, in the Alegria mining complex. It forms abundant populations in shaded places, below boulders, in quartzitic and ferruginous Campo Rupestre. Koernicke (1863) describes *Paepalanthus plantagineus* var. α (leaves puberula) based in *Riedel 439* from "Montis Itacolomi" and var. β (leaves glabrous) based in *Claussen 170* and *Claussen 67* from "Pires, Mariana and Montis Itacolomi". These varieties however are not published accordingly with the International Code of Nomenclature for algae, fungi, and plants, because names composed of non-Latin symbols are not valid (Art. 32.1, Turland *et al.* 2018). Analyzing photos of the syntype, specimens of representative collections, and large populations in the field, we observed the differences raised by Kornicke (1863) as variations, even within the same population, therefore, we consider it to be a morphological plasticity of the species.

Paepalanthus pallidus is known from the type collection only, from Manso (Serra do Itacolomi), described by Silveira (1908) based in *J.C. da Costa Sena 458.* We analyzed photos of the type available in SpeciesLink (CRIA 2022) an the protologue and observed that the diagnostic

characteristics raised by Silveira (1908) are also present in *P. plantagineus*: leaves linear, membranaceous, pale green, with more densely hairs at the base, glabrous to sparsely pilose spathes, and oval involucral bracts. In addition, types of both species are from the same location, blooming in the same months. We consider therefore *P. pallidus* as a latter synonym of *P. plantagineus.* Additionally, in the field we saw that the species populations in Serra do Itacolomi have also the following remarkable features: straw-colored spathes and scapes, globose capitula, turning obconic when dry.

Conservation status: *Paepalanthus plantagineus* is considered as "Endangered" (EN), in accordance to criteria B1ab (i,ii,iii) and B2ab (i,ii,iii) of the IUCN (2022).

Selected specimens examined: BRAZIL. Minas Gerais: Mariana, Parque Estadual do Itacolomi. 20°25'44.9"S, 43°27'15.1"W, 6/IV/2018, *D. Rodrigues et al. 26* (OUPR).

63. ***Paepalanthus pubescens*** Körn., Koernicke, F., Fl. bras., 3(1): 384, 1863. Type:—BRAZIL. Minas Gerais: "Minarum campis". *Martius 896* (B).

Distribution and habitat: not endemic. P*aepalanthus pubescens* is a quite widespread species, largely variable morphologically, of difficult delimitation, and whose type locality is unknown (*Martius 896*, Koernicke 1863). Ruhland (1903) described *P. pubescens* var. *chapadensis* from Serra de Itatiaia, close to Chapada village, in Ouro Preto, differentiating it for having narrower and smaller leaves than the autonym variety. We found *P. pubescens* var. *chapadensis* growing over

quartzitic humid soils, forming populations especially in Serra de Lavras Novas, with autonym variety in Serra do Gandarela, Serra do Capanema, Serra do Ouro Preto, Serra do Veloso, Serra de Ouro Branco serra do Itabirito and Serra da Moeda.

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito. RPPN Capivari, 25/IX/2018, 20°09'25"S, 43°39'50"W, *J.A.M. Paiva et al. 1899* (BHCB).

64. ***Paepalanthus scirpeus*** Mart. ex Körn., in Martius Fl. Bras. 3 (1): 364. 1863. Type:—BRAZIL. Minas Gerais: "Serra da Mendanha prope Itambé in Serro Frio, April and May, *Martius* (B).

Distribution and habitat: not endemic. *Paepalanthus scirpeus* is widely distributed in Minas Gerais, in the Espinhaço Range, from Itacambira at north to Serra do Cipó, and QF at south. In the QF, it inhabits ferruginous outcrops in the Serra do Itatiaiuçu, Serra da Moeda, and Serra da Piedade, as well as quartzitic Campos Rupestres in Serra do Garimpo. It grows in shaded places, at cave mouths, or below boulders, over cracks among rocks or over sandy soils. The species forms abundant populations in the QF, but populations growing in the ferruginous sites might probably be threatened by mining activities.

Selected specimens examined: BRAZIL. Minas Gerais: Igarapé, Pico do Itatiaiuçu, 22/IV/2008, 20°7'12" S, 44°20'27.5" W, *F.F. Carmo 2628* (BHCB).

65. ***Paepalanthus scleranthus*** Ruhland, in Engler, Pflanzenr. 13 (IV.30): 199. 1903. Type:—BRAZIL. Minas Gerais: "Serra do Caraça", March 1892, *E. Ule 2717* (B).

Distribution and habitat: not endemic. *Paepalanthus scleranthus* is included in *P.* subg. *Thelxinoe* together with *P. leucocephalus* Ruhland. These species are very similar, but can be differentiated by the involucral bracts pigmented in *P. scleranthus* and not pigmented in *P. leucocephalus* (Ruhland 1903). The specimens analyzed in the QF, where the type of *P. scleranthus* comes from, have pigmented involucral bracts. According to Andrino *et al.* 2020, it occurs in Northeast (Bahia) and Southeast (Minas Gerais) of Brazil. In the QF it was registered in Serra do Caraça, Serra do Gandarela, Serra do Itacolomi, and Serra do Itabirito forming small populations, over sandy humid soils of quartzitic Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Parque Estadual do Itacolomi, 20°25'48.4"S, 43°27'16.4"W, 6/IV/2018, *D. Rodrigues et al. 27* (OUPR).

66. ***Paepalanthus sphaerocephalus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 182. 1903. Type:—BRAZIL. Minas Gerais: "Itacolumy dans le campo sec", 25 June 1884, *Glaziou 15546* (B).

Distribution and habitat: not endemic. *Paepalanthus sphaerocephalus* is widely distributed from the north of the Espinhaço Range (Chapada Diamantina - BA) to the QF. In spite of the fact that the type locality is from the Itacolomi, there are a few collections only from the QF (*A.A. Silveira* [OUPR 12634], collected in 1906, and *R.A.X. Borges 110* [OUPR] in 2004). Despite our intense

study in OUPR, the specimen *Borges. 110* was not found; it is not georeferenced and the locality is referred to as Serra do Capanema; we fail to recollect it in our field expedition.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Batatal Lua, 1906. *A. Silveira s.n.* (OUPR 12634).

67. *Paepalanthus spixianus* Mart., Ann. Sci. Nat., Bot. sér. 2, 2: 28. 1834. Type:—BRAZIL. Minas Gerais: "crescit in montibus altis provinciae minarum Brasiliae". 1 January 1829, *Martius s.n* (LL).

Fig. 4S

Distribution and habitat: endemic. *Paepalanthus spixianus* is endemic to the QF, occurring in Serra da Piedade, which is most common and Serra do Caraça, in addition there are a collection from Serra de Água Limpa, a sub-mountain in the Serra do Gandarela (*Carmo F.F. 4442*), that despite being in the SpicesLink as part of the BHCB collection was not found. It probably forms small populations, growing especially in ferruginous Campo Rupestre, and can be found in quartzitic soils.

Conservation status: *Paepalanthus spixianus* is considered "Endangered" (EN) in accordance to IUCN (2022), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Caeté, na beira da estrada que sobe para a igreja, 19°49'23.0"S 43°40'36.0"W, 3/VII/2008, *L. Echternacht & T.V. Bastos 1714* (OUPR).

68. ***Paepalanthus suffruticans*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 138. 1903. Type:—BRAZIL. Minas Gerais: "Caraça, au Morro da Carapuça", 11 June 1884, *Glaziou 15529* (B).

= ***Paepalanthus chloroblepharus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 139. 1903. Type:—BRAZIL. Minas Gerais: "In Sümpfen bei Caraça, March 1892, *E. Ule* (B).

Fig. 4T

Distribution and habitat: endemic. *Paepalanthus suffruticans* is a *microendemic* species from Serra do Caraça, inhabiting especially forests, shaded and humid places, forming populations over sandy to argillaceous soils of quartzitic formation. Soldevilla & Echternacht (submitted) proposed *P. chloroblepharus* as a synonym of *P. suffructicans*, as both names have types from the same locality and are morphologically similar.

Conservation status: *Paepalanthus suffruticans* is considered as "Endangered" (EN) according to (IUCN 2022), criteria B1ab (i,ii,iii) and B2ab (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°05'36.7"S 43°28'36.0"W, 1434m, 3/XI/2020, *A. Soldevila & P. Vanucci 309* (OUPR).

69. ***Paepalanthus vellozioides*** Körn., in Martius, Fl. Bras. 3 (1): 401. 186). Type:—BRAZIL. MINAS GERAIS: "Serra do Caraça", *Martius 874* (NY)

Distribution and habitat: not endemic. *Paepalanthus vellozioides* occurs in the Espinhaço Range, from Diamantina to Serra do Cipó, and in the QF, where it is very abundant. In the QF it is widely distributed in Serra do Gandarela, Serra do Capanema, Serra do Caraça, Serra da Moeda, and Serra do Itabirito. It forms abundant populations inhabiting the Campos Rupestres, cerrado, in open grasslands, or more frequently among shrubs and outcrops; it grows over sandy to gravelly soils, of either quartzitic or less frequently in ferruginous rocks.

Selected specimens examined: BRAZIL. Minas Gerais: Catas Altas, RPPN Santuário do Caraça, 20°04'55.8"S, 43°30'10.1"W, 1188m, 23/XI/2020, *A. Soldevilla & P. Vanucci 323* (OUPR).

70. ***Paepalanthus vestitus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 150. 1903. Type:—BRAZIL. Minas Gerais: "au pic d' Itabira". 1843, *Claussen s.n.* (B)

= ***Paepalanthus undulatus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 150. 1903. Type:—BRAZIL. Minas Gerais: "Pico d'Itabira do Campo", 20 December 1888, *Glaziou 17844* (B).

Distribution and notes: endemic. *Paepalanthus vestitus* is endemic to the ferruginous Campo Rupestre of the Quadrilátero Ferrífero, especially in the Serra de Itabirito region. The locality is strongly impacted by mining activity, the population of this species is probably punctual and small,

making the species rare, which may explain the small number of records and the long period without collections. *Paepalanthus vestitus* and *P. undulatus* were described by Ruhland (1903), the former based in *Claussen s.n.* and the latter in *Glaziou 17844*, both from "Pico d' Itabira" [Pico do Itabirito]. Ruhland (1903) differentiates them from the indumentum of leaves, that is most notable in *P. vestitus*; however, this is a characteristic that can be variable in the same population. Both types have similar port, large lanceolate leaves covered with long hairs, and the remarkable feature of large and dark floral bracts conspicuously surpassing the flowers. Considering these similarities, in addition to the fact that the types came from the same locality, we consider them as synonyms. As there is no priority order because names were published in the same work, we chose *P. vestitus* as the accepted name.

Conservation status: *Paepalanthus vestitus* is considered as "Critically endangered" (CR), in accordance to (IUCN 2022), criteria B2a (i,ii,iii).

Selected specimens examined: BRAZIL. Minas Gerais: Nova Lima, RPPN Capitão do Mato, 20°08'50.0"S 43°55'29.0"W, 8/V/2015, *M.O. Pivari et al. 2295* (BHCB).

71. ***Paepalanthus vaginatus*** Körn., in Martius, Fl. Bras. 3 (1): 313. 1863. (1863: 313). Type:— BRAZIL. Minas Gerais: "Serra do Carassa ", January 1825, *Riedel* (B).

Distribution and habitat: not endemic. *Paepalanthus vaginatus* occurs in Minas Gerais, in the Espinhaço Range and QF, from the Diamantina plateau to the Serra do Caraça, and in the Serra da

Canastra. In spite of the type being from Serra do Caraça, the species is known for two other records only from the Quadrilátero Ferrífero (*Messias, M.C.T.B. et al. 1861* and *Messias M.C.T.B. et al. 1829*), both from Bento Rodrigues, close to Serra do Ouro Preto. Due to the few collections for QF, the species probably form punctual and small populations, in humid places over quartzitic Campo Rupestre. We do not have the exact location of the collection, but the Bento Rodrigues area was devastated by the Samarco mud in 2015, that may have reached the area of occurrence of this species and made it rare or even extinct in this area.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Bento Rodrigues, 26/III/2008, *M.C.T.B. Messias et al. 1861* (OUPR).

72. ***Paepalanthus xiphophyllus*** Ruhland in Engler, Pflanzenr. 13 (IV.30): 30. 1903. Type:—BRAZIL. Minas Gerais: "Serra da Gandevelha", *Schwacke 14578* (B).

Distribution and habitat: endemic. *Paepalanthus xiphophyllus* is included in *Paepalanthus* subg. *Xeractis* and is known from the type collection only. Ruhland (1903) attributed the type collection from the "Serra do Gandavelha", which probably refers to the current "Serra do Gandarela", in the central portion of the Quadrilátero Ferrífero. The species is morphologically very unique, with its elongate stem densely covered with white indumentum, and involucral bracts surpassing the flower disc; the port and indumentum of the plant, together with the habitat commonly occupied by other species of the subgenus, all suggest it occurs on open areas in the Campo Rupestre. It should be

easily visible in the field, but it has never been recollected, and we should consider it as probably extinct.

Conservation status: *Paepalanthus xiphophyllus* is considered as "probably extinct" (PE) in accordance with the List of Minas Gerais (COPAM-MG 1997) and "Data deficient", according to CNCflora (2011).

Selected specimens examined: BRAZIL. Minas Gerais: Serra do Gandarela, *Schwacke 14578* (B). [photo online].

73. ***Syngonanthus anthemiflorus*** (Bong.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 258. 1903. 'anthemidiflorus'. *Eriocaulon anthemiflorum* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 636. 1831. Type:—BRAZIL. Minas Gerais: Serra da Lapa, habitat in paludosis, November 1924, *L. Riedel 1409* (LE).

Distribution and habitat: not endemic. *Syngonanthus anthemiflorus* is endemic from the Espinhaço Range and QF, occurring from Grão Mogol in the north to Ouro Preto at south (Echternacht 2012). In the QF it occurs in Serra do Garimpo, Serra do Capanema, Serra do Caraça, and Serra do Itabirito, growing in open grasslands of quartzitic Campo Rupestre, over humid and sandy soils. In spite of the fact that populations are very large and widespread in the Espinhaço Range, in the Quadrilátero Ferrífero they are punctual and small.

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, Serra do Capanema, 20°12'35" S, 43°34'41"W,13/III/2009, *L. Echternacht et al. 1948* (BHCB).

74. *Syngonanthus caulescens* (Poir.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 267. 1903. *Eriocaulon caulescens* Poir., Encycl. (J. Lamarck et al.) Suppl. 3: 162. 1813. Type:—FRENCH GUIANA, Cayenne. *Poiret* (P).

Distribution and habitat: not endemic. *Syngonanthus caulescens* is the most widely distributed species of the genus, with wide occurrence in South and Central Americas (Watanabe 2015). In the Quadrilátero Ferrífero is widely distributed, especially in Ouro Preto (Serra do Itacolomi, Serra de Lavras Novas, Serra do Ouro Preto, Serra do Veloso), but also in Serra do Garimpo, Serra do Caraça, and Serra do Itabirito. Abundant populations are found over organic, constantly humid to soaked soils, in marshes, nearby watercourses, or around lagoons, in preserved as well as partly degraded areas.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto, Parque Estadual do Itacolomi, 20°26'20.1"S, 43°30'32.4"W, 04/V/2018, *D. Rodrigues et al. 35* (OUPR).

75. *Syngonanthus gracilis* (Bong.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 249. 1903. *Eriocaulon gracile* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 634 tab

46. 1831. Type:—BRAZIL. Minas Gerais: “in umbrosis siccis montis Itacolomi”, August 1824, *Riedel s.n.* (LE).

Distribution and habitat: not endemic. *Syngonanthus gracilis* is widely distributed in eastern Brazil, from Northeast (Bahia e Paraíba) to Southeast (Espirito Santo, Minas Gerais e São Paulo) (Echternacht 2012). Type was collected by Riedel in 1824 in the Itacolomi. Later collections were sampled from neighboring mountains and widely in Brazil, but the type locality remained 194 years without new records, until it was retrieved in 2019. Indeed, it is very rare in the Itacolomi State Park. In the QF it occurs, besides the type locality, in the Serra de Lavras Novas, Serra de Ouro Branco, Serra da Moeda, Serra do Itabirito, Serra do Caraça, and Serra do Ouro Preto. It forms abundant populations in open grasslands, over sandy and humid soils in quartzitic Campo Rupestre. There are also records from ferruginous Campo Rupestre, from Mina de Brucutú, close to the Serra do Garimpo, and Mina Fazendão, on the border of Serra do Caraça, both inside mining properties.

Selected specimens examined: BRAZIL. Minas Gerais: Ouro Preto/Mariana, Parque Estadual do Itacolomi, 31/I/2019, *L.G. Pedrosa 1298* (OUPR).

76. *Syngonanthus lanceolatus* Silveira, Floralia Montium (1): 386. 1928. Type:—BRAZIL. Minas Gerais: “In campis argilosis humidisque in Serra da Moeda, prope Lagoa Grande”, August 1926, *A. Silveira 843* (R).

Distribution and habitat: endemic. *Syngonanthus lanceolatus* is known from the type collection only, collected over humid and argillaceous soils, from Serra da Moeda. (Silveira 1928; Echternacht 2012). Leaves are thin and remember the rosettes of *S. widgrenianus*, but the species is unmistakable for its long involucral bracts surpassing the flower disc, the external stramineous, the internal cream and spathulate. In spite of the fact that Serra da Moeda is a relatively well sampled locality, *S. lanceolatus* has never been recollected and could be considered as probably extinct.

Selected specimens examined: BRAZIL. Minas Gerais; Serra da Moeda, V/III/1926, *A. Silveira 843* (R). [photo online].

77. *Syngonanthus nitens* (Bong.) Ruhland (Bong.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 254. 1903. *Eriocaulon nitens* Bong., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1: 633. tab 55. 1831. Type:—BRAZIL. Minas Gerais: "in paludosis arenosis exsiccates prope os Prados", June 1824, *Riedel 295* (LE).

Distribution and habitat: not endemic. *Syngonanthus nitens* is widely distributed in South America (Colombia, Venezuela, Paraguay and Brazil) (Echternacht 2012). In Brazil, it can be found in North (Amazonas, Pará, Rondônia, Roraima and Tocantins), Northeast (Bahia, Maranhão, and Piauí), Midwest (Distrito Federal, Goiás, Mato Grosso do Sul and Mato Grosso), Southeast (Minas Gerais and São Paulo), and South (Paraná and Santa Catarina) (Echternacht 2012). In the

QF, records come from Serra do Gandarela, Serra do Capanema, Serra de Lavras Novas, Serra de Ouro Branco, Serra do Itabirito and Serra da Moeda, where its populations are abundant. It grows in the quartzitic Campos Rupestres, in open grasslands, over sandy to organic humid soils, in marshes, or along the border of watercourses.

Selected material examined: BRAZIL. Minas Gerais: Ouro Preto, Próximo a Lavras Novas, 23/VII/2018, *L.G. Pedrosa 575* (OUPR).

78. ***Syngonanthus pulcher*** (Koern.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 255. 1903. *Paepalanthus pulcher* Koern., in Martius, Fl. Bras. 3 (1): 452. 1863. Type:—BRAZIL. Minas Gerais: *Gardner, G. 5265* (G).

= *Syngonanthus spadiceus* (Koern.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 255. 1903. *Paepalanthus spadiceus* Koern., in Martius, Fl. Bras. 3 (1): 452. 1863. Type:—BRAZIL. MINAS GERAIS: Congonhas do Campo, 1843, *D. Stephan* (BR).

Distribution and habitat: endemic. *Syngonanthus pulcher* is known from historical collections only, in swampy areas from Lagoa Santa to Congonhas (Echternacht 2012). According to label notes, this was a frequent species in the region. However, intense urbanization, agriculture, and mining might have threatened the species with extinction.

Selected specimens examined: BRAZIL. Minas Gerais: Belo Horizonte, Fazenda de Cabral (Ressaca), 04/IX/1934, *Mello Barreto 2514* (BHCB).

79. ***Syngonanthus widgrenianus*** (Körn.) Ruhland in Engler, Pflanzenr. 13 (IV.30): 256. 1903. *Paepalanthus widgrenianus* Körn., in Martius, Fl. Bras. 3 (1): 454. 1863. Type:—BRAZIL. Minas Gerais: *G. Gardner 2957* (G).

Distribution and habitat: not endemic. *Syngonanthus widgrenianus* occurs in the Northeast (Bahia e Piauí) and Southeast (Minas Gerais e São Paulo) Brazil (Echternacht 2012). In the QF it is distributed in the Serra do Capanema, Serra de Lavras Novas, Serra de Ouro Branco, and Serra do Itabirito. It forms punctual populations, inhabiting open grasslands and marshes, over sandy to organic, humid soils, in both quartzitic and ferruginous Campo Rupestre.

Selected specimens examined: BRAZIL. Minas Gerais: Itabirito, Serra do Capanema, 20°13'10" S, 43°34'42", 28/III/2008, *L. Echternacht et al. 1952 (*BHCB).

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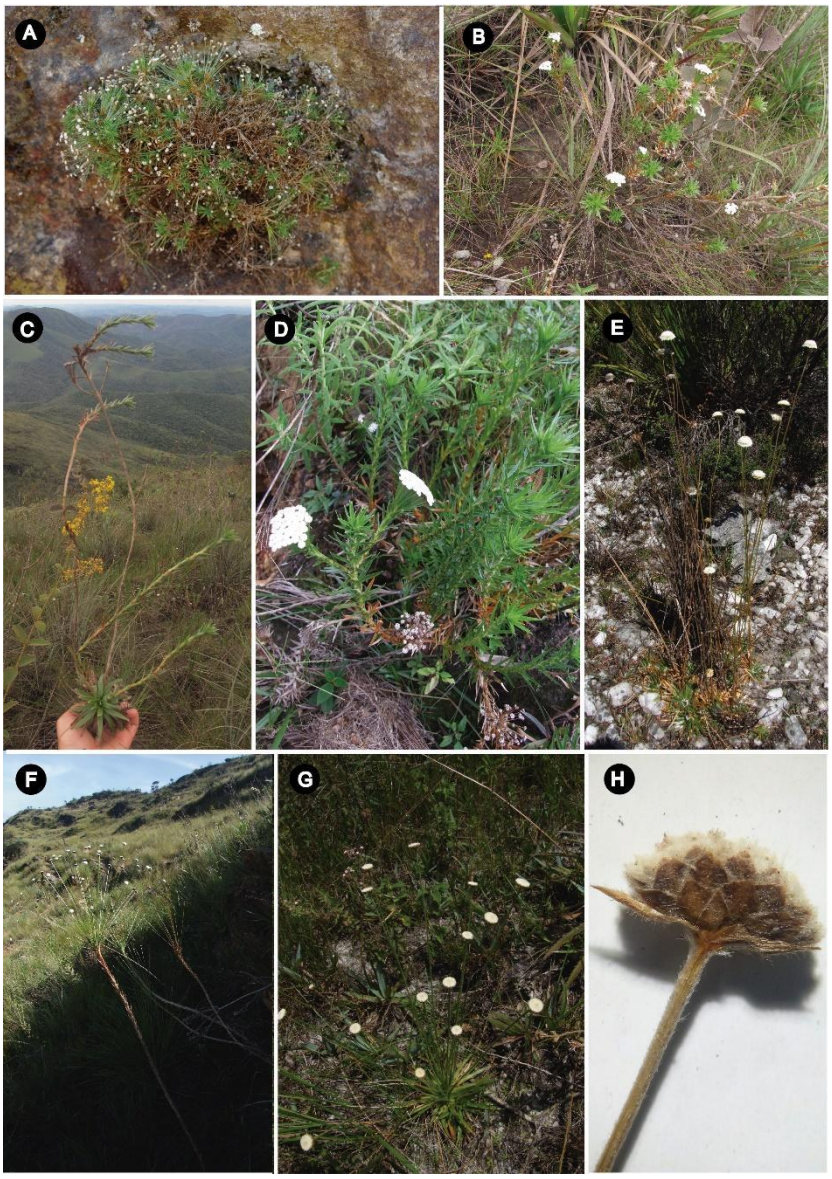

Figure 2. Endemic species to the Quadrilátero Ferrífero. **A.** *Actinocephalus camptopyllus* - habitat and habit. **B-C.** *Actinocephalus falcifolius*- **B.** habitat and habit. **C.** architecture. **D.** *Actinocephalhus giuliettiae* - habitat and habit. **E.** *Leiothrix gomesii* - habitat and habit. **F.** *Paepalanthus amoenus* - habitat and habit. **G-H.** *Paepalanthus batatalensis* - **G.** habitat and habit. **H.** capitula with the external bracts surpassing (herborized material). Photos by L. Echternacht **A-G.** Photos by D. Rodrigues **F.**

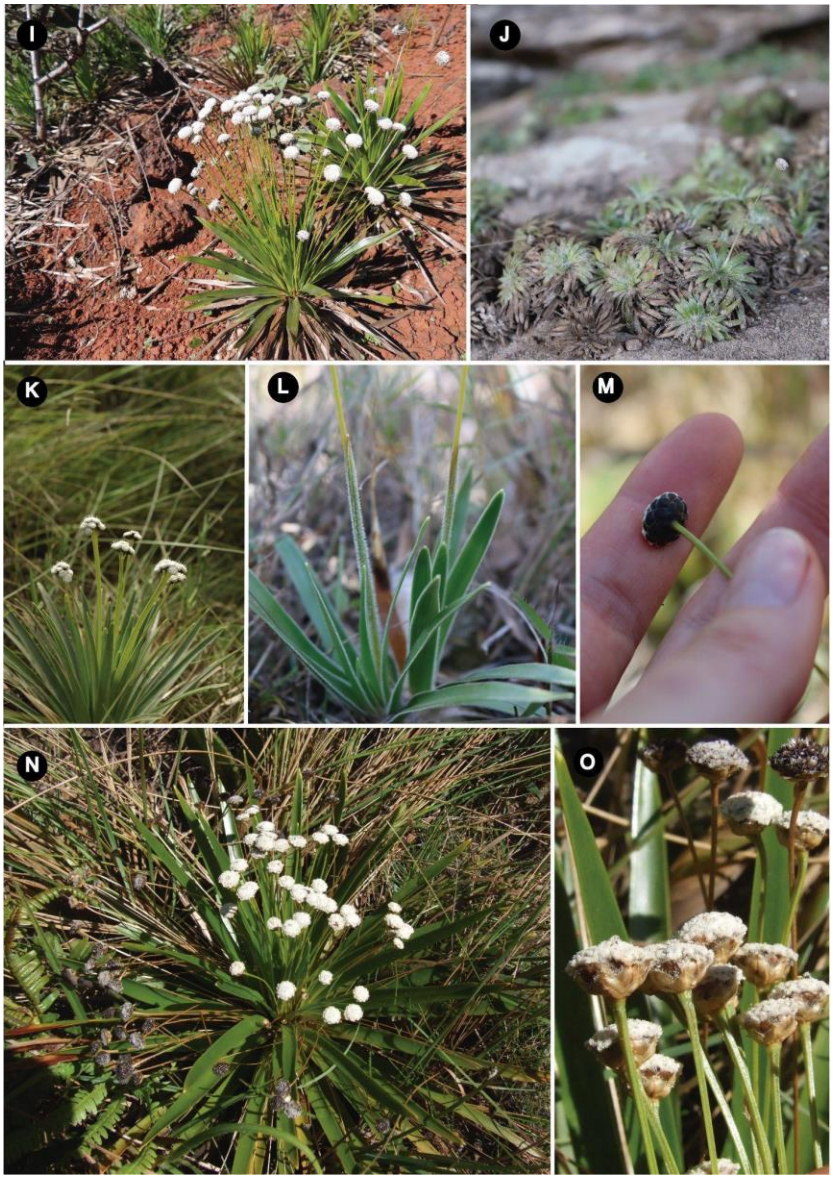

Figure 3 - **I.** *Paepalanthus blepharocnemis* - habit. **J.** *Paepalanthus diplobetor* - habit. **K.** *Paepalanthus hydra* - habit. **L-M.** *Paepalanthus leucoblepharus* - **L.** leaf rosette and spathes. **M.** capitula with blackish involucral bracts **N-O.** *Paepalanthus magalhaesii* - **N.** habit. **O.** capitula with straw-colored external involucral bracts. Photos by A. Salino **I.** Photos by L. Echternacht **J-O.**

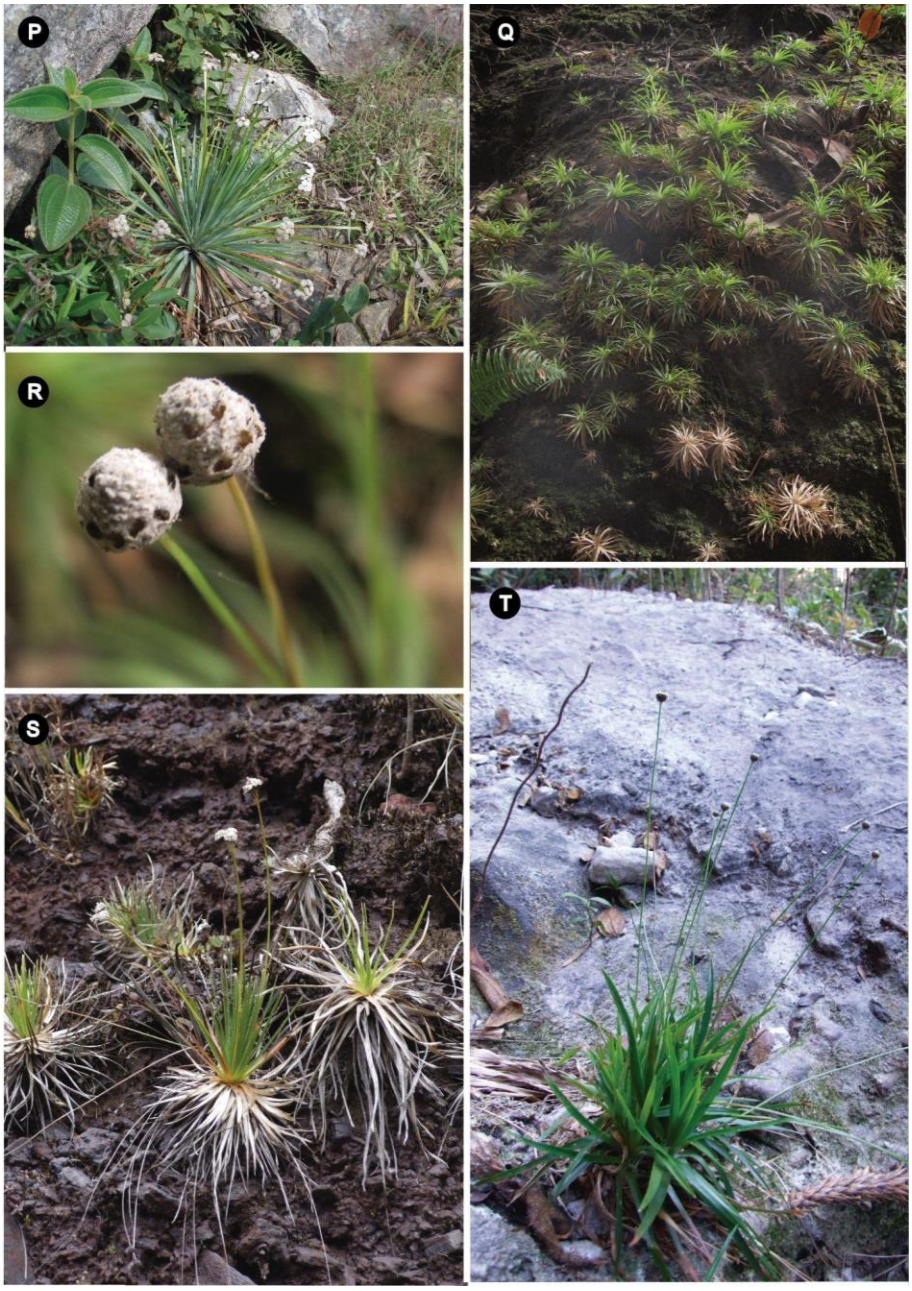

Figure 4 - **P.** *Paepalanthus moedensis* - habitat and habit. **Q**-**R.** *Paepalanthus plantagineus* - **Q.** habit. **R.** capitula with conspicuous brown floral bracts. **S.** *Paepalanthus spixianus* - habitat and habit. **T.** *Paepalanthus suffruticans* - habitat and habit. Photos by L. Echternacht.

Supplementary material: characters and character states.

1 Rizoma

Presente
Ausente

2 Caule – posição

Curto
Alongado

3 Caule – disposição das folhas

Roseta
Touceira
Ao longo do seu comprimento

4 Folhas fenestradas:

Presente
Ausente

5 Folhas – Indumento abaxial:

Glabras
Glabrescentes
Pilosas
Pubescentes
Seríceas

6 Folhas – Indumento adaxial:

Glabras
Glabrescentes
Pilosas
Pubescentes
Seríceas

7 Folhas – Indumento margem:

Glabras

Ciliadas

8 Arquitetura:

Inflorescências simples
Inflorescências compostas (com paracládio)
Inflorescências compostas (sem paracládio)

9 Eixo

Eixo central
Eixo reprodutivo
Eixo da sinflorescência
Ausente

10 Espatas

Presentes (maior do que o tamanho das folhas)
Presentes (menor ou do mesmo tamanho das folhas)
Ausentes

11 Espatas -Abertura

Oblíqua
Truncada a lacerada

12 Espatas - indumento abaxial

Glabras
Glabrescentes
Pilosas
Pubescentes

13 Escapos – tamanho

Menor ou do mesmo das folhas
Maior ou o dobro do tamanho das folhas
Ausentes

14 Escapos

Livres
Fusionados

15 Escapos – fusionados

Totalmente fusionados
Parcialmente fusionados

16 Escapos – indumento

Glabro
Glabrescente
Piloso
Seríceo
Pubescente

17 Paracládios – disposição

Espiralados
Verticilados

18 Paracládios – posição

Retos
Curvos

19 Capítulo - brácteas involucrais

Presentes
Ausentes

20 Capítulos – forma das brácteas involucrais

Mais largas próximo a base (lanceolada, ovada)
Mais largas próximo a ápice (oblanceolada, obovada)
Mais largas no meio (elíptica)
Margens paralelas (oblongas, lineares)

21 Capítulo – tamanho das brácteas involucrais em relação as flores

Ultrapassam o disco das flores

Mesmo tamanho ou menores do que o disco de flores

22 Capítulo – cor das séries das brácteas involucrais

Todas as séries cremes
Todas as séries douradas a estramíneas
Todas as séries marrons a enegrecidas
Séries externas mais escuras (castanhas) do que as internas (creme)

23 Flores - brácteas involucrais – ápice

Arredondado ou obtuso
Agudo ou aculminado

24 Capítulo – brácteas involucrais – indumento abaxial

Glabras
Glabrescentes
Pilosas
Pubescentes

25 Capítulo – brácteas involucrais – indumento adaxial

Glabras
Glabrescentes
Pilosas
Velutinas

26 Flores – meria

Dímeras
Trímeras

27 Flores – brácteas florais

Presentes
Ausentes

28 Flores estaminadas – sépalas – fusão

Livres

Parcialmente fusionadas

29 Flores estaminadas – andoceu

Isostemône
Diplostêmone

30 Flores estaminadas – anteras – cor

Não pigmentada (creme a castanhas)
Pigmentada (pretas)

31 Flores pistiladas – proporção do cálice e corola

Sépalas menores do que as pétalas
Sépalas da mesma altura ou maiores do que as pétalas

32 Flores pistiladas – pétalas – fusão

Livres
Fusionadas na base
Fusionadas na metade superior, livres na base e no ápice

33 Flores pistiladas – gineceu – estilete

Bífido
Simples

34 Flores pistiladas – estilete – ramos

Ramos estigmáticos e nectaríferos liberando-se em alturas diferentes
Ramos estigmáticos e nectaríferos liberando-se na mesma altura
Ramos nectaríferos ausentes

35 Reprodução por propagação de capítulos

Presente
Ausente

Appendix: Complete list of the analyzed specimens of the floristic survey of Eriocaulaceae in the Quadrilátero Ferrífero.

Actinocephalus bongardii **BRAZIL. Minas Gerais: Barão de Cocais**, Cocais, 19°50'52"S, 43°22'40"W, 11/IV/2019, *S.G. Rezende 7090* (BHCB). **Belo Horizonte**, Mutuca, 30/X/1972, *J. Badini s.n* (OUPR 13215). **Brumadinho**, Retiro das pedras, 12/V/1990, *L.H.L Coelho et al.* (BHCB 17751); 29/V/2001, *P.L. Viana 209* (BHCB); Serra da Moeda, 20°06'S, 43°49'W, 27/V/1998, *Silveira V.M. s.n* (BHCB 42273); 04/X/1989, *P.H. Pequeno 122* (BHCB); Monumento Natural Serra da Calçada, 10/III/2015, *Torres D.M. s.n* (BHCB 188265). **Caeté,** Serra da Piedade, 19°49'S, 43°40'W, 28/IV/1985, *Elcione M. S. et al. s.n* (BHCB 5812); 19°49'S, 43°40'W, 28/IV/1985, *Cunha L. et al. s.n* (BHCB 5250); 28/IV/1985, *Silva A.A. et al. 1714* (BHCB); 28/XII/1973, fl. *Badini, J. s.n* (OUPR 13213); 28/XII/1973, *Badini J. s.n* (OUPR 13218); 28/XII/1974, *Badini J. s.n* (OUPR 13211). **Catas Altas**, Caraça, Caminho da Verruguinha, 01/V/1980, T*ales & Telma 079* (BHCB); Piscina do Imperador, 25/V/1987, *Grandi T.S.M. et al. s.n* (BHCB 12943); Serra do Caraça, 14/IV/1933, *Mello Barreto 700* (BHCB); Caminho para a gruta do Padre Caio, 24/V/1987, *Horta M.B. et al. 239* (BHCB); Trilha para capelinha, 20°05'44.6"S, 43°29'06.1"W, 03/XI/2020, *Soldevila A. & Vanucci, P. 306* (OUPR). **Congonhas**, RPPN Poço Fundo, 20°26'45"S, 43°54'21"W, 17/IV/2015, *Paiva J.A. et al. 240* (BHCB, OUPR); Mina da Fábrica, 30/I/2013, *Souza F.S. et al. 1840* (BHCB). **Itabirito**, BR 135-Km 406, 10/VI/1971, *Krienger P.L. s.n* (BHCB 58074); Pico do Itabirito, 07/V/1994, *Teixeira W.A. s.n* (BHCB 24195). Serra de Itabirito, 30/III/1975, *s.col* (OUPR 4571); 30/III/1975, *Badini, J. et al. s.n* (OUPR 13223); 16/IV/2007, *Messias M.C.T.B. 1253* (OUPR); Serra do Gandarela, 20°11'45.0"S, 43°40'06.0"W, 11/VI/2017, *Echternacht L. & Bastos T.V. 2746* (OUPR); **Mariana,**

Área CVRD, *Resende S.G. & Werneck M.S. 1554* (BHCB); Área da Samarco, 10/XII/2000, *Brina A.E. s.n* (BHCB 60066); Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *Mendes M.S. et al. 128* (BHCB); Samarco, Complexo Germano, 20°10'52"S, 43º30'48"W, 13/VII/2010, *Giorni V. s.n* (BHCB 155576); 20°10'51"S, 43°30'48"W, 13/VIII/2010, *Giorni V. s.n* (BHCB 155575); Mina Samarco, Norte Alegria 1 e 6, 20°9'17"S, 43°30'53"W, 28/VII/2009, *Rezende S.C. & Mendes M.S 3798* (BHCB). **Moeda**, 20°16'59"S, 43°57'23"W, 20/VIII/2009, *Resende S.G. et al. 3299* (BHCB); Marinho da Serra, 20°20"54,3"S, 43°56'17.1"W, 20/XII/2008, *Carmo F.F. 2760* (BHCB); Serra da Moeda, 20°16'40.1"S, 43°57'23.2"W, s.d, *Batista A.M. & Martins C.A.N. 2848* (BHCB); 17'16.2"S, 43°57'5.4"W, 29/VIII/2008, *Leite R.L.R.M. et al. 10* (BHCB); 19/XII/1989, *Grandi T.S.M. & Porto L. s.n* (BHCB 16619); 05/VI/1988, *de Souza A. s.n* (BHCB 16082); 19/VI/1986, *Grandi T.S.M. et al. s.n* (BHCB 14131); 29/IX/1987, *Grandi T.S.M. s.n* (BHCB 11751); 06/VI/1981, *de Castro 14 E.M.R.* (BHCB); 20°18"S, 43°56'W, 27/IV/2006, *Matos E.C. et al. s.n* (BHCB 100295). **Nova Lima**, Morro do Chapéu, 28/IV/1982, *Grandi T.S.M. & Andrade P.M. 973* (BHCB); Retiro das Pedras, 30/VII/1972, *Badini J. s.n* (OUPR 13212); 30/VII/1972, *Badini J. s.n* (OUPR 13220). **Ouro Branco,** Serra de Ouro Branco, *Lisboa M.A. s.n* (OUPR 13216); 28/VII/1971, *Lisboa, M.A. s.n* (OUPR 13207). **Ouro Preto**, Antônio Pereira, Samarco - Alegria 7, 30/III/2007, *Ataíde E.S. 12* (OUPR); Mina de Conta História, 20°13'59"S, 43°33'02"W, 14/IV/2013, *Miranda E. et al. 405* (BHCB); *s.d. Miranda E. et al. 388* (BHCB); Fazenda córrego das almas, 20°14'40"S, 43°32'39"W, 21/III/2017, *Pereira A.F.S. et al. 29* (BHCB); Parque Estadual do Itacolomi, 20°25'2"S, 43°38'58"W, 30/VII/2009, *Carmo F.F. 4804* (BHCB);

20°24'51.4"S, 43°26'57.3"W, 06/IV/2018, *Rodrigues, D.* et al 23 (OUPR); 20°25'50.4"S, 43°28'26.6"W, 01/IV/2003, *Terror V.L. s.n* (OUPR 19362); APA Estadual Cachoeira das Andorinhas, 12/VI/2018, *Pedrosa, L.G. 436* (OUPR); Estrada Ouro Preto-Ouro Branco, 15/VI/2009, *Silva L.A. & Matos B.G. 40* (OUPR); 18/VI/2009, *Dutra, V.F. et al. 759* (OUPR); Estrada Real - divisa de Ouro Preto e Ouro Branco, 29/VI/1999, *Sampaio A.C. 13* (OUPR); Próximo à ponte da divisa entre Ouro Preto e Ouro Branco, 29/VI/1999 *Campos R.J. s.n* (OUPR 7864); Miguel Burnier, s.d, *Lima L.S.B. de s.n* (OUPR 4558); 28/VII/1971, *Lisboa M.A. s.n* (OUPR 13210); Serra de Ouro Preto, s.d, *Lisboa M.A. s.n* (OUPR 13226); s.d, *Damazio L.B. s.n* (OUPR 13224); Serra de Lavras Novas, 10/VI/1971, *Badini J. & Lisboa M.A. s.n* (OUPR 13228); 28/VII/1971, *Badini, J. s.n* (OUPR 13214); 06/VI/1971, *Lisboa M.A. s.n* (OUPR 13209); s.d, *Lisboa, M.A. s.n* (OUPR 5316); Serra do Itatiaia, 22/VI/1971, *Badini J. s.n* (OUPR 13219); Chapada, 26/VI/1971, *Badini J. s.n* (OUPR 13222); Serra de Antônio Pereira, 29/II/2008, *Messias M.C.T.B. et al. 1796* (OUPR); 04/V/2007, *Messias M.C.T.B. et al. 1289* (OUPR). **Rio Acima**, Região de Rio peixe, 20°06'36"S, 43°53'36"W, 22/IV/2010, *Mendes M.S. s.n* (BHCB 151840); Serra Água limpa, 20°6'16"S, 43°42'5"W, 25/VII/2009, *Carmo 4912 F.F* (BHCB); 20°6'16"S, 43°42'5"W, 16/III/2009, *Carmo F.F. 4443* (BHCB). **Santa Bárbara**, Serra do Caraça, *Damazio L.B. s.n* (OUPR 13229); 19/VI/1974, *Badini J. s.n* (OUPR 13231); 06/1907, *Damazio L.B. s.n* (OUPR 13221); 06/IV/1976, *Zurlo, M.A. s.n* (OUPR 13208).

Actinocephalus camptophyllus **BRAZIL. MINAS GERAIS. Caeté**, Serra da Piedade, 19°49'26"S, 43°40'10"W, 03/VII/2008, *T.E. Almeida & M.M. Viana 1451* (BHCB); 29/VI/1985,

T.S.M. Grandi et al. 1871 (BHCB); Serra do Capanema, 1904, *Schwacke s.n* (BHCB 539); 1904, *Schwacke s.n* (BHCB 153); in cacumine Batatal, 19/IX/1893, *M. Gomes & Schwacke 1329* (BHCB 16989); 19/IX/1893, *M. Gomes & Schwacke 1329* (BHCB 63196).

Actinocephalus divariatus **BRAZIL. MINAS GERAIS: Mariana**, Área da Samarco, 10/XII/2000, *Brina A.E. s.n* (BHCB 60071).

Actinocephalus falcifolius **BRAZIL. MINAS GERAIS: Ouro Preto**, Próximo ao fojo, 23/VI/2018, *Pedrosa, L.G. 501* (OUPR); Brejo Seco, 29/I/2020, *Pedrosa L.G 2506* (OUPR); Serra de Lavras Novas, 1904, *Schwacke s.n* (BHCB 527); 10/VI/1971, *Badini J. & Lisboa M.A. s.n* (OUPR 12610); 28/VII/1971, *Badini J. s.n* (OUPR 12606); *s.d. Lisboa M.A. s.n* (OUPR 12607); 16/VI/1970, *Duarte A.P. 12495* (B) (BHCB); 29/III/2018, *Pedrosa L.G. 122* (OUPR); Estrada de Ouro Preto - Ouro Branco, 18/VI/2009, *Dutra V.F. et al. 762* (OUPR); Margem de Estrada Real, 29/VI/1999, *Dutra V.F. s.n* (OUPR 7834); Serrinha de Lavras Novas, VI/1971, *Lisboa M.A. s.n* (OUPR 12608); Em campo próximo a Lavras Novas, 29/VI/1999, *Ataíde E.S. s.n* (OUPR 7841); Alto da Serra de Lavras Novas, 18/I/1942, *Magalhães M. 1306* (BHCB); prope Chapada, IV/1901, *Magalhães Gomes 3939* (BHCB); Serra do Itatiaya-perto de Chapada, 12/V/1895, *Gomes M. & Schwacke 2718* (BHCB); Serra do Itatiaia, 10/VI/1971, *Badini J. & Lisboa M.A. s.n* (OUPR 12609); Serra do Buieié (Serrinha), 20°28'04"S, 43°31'53"W, 04/V/2008, *Echternacht L. et al. 1635* (BHCB); 2/II/2014, *Soldevila A. & Fortuna-Perez A.P. 52* (OUPR). Parque Estadual do Itacolomi, 11/V/2018, *Pedrosa, L.G. 259* (OUPR).

Actinocephalus giuliettiae **BRAZIL. MINAS GERAIS: Ouro Preto**, RPPN Horto Alegria, 20°13'41"S, 43°34'15"W, 02/VIII/2017, *Paiva J.A.M. et al. 1425* (BHCB); Mina de Conta História, 20°13'59"S, 43°33'02"W, 14/IV/2013, *E. Miranda et al. 245* (BHCB).

Actinocephalus polyanthus **BRAZIL. MINAS GERAIS: Itabirito**, Mina do Pico, 20°15'21.49"S, 43°52'47.15 W, 29/I/2008, *Arruda L.J. & dos Santos L.M. 352* (BHCB). **Moeda**, Marinho da Serra, 20°19'28"S, 43°56'24"W, 20/I/2009, *Carmo F.F. 4976* (BHCB). **Nova Lima**, Serra do Rola Moça, 20°05'31"S, 43°99'93"W, 13/IV/2015, *Rezende S.G. & Justo A.G. 4810* (BHCB). Retiro das Pedras, 30/VII/1972, *Badini J. s.n* (OUPR 13232). **Ouro Preto**, Camarinhas, s.d, Godoy J.B. *s.n* (OUPR 13291); Serra do Capanema, 20°13'7.7"S, 43°34'52.2"W, 28/II/2008, *Carmo F.F. 2479* (BHCB); III/1893, *Gomes M. & Schwacke 800* (BHCB); Serra de Lavras Novas, 16/VI/1970, *Duarte A.P. 12495* (A) (BHCB); 16/I/1972, *Badini J. s.n* (OUPR 13230); 10/VI/1971, *Badini J. & Lisboa M.A. s.n* (OUPR 13166); 6/VII/2018, *Pedrosa L.G.* 547 (OUPR); Serrinha de Lavras Novas, 8/VI/1971, *Lisboa M.A. s.n* (OUPR 13191); Próximo ao Falcão, 23/VI/2018, *Pedrosa L.G. 500* (OUPR); Falcão, 15/I/1972, *Lisboa M.A. & Badini J. s.n* (OUPR 13235); I/1972, *Lisboa M.A. s.n* (OUPR 13233); Serra do Itatiaia, 30/I/1975, *Lisboa M.A. s.n* (OUPR 13292); Venda do campo, 29/III/2018, *Pedrosa L.G. 131* (OUPR).

Actinocephalus ramosus **BRAZIL. MINAS GERAIS: Caeté**, Serra da Piedade, 19°49'23.3"S, 43°41'07.5W", 11/I/1996, *Souza V.C. et al. 10134* (BHCB); 06/VI/1933, *Mello Barreto 2499* (BHCB); 06/V/1934, *Mello Barreto 2500* (BHCB); 19°49'S, 43°40'W, 16/V/1987,*Paula J.A. et al. s.n* (BHCB 9025); 11/I/1995, *Souza V.C. et al. 10134* (OUPR).

Comanthera centauroides **BRAZIL. MINAS GERAIS: Catas Altas**, Serra do Caraça, 19/VIII/2000, *Motas R.C. 879* (BHCB); Pico do Inficcionado, 07/VIII/2002, *Mota R.C. 3555* (BHCB); 7/XIII/2002, *Ordones J. 929* (OUPR); Mirante 1 da Piscina, 20°06'04.1"S, 43°30'01.1"W, 23/XI/2020, *A. Soldevila & P. Vanucci* 327 (OUPR); Campos de Fora, 20°07'02.2"S, 43°31'07.3"W, 23/XI/2020, *A. Soldevila & P. Vanucci* 328 (OUPR); 19/VII/2000, *Ordones J. 257* (OUPR). **Itabirito**, Pico do Itabirito, 21/VI/1994, *Teixeira W.A. s.n* (BHCB 25111); 16/V/1995, *Teixeira W.A. s.n* (BHCB 2834); 23/VII/1995, *Teixeira W.A. s.n* (BHCB 29789); Serra do Itabirito, 18/IX/2007, *Messias M.C.T.B. 1270* (OUPR); Serra do Gandarela, 20°09'58"S, 43°41'31"W, 14/X/2008, *Borsali E.L. et al. 23* (BHCB); **Ouro Preto**, Serra de Capanema, 20°13'7.7"S, 43°34'52.2"W, 20/XII/2008, *Echternacht L. 2357* (BHCB); Serra do Ribeiro, 20°30'12.0"S, 43°34'25.4"W, 3/VII/2004, *Borges R.A.X. 132* (OUPR); Serra de Lavras Novas, 18/I/1942, *Magalhães M. 1087* (BHCB); 8/XIII/1971, *Badini J. s.n* (OUPR 12699); Falcão, 10/VIII/1971, *Lisboa M.A. s.n* (OUPR 5310); 8/XIII/1971, *Badini J. s.n* (OUPR 12694); 8/XIII/1971, *Badini J. s.n* (OUPR 12698); Serra de Lavras Novas e Falcão, 20/XIII/1973, *Badini J. s.n* (OUPR 12700); Três Moinhos, 10/XIII/1972, *Badini J. s.n* (OUPR 12696); 10/X/1972, *Badini J. s.n* (OUPR 12695); Areião, 23/VI/2018, *Pedrosa L.G. 506* (OUPR); RPPN Capanema, 20°20'05.0"S, 44°00'37.0"W, 29/IX/2015, *Paiva M.O. et al. 869* (OUPR). **Santa Bárbara**, Serra do Gandarela, 20°07'36.0"S, 43°39'20.0"W, 25/VI/2017, *Echternacht L. et al. 2750* (OUPR).

Comanthera cipoensis **BRAZIL. MINAS GERAIS: Barão de Cocais**, Serra do Cambotas,19°51'32"S, 43°32'08"W, 20/II/2014, *Pivari M.O. et al. 1739 (BHCB).*

Comanthera elegantula **BRAZIL. MINAS GERAIS: Barão de Cocais**, Serra do Garimpo, 19°53'14"S, 43°30'55"W, 27/III/2012, *Souza F.S.1597* (BHCB).

Comanthera nivea **BRAZIL. MINAS GERAIS: Catas Altas**, RPPN Santuário do Caraça, 20°07'99"S, 43°30'71"W, 07/X/2008, *Echternacht L. & Chaussidon C. 1642* (BHCB); subida para o Pico do Inficcionado, 20°07'52"S, 43°28'03"W, 26/VII/2009, *Echternacht L. et al. 2075* (BHCB); Pico do Inficcionado, 20°08'18"S, 43°27'19"W, 08/III/2008, *Echternacht L. et al. 1615* (BHCB); Pico do Sol, 20°06'22"S, 43°27'12"W, 29/VI/2009, *Oliveira C.T. et al. 488* (BHCB); 20°10'69"S, 43°36'11"W, 03/III/2010, *Perillo L.N. 465* (BHCB); 20°07'S, 43°27'W, 15/VI/2008, *Echternacht L. & Bastos T.V. s.n* (BHCB 166500); 20°08'05"S, 43°27'49"W, 09/III/2008, *Echternacht L. et al. 1618* (BHCB). **Caeté**, 20'41'49"S, 43°41'49"W, 29/I/2015, *Barros A.M. & Vasconcelos F.B. 2519* (BHCB). **Itabirito**, RPPN Cata Branca, 20°13'46"S, 43°50'58"W, 12/XII/2017, *Paiva J.A.M. et al. 1584* (BHCB); RPPN Capivari II, 20°09'08"S, 43°38'58"W, 27/IX/2017, *Souza J.A.M. et al. 113* (BHCB); 20°13'10"S, 43°34'42"W, 12/III/2009, *Echternacht L. et al. 1942* (BHCB). **Mariana**, Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *Mendes M.S. et al. 40* (BHCB). **Ouro Preto**, Fazenda Córrego das Almas, 20°14'36"S, 43°32'31"W, 22/III/2017, *Pereira A.F.S. et al. 56* (BHCB); RPPN Horto Alegria, 20°13'41"S, 43°34'15"W, 02/VIII/2017, *Paiva J.A.M. et al. 1426* (BHCB); Serra de Capanema, 20°13"05"S, 43°35'05"W, 04/VII/2012, *Tameirão Neto E. et al. 5842* (BHCB); 31/VIII/1973, *Lisboa M.A. s.n* (OUPR 5313); RPPN Capanema, 29/IV/2015. *Paiva J.A. et al. 869* (BHCB); Serra de Ouro Preto, 21/III/1976, *Badini J. s.n* (OUPR 13369); 8/II/2012, *Cardoso R.C. & da Silva T.C. 67* (OUPR);

APA Cachoeira das Andorinhas, 20°22'05.0"S, 43°30'21.0"W, 22/VII/2016, *Echternacht L. & Bastos T.V. 2697* (OUPR); 19/V/2000, *Silveira A.L. 162* (OUPR); 7/VI/2018, *Pedrosa L.G. 405* (OUPR); Morro São Sebastião, 27/II/1895, *Gomes M. 66* (BHCB); s.d, *Baeta-Neves A.T. s.n* (OUPR 13368); s.d, *Damazio L.B. s.n* (OUPR 13370); 1/XII/2002, *Messias M.C.T.B. 807* (OUPR); Camarinhas, 6/VIII/2017, *Rossi B. s.n* (OUPR 29722); 10/VIII/1937, *Mello Barreto 9178* (BHCB); s.d, *Damazio L.B. s.n* (OUPR 13371); 25/VI/1973, *Lisboa M.A. s.n* (OUPR 13364); 9/VI/1973, *Badini J. s.n* (OUPR 13365); 16/III/2000, *Nogueira R.E. 185* (OUPR); 19/I/1999, *Messias M.C.T.B. & Gomes R.N. 168* (OUPR); 22/IX/2000, *Messias M.C.T.B 368* (OUPR); Lavras Novas, 1904, *Schwacke s.n* (BHCB 554); Serra do Buieié (Serrinha), 20°28'04"S, 43°31'53"W, 03/III/2008, *Echternacht L. et al. 1630* (BHCB); Serra do Itatiaya, 12/V/1895, *Gomes M. & Schwacke 2492* (BHCB). Parque Estadual do Itacolomi, 5/IV/2019, *Pedrosa L.G. 1522* (OUPR). **Rio Acima**, Serra do Gandarela, 20°06'36"S, 43°40'06"W, 07/III/2012, *Vidal V.C. & de Paula R.L. 1189* (BHCB); 20°02'43"S, 43°35'53"W, 08/III/2012, *Vidal V.C. & de Paula R.L. 1196* (BHCB). **Santa Bárbara**, Serra do Gandarela, 20°07'08"S, 43°39'16"W, 08/VII/2012, *Echternacht L. et al. 2266* (BHCB); 11/IX/1990, *Stehmann J.R. et al. s.n* (BHCB 28423).

Eriocaulon cinereum **BRAZIL. MINAS GERAIS: Catas Altas**, chapada de canga, 20°8'14.5"S, 43°24'19"W, 16/III/2009, *Carmo F.F. 4979* (BHCB); 20°07'33"S, 43°23'21"W, 16/III/2016, *Mota R.C. 3704* (BHCB); Mina Fazendão, 20°09'33"S, 43°24'56"W, 22/II/2013, *Miranda E. et al. 913* (BHCB); 19/I/2006, *Mota R.C. & Arruda L. 2989* (BHCB). **Itabirito**, Sítio Lagartixa, 20°18'5.62S, 43°55'58.11W, 02/II/2007, *Rezende S.G. 1861* (BHCB); Serra de Capanema,

20°13'7.7"S, 43°34'52.2"W, 10/III/2007, *Carmo F.F. 309* (BHCB). **Nova Lima**, PE Rola Moça, 20°2'41"S, 44°0'4"W, 17/I/2008, *Carmo F.F. 2036* (BHCB). **Ouro Preto**, Serra de Capanema, 20°13'7.7"S, 43°34'52.2W, 28/II/2008, *Carmo F.F. 2487* (BHCB); 20°13'9"S, 43°34'45.5"W, 06/I/2007, *Heringer G. et al. 142* (BHCB); Perto de Antônio Pereira, 25/III/2007, *Damazio, L.B. s.n* (OUPR 13105). **Santa Bárbara**, entre Catas Altas e Santa Rita, 05/II/1943, *Magalhães M. 4346* (BHCB).

Eriocaulon crassiscapum **BRAZIL. MINAS GERAIS: Ouro Preto**, Campo Grande Sítio da D. Jelly, 04/VIII/1978, *Badini J et al. s.n* (OUPR 13375); Cachoeira das Andorinhas, 26/VI/1981, *Badini J. s.n* (OUPR 13106); Cachoeira das Andorinhas, 15/IX/1976, *Badini J. s.n* (OUPR 13383).

Eriocaulon ligulatum **BRAZIL. MINAS GERAIS: Catas Altas,** RPPN Santuário do Caraça, 20°06'25.4"S, 43°29'23.9"W, 25/XI/2020, *Soldevila A. & Vanucci P. 338* (OUPR); 20°06'32.2"S, 43°28'32.5"W, 04/XI/2020, *Soldevila A. & Vanucci P. 313* (OUPR); Serra do Caraça, VI/1907, *Damazio L.B. s.n* (OUPR 13104). **Itabirito,** Pico do Itabirito, 11/X/1994, *Giulietti et al. s.n* (BHCB 26050); RPPN Capivari II, 20°09'07"S, 43°38'58"W, 27/IX/2017, *Souza J.A.M. et al. 118* (BHCB). **Mariana**, Mina Capanema, 20°11'32"S, 43°36'19"W, VII/2007, *Mendes M.S. & G.S. Neves s.n* (BHCB 135492). **Ouro Preto**, RPPN Capanema, 29/IX/2015, *Paiva J. A. et al. 914* (BHCB and OUPR 29356); Serra do Capanema, 31/VII/1973, *Lisboa M.A. s.n* (OUPR 13100); 31/VIII/1973, *Lisboa M.A. s.n* (OUPR 13109); s.d, *Lisboa M.A. s.n* (OUPR 131000); s.d, *Lisboa M.A. s.n* (OUPR 13103); s.d, *Lisboa M.A. s.n* (OUPR 13112); s.d, *Badini J. s.n* (OUPR 13107); s.d, *Badini J. s.n* (OUPR 13111); 14/IX/1973, *Lisboa M.A. s.n* (OUPR 13099); 21/VIII/1973, *Silva*

J.C. s.n (OUPR 13102); Serra do Batatal, 22/IX/1979, *Badini J. s.n* (OUPR 13108) Serra da Ajuda, 22/IX/1976, *Badini J. s.n* (OUPR 1976); Falcão, 28/VI/2018, *Pedrosa L.G. 512* (OUPR); Parque Estadual do Itacolomi, 13/IX/1996, *Messias M.C.T.B & Silva J.L. s.n* (OUPR 6981); **Santa Bárbara**, Serra do Gandarela, 20°07'30"S, 43°39'04"W, 08/VII/2012, *Echternacht L. et al. 2262* (BHCB). Serra do Caraça, VI/1907, *Damazio L.B. s.n* (OUPR 13104).

Eriocaulon modestum **BRAZIL. MINAS GERAIS: Ouro Preto,** Serra de Ouro Preto, 04/VI/1972, *Badini J. s.n* (OUPR 13118); Serra do Itatiaia, 04/VI/1972, *Lisboa M.A. s.n* (OUPR 13113); *s.d. Badini J. s.n* (OUPR 13114); VI/1972, *Lisboa M.A. s.n* (OUPR 5440); (OUPR 5606); Serra do Ouro Preto, 04/VII/1972, *Badini J. s.n* (OUPR 13117); Falcão, 08/VI/1977, *Badini J. s.n* (OUPR 13116).

Leiothrix crassifolia **BRAZIL. MINAS GERAIS: Barão de Cocais**, Serra do Garimpo, 19°51'52"S, 43°30'32"W, 04/V/1982. *Hensold N. 785* (BHCB); Serra cambotas, 19°51°32" S, 43°32'08"W, 20/III/2014, *Pivari M.O. et al. 1737* (BHCB); 19°52'11"S, 43°31'23"W, 18/I/2018, *Souza J.A.M. et al. 222* (BHCB).

Leiothrix curvifolia **BRAZIL. MINAS GERAIS: Ouro Preto**, 1904, *Schwacke s.n* (BHCB 525); Serra de Lavras Novas, III/1972, *Lisboa M.A. s.n* (OUPR 12593); Alto da Serra de Lavras Novas, 18/I/1942, *Magalhães M. 1385* (BHCB); Próximo a Lavras Novas, 11/IV/2018, Pedrosa L.G. 258 (OUPR); 20/VII/2018, Pedrosa L.G. 574 (OUPR); 27/I/1974, Badini J. *s.n* (OUPR 13131); s.d, Badini J. *s.n* (OUPR 13125); Areião, 23/VI/2018, Pedrosa L.G. 504 (OUPR); Itatiaia, 27/I/1974,

Badini J. *s.n* (OUPR 13127); 12/V/1895, *Gomes M. & Schwacke 2722* (BHCB); Falcão, 08/VIII/1971, Badini J. *s.n* (OUPR 13122). RPPN Capivari II, 20°91'20"S, 43°38'58"W, 23/XI/2016, *Paiva J.A.M. et al. 1133* (BHCB); Serra de Capanema/C2, 20°13'7.7"S, 43°34'52.2"W, 28/II/2008, *Carmo F.F. 2529* (BHCB); 20°13'05"S, 43°35'05"W, 04/VII/2012, *Tameirão Neto E. et al. 2843* (BHCB); Morro São Sebastião, II/1894/1985, *Gomes M. 944* (BHCB); **Santa Bárbara,** Caraça, 1906 Baeta-Neves *s.n* (OUPR 13134).

Leiothrix flavescens **BRAZIL. MINAS GERAIS: Brumadinho**, Serra da Moeda, 20°08'11"S, 43°58'22"W, 07/IX/2011, *Tameirão Neto E. et al. 5037* (BHCB). **Itabirito**, RPPN Capivari II, 20°09'07"S, 27/IX/2017, *Souza J.A.M. et al. 120* (BHCB). **Catas Altas**, RPPN Santuário do Caraça, 20°07'24.7"S, 43°27'59.3"W, 04/XI/2020, *Soldevila A. & Vanucci P. 317* (OUPR); 20°06'22.2"S, 43°28'34.2"W, 04/XI/2020, *Soldevila A. & Vanucci P. 312* (OUPR). **Mariana**, Área da Samarco, 10/XII/2000, *Brina A.E. s.n* (BHCB 60082). **Ouro Preto**, Parque Estadual do Itacolomi, 20°25'45"S, 43°29'08"W, 28/II/2018, *Paiva J.A.M. et al. 1695* (BHCB); 20°25'47.4"S, 43°29'03.5"W, 14/XI/2020, *Soldevila A. & Araújo-Silva V. 320* (OUPR); 20°25'37.6"S, 43°27'14.2"W, 06/IV/2018, *Rodrigues D. et al. 25* (OUPR); 04/V/2018, *Rodrigues D. et al. 36* (OUPR); 19/V/2018, *Pedrosa L.G. 315* (OUPR); Cachoeira das Andorinhas, 23/X/1980, *Badini J. s.n* (OUPR 13137); s.d. *Badini J. s.n* (OUPR 13136); RPPN Capanema, 25/IX/2015, *Pivari M.O. et al. 2605* (BHCB); Taquaral, 24/XI/1892, *Filgueiras J.G. s.n* (OUPR 3535); Falcão, 1971, *Badini J. s.n* (OUPR 13152); 28/VII/1973, *Badini J. s.n* (OUPR 13146); 08/VIII/1971, *Badini J. s.n* (OUPR 13139); s.d, *Badini J. s.n* (OUPR 13138); s.d, *Lisboa M.A. s.n* (OUPR 5318); Cerâmica,

22/IX/2019, *Pedrosa L. 2000* (OUPR); Serra do Itatiaia, VII/1972, *Badini J. s.n* (OUPR 13147); s.d, *Badini J. s.n* (OUPR 13140); Serra de Lavras Novas, 08/VIII/1971, *Badini J. s.n* (OUPR 13150); s.d, *Damazio L.B. s.n* (OUPR 13151). **Rio Acima**, Região do Rio do Peixe, 20°10'20"S, 43°49'31"W, 27/IV/2010, *Mendes M.S. s.n* (BHCB 151841).

Leiothrix gomesii **BRAZIL. MINAS GERAIS: Catas Altas**, Serra do Caraça, 20°06'42.0"S, 43°26'40.0"W, 18/X/2010, *Echternacht L.A. et al. 1938* (BHCB); RPPN Santuário do Caraça, 20°06'22.0"S, 43°27'12.0"W, 29/VI/2009, *Oliveira C.T. et al. 487* (BHCB). **Ouro Preto**, Dom Bosco, 06/VI/2018, *Pedrosa L.G. 363* (OUPR). **Santa Bárbara**, RPPN Capivari I, 20°08'50"S, 43°37'45"W, 14/III/2018, *Paiva J.A. et al. 1746* (BHCB).

Leiothrix mucronata **BRAZIL: MINAS GERAIS: Barão de Cocais**, Serra do Garimpo, 19°51'52"S, 43°30'32"W, 04/V/1982, *Hensold N. 787* (BHCB). **Ouro Preto**, Taquaral, 24/XI/1899, *Brandão F.L.J. s.n* (OUPR 3704); s.d, *Medeiros A.C. s.n* (3808). **Catas Altas**, Serra do Caraça, 15/XII/2000, *Mota R.C. 1097* (BHCB).

Leiothrix vivipara **BRAZIL. MINAS GERAIS: Catas Altas,** RPPN Santuário do Caraça,, 20°05'39.9"S, 43°28'53.0"W, 03/XI/2020, *Soldevila A. & Vanucci P. 304* (OUPR); 20°05'36.0"S, 43°28'39.6"W, s.d, *Soldevila A. & Vanucci P. 308* (OUPR); 20°07'52.1"S, 43°30'47.9"W, 24/XI/2020, *Soldevila A. Vanucci P. 333* (OUPR); 20°07'02.2"S, 43°31'07.3"W, 24/XI/2020, *Soldevila A. & Vanucci P. 330* (OUPR). **Mariana**, Complexo Germano, 20°11'17"S, 43°31'38"W, 17/IV/2018, *Vidal C.V. s.n* (BHCB 190905); RPPN Horto Alegria, 20°09'13"S, 43°26'12"W,

26/VI/2015, *Pivari M.O. et al. 2526* (BHCB, OUPR); 30/IV/2015, *Pivari M.O. et al. 2266* (BHCB, OUPR); 14/VIII/2015, *Paiva J.A. et al. 554* (BHCB, OUPR); Mina Samarco, 20°9'17"S, 43°30'53"W, 28/VII/2009, *Rezende S.G. & Mendes M.S. 3799* (BHCB); Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *Mendes M.S. et al. 39* (BHCB); Área da CVRD, 20°7'0"S, 43°25'1"W, *Rezende S.G. & Werneck M.S. 1553* (BHCB). **Ouro Preto**, RPPN Horto Alegria, 20°13'43"S, 43°34'12"W, 02/VIII/2017, *Paiva J.A.M. 1400* (BHCB); Serra do Itacolomi, 1943, *Badini J. s.n* (OUPR 13153); s.d, *Badini J. s.n* (OUPR 5741). **Santa Bárbara,** Serra do Caraça, 11/IX/1990, *Stehmann JR et al. s.n* (BHCB 18925); 20°05'46.0"S, 43°28'45.0"W, s.d, *Stehmann J.R. et al. 2268* (BHCB 38811); Parque do Caraça, 10/I/1996, *Souza V. et al. 10007* (OUPR).

Paepalanthus amoenus **BRAZIL. MINAS GERAIS: Belo Horizonte**, 06/IV/1970, *A.P. Duarte 12740* (BHCB); Serra do Curral, 26/IV/1940, *Mello Barreto 10837* (BHCB); 09/II/1933, *Mello Barreto 2519* (BHCB); 31/V/1933, *Mello Barreto 2521* (BHCB); 16/III/1933, *Mello Barreto 2520* (BHCB); 10/III/1933, *Mello Barreto 2491* (BHCB). **Brumadinho**, Retiro das Pedras - Serra da Calçada, 20°05'35"S, 43°59'01"W, 16/VIII/2002, *P.L. Viana 749* (BHCB). **Caeté**, 20°01'17"S, 43°41'04"W, 05/III/2015, *F.D. Gontijo 659* (BHCB); Fazenda Maquiné, 20°02'57"S, 43°43'22"W, 24/IV/2018, *J.A.M. Souza et al. 253* (BHCB); Serra do Gandarela, 20°01'23"S, 43°41'01"W, 29/IV/2014, *D.T. de Souza s.n* (BHCB 181361); 20°02'37"S, 43°42'51"W, 16/VI/2010, *L.H.Y. Kamino et al. 1590* (BHCB). **Congonhas**, RPPN Poço Fundo, 20°26'58"S, 43°53'37"W, 30/XI/2017, *J.A.M. Souza et al. 186* (BHCB); 20°26'43"S, 43°53'54"W, 28/XI/2017, *J.A.M.Souza et al. 182* (BHCB); 20°26'45"S, 43°54'21"W, 16/IV/2015, *M.O. Pivari et al. 2080*

(BHCB). **Itabirito**, Região do Pico de Itabirito, 28/IV/2004, *W.A.Teixeira s.n* (BHCB 98380); Mina do Pico, 20°15'21.49"S, 43°52'47.15"W, 26/XII/2007, *L.J. Arruda & L.M. dos Santos 206* (BHCB); RPPN capivari II, 20°09'29"S, 43°39'42"W, *J.A.M. Paiva et al. 1891* (BHCB); Serra da Moeda, 12/VII/2002, *P.L.Viana 714* (BHCB); Serra do Gandarela, 20°09'58"S, 43°41'31"W, 14/VIII/2010, *E.F. Borsali et al. 58* (BHCB); Região da Gerdau, 20°10'15"S, 43°50'32"W, 28/III/2008, *S.G. Rezende et al. 2901* (BHCB). **Ouro Branco**, Serra de Ouro Branco, 15/V/1988, *R.A. Sá et al. s.n* (BHCB 13140); 29/VII/1988, *M.M.N. Braga et al. s.n* (BHCB 13672); Estrada velha de Ouro Branco a Ouro Preto, 20°30'27.8"S, 43°38'18.5"W, 09/III/1995, *V.C. Souza et al. 8027* (BHCB). **Ouro Preto**, Serra do Itatiaia, 28/I/1942, *M. Magalhães 1216* (BHCB); Serra do Capanema, III/1893, *M. Gomes & Schwacke 763* (BHCB); 20°12'56"S, 43°35'17"W, 12/III/2009, *L. Echternacht et al. 1947* (BHCB); Mina de Conta História, 20°13'59"S, 43°33'02"W, 14/IV/2013, *E. Miranda et al. 400* (BHCB); 14/IV/2013, *E. Miranda et al. 387* (BHCB). **Sabará**, entrada para Caeté - Alto Pompeo, 23/III/1933, *Mello Barreto 2522* (BHCB); 20/IV/1933, *Mello Barreto 2494* (BHCB). **Mariana**, Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *M.S. Mendes et al. 129* (BHCB). **Nova Lima**, 20°16'09"S, 43°24'14"W, 15/X/2018, *A.S. Quaresma & P.B. Meyer 998* (BHCB); Serra do Curral, 05/VII/1933, *Mello Barreto 2492* (BHCB); 06/IV/1934, *Mello Barreto 2493* (BHCB); Calçadas, 05/VII/1933, *Mello Barreto 2495* (BHCB); Serra da Moeda, 20°06'10"S. 43°59'23"W, 02/IV/2011, *C.V. Vidal et al. 798* (BHCB); Mina Capitão do Mato, 20°06'38"S, 43°54'07"W, 26/II/2013, *E. Miranda 715* (BHCB); 26/II/2013, *E. Miranda 759* (BHCB). **Santa Bárbara**, RPPN Capanema, 20°11'36"S,

43°36'00"W, 03/VII/2012, *E. Tameirão Neto 5768* (BHCB); 20°11'36"S, 43°36'05"W, 28/II/2012, *E. Tameirão Neto & W.A.C. Carvalho 5675* (BHCB); 20°12'23"S, 43°35'41"W, 06/VII/2018, *J.A.M. Souza et al. 274* (BHCB); RPPN Capivari II, 20°08'53"S, 43°38'00"W, 20/X/2017, *J.A.M. Paiva et al. 1539* (BHCB); RPPN Capivari I, 20°08'37"S, 43°37'17"W, *J.A.M. Paiva et al. 1743* (BHCB); 20°10'22"S, 43°35'27"W, 08/XII/2016, *J.A.M. Paiva et al. 1278* (BHCB); Serra do Gandarela/C2, 20°3'24"S, 43°41'28.6"W, 20/12/2008, *F.F. Carmo 3189* (BHCB). **Raposos,** Fazenda Cutão, 20°00'55"S, 43°44'53"W, 20/II/2018, J*.A.M. Paiva et al. 1651* (BHCB). **Rio Acima**, 20°05'26"S, 43°42'10"W, 16/VII/2013, *E. Tameirão Neto & T. Mansur 5333* (BHCB); 20°02'37"S, 43°74'80"W, 07/V/2010, *E.Tameirão Neto & T. Mansur 4852* (BHCB); Região do Rio Peixe, 20°09'54"S, 43°25'08"W, 16/IV/2010, *M.S. Mendes s.n* (BHCB 151852); 20.06'40"S, 43°53'36"W, 22/IV/2010, *M.S. Mendes s.n* (BHCB 151843); Condomínio Tangará, 20°07'40"S, 43°44'29"W, 25/I/2018, *P.B. Meyer 3620* (BHCB).

Paepalanthus blepharocnemis **BRAZIL. MINAS GERAIS: Belo Horizonte**, Serra do Curral, 27/IX/1934, *Mello Barreto 2567* (BHCB); Acaba Mundo, 24/II/1933, *Mello Barreto 2563* (BHCB); Bairro Mangabeiras, 18/XI/1994, *de Vasconcelos M.F. s.n* (BHCB 25571). **Brumadinho**, Serra da Moeda, 20°07'48"S, 43°59'15"W, 08/XI/2017, *Souza J.A.M. et al. 151* (BHCB); 20°97'12"S, 43°58'13"W, 17/II/2012, *Vidal C.V. & Souza J.P. 897* (BHCB); Retiro das Pedras - Serra da Calçada, 20°05'35"S, 43°59'01"W, 06/XI/2001, *Viana P.L. 369* (BHCB); Serra Azul - Serra das Farofas, 20°65'94"S, 44°00'00"W, 08/I/2016, *F.D. Gontijo & E. Tameirão Neto 1087* (BHCB). **Moeda**, Serra da Moeda, 20°16'19.3"S, 43°57'36.9"W, 07/XII/2007, *J.A.N. Batista*

et al. 2255 (BHCB); 20°16'40.1"S, 43°57'23.2"W, 07/XII/2007, *J.A.N. Batista et al. 2290* (BHCB); 20°11'26.9"S, 43°58'46.9"W, 12/X/2008, *R.L.R.M. Leite et al. 90* (BHCB); 05/X/1985, *A. Oliveira & T.S.M. Grandi 2114* (BHCB); 04/X/1989, *P.H.A. Pequeno s.n* (BHCB 16850). **Nova Lima**, 06/XII/1993, *J.A. Lombardii & F.R.N. Toledo 487* (BHCB 23039); Retiro das Pedras, 20°05'49.50"S 43°59'01.25"W, 22/X/1999, *J.A. Lombardi 3340* (BHCB); 08/I/2013, *E. Miranda et al. 352* (BHCB); Morro do Chapéu, 01/XII/1982, *P.M. Andrade & T.S.M.G. s.n* (BHCB 6089); 28/IV/1982, *P.M. Andrade & T.S.M.G 974* (BHCB); Propriedade Capitão do Mato, 20°09'17"S, 43°54'43"W, 21/XI/2017, *J.A.M. Paiva et al. 1553* (BHCB). **Ouro Branco**, Serra de Ouro Branco, 18/VIII/1970, *A.P. Duarte 13128* (BHCB); 01/X/1988, *C.T. Requena et al. s.n* (BHCB 14090); Áreas adjacentes à vila de Miguel Burnier, 20°25'49"S, 43°46'58"W, 16/X/2016, *D.T. Souza 964* (BHCB); Fazenda Rodeio, 20°28'45"S, 43°43'07"W, 17/I/2018, *J.A.M. Paiva et al. 1616* (BHCB); **Itabirito**, Serra da Moeda, em frente ao Condomínio Vila Bela, 20°27'69"S, 43°94'99"W, 28/II/2013, *M.S. Mendes s.n* (BHCB 180347); BR 040, 20°14'51"S, 43°57'55"W, 07/I/2018, *A.S. Quaresma 710* (BHCB); Pico do Itabirito, 11/X/1994, *W.A. Teixeira s.n* (BHCB 26037). **Rio Acima**, 20°06'28"S, 43°40'10"W, 22/XI/2017, *C.V. Vidal s.n* (BHCB 191405). **Caeté**, 43°41'42"S, 20°03'44"W, 03/III/2015, *F.D. Gontijo & J.F. Braga 836* (BHCB). **Santa Bárbara**, Serra do Gandarela, 20°3'24"S, 43°41'28.6"W, 26/XI/2008, *F.F. Carmo 4980* (BHCB).

Paepalanthus argillicola **BRAZIL. MINAS GERAIS: Congonhas**, Mineração Casa de Pedra, *Mendes, M.S. & Brina, A.E*. (BHCB 107391). **Nova Lima**, Mina do Capão Xavier, *Tameirão Neto, E. 3440* (BHCB); 12/II/1995, *Werneck, M.S. 68* (BHCB).

Paepalanthus atrovaginatus **BRAZIL. MINAS GERAIS: Ouro Preto,** Serra do Frasão, 1904, *Schwacke s.n* (BHCB 543); Serra do Frazão, 26/III/1907, *Damazio, L.B. s.n* (OUPR 12539); *s.d. Damazio, L.B. s.n* (OUPR 13173).

Paepalanthus calvus **BRAZIL. MINAS GERAIS: Caeté**, Serra da Piedade, 29/XI/1933, *Mello Barreto 2541* (BHCB).

Paepalanthus ciliolatus **BRAZIL. MINAS GERAIS: Catas Altas,** RPPN Santuário do Caraça, 20°04'26"S, 43°29'39"W, 06/V/2008, *L. Echternacht & C. Chaussidon 1639* (BHCB); 26/XI/2020, 20°04'12.7"S, 43°29'17.6"W, *A. Soldevila & P. Vanucci 339* (OUPR); 19/VI/2013, *C.A. Ferreira Júnior et al. 1133* (OUPR). **Ouro Branco**, Serra de Ouro Branco, 29/VII/1988, *M.M.N. Braga et al. s.n* (BHCB 13676); 21/II/1975, J. Badini *s.n* (OUPR). **Ouro Preto**, Lavras Novas, 08/XI/2018, *L.G. Pedrosa 998* (OUPR);

Paepalanthus clausenii **BRAZIL. MINAS GERAIS: Itabirito,** Pico do Itabirito, 16/10/1993, *W.A. Teixeira s.n* (BHCB 24258); RPPN Cata Branca, 06/III/2018, *J.A.M. Paiva et al 1719* (BHCB, OUPR); Serra do Itabirito, 13/11/2006, *M.C.T.B. Messias 1196* (OUPR); 19/I/1974, *s.col. s.n* (OUPR 5697).

Paepalanthus conduplicatus **BRAZIL. MINAS GERAIS: Catas Altas,** RPPN Santuário do Caraça, 20°07'55.1"S, 43°30'42.4"W, 24/XI/2020, *A. Soldevila & P. Vanucci 336* (OUPR); RPPN Capivari II, 20°09'40"S, 43°39'46"W, 25/IX/2018, *J.A.M. Paiva et al. 1898* (BHCB); **Ouro Preto**,

Serra de Lavras Novas, 07/X/1973, *J. Badini s.n* (OUPR 13192); 17/X/1973, *J. Badini s.n* (OUPR 13190); 17/X/1973, *s.col. s.n* (OUPR 5317); 08/X/1973, *J. Badini s.n* (OUPR 13194); Arredores de Lavras Novas, 20/IX/2018, *L.G. Pedrosa 797* (OUPR); Serra de Capanema, 1904, *A. Silveira* (OUPR 13196); Serra Chapada, 08/X/1973, *J. Badini s.n* (OUPR 13195); Serra do Itatiaia, 08/X/1973, *J. Badini s.n* (OUPR 13189); Serra do Itacolomi, 08/X/1973, J. Badini *s.n* (OUPR 13193);

Paepalanthus dianthoides **BRAZIL. MINAS GERAIS: Barão de Cocais,** Serra do Garimpo (Cambotas), 19°53'37"S, 43°30'10"W, 15/III/2009, *L. Echternacht & T.V. Bastos 1954* (BHCB); 19°51'32"S, 43°32'08"W, *M.O. Pivari et al. 1787* (BHCB); Mina do Baú, 19°53'37.1"S, 43°30'10.0"W, 15/III/2009, *L. Echternacht & T.V. Bastos 2013* (OUPR). **Catas Altas**, RPPN Santuário do Caraça, 23/XI/2020, *A. Soldevila & P. Vanucci 324* (OUPR). **Mariana,** Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *M.S. Mendes et al. 133* (BHCB); Mina Samarco - Norte de Alegria 1 e 2, 20°9'17"S, 43°30'53"W, 16/X/2009, *S.G. Rezende & M.S. Mendes 3800* (BHCB, OUPR); Complexo Germano, 20°10'51"S, 43°30'48"W, 13/VIII/2010, *V. Giorni s.n* (BHCB 155545); 20°12'17"S, 43°31'39"W, 17/IV/2018, *C.V. Vidal s.n* (BHCB 190906); Área da CVRD, 43°25'1"S, 20°7'0"W, *S.G. Rezende & M.S. Werneck 1555* (BHCB); Jazida de Macaco Barbado, 21/III/2003, *P.O. Morais 142* (BHCB). **Ouro Preto,** Fazenda Córrego das Almas, 20°14'25"S, 43°31'30"W, *A.F.S. Pereira et al. 70* (BHCB); Antônio Pereira - Córrego do Macaco, 10/V/1997, *M.B. Roschel & J. Craig 527* (OUPR); Serra de Antônio Pereira, *M.C.T.B. Messias et al 1733* (OUPR);

Paepalanthus diplobetor **BRAZIL. MINAS GERAIS: Ouro Preto,** Morro São Sebastião, 25/II/1896, *M. Gomes e A. da Silveira 3038* (BHCB); 1894, *M. Gomes 2725* (BHCB).

Paepalanthus elongatus **BRAZIL. MINAS GERAIS: Brumadinho**, Serra da Calçada, 29/V/2001, *P.L. Viana 42* (BHCB); Serra da Moeda, 20°08'11"S, 43°58'22"W, 17/II/2012, *C.V. Vidal & J.Paula-Souza 947* (BHCB); 20°07'38"S, 43°59'18"W, 08/XI/2017, *J.A.M. Souza et al. 150* (BHCB). **Congonhas**, Mina da Fábrica - Cava João Pereira, 30/I/2013, *F.S. Souza et al. 1883* (BHCB). **Itabirito**, Serra de Capanema, 20°12'32"S. 43°34'32"W, 12/III/2009, *L. Echternacht et al. 1924* (BHCB); RPPN Cata Branca, 20°13'22"S, 43°50'41"W, 12/XII/2017, *J.A.M. Paiva et al. 1579* (BHCB); 19/VIII/2015, *J.A. Paiva et al. 624* (BHCB); Pico do Itabirito, 05/VII/1993, *W.A. Teixeira s.n* (BHCB 22076); 22/III/1994, *W.A. Teixeira s.n* (BHCB 24061); Serra da Moeda, 20°30'34"S, 43°93'13"W, 28/II/2013, *M.S. Mendes s.n* (BHCB 180348); Ás margens da BR 040, 20°14'51"S, 43°57'55"W, 07/I/2018, *A.S. Quaresma 711* (BHCB); Área do Fraile CSN, 04/IX/2017, *A.S. Quaresma & C.T. Oliveira 861* (BHCB); Serra do Gandarela, 20°09'58"S, 43°41'31"W, 14/VIII/2010, *E.F. Borsali 31* (BHCB). **Moeda**, 20°16'59"S, 43°57'23"W, 20/VIII/2009, *S.G. Rezende et al. 3300* (BHCB); 20°19'29"S, 43°56'26"W, 29/VIII/2019, *S.G. Rezende 7870* (BHCB); Marinho da Serra/QTZ, 20°19'28"S, 43°56'24"W, 20/I/2009, *F.F. Carmo 3965* (BHCB); 20/I/2009, *F.F. Carmo 4007* (BHCB); Serra da Moeda, 19/VI/1986, *T.S.M. Grandi et al. s.n* (BHCB 14184); 05/VI/1988, *A. de Souza s.n* (BHCB 16078); 30/VII/1987, *I.R. Andrade et al. 212* (BHCB); 27/IV/2006, *E.C. Matos et al. s.n* (BHCB 100296); 04/X/1989, *P.H.A. Pequeno et al. 172* (BHCB); 05/X/1985, *D.P. Lima & T.S.M. Grandi 2048* (BHCB). **Nova Lima**, Serra da

Moeda, 20°06'10"S, 43°59'23"W, *C.V. Vidal et al. 1005* (BHCB). **Ouro Branco**, Serra de Ouro Branco, 20°28'54"S, 43°42'18"W, 22/II/2018, *A.E. Brina s.n* (BHCB 199066); Fazenda Rodeio, 20°28'54"S, 43°42'49"W, 18/I/2018, *J.A.M. Paiva et al. 1630* (BHCB); Parque Estadual Serra de Ouro Branco, 20°29'10"S, 43°42'36"W, 19/III/2018, *J.A.M. Souza 230* (BHCB). **Ouro Preto**, In cacumine Serra do Itatiaya prope Chapada, V/1895, *M. Gomes & Schwacke 2719* (BHCB); Serra de Capanema/C1, 20°12'35.5"S, 43°34'27.5"W, 29/IX/2008, *F.F. Carmo 3454* (BHCB); 28/II/2008, *F.F. Carmo 2392* (BHCB); C2, 20°13'7.7"S, 43°34'52.2W, s.d, *F.F. Carmo 2477* (BHCB); RPPN Capanema, 20°12'50"S, 43°35'08"W, 04/VII/2012, *Tameirão Neto et al. 5819* (BHCB); 29/IX/2015, *J.A. Paiva et al. 875* (BHCB); SESC Ouro Preto - Fazenda Ronald, 23/VI/2008, *L.H.Y. Kamino & L. Marielo Silva 883* (BHCB). **Rio Acima**, RPPN Andaime, 20°10'30"S, 43°49'27"W, 14/IV/2015, *M.O. Pivari et al. 2173* (BHCB); Serra Água limpa, 20°6'16,1"S, 43°42'5"W, 16/III/2009, *F.F. Carmo 4432* (BHCB). **Santa Bárbara**, RPPN Capivari, 20°08'57"S, 43°37'45"W, 13/III/2018, *J.A.M. Paiva et al. 1739* (BHCB).

Paepalanthus erectifolius **BRAZIL. MINAS GERAIS: Brumadinho**, Serra da Moeda, 20°06'54"S, 43°59'27"W, 07/XI/2017, *J.A.M. Souza 145* (BHCB); Serra da Calçada, 20°04'43"S, 44°0'8"W, 02/VI/2012, *L. Echternacht et al. 2260* (BHCB). **Itabirito**, RPPN Córrego Seco, 20°16'46"S, 43°53'70"W, 08/XII/2016, *N.L. Sousa 548* (BHCB). **Nova Lima**, Morro do Chapéu, 30/VIII/2008, *F. Azevedo s.n* (BHCB 124796);

Paepalanthus exiguus **BRAZIL. MINAS GERAIS: Catas Altas**, Chapada de Canga, 20°8'14.5"S, 43°24'19"W, 16/III/2009, *F.F. Carmo 4393* (BHCB); 10/I/2008, *F.F. Carmo 1753* (BHCB); 20°07'33"S, 43°23'21"W, 16/III/2016, *R.C. Mota 3703* (BHCB); Mina de Fazendão, 20°8'4"S, 43°25'2"W, 04/11/2003, *S.G. Rezende & M.S. Werneck 3596* (BHCB); 03/II/2006, *R.C. Mota & L. Arruda 2995* (BHCB). **Mariana**, 20°09'41"S, 43°25'54"W, 15/III/2016, *F.D. Gontijo & E. Tameirão Neto 1014* (BHCB); Complexo Germano, 20°12'18"S, 43°31'40"W, 17/IV/2018, *C.V. Vidal s.n* (BHCB 190907); Mina Samarco, norte de Alegria 1 e 6 20°9'17"S, 43°30'53"W, 28/VII/2009, *S.G.Rezende & M.S. Mendes 3801* (BHCB); Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *M.S. Mendes et al. 132* (BHCB); Área da CVRD, 20°7'0"S, 43°25'1"W, *S.G. Rezende & M.S. Werneck 1556* (BHCB); Região da Minas de Fábrica Nova, 20°11'50"S, 43°25'56"W, 07/III/2008, S.G. Rezende & B.R. Dourado 2476 (BHCB). **Ouro Preto**, Serra de Capanema/C1, 20°12'35.5"S, 43°34'27.5"W, 28/II/2008, *F.F. Carmo 2401* (BHCB); Morro são Sebastião, 1901, *M. Gomes 3966* (BHCB); 1901, *M. Gomes 3967* (BHCB); Serra de Ouro Preto, V/1895, *M. Gomes 2482* (BHCB). **Itabirito**, Pico d'Itabira do Campo, 1904, Schwacke *s.n* (BHCB 538); Serra de Capanema/C2, 20°13'7.7"S, 43°34'52.2"W, 04/VI/2007, *F.F. Carmo 664* (BHCB). **Santa Bárbara**, Serra do Gandarela/C2, 20°3'24"S, 43°41'28.6"W, 10/II/2008, *F.F. Carmo 2224* (BHCB).

Paepalanthus fastigiatus **BRAZIL. MINAS GERAIS: Congonhas**, RPPN Poço Fundo, 20°26'27"S, 43°53'16"W, 27/XI/2017, *J.A.M. Souza et al. 174* (BHCB). **Itabirito**, Pico do Itabirito, 28/VI/1993, *W.A. Teixeira s.n* (BHCB 24104). **Santa Bárbara/Ouro Preto**, RPPN

Capanema, 20°13'17"S, 43°13'17"W, 19/IX/2018, *J.A.M. Paiva et al. 1878* (BHCB); Lavras Novas, Serra do Buieié (ou Serrinha), 20°28'04"S, 43°31'53"W, 03/V/2008, *L. Echternacht et al. 1631* (BHCB); Serra do Gandarela, 20°07'40"S, 43°39'05"W, 08/VII/2012, *L.Echternacht et al. 2265* (BHCB).

Paepalanthus flaccidus **BRAZIL. MINAS GERAIS: Caeté**, Serra da Piedade, 28/VI/1933, Mello Barreto 2507 (BHCB); 16/VII/1933, *fl. Mello Barreto 2508* (BHCB). **Itabirito**, RPPN Capivari II, 20°09'11"S, 43°38'58"W, 26/IX/2018, *J.A.M. Paiva et al. 1904* (BHCB); Pico do Itabirito, 28/II/1995, *W.A. Teixeira s.n* (BHCB 26500); Serra de Capanema/C2,20°13'7.7"S, 43°34'52.2"W, 04/VI/2007, *F.F. Carmo 655* (BHCB); 20°13'10"W, 43°34'42"W, 12/III/2009, *L. Echternacht et al. 1946* (BHCB). **Mariana**, Mina de Conta História, 20°15'55"S, 43°31'40"W, VI.2007, *M.S. Mendes et al. 130* (BHCB). **Nova Lima**, Parque Estadual do Rola Moça, 20°02'54"S, 44°00'04"W, 13/II/2010, *F.F. Carmo 4975* (BHCB). **Ouro Preto**, Gambá, IX/1892, *M. Gomes 526* (BHCB); Serra de Lavras Novas, XII/1898, Schwacke *s.n* (BHCB 64100); Morro São Sebastião, IV/1893, *M. Gomes & A. Silveira 916* (BHCB). **Rio Acima**, 20°05'56"S, 43°41'29"W, 04/VII/2013, *Tameirão Neto & T. Mansur 5290* (BHCB).

Paepalanthus freyreissii **BRAZIL. MINAS GERAIS: Mariana**, Mina Samarco - Norte de Alegria 1 e 6, 20°9'17"S, 43°30'53"W, 28/VII/2009, *S.G. Rezende & M.S. Mendes 3667* (BHCB); Samarco - Córrego das Almas, 20°15'19"S, 43°59'78"W, XI/2012, *V.T. Giorni s.n* (BHCB 163844); Mina de Conta História, 20°15'55"S, 43°31'40"W, VI/2007, *M.S. Mendes et al. 134*

(BHCB); Mina Samitri, 04/IX/2000, *R.C. Mota & L.Viana 593* (BHCB); Parque Estadual do Itacolomi - Trilha do Pedrosa, 20°26'35"S, 43°30'42"W, 20/V/2011, *N.F.O. Mota et al. 2251* (BHCB). **Itabirito**, RPPN Capivari II, 20°09'07"S, 43°39'00"W, *J.A.M. Souza et al. 124* (BHCB); **Ouro Preto**, Alto da Serra do Itacolomy, 8/VIII/1894, *M. Gomes 67* (BHCB)

Paepalanthus gomesii **BRAZIL. MINAS GERAIS: Itabirito**, RPPN Capivari II, 20°09'21"S, 43°39'51"W, *J.A.M. Paiva et al. 1890* (BHCB); 20°09'42"S, 43°40'32"W, 13/XII/2017, *J.A.M. Paiva 195* (BHCB); 20°09'41"S, 43°40'25"W, 12/XII/2017, *J.A.M. Souza 190* (BHCB); 20°09'01"S, 43°39'34"W, 19/X/2017, *J.A.M. Souza et al. 136* (BHCB); 20°09'42"S, 43°39'35"W, 25/IX/2018, *J.A.M. Paiva et al. 1896* (BHCB). **Santa Bárbara/Ouro Preto**, RPPN Capanema, 20°13'17"S, 43°35'04"W, 19/IX/2018, *J.A.M. Paiva et al. 1871* (BHCB); 20°12'36"S, 43°35'36"W, 21/XI/2017, *J.A.M. Souza et al. 167* (BHCB); 20°11'28"S, 43°36'15"W, 06/X/2017, *M.O. Pivari et al. 2897* (BHCB); RPPN Capivari I, 20°10'26"S, 43°35'33"W, 15/III/2018, *J.A.M. Paiva 1749* (BHCB); Serra do Gandarela, 20°07'46"S, 43°39'04"W, 08/VII/2012, *L.Echternacht & T.V. Bastos 2263* (BHCB). **Ouro Preto**, RPPN Capanema, 28/IX/2015, *J.A. Paiva 849* (BHCB); 20°11'29"S 43°36'06"W, 28/II/2012, *E. Tameirão Neto & W.A.C. Carvalho 5667* (BHCB); Serra de Capanema, 20°12'56"S, 43°35'17"W, 12/III/2009, *L. Echternacht et al. 1951* (BHCB).

Paepalanthus hydra **BRAZIL. MINAS GERAIS: Congonhas**, RPPN Poço Fundo, 20°26'45"S, 43°54'21"W, 16/IV/2015, *J.A. Paiva 120* (BHCB); 20°26'44"S, 43°53'54"W, 28/XI/2017, *J.A.M. Souza et al. 181* (BHCB). **Ouro Branco**, Fazenda Rodeio, 20°28'55"S, 43°42'49"W, 18/I/2018,

J.A.M. Paiva et al. 1631 (BHCB); Parque Estadual Serra de Ouro Branco, 20°29'12"S, 43°42'37"W, *s.d. J.A.M. Souza et al. 226* (BHCB). Serra de Lavras Novas, 1904, *Schwacke s.n* (BHCB 534); Serra do Trovão, 15/X/2012, *L. Echternacht et al. 2269* (BHCB); Alto do Itatiaya - perto de Chapada, 12/V/1895, *M. Gomes & Schwacke 2723* (BHCB); Serra do Buieié (ou Serrinha), 20°27'96"S, 43°31'75"W, 04/V/2008, *L. Echternacht et al. 1632* (BHCB).

Paepalanthus leucoblepharus **BRAZIL. MINAS GERAIS: Santa Bárbara/Ouro Preto**, RPPN Capanema, 20°12'17"S, 43°35'26"W, 06/VI/2018, *J.A.M. Souza et al. 279* (BHCB); **Ouro Preto**, Serra de Capanema, 20°13'03"S, 43°35'07"W, 04/VII/2012, *E. Tameirão Neto et al. 5835* (BHCB). **Itabirito**, Serra de Capanema, 20°13'10"S, 43°34'42"W, 12/III/2009, *L. Echternacht et al. 1943* (BHCB); 20°13'7.7"S, 43°34'52.2"W, 12/VII/2007, *F.F. Carmo 741* (BHCB); 20°12'35.5"S, 43°34'27.5"W, 12/III/2007, *F.F. Carmo 239* (BHCB); 20°13'7.7"S, 43°34'52.2“W, 10/III/2007, *F.F. Carmo 376* (BHCB).

Paepalanthus macropodus **BRAZIL. MINAS GERAIS: Ouro Branco**, 29/VII/1988, *H.C. de Souza et al. s.n* (BHCB 13681).

Paepalanthus manicatus **BRAZIL. MINAS GERAIS: Caeté**, Serra da Piedade, 28/IV/1985, *T.S.M. Grandi & R.M. Ribeiro 1744* (BHCB); 19/II/1938, *Mello Barreto 8813* (BHCB). **Iguarapé**, Pico do Itatiaiuçu, 20°7'17"S, 44°21'43.7”W, 09/I/2008, *F.F. Carmo 4987* (BHCB). **Itabirito**, Pico do Itabirito, 29/III/1994, *W.A. Teixeira s.n* (BHCB 23933). **Nova Lima**, PE Rola Moça, 01/IV/2008, *F.F. Carmo 2811* (BHCB). **Ouro Preto**, RPPN Capanema, 30/IX/2015, *J.A. Paiva et*

al. 927 (BHCB). **Santa Bárbara**, Serra do Brucutú - Cocais, 06/II/1943, *M. Magalhães 4343* (BHCB); 06/II/1943, *M. Magalhães 4347* (BHCB).

Paepalanthus melaleucus **BRAZIL. MINAS GERAIS: Catas Altas**, Serra do Caraça, 20/VIII/2000, *R.C. Mota 896* (BHCB). **Mariana**, Propriedade Horto Alegria, 20°08'51"S, 43°26'25"W, 03/VII/2018, *J.A.M. Paiva et al. 1806* (BHCB).

Paepalanthus moedensis **BRAZIL. MINAS GERAIS: Itabirito**, Serra do Itabirito, 14/XI/1987, *R.R. Pena s.n* (BHCB 11628). **Nova Lima**, Morro do Chapéu, s.d. T.*S.M. Grandi & P.M. Andrade 947* (BHCB); 20°06'52"S, 43°57'43"W, 03/IV/2018, *A.S. Quaresma & P.B. Meyer 908* (BHCB).

Paepalanthus mollis **BRAZIL. MINAS GERAIS: Brumadinho**, Fazenda Cachoeira, 20°05'20"S, 44°01'21"W, 01/II/2018, *J.A.M. Paiva et al. 1448* (BHCB); Serra da Moeda, 20°07'21", 43°59'15"W, 07/XI/2017, *J.A.M. Paiva et al. 146* (BHCB). **Ouro Preto**, 1904, Schwacke *s.n* (BHCB 546); RPPN Horto Alegria, 20°13'43"S, 43°34'12"W, 02/VIII/2017, *J.A.M. Paiva et al. 1398* (BHCB); Morro São Sebastião, 27/II/1895, *M. Gomes 956* (BHCB). **Itabirito**, RPPN Córrego Seco, 20°15'47"S, 43°52'36"W, 27/IX/2017, *M.O. Pivari et al. 2882* (BHCB); 20°16'37"S, 43°53'01"W, 13/IX/2018, J*.A.M. Paiva et al. 1861* (BHCB); RPPN Cata Branca, 20°13'46"S 43°50'58"W, 12/XII/2017, *J.A.M. Paiva et al. 1586* (BHCB); 20°14'23"S, 43°51'14"W, 06/III/2018, *J.A.M. Paiva et al. 1719* (BHCB). **Nova Lima**, RPPN Trovões, 20°07'42"S, 43°52'46"W, 09/XI/2017, *J.A.M. Paiva et al. 1548* (BHCB).

Paepalanthus planifolius **BRAZIL. MINAS GERAIS.: Barão de Cocais**, Mina do Baú, 20°01'06"S, 43°34'39"W, 07/II/2013, *E. Miranda et al. 468* (BHCB). **Brumadinho**, Serra da Moeda, 20°07'13"S, 43°58'17"W, 07/IX/2011, *E. Tameirão Neto et al. 2046* (BHCB). **Itabirito**, Pico do Itabirito, 03/IX/1993, *W.A. Teixeira s.n* (BHCB 24245); RPPN Capivari II, 20°09'07"S, 43°38'58"W, 27/IX/2017, *J.A.M. Souza et al. 119* (BHCB); 27/IX/2017, *J.A.M. Souza et al. 117* (BHCB); RPPN Córrego Seco, 20°16'38"S. 43°53'02"W, 11/IX/2018, *J.A.M. Paiva et al. 1851* (BHCB). **Moeda**, Serra da Moeda, 20°17'16.2"S, 43°57'5.4"W, 29/VIII/2008, *R.L.R.M. Leite et al. 1* (BHCB); 11/VIII/1987, *C.C. Reis et al. 23* (BHCB); 20°16'38"S, 43°57'19"W, 26/XIII/2019, *S.G. Rezende 7869* (BHCB). **Mariana**, mina Samitri, 04/IX/2000, *R.C. Mota & L. Viana 592* (BHCB). **Nova Lima**, Morro do Chapéu, 20°6'22.25"S, 43°55'7.57"W, 30/VIII/2008, *J.R. Stehmann s.n* (BHCB 128337). **Ouro Preto**, 1904, *Schwacke s.n* (BHCB 531); 25/VII/1986, *A. da Silveira s.n* (BHCB 26613); Serra de Capanema/C2, 20°13'7.7"S, 43°34'52.2"W, 10/XII/2007, *F.F. Carmo 399* (BHCB); Morro São Sebastião e Serra de Ouro Preto, 22/XII/1895, *M. Gomes 2813* (BHCB); 1902, *R. Andrade s.n* (BHCB 3490); Morro Sant' Anna, 10/VIII/1937, *Mello Barreto 9179* (BHCB); Lages, 08/IX/1896, *M. Gomes 3884* (BHCB); RPPN Capanema, 25/IX/2015, *M.O. Pivari et al. 2592* (BHCB); RPPN Horto da Alegria, 20°13'40"S, 43°34'17"W, 02/VIII/2017, *J.A.M. Paiva et al. 1410* (BHCB); Lavras Novas, 16/VI/1970, *fl. A.P. Duarte 12502* (BHCB); Serra do Trovão, 15/X/2012, *L. Echternacht et al. 2013* (BHCB); Serra do Buieié (Ou Serrinha), 20°27'96"S, 43°31'75"W, 04/V/2008, *L.Echternacht et al. 1634* (BHCB). **Santa**

Bárbara/Ouro Preto, RPPN Capanema, 29°13'19"S, 43°34'55"W, 19/IX/2018, *J.A.M. Paiva et al. 1872* (BHCB).

Paepalanthus plantagineus **BRAZIL. MINAS GERAIS: Mariana**, RPPN Horto Alegria, 20°09'13"S, 43°26'12"W, 14/V/2015, *J.A. Paiva 467* (BHCB); 20°08'37"S, 43°26'09"W, 05/VII/2018, *J.A.M. Paiva et al. 1810* (BHCB); 20°08'55"S, 43°26'12"W, 17/V/2018, *J.A.M. Paiva et al. 1773* (BHCB); Parque Municipal Cachoeira das Andorinhas, 20°21'35"S, 43°29'18"W, 20/V/2011, *N.F.O. Mota et al. 2252* (BHCB); Samarco - Complexo Germano, 20°13'49"S, 43°28'10"W, 13/VIII/2010, *V. Giorni s.n* (BHCB 155589). **Ouro Preto**, Serra do Frasão, 1904, *Schwacke s.n* (BHCB 5445); Morro São Sebastião, IV/1893, *M. Gomes & A. da Silveira 946* (BHCB). Parque Estadual do Itacolomi, 20°25'41"S, 43°28'27"W, 27/II/2018, *J.A.M. Paiva et al. 1688* (BHCB); Alto da Serra do Itacolomy, 28/VII/1896, *M. Gomes & A. da Silveira 3029* (BHCB); Taquaral, 24/IV/1892, *M. Gomes & Schwacke 2992* (BHCB); Lavras Novas, Serra do Buieié (ou Serrinha), 20°28'01"S, 43°32'27"W, 04/V/2008, *L. Echternacht et al. 1633* (BHCB).

Paepalanthus pubescens **BRAZIL. MINAS GERAIS: Rio Acima,** Serra Água Limpa,20°6'16.1"S, 43°42'5"W, 03/V/2009, *F.F. Carmo 4553* (BHCB); 16/III/2009, *F.F. Carmo 4445* (BHCB); Região do Rio Peixe, 20°06'49"S, 43°53'40"W, 21/IV/2010, *M.S. Mendes s.n* (BHCB 151845). **Moeda,** Marinho da Serra, 20°19'28"S, 43°56'24"W, 20/I/2009, *F.F. Carmo 4012* (BHCB); Serra da Moeda, 27/IV/2006, *E.C. Matos et al. s.n* (BHCB 100299). **Nova Lima,** RPPN Trovões, 20°07'40"S, 43°52'50"W, 07/XI/2017, *J.A.M. Paiva et al. 1543* (BHCB);

Calçadas, 05/VII/1933, *Mello Barreto 2578* (BHCB). **Ouro Preto,** alto Caboclo, 12/VIII/1937, *Mello Barreto 9177* (BHCB); Serra do Itatiaya prope Chapada, 12/V/1895, *M. Gomes & Schwacke 2724* (BHCB); Mina de Conta História, 20°13'59"S, 43°33'02"W, 14/IV/2013, *E. Miranda et al. 385* (BHCB); RPPN Horto Alegria, 20°13'41"S, 43°34'15"W, 02/VIII/2017, *J.A.M. Paiva et al. 1438* (BHCB); 02/VIII/2017, *J.A.M. Paiva et al. 1437* (BHCB); Areião, 23/VI/2018, *L.G. Pedrosa 507* (OUPR); Bico de Pedra/Areião, 06/VII/2018, *L.G. Pedrosa 558* (OUPR); Serra de Lavras Novas, 1972, *M.A. Lisboa s.n* (OUPR 12646); 09/VIII/1972, *J. Badin*i *s.n* (OUPR 12644); VI/1972, *J. Badini s.n* (OUPR 12647); s.d. *J. Badini s.n* (OUPR 12672); Serra do Chafariz, 10/XII/2016, *L. Echternacht & T.V. Bastos 2706* (OUPR). **Itabirito,** Serra de Capanema, 20°12'56"S, 43°35'17"W, 12/III/2009, *L. Echternacht et al. 1950* (BHCB); III/1893, *M. Gomes & Schwacke 756* (BHCB); RPPN Capivari II, 20°09'25"S, 43°39'50"W, 25/IX/2018, *J.A.M. Paiva et al. 1899* (BHCB); Pico do Itabirito, 18/V/1994, *W.A. Teixeira s.n* (BHCB 25137); 16/V/1995, *W.A. Teixeira s.n* (BHCB 28635); RPPN Cata Branca, 20°13'46"S, 43°50'58"W, 12/XII/2017, *J.A. Paiva et al. 1585* (BHCB). **Santa Bárbara/Ouro Preto**, RPPN Capanema, 20°12'17"S, 43°35'26"W, 06/VI/2018, *J.A.M. Paiva et al. 278* (BHCB); 20°12'37"S, 43°35'33"W, 04/VI/2018, *J.A.M. Souza et al. 267* (BHCB).

Paepalanthus scirpeus **BRAZIL. MINAS GERAIS: Caeté,** Serra da Piedade, 19/II/1938, *Mello Barreto 8802* (BHCB). **Iguarapé,** Pico do Itatiauçu, 20°7'17"S, 44°21'43.7"W, 10/V/2008, *F.F. Carmo 3057* (BHCB); 20°7'12"S, 44°20'27.5"W, 22/IV/2008, *F.F. Carmo 2638* (BHCB);

10/XI/2008, *F.F. Carmo 4981* (BHCB). **Moeda,** Marinho da Serra, 20°20'54.3"S, 43°56'17.1"W, 05/I/2006, *F.F. Carmo 484* (BHCB); 10/I/2007, *F.F. Carmo 73* (BHCB). **Nova Lima,** PE Rola Moça, 20°2'41"S, 44°0'4"W, 17/I/2008, *F.F. Carmo 2012* (BHCB); 13/I/2010, *F.F. Carmo 4977* (BHCB); 20°3'60"S, 44°2'0"W, 01/IV/2008, *F.F. Carmo 2828* (BHCB).

Paepalanthus scleranthus **BRAZIL. MINAS GERAIS: Catas Altas,** RPPN Santuário do Caraça, 20°06'34.0"S 43°27'06.0"W, 24/IV/2009, *C.T. Oliveira et al. 399* (BHCB). **Itabirito,** Pico do Itabirito, 13/IV/1995, *W.A. Teixeira* (BHCB 28504). **Mariana,** APA Estadual Cachoeira das Andorinhas, 12/VI/2018, *L.G. Pedrosa 439* (OUPR). **Rio Acima,** Serra Água Limpa, 20°6'16" S, 43°42'5"W, 16/III/2009, *F.F. Carmo 4430* (BHCB).

Paepalanthus spixianus **BRAZIL. MINAS GERAIS: Caeté,** 19°49'23"S, 43°40'36"W, 03/VII/2008, *L. Echternacht & T.V. Bastos 1714* (BHCB); Serra da Piedade, 29/IV/1969, *A.P. Duarte 11483* (BHCB); 04/XII/1992, *A.A.Arantes s.n* (BHCB 21160); 29/VI/1985, *T.S.M. Grandi et al. 1848* (BHCB); 15/VIII/1985, *T.S.M. Grandi et al. 1890* (BHCB); 28/12/1973, *J. Badini s.n* (OUPR 12620); 28/XII/1973, *J. Badini s.n* (OUPR 12619).

Paepalanthus suffruticans **BRAZIL. MINAS GERAIS: Catas Altas,** RPPN Snatuário do Caraça, 20°05'27.0"S 43°28'17.0"W, 17/II/2009, *C.T Oliveira & A.J. Arruda 329* (BHCB); 20°06'38.0"S 43°26'52.0"W, 29/VI/2009, *C.T. Oliveira et al. 513* (BHCB); Serra do Caraça, VI/1907, *L.B. Damazio s.n* (OUPR 12633). **Santa Bárbara,** Serra do Caraça, 09/I/1982, *N.*

Hensold et al. s.n (BHCB 70446). **Itabirito,** Pico da Carapuça, 20°05'27"S, 43°28'17"W, 1848 m, 17/II/2009, *C.T. Oliveira & A.J. Arruda 329* (BHCB, RB); Pico do Sol, 20°06'38"S, 43°26'52"W, 1885 m, 29/VI/2009, *C.T. Oliveira et al. 513* (BHCB, RB); Serra do Caraça, VI/1907, *L.B. Damazio s.n* (OUPR 12633); Trilha para Capelinha e Gruta de Lourdes, 9/I/1982, *N. Hensold et al. s.n* (BHCB 70446); 20°03'14"S, 43°17'06"W, 1413 m, 3/XI/2020, *A. Soldevila & P. Vanucci 305* (OUPR); Trilha para a Gruta de Lourdes, próximo a gruta, 20°03'13"S, 43°17'01"W, 1434 m, 3/XI/2020, *A. Soldevila & P. Vanucci 309* (OUPR).

Paepalanthus vestitus **BRAZIL. MINAS GERAIS: Itabirito,** Pico do Itabirito, 01/II/1995, *W.A. Teixeira s.n* (BHCB 26162); 28/II/1995, *W.A. Teixeira s.n* (BHCB 26507).

Paepalanthus vellozioides **BRAZIL. MINAS GERAIS: Catas Altas,** 20°23'18”S, 43°41'13"W, 21/VIII/2018, *C.V. Vidal s.n* (BHCB 194918). RPPN Santuário do Caraça, 20°04'55.8"S, 43°30'10.1"W, 23/XI/2020, *A. Soldevila & P. Vanucci 323* (OUPR); 20°05'43.3"S, 43°29'52.2"W, 23/XI/2020, *A. Soldevila & P. Vanucci 326* (OUPR); 31/VIII/1973, *J. Badini s.n* (OUPR 12652). **Rio Acima,** 20°02'57"S, 43°74'19"W, 07/V/2010, *E. Tameirão Neto* & *T. Mansur 4853* (BHCB); Serra Água Limpa/QTZ, 20°6'16.1"S, 43°42'5"W, 13/III/2010, *F.F. Carmo 442* (BHCB); 03/V/2009, *F.F. Carmo 4574* (BHCB); Serra do Gandarela, 20°06'13"S, 43°42'25"W, 18/VI/2010, *T.E. Almeida et al. 2409* (BHCB); Região do Rio Peixe - Cava de Abóboras, 20°06'49"S, 43°53'40"W, 21/IV/2010, *M.S. Mendes s.n* (BHCB 195441). **Santa Bárbara,** Serra do Gandarela, 20°3'24"S, 43°41'28.6"W, 26/V/2008, *F.F. Carmo 3219* (BHCB); RPPN Capanema, 20°11'46"S,

43°36'18"W, 03/X/2017, *M.O. Pivari et al. 2889* (BHCB); 20°11'39"S, 43°36'36"W, 20/IV/2018, *J.A.M. Paiva et al. 1880* (BHCB); 20°11'36"S, 43°36'05"W, 28/II/2012, *E. Tameirão Neto & W.A.C. Carvalho 5685* (BHCB); RPPN Capivari I, 20°08'33"S, 43°37'23"W, 17/X/2017, *J.A.M. Paiva et al. 1528* (BHCB); 20°08'38"S, 43°37'45"W, 12/III/2018, *J.A.M. Paiva et al. 1732* (BHCB). **Itabirito,** Serra de Capanema, 20°12'56"S, 43°35'17"W, 12/III/2009, *L. Echternacht et al. 1941* (BHCB); Região da Gerdau, 20°9'52"S, 43°51'52"W, 28/III/2008, *S.G. Rezende et al. 2902* (BHCB); Pico do Itabirito, 19/VIII/1994, *W.A. Teixeira s.n* (BHCB 25306); Serra do Gandarela, 20°07'36"S, 43°39'28"W, 08/VII/2012, *L. Echternacht et al. 2264* (BHCB); RPPN Capivari II, 20°09'13"S, 43°39'21"W, 17/X/2017, *J.A.M. Souza et al. 127* (BHCB); 20°09'04"S, 43°39'31"W, 26/IX/2017, *J.A.M. Souza et al. 110* (BHCB); RPPN Cata Branca, 20°13'22"S, 43°50'47"W, 12/XII/2017, *J.A.M. Paiva 1577* (BHCB). **Ouro Preto,** RPPN Capanema, 24/IX/2015, *J.A. Pivari et al. 762* (BHCB, OUPR); Serra de Capanema, III/1893, *M. Gomes & Schwacke 757* (BHCB); 1906, *A. Silveira s.n* (OUPR 12655); 20°12'59.1"S 43°36'58.3"W, 23/III/2012, *B.V. Tavares et al. 27* (BHCB); 03/VIII/1073, *M.A. Lisboa s.n* (OUPR 12651); 03/VIII/1973, *J. Badini s.n* (OUPR 12656); 22/IX/1976, *J. Badini s.n* (OUPR 12654); Serra do Batatal, 22/IX/1976, *J. Badini s.n* (OUPR 12653); Próximo a São Bartolomeu, 08/VI/2018, *L.G. Pedrosa 409* (OUPR). **Nova Lima,** Serra da Moeda, 20°06'10"S, 43°59'23"W, 18/IV/2012, *C.V. Vidal et al. 1006* (BHCB).

Syngonanthus anthemiflorus **BRAZIL. MINAS GERAIS: Barão de Cocais,** Serra do Cambotas, 20/III/2014, *M.O. Pivari 1738* (BHCB). **Itabirito,** Serra de Capanema, 12/III/2009, *L. Echternacht et al. 1948* (BHCB); Pico do Itabirito, 13/II/1995, *W.A. Teixeira* (BHCB 26263).

Syngonanthus caulescens **BRAZIL. MINAS GERAIS: Belo Horizonte,** Ressaca, 18/VII/1934, *Mello Barreto 2586* (BHCB); 26/VII/1935, *Mello Barreto 2587 (*BHCB); 26/VII/1935, *Mello Barreto 2588* (BHCB); 21/VII/1936, *Mello Barreto 4414* (BHCB). **Catas Altas**, Caraça, 4/XII/2000, *J. Ordones et al. 558* (OUPR); 04/XI/2020, *A. Soldevila & P. Vanucci 311* (OUPR). **Itabirito,** RPPN Cata Branca, 13/XII/2017, *J.A.M. Paiva et al. 1593* (BHCB). **Mariana,** Santa Rita Durão. 14/VI/1971, *J. Badini s.n* (OUPR 13339); 21/V/1974, *J. Badini s.n* (OUPR 13337); 21/V/1974, *J. Badini s.n* (OUPR 13336); 04/XII/1974, *J. Badini s.n* (OUPR 2235); 04/XII/1974, *J. Badini s.n* (OUPR 13354); 08/VIII/1971, *J. Badini s.n* (OUPR 1335). **Ouro Branco,** Alto da Serra de Ouro Branco, 21/II/1975, *J. Badini s.n* (OUPR 13347), Serra de Itatiaia, 03/VI/1972, *M.A. Lisboa* (OUPR 13335); s.d, *s.col. s.n* (OUPR 4068); 04/VI/1972, *J. Badini s.n* (OUPR 13334). **Ouro Preto,** Camarinhas, s.d. *J.B. Godoy s.n* (OUPR 13345); Campo Grande, 04/VIII/1978, *J. Badini et al. s.n* (OUPR 13353); Fazenda do Manso, 20/VI/1971, *J. Badini s.n* (OUPR 13357); 03/I/1974, *J. Badini s.n* (OUPR 13356); 03/VII/1974, *J. Badini s.n* (OUPR 13348); Lavras Novas, 1972, *M.A. Lisboa s.n* (OUPR 13343); SESC - Ouro Preto, 23/VI/2008, *L.H.Y. Kamino & L. Maielo Silva 903* (BHCB); 23/VI/2008, *L.H.Y. Kamino & L. Maielo Silva 888* (BHCB); Cruzeiro, VIII/1896, *Magalhães Gomes 3885* (BHCB); Saramenha, 02/II/1896, *Magalhães Gomes 943* (BHCB); Tripuhy, 26/XII/1893, *Magalhães Gomes et al. 943* (BHCB); s.d. *L.B. Damazio s.n*

(OUPR 13338); Passadez, VI/1914, *Magalhães Gomes & C. Brandão 4302* (BHCB); Parque Estadual do Itacolomi, 20/VI/1971, *J. Badini s.n* (OUPR 13350), 19/V/2018, *L.G. Pedrosa 301* (OUPR); 19/V/2018, *L.G. Pedrosa 302* (OUPR 31260); 4/V/2018, *D. Rodrigues et al. 35* (OUPR); Rancharia, 16/I/1972, *J. Badini s.n* (OUPR 13341); 16/I/1972, *J. Badini s.n* (OUPR 13342); Serra do Itatiaia, 04/VI/1972, *J. Badini s.n* (OUPR 13333); 26/V/1974, *J. Badini s.n* (OUPR 13344); 28/V/1974, *M.A. Lisboa s.n* (OUPR 5314); 26/V/1974, *J. Badini s.n* (OUPR 13355); Três Moinhos, 12/III/1975, *J. Badini s.n* (OUPR 13346); 09/III/1975, *J. Badini s.n* (OUPR 13352); Tripuí, 07/II/1893, *B.P.C. Bittencourt s.n* (OUPR 3684); I/1893, *M.P. Mathias s.n* (OUPR 5869).

Syngonanthus gracilis **BRAZIL. MINAS GERAIS: Barão de Cocais,** Cocais, 10/IV/2019, *S.G. Rezende 7091* (BHCB). **Belo Horizonte,** Fazenda do Cabral (Ressaca), 04/IX/1934, *Mello Barreto 2554* (BHCB). **Catas Altas,** 01/VII/2008, *F.F. Carmo 3184* (BHCB). **Itabirito,** RPPN Capivari II, 27/IX/2017, *J.A.M. Souza 116* (BHCB); Pico do Itabirito, 13/IV/1995, *W.A. Teixeira s.n* (BHCB 28505). **Moeda,** Serra da Moeda, 07/VI/1995, *J.A. Lombardi 776* (BHCB); 10/V/2009, *F.F. Carmo 4672* (BHCB). **Ouro Preto,** Areião, 23/VI/2018, *L.G. Pedrosa 508* (OUPR); Bento Rodrigues, 4/IV/2008, *M.C.T.B. Messias et al. 1998* (OUPR); Fazenda Olaria, 6/VII/2018, *L.G. Pedrosa 556* (OUPR); Serra do Itacolomy, V/1893, *Magalhães Gomes 938* (BHCB); Lavras Novas, 6/III/1972, *J. Badini s.n* (OUPR 12563); 6/III/1973, *Badini J. s.n* (OUPR 12565); Parque Estadual do Itacolomi, 31/I/2019, *Pedrosa L.G. 1298* (OUPR); 10/VII/2018, *L.G. Pedrosa 570* (OUPR); 16/VI/2019, *L.G. Pedrosa 1661* (OUPR); Próximo à Lavras Novas, 20/VII/2018, *L.G. Pedrosa 576* (OUPR).

Syngonanthus nitens **BRAZIL. MINAS GERAIS: Brumadinho,** Retiro das Pedras, 20°19'19.9"S, 43°56'17"W, 10/I/2003, *P.L. Viana 949* (BHCB). **Itabirito,** RPPN capivari III, 20°09'07"S, 43°38'58"W, 27/IX/2017, *J.A.M. Souza et al. 115* (BHCB). **Moeda,** Serra da Moeda, 20°17'44"S, 43°56'58"W, 22/VIII/2019, *S.G. Rezende 7871* (BHCB); 11/VII/1987, *C.C. Reis et al. 9* (BHCB). **Ouro Preto,** Areião, 28/VI/2018, *L.G. Pedrosa 513* (OUPR); Cerâmica, 24/IX/2019, *L.G. Pedrosa 2019* (OUPR); Lavras Novas, 15/IX/1972, *J. Badini s.n* (OUPR 13361); 6/III/1972, *J. Badini s.n* (OUPR 12548); 29/VIII/1973, *J. Badini s.n* (OUPR 12621); VIII/1979, *J. Badini s.n* (OUPR 13362); Próximo a Lavras Novas, 20/VII/2018, *L.G. Pedrosa 575* (OUPR); Falcão, 8/VIII/1971, *J. Badini s.n* (OUPR 13363); VIII/1971, *J. Badini s.n* (OUPR); 4/VIII/1974, *s.col. s.n* (OUPR 4557); Serra do Capanema, s.d, *M.A. Lisboa s.n* (OUPR 5739); Tripuí, 7/II/1893, *A.C. Araújo s.n* (OUPR 5451). **Rio Acima**, Região do Rio Peixe, 20°06'40"S, 43°53'36"W, 22/VI/2010, *M.S. Mendes s.n* (BHCB 151851).

Syngonanthus pulcher **BRAZIL. MINAS GERAIS: Belo Horizonte,** Fazenda de Cabral (Ressaca), 04/IX/1934, *Mello Barreto 2514* (BHCB).

Syngonanthus widgrenianus **BRAZIL. Minas Gerais: Itabirito,** Pico do Itabirito, 01/II/1995, *W.A. Teixeira s.n* (BHCB 26163); Serra do Itabirito, 11/XI/1974, *J. Badini s.n* (OUPR 13330); 13/XI/2006, *M.C.T.B. Messias 1181* (OUPR); Serra de Capanema, 20°13'10"S, 43°34'42"W, 12/III/2009, *L. Echternacht et al. 1952* (BHCB); 20°13'7.7"S, 43°34'52.2"W, 12/VII/2007, *F.F. Carmo 737* (BHCB); 20°13'7.7"S, 43°34'52.2"W, 18/III/2009, *F.F. Carmo 4976* (BHCB). **Ouro Preto,** Lavras Novas, 1972, *M.A. Lisboa* (OUPR 13328); s.d, *M.A. Lisboa s.n* (OUPR 13327);

12/II/1974, *J. Badini s.n* (OUPR 13329); 12/II/1974, *J. Badini s.n* (OUPR 5737); Areião, 28/VI/2018, *L.G. Pedrosa 515* (OUPR); Boa Vista, 28/XI/2018, *L.G. Pedrosa 1113* (OUPR).