UNIVERSIDADE ESTADUAL PAULISTA
"JÚLIO DE MESQUITA FILHO"

Instituto de Biociências de Botucatu - Unesp

SISTEMÁTICA DE *Stylosanthes* Sw. (LEGUMINOSAE – PAPILIONOIDEAE – DALBERGIEAE), COM ÊNFASE NAS ESPÉCIES OCORRENTES NO BRASIL

DANILO SOARES GISSI

Tese apresentada ao Instituto de Biociências, Câmpus de Botucatu, UNESP, para obtenção do título de Doutor no Programa de Pós Graduação em Biologia Vegetal, Interunidades entre o Instituto de Biociências do campus de Botucatu e Instituto de Biociências do campus de Rio Claro.

Botucatu-SP

2022

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DANILO SOARES GISSI

ORIENTADORA: PROFª. DRª. ANA PAULA FORTUNA PEREZ

CO-ORIENTADORA: PROFª. DRª. TATIANE MARIA RODRIGUES

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I gained another pound today.
But I think it's a pound of knowledge.
Grace and Frankie
NETFLIX

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Resumo

Stylosanthes Sw. pertence à Dalbergieae, Papilionoideae, Leguminosae e apresenta aproximadamente 50 espécies reconhecidas. Várias espécies do gênero são utilizadas como forrageiras, principalmente por serem colonizadoras de áreas com pouca precipitação e solos de baixa fertilidade. O maior centro de distribuição do gênero está no cerrado brasileiro. Devido à sua importância econômica, estudos relacionados à genética, produtividade, distribuição geográfica, doenças, sistemática e anatomia já foram realizados, entretanto muito ainda precisaria ser feito. Assim sendo, apresento três capítulos para a tese de doutorado. No primeiro, investigamos a anatomia de folíolos e caule para delimitar táxons no complexo de *Stylosanthes guianensis*. Observamos que na superfície destes órgãos, existem tricomas não glandulares e emergências secretoras. A ausência e presença dessas estruturas, diferenças nas calotas de fibras e no clorênquima se mostraram caracteres valiosos para a delimitação de alguns táxons. No segundo capítulo, publicamos uma nova espécie para o Parque Nacional da Chapada das Mesas no Maranhão. Por fim, no terceiro capítulo, apresentamos o tratamento taxonômico para as espécies ocorrentes na América do Sul, contabilizando 43 espécies, incluindo novidades nomenclaturais como sinonimizações, mudanças de status e tipificações. Também é apresentado uma chave de identificação, avaliações preliminares do estado de conservação, comparações, mapas de distribuição e ilustrações.

Palavras-chave: Fabaceae; Faboideae; emergências secretoras; tricomas; anatomia; estilosantes

Abstract

Stylosanthes Sw. belongs to Dalbergieae, Papilionoideae, Leguminosae and has approximately 50 recognized species. Several species of the genus are used as forage, mainly because they colonize areas with little precipitation and low fertility soils. The most representative distribution center of the genus is the Brazilian Cerrado. Due to its economic importance, studies related to genetics, productivity, geographic distribution, diseases, systematics and anatomy have already been carried out, however much still needs to be done. Therefore, I present three chapters for the doctoral thesis. In the first one, we investigated leaflet and stem anatomy to delimit taxa in the *Stylosanthes guianensis* complex. We observed that there are non-glandular trichomes and secretory emergences on the surface of these organs. The absence and presence of these structures, differences in fiber caps, and chlorenchyma proved to be valuable characters for the delimitation of some taxa. In the second chapter, we published a new species for the Chapada das Mesas National Park in Maranhão. Finally, in the third chapter, we present the taxonomic treatment for the species occurring in South America, accounting for 43 species, including nomenclatural novelties such as synonymization, status changes, and typifications. An identification key, preliminary conservation status assessments, comparisons, distribution maps, and illustrations are also presented.

Keywords: Fabaceae; Faboideae; secretory emergences; trichomes; anatomia; estilosantes

Introdução

Leguminosae Juss. é a terceira maior família de angiospermas contando com cerca de 770 gêneros e 19.500 espécies (LPWG, 2017). Apresenta distribuição cosmopolita, sendo encontrada em todos os continentes, exceto na Antártida e nas áreas mais ao norte do Ártico (LEWIS et al., 2005). No Brasil ocorrem 3026 espécies circunscritas em 253 gêneros, amplamente distribuídos pelo território brasileiro ("Fabaceae," 2020).

É uma das famílias de maior importância econômica do mundo, atrás apenas de Poaceae Barnhart. Muitas espécies são utilizadas na alimentação humana e são inclusive recomendadas pelo Guia alimentar da população brasileira (BRASIL, 2014), dentre elas estão o feijão (*Phaseolus vulgaris* L.), a soja [*Glycine max* (L.) Merr]), o amendoim (*Arachis hypogaea* L.), o grão-de-bico (*Cicer arietinum* L.), a lentilha (*Lens culinaris* Medik.) e a ervilha (*Pisum sativum* L.). Na alimentação do gado, seja como silagem ou forrageira, se destacam os gêneros *Arachis* L., *Cajanus* Adans., *Calopogonium* Desv., *Centrosema* (DC.) Benth., *Leucaena* Benth., *Macroptilium* (Benth.) Urb., *Neonotonia* J.A. Lackey, *Pueraria* DC. e *Stylosanthes* Sw. Algumas espécies são ornamentais e utilizadas na arborização urbana como o flamboyant (*Delonix regia* (Bojer ex Hook.) Raf.), a tipuana [*Tipuana tipu* (Benth.) Kuntze], a sibipiruna [*Poincianella pluviosa* (DC.) L.P. Queiroz], a pata-de-vaca (*Bauhinia variegata* L.), a barba-de-barata [*Caesalpinia pulcherrima* (L.) Sw.], a ervilha-de-cheiro (*Lathyrus odoratus* L.) e o lupino (*Lupinus hybridus* Lem.) (LEWIS et al., 2005; KARIA et al., 2010; SOUZA; LORENZI, 2012).

A família foi tradicionalmente subdividida em três subfamílias: Papilionoideae DC.; Mimosoideae DC. e Caesalpinioideae DC., as quais foram largamente aceitas (LEWIS et al., 2005), entretanto esta classificação não corresponde às relações filogenéticas na família sendo proposta uma nova classificação com seis subfamílias monofiléticas: Caesalpinioideae, Cercidoideae LPWG, Detarioideae Burmeist., Dialioideae LPWG, Duparquetioideae LPWG, e Papilionoideae. A subfamília Mimosoideae forma um grupo monofilético inserido em Caesalpinoideae e é tratada informalmente como o clado mimosoide (LPWG, 2017).

Papilionoideae constitui a mais diversa subfamília em Leguminosae contabilizando 503 gêneros e ca. 14.000 espécies. Distingue-se das demais subfamílias por apresentar corola geralmente papilionada com a pétala adaxial (estandarte) mais externa e maior, zigomorfa, os filetes geralmente conados com o filete superior totalmente ou parcialmente livre, sementes com válvula hilar complexa, pleurograma ausente, radícula embrionária geralmente curvada e nódulos na raiz geralmente presentes (LPWG, 2017). Papilionoideae foi dividida em 28 tribos, embora muitas ainda necessitam de revisões (LEWIS et al., 2005; CARDOSO et al., 2013).

Tribo Dalbergieae

Dalbergieae *sensu* Klitgaard & Lavin (2005) corresponde a Dalbergieae sensu Polhill (1981), com a exclusão de *Vatairea* Aubl., *Vateireopsis* Ducke, *Andira* Lam. e *Hymenolobium* Benth. e a inclusão de Aeschynomeneae *sensu* Rudd (1981), Adesmieae *sensu* Polhill (1981), a subtribo Bryineae de Desmodieae *sensu* Ohashi et al. (1981) e o gênero *Diphysa* Jacq. de Robinieae *sensu* Polhill & Sousa (1981). A sinapomorfia da tribo é a presença de nódulos esquinomenoides na raiz. Este tipo tem como principal característica um pequeno nódulo com o diâmetro transversal maior que o axial, com crescimento determinado e frequentemente associado a uma raiz lateral ou adventícia (LAVIN et al., 2001). Dalbergieae forma um grupo monofilético e apresenta três clados principais (LAVIN et al., 2001): o clado Adesmia com 6 gêneros e aproximadamente 360 espécies; o clado Dalbergia com 17 gêneros e cerca de 700 espécies e o clado Pterocarpus com 22 gêneros e cerca de 200 espécies, no qual está incluído o gênero *Stylosanthes* Sw.

Stylosanthes

Stylosanthes foi descrito por Swartz (1788) baseado em duas espécies anteriormente descritas em *Hedysarum* L. Vogel (1838) dividiu o gênero em duas seções: *S.* sect. *Eustylosanthes*, agrupando oito espécies com flores não sustentadas por um apêndice plumoso e uma única bractéola interna, e *S.* sect. *Styposanthes* Vogel, agrupando sete espécies, com flores sustentadas por um apêndice plumoso e duas bractéolas internas. Taubert (1890) revisou novamente o gênero e manteve as seções propostas por Vogel (1838), reconhecendo 22 espécies.

Mohlenbrock (1958), em mais uma revisão para o gênero, reconheceu 25 espécies em duas seções: *S*. sect. *Stylosanthes* (= *S.* sect. *Styposanthes* Vogel), por agrupar a espécie tipo [*S. hamata* (L.) Taub.] e *S.* sect. *Astyposanthes* (Herter) Mohlenbr. (= *S.* sect. *Eustylosanthes* Vogel). Esta confusão se dá pelo fato de *S. hamata* ser considerado a espécie tipo de gênero, porém possuir apêndice plumoso correspondendo à seção *Styposanthes* sensu Vogel. Pelas regras nomenclaturais, o nome da seção que possui o tipo usualmente é homônima ao gênero (TURLAND et al., 2018). Kirkbride & Kirkbride (1987) com objetivo de resolver os problemas nomenclaturais das seções propuseram a seção *Stylosanthes*, a qual corresponde às seções *Eustylosanthes* Vogel e *Astyposanthes* (Hert.) Mohlenbr., com flores não sustentadas por um apêndice plumoso e duas bractéolas internas e a seção *Styposanthes* Vogel com flores sustentadas por apêndice plumoso, usualmente com uma bractéola interna.

Ferreira e Costa (1979) estudaram o gênero para o Brasil e monografaram 25 espécies para o país, reconhecendo as seções propostas por Mohlenbrock (1958). Costa (2006) faz uma revisão do gênero com extensas descrições e ilustrações de todas as espécies e considerou 48 espécies, das quais 43 exclusivas da região neotropical e baseando as seções de acordo com Kirkbride & Kirkbride (1987). Entretanto, o trabalho nunca foi efetivamente publicado e diversos pontos ainda precisariam ser discutidos.

Calles e Schultze-Kraft (2010a) estudaram os *Stylosanthes* na Venezuela, inclusive descrevendo duas novas espécies. Vanni (2017) publicou uma revisão para a América do Sul, porém o trabalho apresenta uma classificação agrupando e reduzindo o número de espécies e ignorando diversos nomes já publicados antes da publicação da revisão. Nesta tese, optamos por uma classificação diferente de Vanni (2017). Acreditamos que as diferenças morfológicas que pudemos verificar nas plantas no campo e na extensa quantidade de exsicatas observadas refletem a diversidade de espécies sul-americanas.

Estudos filogenéticos

Stylosanthes é apontado como monofilético como evidenciam os trabalhos de filogenia molecular, porém a divisão do gênero em duas seções não é suportada (VANDER STAPPEN et al., 1998, 1999, 2002; LAVIN et al., 2001; VANDER STAPPEN; MARANT; VOLCKAERT, 2003; COSTA, 2006). Apesar de todos trabalhos apresentados, as relações interespecíficas ainda permaneceram obscuras, com algumas espécies com delimitação problemática. Um dos motivos é o fato do gênero apresentar diversas espécies alopoliploides (OLIVEIRA et al., 2021). Assim sendo, ainda é necessário estudos mais aprofundados para se entender a história evolutiva do grupo e propor um tratamento taxonômico mais adequado.

Distribuição geográfica

O gênero apresenta dois centros principais de diversidade, o primeiro no Brasil central e o segundo no México e Caribe (WILLIAMS et al., 1984). Algumas espécies como *S. guianensis* (Aubl.) Sw. var. *guianensis*, *S. hamata* (L.) Taub., *S. viscosa* (L.) Sw. e *S. humilis* Kunth. apresentam distribuição pan-americana. Outras como *S. biflora* (L.) Britton, Sterns & Poggenb., *S. calicicola* Small e *S. dissitiflora* Robinson & Seaton ocorrem apenas na América do Norte. Algumas espécies possuem distribuição no Velho Mundo ocorrendo na África e na Ásia, como *S. sundaica* Taub., *S. fruticosa* (Retz.) Alston e *S. erecta* P. Beauv. (WILLIAMS et al., 1984; COSTA, 2006).

Stylosanthes e sua importância agronômica

Diversas leguminosas são e podem ser utilizadas no estabelecimento de pastagens, pois se adaptam a solos pobres em nitrogênio e possuem alta qualidade proteica na dieta de animais ruminantes (MACHADO et al., 2010). Representantes do gênero *Stylosanthes* se destacam pela sua característica colonizadora e tem como habitat regiões de baixa precipitação e solos de baixa fertilidade, além de ter alta produtividade de matéria seca e elevada produção de sementes. Esse sucesso se dá principalmente por apresentar nódulos com bactérias fixadoras de nitrogênio (LAVIN et al, 2001). As principais espécies de *Stylosanthes* para a formação de pastos são *S. guianensis, S. capitata* Vogel*, S. macrocephala* M.B. Ferreira & S. Costa*, S. scabra* Vogel*, S. humilis, S. fruticosa, S. hamata, S. leiocarpa* Vogel*, S. seabrana* B. L. Maass & 't Mannetje*, S. sympodialis* Taub. e *S. viscosa,* sendo as três primeiras as mais utilizadas no Brasil (KARIA et al., 2010).

O primeiro reconhecimento de *Stylosanthes* como forrageira se deu na Austrália no início do século XX, com a chegada de sementes de *S. humilis* ao país. Na década de 70, os campos de *S. humilis* começaram a ser atacados pela antracnose causada pelo fungo *Colleotrichum gloeosporoides* (Penz.) Penz. & Sacc., tendo-se a preferência na implantação então dos cultivares de *S. guianensis*. No Brasil, os primeiros estudos com *Stylosanthes* começaram em 1933 com a chegada de sementes provenientes da Austrália. Por causa do ataque da antracnose, começaram a se desenvolver cultivares a partir de progênies nativas de *S. guianensis* coletadas no estado do Rio de Janeiro. Mas apenas no início da década de 70, com incentivos governamentais, começou o interesse de se consorciar gramíneas e leguminosas nos pastos (KARIA et al., 2010). Em 2000, a Embrapa Gado de Corte lançou o 'Estilosantes Campo Grande' que, na prática, compõe uma mistura física de sementes com 80% de linhagens de *S. capitata* cv. Campo Grande I e 20% de linhagens de *S. macrocephala* cv. Campo Grande II, ambas com alto grau de resistência à antracnose (MACHADO et al., 2010). Devido ao alto potencial forrageiro de *Stylosanthes*, várias pesquisas sobre o gênero em diversas áreas do conhecimento têm sido realizadas nas últimas décadas (CHAKRABORTY, 2004).

Capítulos

Dito isso, apresento três capítulos para a tese.

No primeiro capítulo, investigamos estruturas anatômicas para delimitar táxons no complexo de *Stylosanthes guianensis*. *S. guianensis* é uma espécie amplamente distribuída do México à Argentina e introduzida em vários países tropicais como uma das principais espécies de *Stylosanthes* forrageiras (’T MANNETJE, 1977). A espécie já passou por diversas reformulações, muitos nomes infraspecíficos foram propostos ou diversas sinonimizações foram realizadas (BONPLAND; HUMBOLDT; KUNTH, 1824; VOGEL, 1838; MOHLENBROCK, 1958; ’T MANNETJE, 1977; FERREIRA; COSTA, 1979; BRANDÃO; COSTA; SCHULTZE-KRAFT, 1990; CALLES; SCHULTZE-KRAFT, 2010b; VANNI, 2017). Observamos que na superfície dos órgãos estudados, folíolos e caule, existem tricomas não glandulares e apêndices longos com base dilatada. A partir de estudos ontogenéticos verificamos que estes apêndices se referem a emergências secretoras. A ausência dessas estruturas em *S. guianensis* var. *canescens* se mostrou um caráter valioso para a delimitação desta variedade. Além do mais, calotas de fibras adjacentes ao floema ocorreram nos feixes vasculares que também apresentam extensão de bainha de feixe. Diferenças no tamanho das calotas de fibra foram importantes para a separação de alguns táxons. Em *S. gracilis*, o parênquima clorofiliano apresentou células alongadas em comparação aos táxons que apresentaram células isodiamétricas. Este capítulo foi publicado revista Flora Journal (GISSI et al., 2022a).

No segundo capítulo, apresentamos a publicação no prelo de uma espécie nova para o Parque Nacional da Chapada das Mesas no Maranhão, Brasil. *Stylosanthes acicularis* Gissi & Fort.-Perez se assemelha muito a *S. hippocampoides* Mohlenbr. por suas pequenas inflorescências capitadas, ausência de apêndice plumoso, apenas uma bractéola interna, lomentos com apenas um artículo fértil e rostro muito curto, ausência de nervura marginal e até cinco nervuras secundárias nos folíolos. No entanto, as duas espécies diferem pelo indumento do caule, comprimento das cerdas, formato e venação do folíolo e formato da margem da bractéola externa. Descrição morfológica, ilustrações - incluindo imagens de raios-X da venação do folíolo - e notas sobre a distribuição geográfica, habitat e estado de conservação das novas espécies foram apresentadas (GISSI et al., 2022b).

No terceiro capítulo, apresentamos o tratamento taxonômico para as espécies da América do Sul, incluindo novidades nomenclaturais diferentes daquelas apresentadas recentemente à Flora do Brasil (GISSI, 2020). Reconhecemos 43 espécies de *Stylosanthes* na América do Sul. Seis novos sinônimos são propostos. Os lectótipos de oito nomes são aqui designados. É

escolhido um neótipo para *S. nunoi* Brandão. *S. pohliana* Taub. é restabelecida como uma espécie aceita. Considerando as diferenças morfológicas e ecológicas, as variedades de *S. guianensis* (Aubl.) Sw. sensu Costa (2006) são elevados ao nível de espécie. As novas combinações são *S. microcephala* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez, *S. pauciflora* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez e *S. pubescens* (Pilger) Gissi & Fort.-Perez. É apresentada uma revisão morfológica e nomenclatural, juntamente com uma chave de identificação, avaliações preliminares do estado de conservação, comparações, mapas de distribuição e ilustrações.

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Capítulo 1

Leaf and stem anatomy of the *Stylosanthes guianensis* complex (Aubl.) Sw. (Leguminosae, Papilionoideae, Dalbergieae) and its systematic significance

Danilo Soares Gissi, Diana Pacheco Seixas, Ana Paula Fortuna-Perez, Benjamin M. Torke, Marcelo Fragomeni Simon, Gustavo Souza, Gwilym Peter Lewis, and Tatiane Maria Rodrigues

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Leaf and stem anatomy of the *Stylosanthes guianensis* complex (Aubl.) Sw. (Leguminosae, Papilionoideae, Dalbergieae) and its systematic significance

Danilo Soares Gissi[a,*], Diana Pacheco Seixas[a], Ana Paula Fortuna-Perez[a,*], Benjamin M. Torke[b], Marcelo Fragomeni Simon[c], Gustavo Souza[d], Gwilym Peter Lewis[e], and Tatiane Maria Rodrigues[a]

[a]São Paulo State University – UNESP, Institute of Biosciences – IBB, Department of Biostatistics, Plant Biology, Parasitology and Zoology, PO Box 510, 18618-970, Botucatu, SP, Brazil.

[b]Institute of Systematic Botany, New York Botanical Garden, 2900 Southern Blvd., Bronx, NY, 10458-5126, USA

[c]Embrapa Recursos Genéticos e Biotecnologia, PqEB, PO Box 02372, 70770–917, Brasília-DF, Brazil

[d]Pernambuco Federal University, Department of Botany, Laboratory of Cytogenetics and Plant Evolution, 50670-420, Recife, PE, Brazil

[e]Accelerated Taxonomy Department, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, UK

* corresponding authors: *dsgissi@gmail.com; ana.fortuna@unesp.br*

All authors have none to declare.

Abstract

Stylosanthes comprises about 50 species, with Brazil being one of the main diversity centers. *Stylosanthes guianensis* constitutes a problematic taxonomic complex, comprising four varieties of *S. guianensis* and seven other species. Considering the difficulty of taxon delimitation, this study assessed the potential value of the secretory structures and other anatomical characters to the diagnosis of taxa within the complex. We analyzed the leaflet and stem anatomy and micromorphology of representatives of the *S. guianensis* complex using light and scanning electron microscopy. Long uniseriate non-glandular hairs occurred on the stems and leaflets of all species. Secretory structures with a dilated base and a tapered distal portion occurred on both stems and leaflets, except in *S. guianensis* var. *canescens*. Polysaccharides, lipids and terpenes were histochemically detected in the secretory exudates. In the stem of *S. gracilis,* chlorenchyma cells were observed to be radially elongated, while in the other taxa studied they were isodiametric. On leaflets of *S. guianensis* var. *pauciflora*, *S. acuminata*, *S. aurea,* and *S. gracilis*, the midrib was eccentric and the veins closer to the leaflet margin had larger fiber caps. Anatomical structures proved to be useful for separating taxa. *Stylosanthes guianensis* var. *canescens* and *S. guianensis* var. *pauciflora* differ from the other varieties of the species and are possibly worthy of recognition at species rank. Our findings also reinforce the status of *S. gracilis* as a distinct species.

Keywords: Fabaceae, leaflet, secretory emergences, shoot, structure, taxonomy

1. Introduction

The genus *Stylosanthes* Sw. (Leguminosae, Papilionoideae, Dalbergieae) comprises approximately 50 species, distributed in two main centers of diversity, Brazil and Mexico. In Brazil there are 32 species, 14 of which are endemic (Gissi, 2020). Many species of the genus, including *S. guianensis* (Aubl.) Sw., are used in agriculture as animal fodder, because they have a high protein content (Machado et al., 2010). They also stand out for their ability to colonize and thrive in low rainfall areas and on substrates of low fertility, including acidic soils with high aluminum levels (Williams et al., 1984; Karia et al., 2010).

The types of indumentum, in particular, provide important characters which help to distinguish species and varieties of *Stylosanthes*. In previous major taxonomic studies of the genus (Mohlenbrock, 1958; Ferreira and Costa, 1979; Vanni, 2017), the indumentum of different *Stylosanthes* species has been referred to as hirsute, hispid, or pubescent, and sometimes as pilose, setose or hairy-viscous. The structures that make up the indumentum have been referred to as hairs, bristles or tuberculate-bristles. However, the terminology used in previous studies lacks consistency and has often not been supported by detailed anatomical investigations.

Taxa of the *Stylosanthes guianensis* complex, widely distributed from Mexico to Argentina, have been introduced in several other tropical countries as forage. In Brazil, they occur mainly in the Cerrado domain in savannah formations, campos rupestres (rocky fields), and in campos limpos and sujos. Furthermore, they are often found in anthropogenic and disturbed areas including pastures, lawns and along road sides (Gissi, 2020). *Stylosanthes* species also are known to grow in acid soils of low fertility and high aluminum levels

(Williams et al., 1984). Among the taxa of the complex, *S. aurea* M.B. Ferreira & Sousa Costa, *S. campestris* M.B. Ferreira & Sousa Costa, *S. guianensis* var. *microcephala* M.B. Ferreira & Sousa Costa, and *S. nunoi* Brandão are endemic to Brazil (Gissi, 2020). They differ morphologically from other taxa of *Stylosanthes* in presenting the lomentaceous fruit with only a single fertile papillate article and a strongly reduced rostrum (Mohlenbrock, 1958; 't Mannetje, 1977; Ferreira and Costa, 1979). The taxonomy of the complex has varied substantially in recent treatments (Table 1). 't Mannetje (1977, 1984) recognized only a single species, *S. guianensis*, with five varieties. Ferreira and Costa (1979) reduced the number of varieties to three and recognized the segregate species *S. acuminata* M.B. Ferreira & Sousa Costa, *S. aurea*, *S. gracilis* Kunth, *S. grandifolia* M.B. Ferreira & Sousa Costa and *S. hippocampoides* Mohlenbr. This system was largely followed by Costa (2006), but with the addition of a fourth variety of *S. guianensis* and the recognition of another segregate species, *S. nunoi*. Finally, Vanni (2017) subsumed all the segregate species, except *S. hippocampoides*, within *S. guianensis*, within which he recognized only two varieties in South America —*S. guianensis* var. *guianensis*, and *S. guianensis* var. *gracilis* (Kunth) Vogel ex Benth. Testing the extent to which the taxa in these widely diverging classifications correspond to discrete evolutionary lineages will require analysis of diverse datasets of the genetic and phenotypic variation across the complex (Costa, 2006; Santos-Garcia et al., 2012).

One promising source of potentially taxonomically and phylogenetically informative characters is the anatomy of stems and leaves. Anatomical characters, especially focusing on secretory structures, have proved to be a taxonomically informative in Leguminosae and have led to the discovery of several new species (Sartori and Tozzi, 2002; Francino, 2010; Coutinho

et al., 2013, 2014, 2016; Cândido et al., 2014; Devecchi et al., 2014; Francino et al., 2015; Fortuna-Perez et al., 2016, 2018, 2021a; Silva et al., 2017; Castro Silva et al., 2021). However, there exist few anatomical studies published for *Stylosanthes*, and previous research on the distribution and diversity of secretory structures only assessed whether the trichomes are glandular or non-glandular (D'Assumpção, 1978; Jerba and Fernandes, 2004; Jerba et al., 2006; Matos et al., 2013).

Here, we provide a comprehensive survey of stem and leaflet anatomy and micromorphology across the *S. guianensis* complex *sensu* Costa (2006) and discuss the taxonomic implications of our findings.

2. Material and methods

2.1. Plant material and sampling area

Field expeditions were carried out in Cerrado areas located in the municipalities of Botucatu (22° 53′ 25″ S, 48° 27′ 19″ W) and Buri (23º 47' 51" S, 48º 35' 34" W), São Paulo state, Brazil, from May 2018 to October 2019. Both municipalities present a warm and temperate climate classified as Cfa according to Köppen and Geiger (Peel et al., 2007). In Botucatu, the average annual rainfall is 1696 mm and the average annual temperature is 20.5 °C. The average annual temperature in Buri is 19.8 °C and the average annual rainfall is 1273 mm (AM Online Projects, 2021).

The field expeditions resulted in the collection of material of *S. guianensis* var. *guianensis* (Fig. 1a), *S. gracilis* (Fig. 1b), *S. guianensis* var. *pauciflora* M.B. Ferreira & Sousa Costa, *S. guianensis* var. *microcephala* (Fig. 1c), *S. guianensis* var. *canescens* M.B. Ferreira &

Sousa Costa (Fig. 1d), *S. grandifolia, S. hippocampoides*, and *S. acuminata* (Table 2). Samples of the other species (*S. aurea*, *S. campestris*, and *S. nunoi*) were obtained from vouchers deposited in the herbarium CEN of Embrapa Recursos Genéticos e Biotecnologia, Distrito Federal (Table 2). All varieties of the *Stylosanthes guianensis* complex occur mainly in dry regions in different states of Brazil and its overall geographical distribution can be consulted online in the updated treatment of the Brazilian Flora (REFLORA – http://reflora.jbrj.gov.br; see Gissi (2020) for the genus *Stylosanthes*). The analyzed specimens were identified using Ferreira and Costa (1979), Costa and Ferreira (1984), and Costa (2006), as well as consulting the taxon protologues, and by comparison with type specimens housed in the herbaria RB and NY (acronyms according to Thiers, 2021). The nomenclature is based on the treatment presented by Costa (2006) and Gissi (2020). In total, three to five individuals were sampled from each of the 11 putative taxa of the *S. guianensis* complex (Table 2). Macromorphological analyses were made using herbarium materials deposited in BOTU, CEN and RB (acronyms according to Thiers, 2021).

2.2. Anatomical and histochemical analysis

Shoot apices, portions of young stems located 0.5 cm below the apex, and fully expanded leaves located at the third node from the shoot apex were collected in the field and fixed in a solution of formaldehyde, 50% ethanol, and acetic acid (18:01:01) (Johansen, 1940). The samples were dehydrated in an ethanolic series and stored in 70% ethanol. Samples of leaves and stems obtained from herbarium specimens were rehydrated in water, treated with 2% potassium hydroxide (Smith and Smith, 1942), and washed in distilled water.

Transverse sections of the middle portion of the right lateral leaflet of trifoliolate leaves and green stems were cut using a hand-held razor blade. The transverse sections were stained with Astra blue and safranin (9:1) (Bukatsch, 1972) and mounted on slides with glycerine gelatin. Leaflet samples and shoot apices of *S. guianensis* var. *guianensis* and *S. grandifolia* were also embedded in methacrylate resin (Leica, Germany). Transverse and longitudinal sections were obtained using a rotary microtome RM 2145 (Leica, Germany) and stained with toluidine blue (O'Brien et al., 1964). Permanent slides were mounted using Entellan (Merck, Germany).

Histochemical tests were performed on fresh leaflet blades and young stems were transverse-sectioned by hand. The sections were treated with Sudan IV reagent for detection of total lipids (Johansen, 1940), ferric chloride for phenolic compounds (Johansen, 1940), Lugol reagent for starch grains (Johansen, 1940), Nadi's reagent for essential oils and resin (David and Carde, 1964), ruthenium red solution for polysaccharides and pectin (Jensen, 1962), Wagner reagent for alkaloids (Furr and Mahlberg, 1981), periodic acid/Schiff reagent (PAS) for non-cellulosic polysaccharides (Amaral et al., 2001), and phloroglucinol-hydrochloric acid for lignin (Johansen, 1940). Control tests followed the protocols indicated by the authors of each technique.

The slides were examined using a BX 41 photomicroscope (Olympus, Japan) and the relevant results were documented using a coupled C-7070 digital camera (Olympus, Japan).

2.3. Indumentum analysis

For indumentum analysis, portions of young stem and fully expanded leaves were observed under a M205C stereomicroscope (Leica, Germany). Some samples were previously

treated with ruthenium red (Jensen, 1962) and Sudan IV (Johansen 1940) for detecting the chemical properties of the exudate on the long secretory structures.

In addition, stem samples of *S. guianensis* var. *guianensis* and *S. guianensis* var. *canescens* were fixed in 2.5% glutaraldehyde in 0.1 M phosphate buffer (pH 7.3) for 24 h, post-fixed in 1% osmium tetroxide, dehydrated in an ethylic series, dried in a critical point drier and coated with gold (Robards, 1978). The samples were analyzed using an FEI Quanta 200 scanning electron microscope (FEI, Netherlands) at 12.5 kV.

3. Results

3.1. Stem anatomy

In all the analyzed taxa, the young stems were cylindrical in transverse section (Fig. 2a). The epidermis was uniseriate and consisted of rectangular to isodiametric ordinary cells (Fig. 2b) and had stomata (Fig. 2b) and non-glandular trichomes (Fig. 2a, c-f). Non-glandular trichomes were uniseriate and consisted of a lower portion with 3–4 square or rectangular cells, and a tapered upper portion consisting of an elongated cell (Fig. 2c, d). In both the lower and upper portions of the non-glandular trichomes, cells had thick and lignified walls (Fig. 2c, d). In *S. guianensis* var. *canescens* and *S. gracilis*, the non-glandular trichomes occurred only on the stem portions adjacent to the axillary buds, thus presenting an alternate distribution pattern along the stem (Fig. 1d).

Long secretory appendages with a dilated base and a tapered distal portion were observed on the surface of stems in most taxa (Fig. 2e, f), except in *S. guianensis* var. *canescens*, in which the stems were covered only by non-glandular trichomes (Table 3). In *S. gracilis*, we observed specimens with completely glabrous stems, as well as specimens with

numerous long secretory appendages throughout the stem length; in other individuals the proximal portion of the stem was covered by abundant long secretory appendages, while the distal portion was glabrous. This variation was observed among individuals from the same population in the field, as well as in the large quantity of herbarium material analyzed.

The origin and development of these long secretory appendages was observed in the shoot apex. The secretory appendages initiated from anticlinal divisions of protodermal cells and anticlinal and periclinal divisions of the subjacent differentiating parenchyma cells that gave rise to small outgrowths on the organ surface (Fig. 3a). Subsequent divisions in several planes in the ground cells made the length and width more evident, resulting in a larger protuberance on the organ surface (Fig. 3b, c). Anticlinal divisions in the protodermal cells accompanied the growth of the protuberance (Fig. 3b, c). In a later developmental stage, the protuberances were covered by differentiated epidermal cells and filled with parenchyma cells, some of them containing chloroplasts (Fig. 3d). The cells of the upper portion of the protuberance divided and elongated giving rise to conical appendages with dilated bases and a tapered distal portion (Fig. 3e-f). The cells of the distal portion of the appendages continued to elongate forming very long structures (Fig. 3f). The median and apical portions of the fully differentiated long appendages consisted of fusiform cells with thick walls (Fig. 3g). These cells were impregnated with lipophilic material. Droplets of sticky secretion were observed at the apex of these appendages (Fig. 3h). These droplets were stained with Sudan IV, Ruthenium red (Fig. 3h), PAS, and Nadi's reagent detecting lipids, polysaccharides and terpenes. These substances were also histochemically detected in the parenchyma cells at the base of the long appendages.

In the cortex of all the studied taxa, a single layer of hypodermis with isodiametric to oval parenchyma cells devoid of chloroplasts and containing thick pectin-cellulosic walls occurred subjacent to the epidermis (Fig. 2b). This layer was followed by 3-4 layers of chlorenchyma cells with a rounded shape. In *S. gracilis* these chlorenchyma cells were elongated radially to the epidermis (Fig. 2b). The endodermis was well delimited (Fig. 2b) in all the studied plants.

The vascular system was formed by collateral bundles arranged in a ring and separated by interfascicular parenchyma (Fig. 2a, b) in all the studied taxa. Large caps with about ten layers of fibers occurred externally to the primary phloem in each vascular bundle (Fig. 2b). The pith was large and formed by rounded and large ground parenchyma cells (Fig. 2a). Phenolic idioblasts were found immersed in the pith. Some stem portions analyzed exhibited incipient secondary growth with establishing secondary vascular tissues (Fig. 2a).

3.2. Leaflet blade anatomy

The leaflet blade of all studied taxa was slightly V-shaped in transverse section (Fig. 4a, b). In *S. guianensis* var. *pauciflora*, *S. acuminata*, *S. aurea*, and *S. gracilis*, the vertex of the V was eccentric (Fig. 4a) and in *S. guianensis* var. *guianensis*, *S. guianensis* var. *canescens*, *S. guianensis* var. *microcephala*, *S. grandifolia*, S. *hippocampoides* and *S. nunoi* the vertex of the V was located in a more or less central region of the leaflet (Fig. 4b).

In the taxa analyzed, the leaves were amphistomatic (Fig. 4c) and the stomata complex was paracytic. The epidermis was uniseriate with small cells varying in shape from isodiametric to oval or rectangular in the abaxial leaflet surface (Fig. 4c). On the adaxial

leaflet surface, voluminous epidermal cells with a conical shape protruded into the palisade parenchyma (Fig. 4c, f). The content of these cells reacted positively for the histochemical tests for polyssacharides and mucilage.

Non-glandular trichomes were broadly distributed throughout the entire leaflet blade surface (Fig. 4d, e), including the midrib region and the leaflet margins, in all studied taxa. The non-glandular trichomes in the leaflets exhibited a similar morphology to that observed on the stems. Long secretory appendages with similar morphology and histochemistry to those observed on the stem were also found on the leaflets (Fig. 4e). In *S. guianensis* var. *guianensis*, *S. guianensis* var. *pauciflora*, *S. guianensis* var. *microcephala*, *S. campestris*, *S. hippocampoides* and *S. nunoi* these long secretory appendages were found on the adaxial and abaxial surface of leaflet blades, on leaflet margins and on the midrib (Table 3). In *S. acuminata*, *S. aurea*, and *S. grandifolia,* they were found only on the leaflet margins and above the midrib, they are lacking on the surface of leaflet blades. In *S. gracilis*, we observed leaflets devoid of secretory appendages, leaflets bearing long secretory appendages only on the midrib and leaflet margins, and leaflets with long secretory appendages spread all over the leaflet blade. In *S. guianensis* var. *canescens*, long secretory appendages were not found.

In all the analyzed taxa, the mesophyll was dorsiventral and composed of 2-3 layers of palisade parenchyma in the adaxial portion, and 3-5 layers of spongy parenchyma in the abaxial portion (Fig. 4c, f). On the abaxial leaflet surface, a layer of voluminous idioblasts occurred beneath the epidermis (Fig. 4c, d, f). Phenolic compounds were histochemically detected in these cells. These phenolic idioblasts differentiated early during leaf development and were identified in the leaf primordia (Fig. 4g).

The vascular bundles were collateral (Fig. 4c, f) in the leaflets of all the studied taxa. A sheath comprised of parenchyma cells devoid of chloroplasts surrounded the vascular bundles (Fig. 4c, f). In the primary and secondary veins, the bundle sheath extended toward the adaxial epidermis (Fig. 4c, f). Caps of fibers with thick and lignified walls occurred subjacent to the phloem in the primary, secondary and tertiary veins (Fig. 4a-c, f). In *S. guianensis* var. *guianensis*, *S. guianensis* var. *canescens*, *S. guianensis* var. *microcephala*, *S. grandifolia*, *S. campestris*, S. *hippocampoides* and *S. nunoi,* veins with large caps occurred throughout the leaflet blade (Table 3, Fig. 4b). In *S. guianensis* var. *pauciflora*, *S. acuminata*, *S. aurea* and *S. gracilis* the fiber caps were especially large in the portion of the veins close to the leaflet margin (Table 3, Fig. 4a, f).

In all the analyzed taxa, the midrib region was concave on the adaxial side and convex on the abaxial side (Fig. 4a, b, h). One to two layers of collenchyma and a layer of colorless parenchyma occurred in the abaxial side of the midrib (Fig. 4h). The vascular system in this region was comprised of a collateral vascular bundle surrounded by a colorless parenchyma sheath that extended toward the adaxial epidermis (Fig. 4h). A moderately developed fiber cap occurred subjacent to the phloem (Fig. 4h).

4. Discussion

Our results show that the 11 taxa of the *Stylosanthes guianensis* complex studied here share many anatomical features of their stems and leaves. Many of these characteristics are related to the colonization of dry environments with low soil fertility (Gardener, 1984; Karia

et al., 2010). However, some anatomical features were found to vary among the sampled taxa, and appear to have potential taxonomic significance.

Long, uniseriate non-glandular trichomes with a similar morphology were found on the leaflets and stems of all taxa studied. Similar non-glandular trichomes occur in many genera of Leguminosae, including other genera of tribe Dalbergieae (Leelavathi and Ramayya, 1983; Veiga et al., 1994). Interestingly, on the stems of *S. guianensis* var. *canescens* and *S. gracilis*, the distribution of non-glandular trichomes alternates at each internode, following the phyllotaxis (Fig. 1d). The functional significance of this spatial pattern is not clear, but it may be related to the protection of the axillary bud and developing leaves. Non-glandular trichomes may provide a physical defense against herbivores, such as leafhoppers, aphids and caterpillars (Levin, 1973; Baur et al., 1991; Kaur and Kariyat, 2020) and also offer protection against excessive light, extreme temperatures, and desiccation (Werker, 2000; Lusa et al., 2014; Tozin et al., 2016).

The presence of voluminous conical cells containing mucilage in the epidermis of the adaxial leaflet surface was a remarkable feature observed in all the studied taxa, as previously observed in other genera of Dalbergieae, such as *Zornia* J.F. Gmel., *Poiretia* Vent., and in all other species of the Adesmia clade (Solereder, 1908; Fortuna-Perez et al., 2012, 2021b; Mendes et al., 2019). However, the reported location of such cells is not consistent in the literature. Some studies have reported that voluminous mucilage cells occur in the mesophyll in some species of *Stylosanthes* (Matos et al., 2013), while in the present study we observed these cells arising in the protodermis and protruding towards the mesophyll. In general, the functions attributed to mucilage cells include carbohydrate storage, water storage, reduction

of transpiration, protection against intensive radiation by light scattering or reflection, and protection against herbivory (Gregory and Baas, 1989); they may also confer resistance to infection by fungi (Veiga et al., 1994; Sanine and Rodella, 2012; Fortuna-Perez et al., 2021b).

Long multiseriate secretory appendages with a dilated base and tapering apex were observed in leaflets and stems of all studied taxa, except *S. guianensis* var. *canescens*. Similar appendages have been reported previously in *Stylosanthes* and other dalbergioids, including *Aeschynomene* L. (Solereder, 1908; Metcalfe and Chalk, 1950; Leme and Scremin-Dias, 2014), *Arachis* L. (Solereder, 1908; Metcalfe and Chalk, 1950; Veiga et al., 1994), *Chapmannia* Torr. & A. Gray (Solereder, 1908; Metcalfe and Chalk, 1950), *Cranocarpus* Benth. (Solereder, 1908; Metcalfe and Chalk, 1950), *Discolobium* Benth. (Solereder, 1908; Metcalfe and Chalk, 1950), *Geissaspsis* Wight & Arn. (Solereder, 1908; Metcalfe and Chalk, 1950), *Ormocarpum* P. Beauv. (Solereder, 1908; Metcalfe and Chalk, 1950), and *Smithia* Aiton (Solereder, 1908; Metcalfe and Chalk, 1950). Such long and multiseriate appendages have been interpreted in the literature as trichomes, including in taxa of *Stylosanthes* (Solereder, 1908; Metcalfe and Chalk, 1950; Mohlenbrock, 1958; D'Assumpção, 1978; Leelavathi and Ramayya, 1983). However, based on our microscopical observations, we conclude that such appendages in the studied taxa of *Stylosanthes* are better referred to as emergences, because they originate from both the protodermis and ground cells. In fact, we were able to observe parenchyma cells with chloroplasts filling the dilated bases of some of these appendages.

Histochemical tests suggested that the bases of the secretory emergences produce hydrophilic and lipophilic compounds that are transported through the elongated apical portion and released as viscous drops at the tapered apex. We conclude that these released

drops likely confer the well-known viscosity of many taxa of *Stylosanthes* (Costa, 2006; Jerba et al., 2006). Our histochemical tests suggest that the secretion produced by the secretory emergences is rich in polysaccharides, total lipids, and terpenes. The polysaccharides histochemically detected in the secretory emergences may be one of the reasons for the high tolerance of *Stylosanthes* to drought, since they are known to act in preventing water loss from plant tissues (Werker and Fahn, 1981; Wagner et al., 2004). Furthermore, the combination of polysaccharides and lipids may act as a light reflector, thereby lowering leaf temperature (Fahn, 1979; Naidoo et al., 2014; Oliveira et al., 2017). Terpenes often play a role against herbivores, directly as toxins or repellents or indirectly by signalling to other plants when they are being attacked (Levin, 1973; Fineschi and Loreto, 2012; Pichersky and Raguso, 2018). The viscosity of the exudate in *Stylosanthes* has been suggested to function in trapping insects such as ticks (Sutherst et al., 1982, 1988). The viscous substances released by the plants can immobilize and kill larvae in a few hours. This trapping behavior may contribute to the beneficial use of *Stylosanthes* in pasture, since it may decrease parasites that infect cattle (Sutherst et al., 1982, 1988; Fernandez-Ruvalcaba et al., 1999; Castrejón et al., 2003).

In addition to the external secretory structures, idioblasts containing phenolic compounds were detected in a layer subjacent to the epidermis in the abaxial leaflet surface and the pith of the stems of all studied taxa. The presence of phenolic idioblasts is a feature widespread among taxa of Leguminosae (Fortuna-Perez et al., 2012, 2021b; Silva et al., 2018; Mendes et al., 2019; Seixas et al., 2019; Bento et al., 2020). Phenolic compounds are a chemical category of substances that are very important in plant environmental responses,

conferring protection against UV damage, herbivory, and pathogens (Liakoura et al., 1997; Machado & Rodrigues, 2004; Castro and Demarco, 2008; Lusa et al., 2014; Tozin et al., 2015).

For the most part, the anatomical organization of the stem was found to be conserved among the studied taxa of *Stylosanthes*, corroborating previous descriptions for the genus (Solereder, 1908; Matos et al., 2013). A differential feature was found in *S. gracilis* that exhibited chlorenchyma cells elongated radially to the epidermis in the stem cortex.

With respect to leaflets, most of the anatomical features here described have already been reported for *Stylosanthes* (Solereder, 1908; Matos et al., 2013). Nevertheless, our analyses showed that some of the anatomical aspects of the leaflet blade, such as the presence and distribution of secretory emergences, the positioning of the midrib, and the distribution of veins with very large fiber caps, are variable within *Stylosanthes* and diagnostic for some of its taxa (Table 3).

Some authors (Mohlenbrock, 1958; 't Mannetje, 1977, 1984; Vanni, 2017) have adopted a broader circumscription of *S. guianensis*, subsuming within it several other binomials, which in our opinion should be maintained as separate species. Under our concept of the species, *S. guianensis* is distinguished by the fruit with only one fertile article, a very short rostrum (less than 1 mm), and visible glands at the base (Costa, 2006). Due to its great morphological variability, four varieties are usually recognizable within *S. guianensis* (Costa, 2006), but they can be somewhat difficult to differentiate, especially where two or more occur in sympatry leading to the likelihood of inter-varietal hybridization. Based on our results, *S. guianensis* var. *guianensis* and *S. guianensis* var. *microcephala* are indistinguishable from each other in anatomical features of the leaflets and stem. However, *S. guianensis* var.

microcephala can be distinguished from the other varieties by its macromorphological features, including the less branched habit, smaller and narrowly elliptical leaflets, and pale yellow to whitish flowers (Ferreira and Costa, 1979; Gissi, 2020). *S. guianensis* var. *canescens* can be differentiated by the absence of secretory emergences in the leaflets and stems, as well as by having non-glandular trichomes alternately distributed along the stem. The inflorescences have a covering of whitish, non-glandular trichomes conferring a pubescent indumentum (Ferreira and Costa, 1979; Gissi, 2020). The distinction of *S. guianensis* var. *canescens* was also supported in a previous study using microsatellites (Santos-Garcia et al., 2012). Likewise, *S. guianensis* var. *pauciflora* is distinct in having large fiber caps at the margins of the leaflets and an eccentric midrib, as well as an erect habit, shorter leaflets, and cupuliform inflorescences with 1-2 spikes (Brandão et al., 1990; Gissi, 2020). Further research may support the elevation of one or more of these varieties to species rank.

Stylosanthes campestris, *S. hippocampoides*, and *S. nunoi* are morphologically very similar, and not surprisingly we noted no taxonomically significant anatomical differences among them. 't Mannetje (1984) treated both *S. campestris* and *S. hippocampoides* as synonyms of *S. guianensis* var. *intermedia* (Vog.) Hassler. However, the two species can be differentiated by their leaflet shape and venation. *Stylosanthes campestris* has obovoid leaflets with conspicuous veins while *S. hippocampoides* has elliptical leaflets and inconspicuous veins (Gissi, 2020). In its protologue, Brandão (1991) distinguished *Stylosanthes nunoi* from *S. hippocampoides* by the number of leaflet secondary veins (more numerous in *S. nunoi*) and by the shape of the fruit rostrum (shorter in *S. nunoi*) but the two species also differ by the number of fertile articles, two in *S. nunoi* (Gissi, 2020). The

distinction of the three species requires further investigation. Molecular studies should help to determine if the three species be maintained or treated as synonyms.

In some taxonomic studies, *S. acuminata*, *S. aurea*, *S. grandifolia,* and *S. gracilis* have been treated as synonyms under *S. guianensis* var. *gracilis* (Vanni, 2017). 't Mannetje (1984) treated *S. aurea* and *S. grandifolia* under *S. guianensis* var. *robusta* 't Mannetje and *S. acuminata* as a synonym of *S. guianensis* var. *marginata* Hassler. We observed that in contrast to *S. acuminata* and *S. aurea*, *S. grandifolia* does not present an eccentric midvein, and that the fiber caps are similar throughout the leaflet (and not larger near the margin). Although *S. acuminata* and *S. aurea* appear to be indistinguishable from each other in leaflet and stem anatomy, they are separable by their habit and the color of their emergences (Ferreira and Costa, 1979; Gissi, 2020). Hence, we propose that they should continue to be treated as distinct species.

Stylosanthes gracilis is unique in the *S guianensis* complex in having elongated chlorenchyma cells in its stems; in other taxa of the complex, the cells of the chlorenchyma are isodiametric. However, in other respects, *S. gracilis* presents great anatomical and morphological variation, hampering its delimitation and recognition; actually, in some studies, it has been treated as a variety of *S. guianensis* (Vogel, 1838; Bentham, 1859; Taubert, 1890; Mohlenbrock, 1958;'t Mannetje, 1977, 1984; Vanni, 2017). However, several characteristics differentiate it from that species, including its erect habit to 2m tall (vs. mainly prostrate in *S. guianensis*), the presence (vs. absence) of a submarginal vein in the leaflets; the inflorescence covered with long, golden emergences (vs. shorter and hyaline

emergences); and fruits generally with two (vs. one) fertile articles (Ferreira and Costa, 1979; Costa, 2006; Calles and Schultze-Kraft, 2010; Gissi, 2020).

5. Conclusion

The present study sheds light on the nature of the secretory appendages present in species of the *S. guianensis* complex. Generally treated as hairs or bristles, they are better referred to as secretory emergences. They can be useful to distinguish some species groups and varieties within the complex. Thus, the treatments proposed by 't Mannetje (1979) and Vanni (2017), lumping all the taxa of the *S. guianensis* complex into one, underestimate all the variations, forms and diversity in the complex. Our findings reinforce the status of *S. gracilis* as a distinct species. *Stylosanthes guianensis* var. *canescens* and *S. guianensis* var. *pauciflora* present anatomical features that separate them from the other *S. guianensis* varieties and are possibly worthy of recognition at species rank. In this sense, the treatments proposed by Ferreira & Costa (1979), Costa (2006) and Gissi (2020) better reflect the taxonomy of the *S. guianensis* complex.

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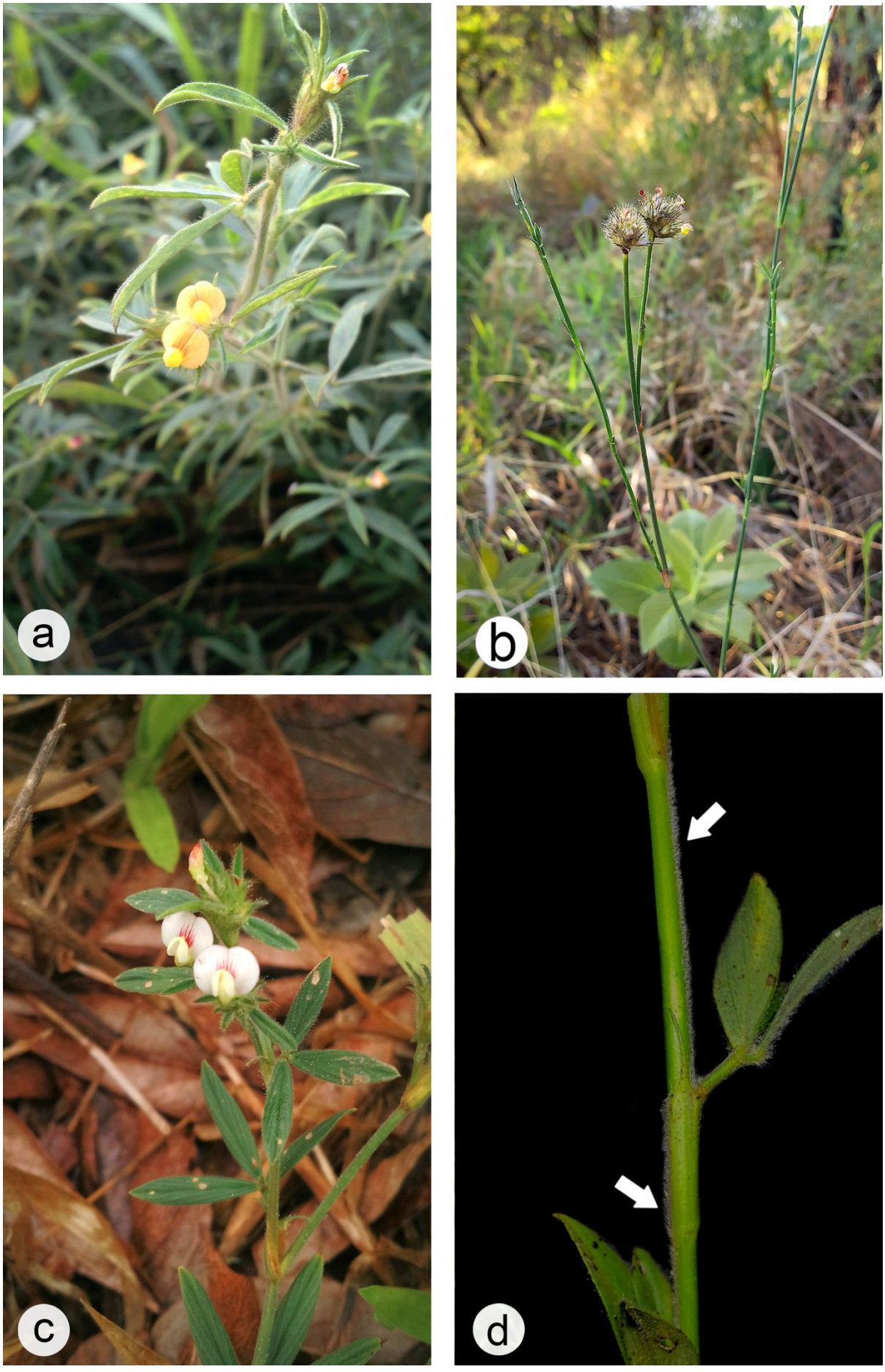
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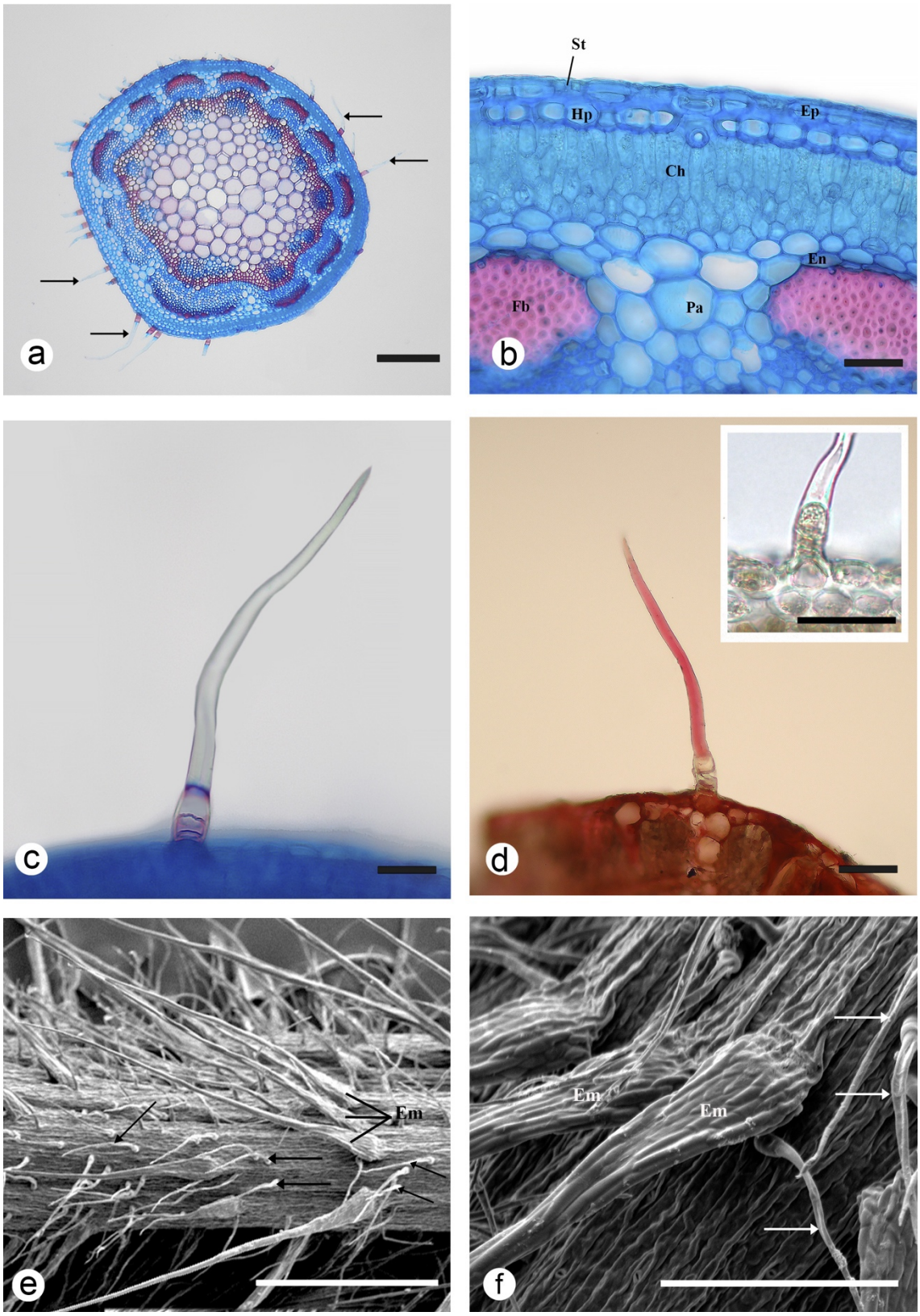
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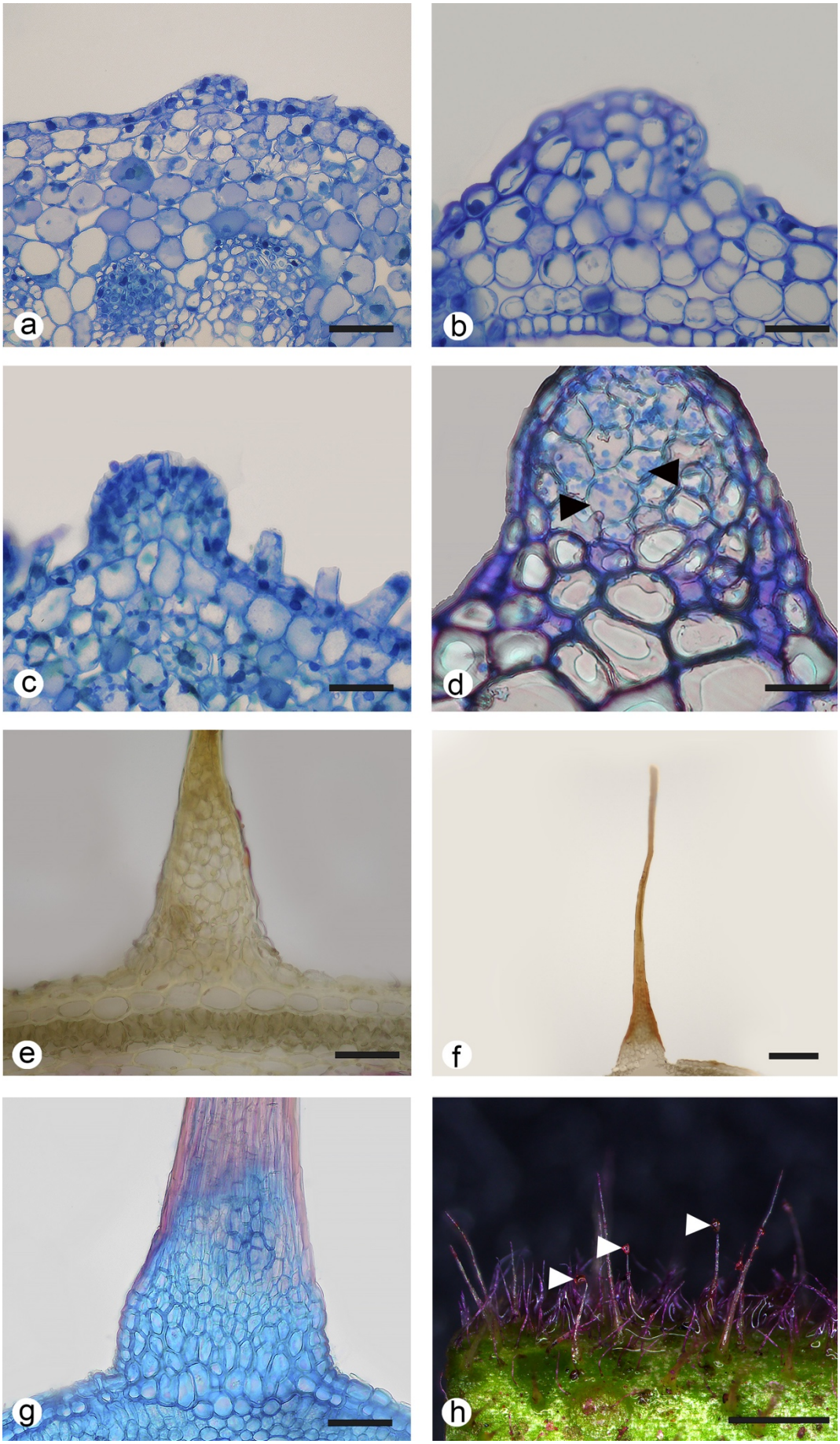
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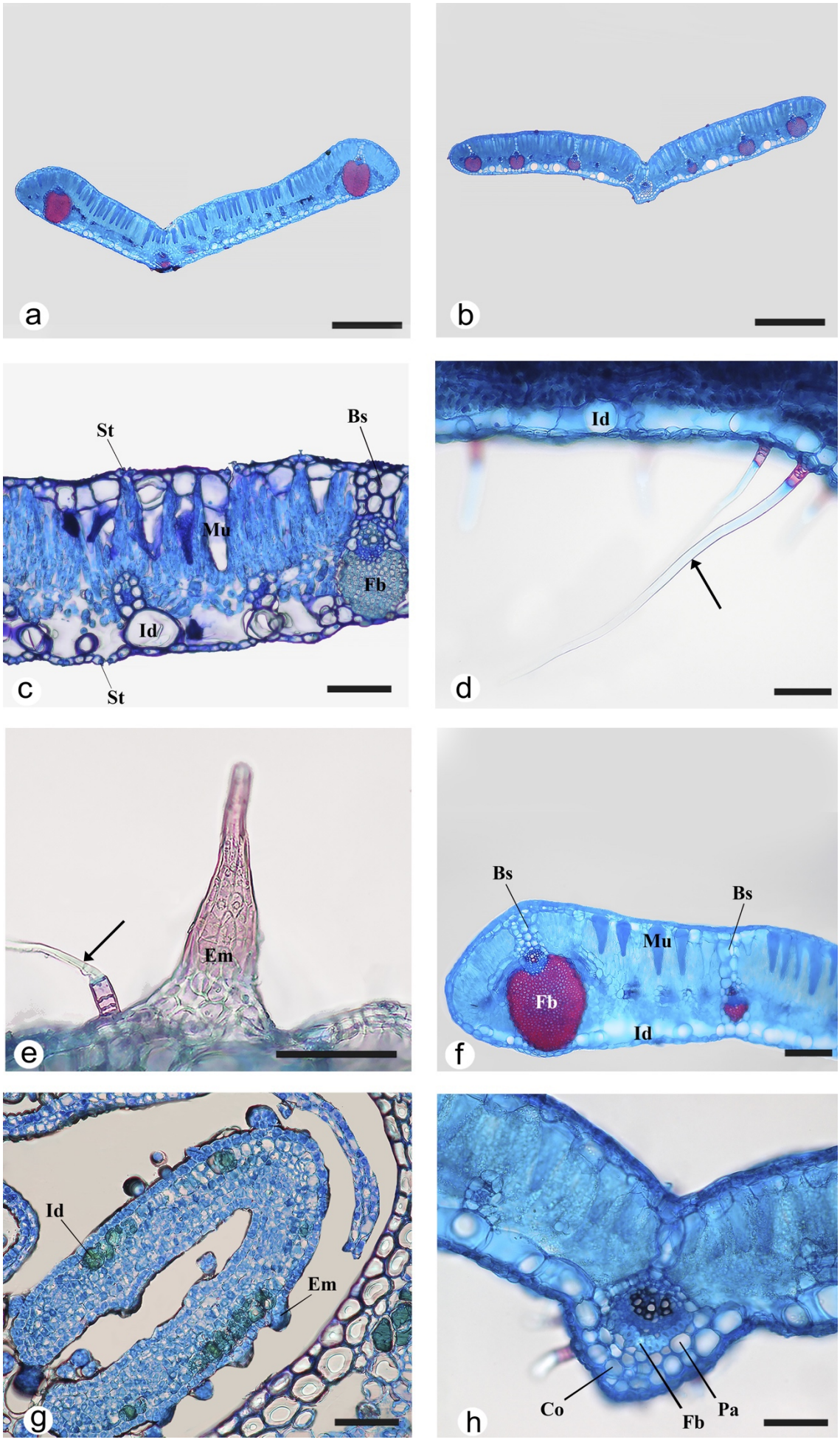
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Captions

Fig 1. Photographs of *Stylosanthes* in the field **a.** *S. guianensis* var. *guianensis* (Gissi 385) **b.** *S. gracilis* (Gissi 407). **c.** *S. guianensis* var. *microcephala* (Gissi 421) **d.** *S. guianensis* var. *canescens* (Gissi 440) showing the differential distribution of non-glandular trichomes (**arrows**) at the stem internodes.

Fig 2. Photomicrographs **(a–d)** and scanning electron micrographs **(e-f)** of stems of *Stylosanthes* taxa**. a.** General view of *S. hippocampoides* stem stained with Astra blue and safranin. The arrows indicate non-glandular trichomes. **b.** Stem of *S. gracilis* stained with Astra blue and safranin showing uniseriate epidermis with stomata **(St)**, hypodermis **(Hp)**, chlorenchyma (**Ch**) with elongated cells, interfascicular parenchyma (**Pa**), endodermis **(En)** and fiber caps **(Fb**) adjacent to the phloem. **c-d.** Non-glandular trichomes stained with Astra blue and safranin **(c)** and with ruthenium red **(d)**. Note the thick, lignified walls of a non-glandular trichome stained with phloroglucinol-hydrochloric acid. **e.** Emergences **(Em)** and non-glandular trichomes **(arrows)** in *S. guianensis* var. *guianensis*. **f.** Detail showing emergences (**Em**) and non-glandular trichomes **(arrows)** in the stem of *S. guianensis* var. *guianensis.* Scale bars: 500 μm in a; 50 μm in b, c; 100 μm in d; 1mm in e; 200 μm in f.

Fig 3. Secretory emergences in *S. guianensis* **(e-f)** and *S. grandifolia* **(g-h)** under different developmental stages**. a-c.** Protuberances consisting of primordial cells on the stem surface stained with toluidine blue. **d.** Developing emergence filled with parenchyma cells containing chloroplasts **(black arrowheads)** stained with toluidine blue. **e.** Emergence treated with phloroglucinol-hydrochloric acid showing absence of lignified cells in the base **f.** Emergence treated with Sudan IV showing cells impregnated with lipophilic material in the median and apical portion. **g.** Emergence stained with Astra blue and safranin

showing non-lignified cells in the base and fusiform cells with lignified walls in the median portion. **H.** Stem portion treated with ruthenium red analyzed under stereomicroscope. Note the droplets at the apex of the emergences **(white arrowheads)**. Scale bars: 50 μm in a, b, c, d, e; 150 μm in e; 200 μm in g; 1mm in h.

Fig 4. Photomicrographs of transverse sections of the leaflets of six taxa of the *Stylosanthes guianensis* complex stained with Astra bue and safranin **(a, b, e, f)** and toluidine blue **(c, d, g, h). a.** *S. gracilis* showing larger fiber caps in the veins closer to the leaflet margin. **b.** *S. campestris* showing veins with fiber caps similar in size throughout the leaflet blade. **c.** *S. grandifolia* showing conical mucilage **(Mu)** epidermal cells in the adaxial leaflet surface, and dorsiventral mesophyll containing phenolic idioblasts **(Id)**; note fiber cap **(Fb)** associated with the vascular bundle, bundle sheath extension **(Bs)**, and stomata **(St)**. **d.** *S. guianensis* var. *microcephala* showing non-glandular trichomes (**arrow**); **Id**: phenolic idioblasts. **e.** *S. guianensis* var. *pauciflora* showing secretory emergence **(Em)** and non-glandular trichome (arrow). **f.** *S. acuminata* showing epidermis with conical mucilaginous **(Mu)** cells on the adaxial leaflet surface, bundle sheath extensions **(Bs)**, and large fiber cap **(Fb)** in vein next to the margin**; Id:** phenolic idioblasts**. g.** *S. guianensis* var. *guianensis* leaf primordium showing phenolic idioblasts (**Id**) in the mesophyll and developing emergences (**Em**). **h.** *S. guianensis* var. *canescens* midrib showing collenchyma **(Co)** and parenchyma **(Pa)** in the abaxial side and small fiber group **(Fb)** adjacent to the phloem. Scale bars: 500 μm in a, b, g; 100 μm in c, e, h; 150 μm in d, f.

Table 1.

Taxonomic changes at the *Stylosanthes guianensis* complex

t' Mannetje (1977, 1984)	Ferreira & Costa (1979)	Costa (2006)	Vanni (2017)
S. guianensis var. *guianensis*	*S. guianensis* var. *vulgaris*	*S. guianensis* var. *guianensis*	*S. guianensis* var. *guianensis*
	S. guianensis var. *canescens*	*S. guianensis* var. *canescens*	*S. guianensis* var. *gracilis*
	S. guianensis var. *microcephala*	*S. guianensis* var. *microcephala*	*S. guianensis* var. *guianensis*
		S. guianensis var. *pauciflora*	*Nomen nudum*
S. guianensis var. *gracilis*	*S. gracilis*	*S. gracilis*	*S. guianensis* var. *gracilis*
S. guianensis var. *intermedia*	*S. hippocampoides*	*S. hippocampoides*	*S. hippocampoides*
S. guianensis var. *intermedia*	*S. campestris*	*S. campestris*	Not included
S. guianensis var. *robusta*	*S. grandifolia*	*S. grandifolia*	*S. guianensis* var. *gracilis*
S. guianensis var. marginata	*S. acuminata*	*S. acuminata*	*S. guianensis* var. *gracilis*
		S. nunoi	*S. guianensis* var. *guianensis*
	S. aurea	*S. aurea*	*S. guianensis* var. *gracilis*

Table 2.
Voucher information for the studied taxa of the *Stylosanthes guianensis* (Aubl.) Sw. complex.

Taxa	Collector	Collector number	Locality	Herbarium
S. acuminata	Gissi, D. S.	434	Pardinho, SP	BOTU
	Costa, N.M.S.	3088	Antonio João, MS	CEN
	Pereira-Silva, G.	4185	Cachoeira de Goiás, GO	CEN
	Pereira-Silva, G.	9812	Barra do Ouro, TO	CEN
S. aurea	Sevilha, A.C.	3699	Parana, TO	CEN
	Sevilha, A.C.	3799	Parana, TO	CEN
	Costa, N.M.S.	3018	Diamantina, MG	CEN
S. campestris	Ferreira, J.J.S.	60	Rio das Contas, BA	BOTU
	Pereira-Silva, G.	5309	Cavalcante, GO	CEN
	Pereira-Silva, G.	5162	Cavalcante, GO	CEN
S. gracilis	Gissi, D. S.	407	Botucatu, SP	BOTU
	Gissi, D. S.	429	Santa Maria Da Serra, SP	BOTU
	Coradin, L.	8272	Rio de Janeiro, RJ	CEN
	Coradin, L.	8079	Luziania, GO	CEN
	Simon, M.F.	2729	Carolina, MA	CEN
S. grandifolia	Gissi, D. S.	388	Buri, SP	BOTU
	Costa, N.M.S.	3095	Campo Grande, MS	CEN
	Costa, N.M.S.	3079	Dourados, MS	CEN
S. guianensis var. *canescens*	Gissi, D. S.	384	Buri, SP	BOTU
	Gissi, D. S.	439	Botucatu, SP	BOTU
	Souza, V.C.	16737	Nortelândia, MT	BOTU
S. guianensis var. *guianensis*	Gissi, D. S.	425	Botucatu, SP	BOTU
	Gissi, D. S.	385	Buri, SP	BOTU
	Gissi, D. S.	436	Botucatu, SP	BOTU
S. guianensis var. *microcephala*	Gissi, D. S.	421	Botucatu, SP	BOTU
	Costa, N.M.S.	3064	Lençois, BA	CEN
	Costa, N.M.S.	3063	Caeté, MG	CEN
S. guianensis var. *pauciflora*	Gissi, D. S.	435	Pardinho, SP	BOTU
	Elias, S. I.	604	Cristalina, GO	BOTU
	Souza, V.C.	25994	Rio Das Contas, BA	BOTU
	Coradin, L.	2548	Nova Olinda, CE	CEN
S. hippocampoides	Pereira-Silva, G.	4197	Balsas, MA	CEN
	Costa, N.M.S.	3084	Amambai, MS	CEN
	Gissi, D. S.	426	Botucatu, SP	CEN
S. nunoi	Coradin, L.	2633	Timon, TO	BOTU
	Coradin, L.	2634	Timon, TO	CEN
	Coradin, L.	7938	Timon, TO	CEN

Table 3.
Distinctive anatomical features of stem and leaves in members of the *Stylosanthes guianensis* complex.

	Stem			Leaflet blade			
Taxa	Secretory long appendages in the stem	Non-glandular trichomes concentrated only on one side of the stem	Chlorenchyma cells elongated perpendicularly to the epidermis	Eccentric midrib	Larger fiber caps in the leaflet border	Secretory long appendages widely distributed in the leaflet blade	Secretory long appendages only above the midrib and leaflet edges
S. acuminata	X			X	X		X
S. aurea	X			X	X		X
S. campestris	X					X	
S. gracilis	X*	X	X	X	X	X**	X**
S. grandifolia	X						X
S. guianensis var. *canescens*		X					
S. guianensis var. *guianensis*	X					X	
S. guianensis var. *microcephala*	X					X	
S. guianensis var. *pauciflora*	*X*			X	X	X	
S. hippocampoides	X					X	
S. nunoi	X					X	

** Variable distribution of appendages in the stem (individuals with bearing appendages along the entire stem, individuals with appendages in the proximal portion of the stem, individuals devoid of appendages).*

*** Variable distribution of appendages in the leaflets (individuals with bearing appendages along the entire leaflet blade extension, individuals with appendages in the midrib region and leaflet edges and individuals devoid of appendages).*

Capítulo 2

A new species of *Stylosanthes* (Leguminosae - Papilionoideae) from the Chapada das Mesas National Park in Maranhão, Brazil.

Danilo Soares Gissi, Benjamin M. Torke, Mario Tomazello-Filho and Ana Paula Fortuna-Perez

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A new species of *Stylosanthes* (Leguminosae - Papilionoideae) from the Chapada das Mesas National Park in Maranhão, Brazil.

DANILO SOARES GISSI[1,4], BENJAMIN M. TORKE[2], MARIO TOMAZELLO-FILHO[3], AND ANA PAULA FORTUNA-PEREZ[1]

[1]São Paulo State University–UNESP, Institute of Biosciences–IBB, Department of Biostatistics, Plant Biology, Parasitology and Zoology, PO Box 510, 18618-970, Botucatu, SP, Brazil.

[2]Institute of Systematic Botany, New York Botanical Garden, 2900 Southern Blvd., Bronx, NY, 10458-5126, USA.

[3]Department of Forest Resource, Escola Superior de Agricultura Luiz de Queiroz, University of São Paulo, Av. Pádua Dias N° 11, Piracicaba, São Paulo 13418-900, Brazil

[4]Author for correspondence: dsgissi@gmail.com

Abstract: A new species of *Stylosanthes* (Leguminosae – Papilionoideae) from the Chapada das Mesas National Park in Maranhão, Brazil, is described. *Stylosanthes acicularis* was misidentified as *S. angustifolia* in the collection from SLUI herbarium. However, the material differs from *S. angustifolia* especially by inflorescence shape and rostrum length. The new species closely resembles *S. hippocampoides* by its small capitate inflorescences, absence of a rudimentary axis beneath the flower, only one inner bracteole, loments with only one fertile article and a very short rostrum, and the absence of a marginal vein and up to five secondary veins in the leaflets. However, the two species

differ by stem indumentum, bristle length, leaflet shape and venation, and shape of the outer bracteole margin. A morphological description, illustrations—including X-ray imaging of the leaflet venation—and notes on the geographical distribution, habitat, and conservation status of the new species are presented.

Keywords: Fabaceae, Dalbergieae, X-ray, venation, taxonomy, forage.

Stylosanthes Sw. comprises about 50 species and is distributed mainly in the Neotropics, with only two species in the Paleotropics (’t Mannetje, 1984; Costa, 2006; Ferreira et al., 2020). The genus is characterized by subshrubby habit, trifoliolate leaves, amplexicaul fused stipules with two teeth, spiciform inflorescences, and papilionaceous, generally yellow flowers. Fruits are loments with one or two fertile articles and with a rostrum formed by the residual style (’t Mannetje, 1984; Costa, 2006; Gissi, 2020). The genus was previously divided into two sections, *S.* sect. *Stylosanthes*, diagnosed by the presence of only one inner bracteole and the absence of a rudimentary axis in the inflorescence, and *S.* sect. *Styposanthes* Vogel, with two inner bracteoles and the presence of a rudimentary axis (i.e., an undeveloped, stiff structure that occurs beneath the flowers, besides the inner bracteoles) in the inflorescence (Vogel, 1838). The system was followed by other authors and it is useful for distinguishing species (Mohlenbrock, 1958; Kirkbride & Kirkbride, 1987; Costa, 2006), however the sections were found to be non-monophyletic in molecular phylogenetic studies (Vander Stappen et al., 2002, 2003; Oliveira et al., 2021).

Brazil harbors more species of *Stylosanthes* than in any other country with 32 species, 14 of which are happens exclusively in the country (Gissi, 2020). Within Brazil, 25 species of *Stylosanthes* are distributed mainly in the Cerrado domain, in open vegetation physiognomies (following Ribeiro & Walter, 2008), such as *cerrado típico*, *campo sujo*, *campo limpo*, *campo rupestre,* and *veredas* (Costa, 2006; Vanni, 2017; Gissi, 2020). Several species also occur in pastures, lawns, and roadsides (Gissi, 2020) and are sometimes considered to be agricultural weeds for their invasive behavior in cultivated fields (Carvalho, 2013), while cultivars of *S. capitata* Vogel and *S. macrocephala* M.B. Ferreira & Sousa Costa are sold commercially under the name of Estilosantes ‘Campo

Grande' and are planted for livestock forage (Embrapa Gado de Corte, 2007; Karia et al., 2010; Machado et al., 2010).

While examining herbarium specimens at SLUI, the authors encountered a specimen of *Stylosanthes* collected in Chapada das Mesas National Park in the State of Maranhão. Although it was previously identified as *S. angustifolia* Vogel, we surmised that the specimen not only did not belong to that species but that it was new to science. Here, we provide a description and illustration of this new species.

Material and methods

For this study, specimens of all South American *Stylosanthes* species deposited in the following herbaria were analyzed: ALCB, ASE, BOTU, CEN, EAC, ESA, HBRA, HUEFS, HVASF, IAN, INPA, L, MFS, NY, P, R, RB, SLUI, SP, UB, US, WAG (acronyms according to Thiers, 2021). The relevant taxonomic literature on *Stylosanthes* was also consulted (Vogel, 1838; Mohlenbrock, 1958; 't Mannetje, 1984; Costa, 2006; Vanni, 2017; Gissi, 2020). The use of overall morphological terms follows Harris and Harris (2001) and Radford (1974). For a more complete terminology of leaves, the Manual of Leaf Architecture (Ellis et al., 2009) and the Hickey (1973) classification were also consulted, especially regarding venation terms. Herborized leaflets were radiographed using a digital X-ray machine (Faxitron X-Ray, model MX-20 DC12), with an exposure time of 8 sec at a voltage of 26 kV (Schneider et al., 2018). Photographs of minute morphological traits were taken under a Leica M205C stereomicroscope (Leica, Germany) with an attached Leica DFC 425 camera. The radiographies were used to better identify the venation pattern in the species. A distribution map was generated using QGis 3.22 and conservation status assessment was made employing the IUCN Red List categories and criteria (IUCN Standards and Petitions Committee, 2019).

Taxonomic treatment

Stylosanthes acicularis Gissi & Fort.-Perez, **sp. nov.** —Type: Brazil. Maranhão, Carolina, Parque Nacional Chapada das Mesas, 337 m elevation, 07°18'53.2"S, 47°02'28.0"W, 06 Apr 2017 (fl, fr), *R. V. C. Saraiva s.n.* (holotype: SLUI herb. no. 4987 [!]). (Figs. 1–3.)

Diagnosis.—*Stylosanthes acicularis* is similar to *S. hippocampoides* Mohlenbr. but differs by having leaflets linear, less than 1 mm wide, with imperceptible primary vein and secondary veins angles 5°–8° and uniform, bristles on the stem up to 1 mm long, pilose-scabrous, and the outer bracteole bilobed (vs. leaflets elliptical, easily discernible primary vein, secondary veins angles 10°–15° and irregular, stem bristles 2–4 mm long, hispid-pubescent, and the outer bracteole unlobed in *S. hippocampoides*).

Perennial subshrub, 0.6 m tall, branched from the base. Stems erect, ligneous near the base, upper branches green, striate, indumentum pilose-scabrous, viscid, with scattered bristles up to 1 mm long and more numerous non-glandular trichomes, the latter mostly restricted to one side of each internode (the side above the adjacent leaf, i.e., alternating between internodes). Stipules amplexicaul with a pilose-scabrous indumentum, sheath 3–6 mm long, the apex with two slightly spreading teeth on each side, the teeth 3–4 mm long. Leaves trifoliolate; pulvinus 0.5–0.75 mm long, petiole 5–7 mm long, adaxially channeled, sericeous with scattered bristles; rachis up to 1 mm long, pilose, rarely with bristles; pulvinules 0.5 mm long, pilose; leaflet blades 10–18 × 0.4–1 mm, linear, L:W ratio of the lamina 12:1 to 25:1, mucronate, narrowly acute-cuneate at base, chartaceous, V-shaped in cross-section; adaxial surface sparsely scabrous with

scattered short bristles and appressed non-glandular trichomes; abaxial surface scabrous, with bristles concentrated mainly on the primary vein, primary vein imperceptible, the secondary veins 3–4 pairs, the angles 5°–8° and uniform, eucamptodromous with regular spacing and excurrent attachment to the midvein, immersed and inconspicuous above, prominent below, marginal vein lacking. Inflorescences terminal and axillary, formed by 1–2 congested spikes, more or less obovoid, 6–10 mm long, 2–4-flowered; outermost bract stipule-like, sheathed at base, with a 1–3-foliolate reduced leaf distally, the sheath 4–5 × 2–3 mm, with 3–5 pairs of veins, pilose-scabrous, rounded at base and more or less oblong, the apex with two slightly spreading teeth on each side, the teeth cuspidate-triangular, 2.8–4.2 mm long; other bracts similar to the outermost bract, but always 1-foliolate; bracteoles 2, hyaline, pilose externally, and margin ciliate; outer bracteole adaxially convex, truncate at base, somewhat dilated distally, apically bilobed, 2.6–3.6 x 1.1 mm, the lobes unequal, triangular-apiculate, the larger one 2 mm long, the smaller one ca. 1.5 mm long, inner bracteole entire, ovate, abaxially convex, truncate at base, caudate at apex, ca. 3 mm long. Flowers exserted; calyx 3–4 mm long, 5-lobed, with the sepals united for ca. 2 mm, ciliate on the lobe margins, otherwise glabrous, dorsal lobes 1.5–1.6 mm long, obtuse, lateral lobes 1.4–1.6 mm, acute-triangular, ventral lobe 2–2.5 mm, acute-triangular, keeled; corolla yellow, glabrous, standard petal suborbicular, unguiculate, apically retuse, ca. 3.4 × 7.6 mm; wings elliptic, spurred at base, ca. 5.9 × 1.6 mm, keel petals apically fused, falcate, spurred at base, ca. 7.7 mm long; androecium monadelphous; anthers dimorphic, the shorter 5 basifixed, the longer 5 dorsifixed, ovary biovulated. Loment with one fertile article, orbicular, 3.2–3.5 × 2.3–2.4 mm, papillose at apex, reticulate; rostrum ca. 1 mm long, coiled, covered with long papillae. Seeds ca. 1.9 × 1.5 mm, reniform, brown with a lustrous testa and dark brown rim aril.

Etymology.—The specific epithet refers to the linear leaflets of the species.

Distribution and habitat.—Known from a single collection from Chapada das Mesas National Park (CMNP) in the State of Maranhão, Brazil, where it was found in typical *cerrado* vegetation (Fig. 4) at 353 m elevation. According to Saraiva et al. (2020), the relief in the CMNP ranges from 250 m in the valleys to 524 m in the hills, the local soil is mostly quartz sands, the local climate is classified as Tropical Aw in the Köppen (1884) classification, the average annual temperature is 26.1°C, and annual precipitation is 1250–1500 mm (IBAMA, 2013). The rainy season starts in November and extends through April. During the dry season (May to October) the local vegetation is especially vulnerable to fire outbreaks. (Saraiva et al., 2020).

Phenology.—The species was collected in April with flowers and mature seed-bearing fruits.

Conservation status.—Since the species is known from only a single collection, we assess it as Data Deficient (DD; see IUCN Standards and Petitions Committee, 2019). The species has been collected inside a protected area, but it's possible that it can occur in nearby Cerrado areas since other species of *Stylosanthes* are generally wide distributed. However, Cerrado areas are often threatened by the expansion of agriculture and fire in the region (Saraiva et al., 2020).

The combination of a single fertile article and very short rostrum in the loment, the absence of a rudimentary axis beneath the flowers in the inflorescence, and the presence of only a single inner bracteole suggest a close relationship between *Stylosanthes acicularis* and the ca. eight species of the *S. guianensis* complex (sensu 't Mannetje, 1977; Gissi et al., 2022). Species with these characteristics that have been sampled in molecular phylogenies form a well-supported clade (Vander Stappen et al., 2002; Vander Stappen et al., 2003; Oliveira et al., 2021).

Among species of the *Stylosanthes guianensis* complex, *S. acicularis* is most similar to *S. hippocampoides*, a wide-ranging species distributed from northeastern Brazil to central Bolivia, Paraguay, and northern Argentina. The two species can be distinguished from other species of the *S. guianensis* complex by the combination of small capitate inflorescences and the leaflets having up to 5 secondary veins and lacking a marginal vein. Although the new species is known from just a single specimen, and the type locality may lie within the geographical distribution of *S. hippocampoides*, we are confident of its distinction from *S. hippocampoides*. The latter species is relatively well characterized, being known from more than 50 analyzed collections, including type specimens, over its broad geographical range (Appendix 1). As enumerated in the diagnosis and Table 1, the type of *S. acicularis* differs by multiple morphological characters, including indument, leaflet shape and venation, and lobing of the outer bracteole, from all collections of *S. hippocampoides*, including those from nearby localities in Northeast Brazil (Table 1).

The new species is also similar in some features to *Stylosanthes angustifolia*; indeed, the type specimen of *S. acicularis* was previously misidentified as *S. angustifolia*. Both species lack a rudimentary axis beneath the flower, and have only one inner bracteole, loments with only one fertile article, and linear leaflets lacking a marginal vein. *Stylosanthes angustifolia* is not considered a member of the *S. guianensis* complex because of the shape of the inflorescence and the rostrum length. In the phylogenies, it is nested in the clade with other species with long rostrums (Vander Stappen et al., 2002). The geographical range of *S. acicularis* is also contained within that of *S. angustifolia*, which ranges from the Northeast Brazil to the Guianas. However, the new species consistently differs from *S. angustifolia* in multiple morphological characters, most notably in its shorter rostrum and much less elongate inflorescence (Table 1).

Key to the species of *Stylosanthes* in Maranhão

1. Flowers and fruits subtended by a rudimentary axis; 2 inner bracteoles
    2. Bracts wider than longer, more than 10mm broad …… *S. capitata*
    2. Bracts longer than wider, up to 10mm broad
        3. Plants hispid; with long bristles, ca. 5 mm long; rostrum coiled……*S. pilosa*
        3. Plants scabrous; with short bristles, ca. 2 mm long; rostrum uncinate…*S. scabra*
1. Flowers and fruits <u>not</u> subtended by a rudimentary axis; 1 inner bracteole
    4. Leaflets linear, less than 2 mm broad
        5. Inflorescences very narrow and elongated; rostrum longer than the upper article ……..……. *S. angustifolia*
        5. Inflorescences short and capitate; rostrum shorter than the upper article ……...……..… *S. acicularis*
    4. Leaflets elliptical or oboval, more than 2 mm broad
        6. Rostrum longer than the upper article…… *S. humilis*
        6. Rostrum shorter than the upper article
            7. Loment with conspicuous oil glands at the base …… *S. guianensis*
            7. Loment without conspicuous oil glands at the base
                8. Leaflets presenting marginal vein …… *S. gracilis*
                8. Leaflets without marginal vein
                    9. Loment with 1 article
                        10. Leaflets with more than 5 secondary veins …..... *S. grandifolia*
                        10. Leaflets with less than 5 secondary veins … *S. hippocampoides*
                    9. Loment with 2 articles
                        11. Rostrum coiled, loment straw…… *S. viscosa*
                        11. Rostrum uncinated, loment brown…… *S. nunoi*

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Declarations

Competing interests.—B. Torke is Editor-in Chief of Brittonia but was not involved in the peer review of this article or the decision to publish. The authors declare that they have no known competing interests that could have appeared to undermine the objectivity or integrity of the work reported in this paper.

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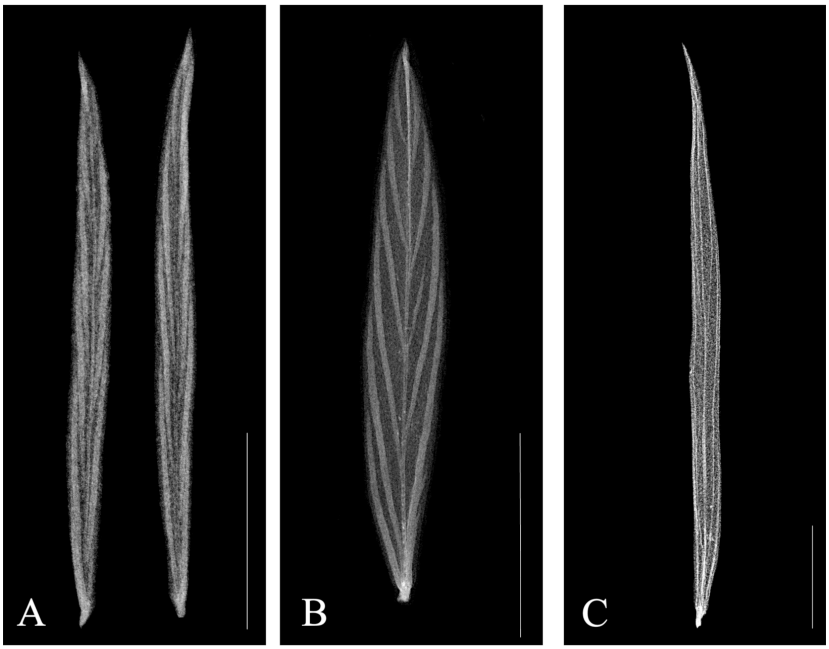
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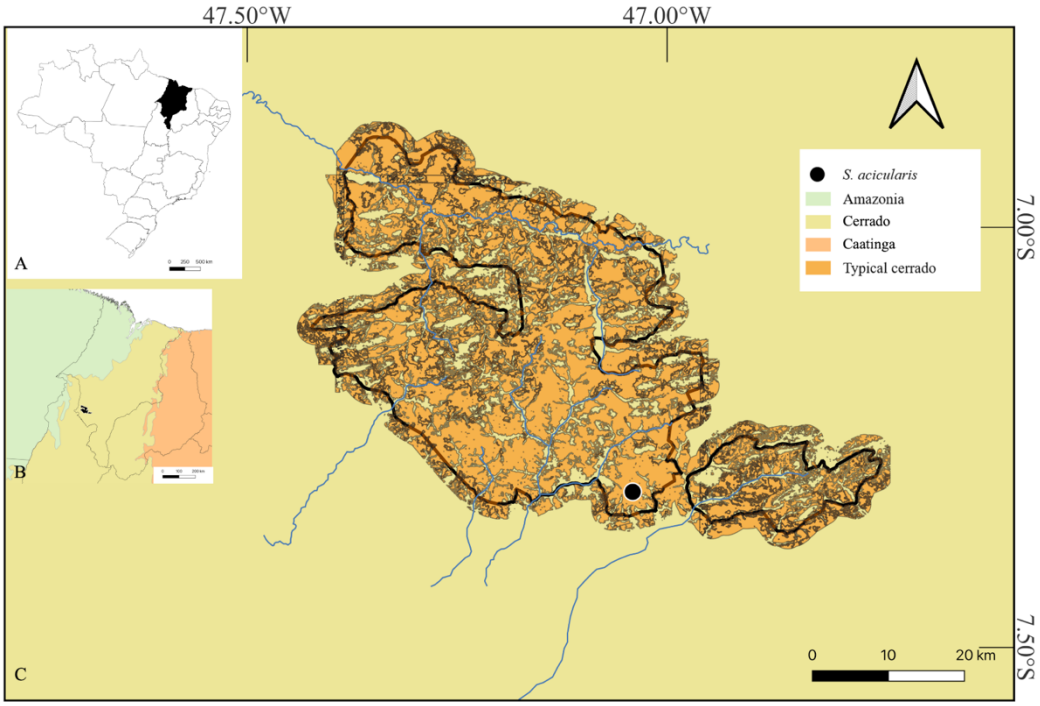

Figure captions

FIG. 1. *Stylosanthes acicularis*. **A.** Habit with inflorescences. **B.** Leaflet **C.** Outer bracteole. **D.** Inflorescence **E.** Loment. (Drawn from the holotype by Maíra G. Mezzacappa.)

FIG. 2. *Stylosanthes acicularis*. **A.** Stem with bristles with secretion drops (arrowheads) and non-glandular trichomes (arrow). **B.** Outer bracteole. **C.** Inflorescence highlighting the bract leaflets (arrowheads). **D.** Loment. **E.** Seed. *Stylosanthes angustifolia.* **F.** Inflorescence bearing loments. Loment's rostrum exerting the inflorescence (arrowheads). *Stylosanthes hippocampoides*. **G.** Stem with bristles **H.** Outer bracteole **I.** Loment. [Scale bars: A–B; D–E, G–I = 1 mm; C = 5 mm; F = 1 mm.]

FIG. 3. Comparison of the leaflets of three species of *Stylosanthes* by X-ray method emphasizing venation. **A.** *S. acicularis*. **B.** *S. hippocampoides* **C.** *S. angustifolia*. [Scale bars: 5 mm.]

FIG. 4. Geographical distribution of *Stylosanthes acicularis* in the Chapada das

Mesas National Park (CMNP). **A.** Map of Brazil highlighting the state of Maranhão. **B.** Location of the CMNP (black-shaded area) in Maranhão. The colors represent the phytogeographic domains present in the state. **C.** Cerrado vegetation in the CMNP Black dot represents the type locality of *S. acicularis*.

Table 1. Morphological comparison of three Brazilian species of *Stylosanthes*.

Character	*S. acicularis*	*S. hippocampoides*	*S. angustifolia*
Stem indumentum	Pilose-scabrous, viscid	Hispid-pubescent, non-viscid	Hispid-pubescent, non-viscid
Bristles length	< 1 mm	2–4 mm	1–2 mm
Leaflet shape	Linear, 10–18 × 0.4–1 mm	Elliptical, 15–30 × 2–4 mm	Linear, 15–30 × 1–2 mm
L:W ratio of the lamina	12:1 to 25:1	10:1 to 5:1	10:1 to 20:1
Leaflet primary vein	Imperceptible	c	Imperceptible
Leaflet secondary veins angles	5°–8° and uniform	10°–15° and irregular	5°–8° and uniform
Inflorescence shape	Capitate	Capitate	Narrow, elongated
Inflorescence indumentum	Pilose-scabrous	Hispid-pubescent	Hispid-pubescent
Outer bracteole	Bilobed	Unlobed	Unlobed
Fertile articles	1	1	2
Rostrum length	1 mm	1–1.5 mm	4–5 mm
Rostrum shape	Shortly coiled	Shortly coiled or uncinate	Uncinate

Appendix 1

Selected examined material

Stylosanthes hippocampoides Mohlenbr.

Argentina. Córdoba: Sierra Achala: La Cuesta de La Ensenada, 4 Jan 1885 (fl., fr.), *F. Kurtz 8303* (NY). Sierra Chica: Potrero de Loza, 30 Dec 1979 (fl., fr.), *C. Galander s.n.* (NY). Sierra Chica: Santa Catalina, 28 Feb 1891 (fl., fr.), *F. Kurtz 6983* (NY). Sierra Chica: March 1891 (fl., fr.), *F. Kurtz s.n.* (NY). Unquillo: Mar 1926 (fl., fr.), *C. Bruch s.n.* (NY). Bella Vista: 19 km S de Bella Vista, Est. Cuevas, 24 May 1973 (fl., fr.), *A. Schinini 6552* (NY). Capital: Santa Catalina, 31 Oct 1944 (fl., fr.), *T. S. Ibarrola 928* (NY). Concepción: Estancia Tranquera de Hierro, 66 km al NE de Chavarría, camino a Concepcíon, 3 Dec 1996 (fl., fr.), *M. M. Arbo 6938* (NY). Empedrado: Arroyo Gonzales, 6 Mar 1974 (fl., fr.), *G. J. Schwarz 10011* (NY). Empedrado: EE INTA, s.d. (fl., fr.), *A. Schinini 16227* (NY). Itatí: Ramada Paso, 11 Feb 1972 (fl., fr.), *A. Krapovickas 16478* (NY). Ituzaingó: Ruta 12, Bajo Vedoya, ca 1km al E del peaje, 14 Jan 2001 (fl., fr.), *M. M. Arbo 8771* (NY). Ituzaingó: Villa Olivari, ruta 12m 24 km W de Ituzaingó, 21 Dec 1983 (fl., fr.), *R. Vanni 428* (NY). Lavalle: Estancia "La Pastoril", 24 Nov 1971 (fl., fr.), *T. M. Pedersen 10007* (NY). Monte Caseras: Juan Pujol, 8 Feb 1945 (fl., fr.), *T. S. Ibarrola 2331* (NY). Paso de los Libres: Bonpland costa rio Uruguay, 19 Jan 1945 (fl., fr.), *T. S. Ibarrola 2142* (NY). Paso de los Libres: Ea. "El Recreo", 21 km E de Bonpland, 19 Feb 1979 (fl., fr.), *A. Schinini 17345* (NY). San Martín: 14 Jul 1944 (fl., fr.), *T. S. Ibarrola 1683* (NY). San Martín: Yapeyú, Costa del río Uruguay, 12 Feb 1979 (fl., fr.), *A. Schinini 16995* (NY). San Martín: Yopeyu, 31 Dec 1944 (fl., fr.), *T. S. Ibarrola 1918* (NY). Santa Teresa: 25 Dec 1947 (fl., fr.), *T. M. Pedersen 79* (NY). Santo Tomé: Cuay Grande, 8 Jul 1944 (fl., fr.), *T. S. Ibarrola 1607* (NY). Santo tomé: Pueblo al NE 2 leguas, s.d. (fl., fr.), *T. S. Ibarrola 1514* (NY). Between San Cosme and Ramada Paso, 9 Dec 1947 (fl., fr.), *J. L. Stephens 15* (NY). **Misiones:** Candelaria: Puerto Santa Ana, 31 Jan 1945 (fl., fr.), *G. J. Schwarz 608* (NY). Posadas, Bompland, in Campina trans Martines chico: 20 Jan 1908 (fl., fr.), *E. L. Ekman 1742* (NY). **Sará:** Santa Cruz: Lomas secas, campos de Buena Vista, 6 Feb 1925 (fl., fr.), *J. Steinbach 6916* (NY).
Bolivia. Santa Cruz: Warnes Province: Pampa de Viru-Viru, a 17 Km al N de ciudaded de Sta. Cruz., 13 Feb 1994 (fl., fr.), *M. Menacho 450* (NY).
Brasil. Bahia: Correntina: 7 km SW de Correntina., 2 Feb 1963 (fl., fr.), *A. Krapovickas 30162* (NY). **Goiás:** Alto Paraíso de Goiás: 5-6 km N of Alto Paraíso, peat of E & NE aspect by highway, 30 Nov 1988 (fl., fr.), *R. Kral 75742* (NY). Guará: ca. 9km s. of Guará, 20 Mar 1968 (fl., fr.), *H.S. Irwin 21515* (NY). **Maranhão:** Carolina: Transamazonian Highway, BR-230 and BR-010, Pedra Caida, 35 km N of Carolina, ponto turístico W towards Serra de Baleia, 14 Apr 1983 (fl., fr.), *E. L. Taylor E1235* (NY). **Pará:** Bragança: Desvio da estrada PA-242, no km 15 - Viseu km 7, 25 Nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2420* (BOTU, CEN). **Pará:** São Graldo do Araguia: Fazenda Andorinhas, retiro Santa Cruz, margem esquerda do rio Araguaia, 21 Apr 2004 (fl., fr.), *Silva-Pereira, G. 8903* (BOTU, CEN). **Paraná:** Jaguariaíva: Above Rio das Mortes on road to Senges., 18 Jan 1965 (fl., fr.), *L. B. Smith 14771* (NY). Lapa: Rio Passa 2, 2 Mar 1970 (fl., fr.), *C. Koczicki 253* (NY). Tibagi: Along the river southeast of Tibagi., 10 Nov 1935 (fl., fr.), *R. Reiss 75a* (NY). At foot of Pico de Cajurú, 15 km SE of Jaguariaíva., 4 Mar 1966 (fl., fr.), *J. C. Lindeman 1455* (NY). Piraí do Sul: Fazenda Nova Era, 15 Feb 2013 (fl., fr.), *Brotto, M. L. et al. 931* (ESA). **Rio Grande do Sul:** Santa Maria: Estação Experimental de Silvicultura, 28 Feb 1956 (fl., fr.), *O. R. Camargo 5*

(BLA). Tupanciretã: Estação Experimental, 07 Feb 1969 (fl., fr.), *A. Pott 74* (BLA). Quaraí: Cerro do Jarau, 12 Nov 1987 (fl., fr.), *Galvani, F.R. & Freitas, M.R. s.n.* (HUCS). 55 km W de Rosário do Sul, 8 Dec 1978 (fl., fr.), *A. Krapovickas 34236* (NY). **Santa Catarina:** Mafra: 7 km northwest of Mafra on the road to Barracas (20 km), 13 Mar 1957 (fl., fr.), *L. B. Smith 12090* (NY). **São Paulo:** Botucatu: Distrito de Rubião Júnior, em frente ao Haras Apache WO, 29 Sep 2018 (fl., fr.), *Gissi, D.S. 403* (BOTU). 7 Feb 2019 (fl., fr.), *D. S. Gissi 426* (BOTU). Botucatu: Distrito Rubião Júnior, 08 Feb 2017 (fl., fr.), *Tunes, T.P. 11* (BOTU).
Paraguay. Boqueron: Colonias Mennonitas, 2 May 1995 (fl., fr.), *R. Vanni 3492* (NY). **Guairá:** Independencia: Arroyo Guazú, camino a San Gervasio, 27 Mar 1993 (fl., fr.), *A. Schinini 28079* (NY). Central: Near Ituagua, 14 Feb 1948 (fl., fr.), *J. L. Stevens 94* (NY). San Pedro: 10 km W de San Estanislao, bañado del río Tapiracuí, 19 Feb 1994 (fl., fr.), *A. Krapovickas 44879* (NY).

Stylosanthes angustifolia Vogel
Brazil. Amapá: Amapá: BR-156, km 38 do trevo de Amapá para Tartarugalzinho, 2 sep 1988 (fl., fr.), *Costa, N.M. de Sousa 2245* (BOTU, CEN). BR-156, 48 km do trevo de Amapá para Tartarugalzinho, 2 sep 1988 (fl., fr.), *Costa, N.M. de Sousa 2247* (BOTU, CEN). Ferreira Gomes: A 1 km do Entroncamento da BR-156 para Porto Grande, 28 jan 1988 (fl., fr.), *Costa, N.M. de Sousa 2172* (BOTU, CEN). Macapá: Km 92 da BR-156, 27 aug 1988 (fl., fr.), *Costa, N.M. de Sousa 2122* (BOTU, CEN). Tartarugalzinho: BR-156, 13 km Sul de Tartarugalzinho, 2 sep 1988 (fl., fr.), *Costa, N.M. de Sousa 2252* (BOTU, CEN). BR-156, 17 km de Tartarugalzinho para Ferreira Gomes, 3 sep 1988 (fl., fr.), *Costa, N.M. de Sousa 2262* (BOTU, CEN). **Bahia:** Ca. 25km W of Barreiras, 03 mar 1971 (fl., fr.), *Irwin, HS; Harley, RM; Smith, GL 31349* (UB). Barreiras: BR-242-km 938, Rodovia Brasília-Fortaleza, beira de estrada, 29 sep 1978 (fl., fr.), *Coradin, L. 1175* (BOTU, CEN). São Desidério: Fazenda Estiva, Córrego Galheirão., 9 apr 1989 (fl., fr.), *R.C.Mendonça 1457* (RB). **Ceará:** Juazeiro do Norte: Rodovia Juazeiro do Norte - Crato, km 2, (pista dupla), 24 jun 1987 (fl., fr.), *Coradin, L. 7766* (BOTU, CEN). São Luis do Curu: BR-222, km 70, Fortaleza - Sobral, beira da estrda, 13 jun 1979 (fl., fr.), *Coradin, L. 1896* (BOTU, CEN). Tianguá: Rodovia Tianguá- Teresina (BR-22), km 27, 1 jul 1987 (fl., fr.), *Coradin, L. 7898* (BOTU, CEN). Tianguá: Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1 jul 1987 (fl., fr.), *Coradin, L. 7889* (BOTU, CEN). Tianguá: Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1 jul 1987 (fl., fr.), *Coradin, L. 7892* (BOTU, CEN). **Maranhão:** Alto Parnaíba: Entrada de Alto Parnaíba desde Balsas na área da caixa d′sgua municipal, 21 may 1991 (fl., fr.), *Valls, J.F.M. 13046* (BOTU, CEN). **Maranhão:** Balsas: Borda de ampla lagoa 12 km ao sul de Balsas na saída para Alto Parnaíba, fazenda Brejo da lagoa, 20 may 1991 (fl., fr.), *Valls, J.F.M. 13031* (BOTU, CEN). Carolina: Laje de Arenito ao longo do rio Farinha, 7 apr 2016 (fl., fr.), *Sevilha, A.C. 5664* (BOTU, CEN). Carolina: Margem esquerda do rio Farinha, próximo à ponte na BR-010, 25 apr 2008 (fl., fr.), *Silva-Pereira, G. 13321* (BOTU, CEN). Carolina: Parque Nacional Chapada das Mesas, acesso E no km 612 da BR- 0230, 20 km em estrada vicinal em direção á localidade Buenos Aires, próximo ao rio Farimha, 7 apr 2016 (fl., fr.), *Simon, M.F. 2746* (BOTU, CEN). Carolina: Rodovia BR-010, Carolina-Estreito, km 26, entrada para a cachoeira do Dodô, 24 apr 2008 (fl., fr.), *Silva-Pereira, G. 13265* (BOTU, CEN). Peritoró: Rodovia Caxias-Peritoró (BR-316), km 48, 2 jul 1987 (fl., fr.), *Coradin, L. 7946* (BOTU, CEN). **Pará:** Monte Alegre: 26 mar 1924 (fl., fr.), *J.G. KUHLMANN 1770* (RB). Augusto Correa: Estrada PA-242 Augusto Correia km 2,2, 25 jan 1988 (fl., fr.), *Costa, N.M. de Sousa 2423* (BOTU, CEN).

Bragança: Bragança- Ajuruteua, a 300 m da praia, 24 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2414* (BOTU, CEN). Bragança: Bragança- Ajuruteua, Km 30,5, 24 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2408* (BOTU, CEN). Bragança: Bragança- Ajuruteua, Km 4,7, 24 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2404* (BOTU, CEN). Bragança: Entroncamento- Bragança-PA, Mirasselvas, 23 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2391* (BOTU, CEN). **Brazil. Pará:** Bragança: Trevo Bragança-Mirasselvas, km 1,3, 23 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2393* (BOTU, CEN). Capanema: Capanema-Bragança, km 5, 22 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2371* (BOTU, CEN). Castanhal: Rodovia PA-136, Castanhal-Curuçá, km23, 19 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2325* (BOTU, CEN). Curuca: Rodovia Curuçá - Marudá km 1,4, 19 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2329* (BOTU, CEN). Irituia: Capitão Poço-Irituia, km 34, 28 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2460* (BOTU, CEN). Irituia: Capitão Poço-Irituia, km 39,4, 28 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2464* (BOTU, CEN). Nova Timboteua: Nova Timboteua - Salinópolis-PA, km 10, 20 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2340* (BOTU, CEN). Ourém: Ourém- Capitão Poço, km 3,7, 27 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2445* (BOTU, CEN). Salinópolis: Alto da praia do Atalaia, 20 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2347* (BOTU, CEN). Santa Isabel do Pará: Trevo da BR-010- Vigia, cerca de 700m, 17 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2275* (BOTU, CEN). São João de Pirabas: Entroncamento PA-124, Capanema km 2, 21 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2361* (BOTU, CEN). Vigia: Estrada de Santa Isabel do Pará - Vigia km 48, 17 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2292* (BOTU, CEN). Vigia: Saída para Santa Isabel do Pará, 18 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2296* (BOTU, CEN). Viseu: Estrada PA-242 Viseu - Bragança km 41, desvio para a rodovia Pará - Maranhão, 26 nov 1988 (fl., fr.), *Costa, N.M. de Sousa 2434* (BOTU, CEN). **Paraíba:** Baía da Traição: Dunas fixas, utilizadas como pasto., 27 jul 2001 (fl., fr.), *Souza, V.C. ; Souza, J.P. 26626* (ESA). **Pernambuco:** Petrolina: Entre Caboclo e Dormente, 22 apr 1971 (fl., fr.), *Heringer, EP; Lima, DA; Lana Sobrinho, JP; Sarmento, AC 275* (UB). Petrolina: Rodovia Petrolina-Santa Maria da Boa Vista, km 87, 5 apr 1979 (fl., fr.), *Coradin, L. 1293* (BOTU, CEN). **Piauí:** Piracuruca: Divisa CE/ PI-teresina (BR-222), km 52, 1 jul 1987 (fl., fr.), *Coradin, L. 7914* (BOTU, CEN). Piracuruca: Parque Nacional de Sete Cidades, área A1 do levantamento fitossociológico., 12 may 2007 (fl., fr.), *Mendes, MRA; Viana, JL 11* (UB). Piracuruca: Parque Nacional de Sete Cidades, área A1 do levantamento fitossociológico., 07 jul 2007 (fl., fr.), *Mendes, MRA; Viana, JL; Sousa, RS 66* (UB). Piracuruca: Parque Nacional de Sete Cidades., 21 jul 2007 (fl., fr.), *Mendes, MRA; Munhoz, CBR 162* (UB). **Roraima:** Caracaraí: Parque Nacional Viruá. Piçarra na beira da estrada vicinal, Área aberta., 16 sep 2010 (fl., fr.), *Siniscalchi, C.M 76* (RB). **Tocantins:** Babaculândia: margem do rio Taboca, 26 nov 2009 (fl., fr.), *Silva-Pereira, G. 14797* (BOTU, CEN). **Tocantins:** Darcinópolis: Margem direita do rio Curicaca, cachoeira da fazenda do Sr. Marcelo, 17 apr 2008 (fl., fr.), *Silva-Pereira, G. 13005* (BOTU, CEN).

French Guiana. Cayenne: jan 1845 (fl., fr.), *H. C. Rothery* (NY). **Kourou:** Centre Spatial Guyanais. White sand savanna., 30 aug 2005 (fl., fr.), *P. J. M. Mass 9692* (NY). **Laussat:** Bassin de la Basse Mana: 15 apr 1989 (fl., fr.), *G. Cremers 10628* (NY). Route de Sinnamary, entreé de Marosi, 1 jun 1957 (fl., fr.), *Hoock s.n.* (NY).

Guyana. Rupunini: Dadanawa: Between Dadanawa and Mountainpoint, 3 oct 1992 (fl., fr.), *M. J. Jansen-Jacobs 2721* (NY). Manari: 12 jul 1995 (fl., fr.), *M. J. Jansen-Jacobs 4402* (NY). Manari: 20 oct 1979 (fl., fr.), *P. J. M. Mass 3659* (NY). Mountain Point: 13 jun 1995 (fl., fr.), *M. J. Jansen-Jacobs 4054* (NY). St. Ignatius: 12 jul 1958 (fl., fr.), *S. G. Harrison 1257* (NY). Lethem: Moka creek flood plain. Stand 18., 5 sep 1963 (fl., fr.), *R. Goodland 607* (NY). Rupununi savanna. Lethem., 28 oct 1987 (fl., fr.), *M. J. Jansen-*

Jacobs 567 (NY). **U. Takutu-U. Essequibo:** Essequibo: South Rupununi savanna, Dadanawa., 17 jun 1989 (fl., fr.), *L. J. Gillespie 1638* (NY). **U. Takutu-U. Essequibo:** Sand Creek: Sand creek to Shea Village, 1996 may 1996 (fl., fr.), *D. Clarke 1774* (NY). Karanambo: Savanna near airstrip; Sandy clay with na overlay of lateritic gravel, 4 sep 1988 (fl., fr.), *P. J. M. Mass 7228* (NY). Waranama Ranch. Intermediate savanna. Berbice River, 10 jun 1958 (fl., fr.), *S. G. Harrison 1083* (NY).
Suriname. Coebiti: Saramacca: 28 dec 1982 (fl., fr.), *A. P. Everaarts 729* (NY). **Paramaribo:** Zanderij: Vicinity of Zanderij, 50Km S. of Paramaribo. Zanderij Savanna on white sand, near Matta., 19 sep 1976 (fl., fr.), *S. Mori 8357* (NY). Wayambo River, 15 nov 1923 (fl., fr.), *D. H. Linder 97* (NY). **j**an (fl., fr.), *Hostmam 1018* (NY). may 1846 (fl., fr.), *H.A.H. Kegel 1113* (NY).
Venezuela. Apure: Pedro Camejo: P.N. Santos Luzardo. Río Cinaruco, 30 min abajo del paso Cinaruco, camino al Orinoco., 2 nov 1989 (fl., fr.), *A. Castillo 3110* (NY). **Bolivar:** Cedeño: Caicara del Orinoco, jan 1989 (fl., fr.), *S. Elcoro 210* (NY). Cedeño: Entre los km 12-120 de la carretera Caicara del Orinoco - Pto. Ayacucho. Al sur de Caicara del Orinoco., 18 nov 1984 (fl., fr.), *G. Aymard & B. Stergios 3142* (NY). Cerro San Borja: Middle Orinoco, 12 dec 1955 (fl., fr.), *J. J. Murdack 39850* (NY).

Capítulo 3

A synopsis of the legume genus *Stylosanthes* Sw. (Papilionoideae, Leguminosae) in South America and nomenclatural novelties

Danilo Soares Gissi, Benjamin M. Torke, Mario Tomazello-Filho and Ana Paula Fortuna-Perez

Artigo ainda não submetido

A synopsis of the legume genus *Stylosanthes* Sw. (Papilionoideae, Leguminosae) in South America and nomenclatural novelties

Danilo Soares Gissi[a], Benjamin Torke[b], Mario Tomazello-Filho[c], Ana Paula Fortuna-Perez[a]

[a]São Paulo State University – UNESP, Institute of Biosciences – IBB, Department of Biostatistics, Plant Biology, Parasitology and Zoology, PO Box 510, 18618-970, Botucatu, SP, Brazil.

[b]Institute of Systematic Botany, New York Botanical Garden, 2900 Southern Blvd., Bronx, NY, 10458-5126, USA

[c]Department of Forest Resource, Escola Superior de Agricultura Luiz de Queiroz, University of São Paulo, Av. Pádua Dias N° 11, Piracicaba, São Paulo 13418-900, Brazil

Abstract

A synopsis of *Stylosanthes* in South America is here presented. The genus is Pantropical with most species distributed throughout the Americas, and with the Brazilian Cerrado as the main diversity center. Many of its species are widely used as fodder for cattle. The genus has passed through several taxonomic reformulations provoking confusion in the taxa identification. We recognize 43 species of *Stylosanthes* in South America, and six new synonyms are proposed. Lectotypes of eight names are here designated, and a neotype for *S. nunoi* Brandão is chosen. *Stylosanthes pohliana* Taub. is re-established as an accepted species. Considering the morphological and ecological differences, the varieties of *S. guianensis* (Aubl.) Sw. *sensu* Costa (2006) are elevated to species level. New combinations include *S. microcephala* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez, *S. pauciflora* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez and *S. pubescens* (Pilger) Gissi & Fort.-Perez. A morphological and nomenclatural review is presented alongside an identification key, preliminary conservation status assessments, morphological comparisons, distribution maps, and illustrations.

Keywords: Dalbergieae, Fabaceae, Faboideae, nomenclature, taxonomy, estilosantes, forage

Introduction

The genus *Stylosanthes* belongs to the Leguminosae family, subfamily Papilionoideae, Dalbergieae tribe. This tribe is divided into three informal clades: Adesmia, Dalbergia, and Pterocarpus; *Stylosanthes* is nested in the last one (Lavin *et al.* 2001; Klitgaard & Lavin 2005). *Stylosanthes* is easily distinguished from other Dalbergioids by its subshrub habit, trifoliolate leaves, amplexicaul and bidentate stipules; inflorescences compound by several spikes, and loment with one or two articles and with a rostrum derived from the remanent style (Mohlenbrock 1957; Costa 2006). Studies of (Stace & Edye 1984; Costa 2006) showed that the genus had approximately 50 species distributed throughout the Americas, with a few native to Africa and Asia. The genus' main diversity center is the Brazilian Cerrado (Williams *et al.* 1984; Gissi 2020).

Many species of *Stylosanthes* are used as tropical forage. They stand out for their colonizing characteristics, prospering on low-fertility soils, high productivity of protein, and high seed production (Fernandes *et al.* 2005; Karia *et al.* 2010). Furthermore, like many legumes, the genus is a nitrogen-fixing plant (Taubert 1890, Chandler *et al.* 1982). N-fixing forage legumes may increase milk and meat production and even reduce greenhouse gas and enteric methane emissions (Boddey *et al.* 2020). Brazil is one of the largest producers of *Stylosanthes* seeds, especially with the cultivar “Campo-Grande” and “Bela” (Embrapa Gado de Corte 2007; Corte 2019).

Several authors have studied group taxonomy (Burkart 1939; Mohlenbrock 1957, 1962; Ferreira & Costa 1979; ’t Mannetje 1984; Costa 2006; Vanni 2017), but they often diverge in recognition of some taxa, and the identification of species is still challenging. Despite Costa's (2006) revisional work, several names are poorly studied in the genus,

resulting in taxonomy and nomenclature confusion. In addition, some studies subsumed the number of species, consequently hiding the diversity of the genus (’t Mannetje 1984; Vanni 2017). The infrageneric classification was also proposed dividing the genus into two sections: *S.* sect. *Stylosanthes* and *S.* sect. *Styposanthes* Vogel (Vogel 1838; Taubert 1890; Mohlenbrock 1957). Although the genus is monophyletic in molecular phylogenetic studies, the two sections are not supported (Vander Stappen *et al.* 2002; Costa 2006).

The present study aims to provide an identification key, illustrations, comments on diagnostic characteristics, distribution maps, and a morphological and nomenclature revision of the species of *Stylosanthes* from South America.

Material and methods

Exsiccates from herbaria BHCB, BLA, BOTU, ESA, CEN, HUCS, HVAT, MBM, NY, PACA, PAMG, RB, UB, and UEC were personally examined. In addition, high-resolution photographs from B, BAB, BM, F, G, GH, K, L, LL, M, MICH, P, SI, U, UC, US, W, and WAG were carefully analyzed. All cited acronyms follow the Index Herbariorum (Thiers 2022). The complete list of the examined specimens is presented in Appendix 1.

Field expeditions were made in native vegetation, pastures, and anthropic areas in the municipalities of Botucatu – SP, Buri – SP, Piracicaba – SP, Alegrete – RS, Torres – RS, and Brasília – DF. Collections were deposited in herbarium BOTU.

General morphological terminology followed Font-Quer (1993), Beentje (2010), and Harris and Harris (2001). For 2-D and 3-D shapes, it followed Radford *et al.* (1974), for inflorescences, Weberling (1989), and for leaf venation, Ellis *et al.* (2009). In this study, we adopt the term plumose appendage for the rudimentary axis in the inflorescence (Taubert 1890); bristles for the secretory emergences on the organ surfaces (Payne 1978;

Gissi *et al.* 2022*b*); and rostrum for the upper article beak (Font Quer 1993; Harris & Harris 2001).

The nomenclature is in accordance with the International Code of Nomenclature for algae, fungi, and plants (Turland *et al.* 2018). Conservation status assessments were employed according to IUCN Red List categories and criteria (IUCN 2019). Distribution maps were generated using the software QGis 3.22. The phytogeographic domains were based on IBGE (2012) and Olson (2001).

Dried leaflets were radiographed using a digital X-ray machine (Faxitron X-Ray, MX-20 DC12), with an exposure time of 8 sec at a voltage of 26 kV (Schneider *et al.* 2018). Morphological characters were photographed under a stereomicroscope (Leica M205C, Germany) with an attached camera (Leica DFC 425).

Results

We recognize 43 species of *Stylosanthes* in South America. Six new synonyms are proposed. The lectotypes of *S. angustifolia* Vogel, *S. bracteata* Vogel, *S. juncea* var. *setosa* f. *intermedia* Chodat. & Hassler, *S. montevidensis* var. *juncea* f. *setosa* (Chodat & Hassler) Hassler, *S. guianensis* var. *pauciflora* M.B. Ferreira & Sousa Costa, *S. longicarpa* Brandão & Sousa Costa, *S. pohliana* Pilger, *S. ruellioides* Mart. ex Benth. and the neotype for *S. nunoi* Brandão are here designated. Considering the morphological and ecological differences, the varieties of *S. guianensis* (Aubl.) Sw. *sensu* Costa (2006) are elevated to species level. The new combinations are *S. microcephala* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez, *S. pauciflora* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez, and *S. pubescens* (Pilger) Gissi & Fort.-Perez. *Stylosanthes pohliana* is re-established as accepted, and a new species is described.

Morphology

The plants from the genus bear some unique characteristics compared to other legumes. They vary from prostrate to erect subshrubs, lignified at the base and sometimes green at the distal portions. While most legumes possess two separate stipules, they are connate in *Stylosanthes*, forming a sheath that embraces the stems but not closing at the opposite side, resembling grass sheaths (Harris & Harris 2001). Each side of the stipule has an acute apex with a terminal arista or teeth.

The leaf petiole emerges at the end of the sheath's midvein. At the base, there is a pulvinus responsible for the leaf movement. The petiole is often channeled on the adaxial side, bearing non-glandular trichomes in the sulcus. At the distal portion, two lateral and opposite leaflets emerge (Fig. 1B). There's no visual differentiation between the petiole and the rachis. The rachis can be almost indistinguishable in some species or reach only a few millimeters. Each leaflet has a pulvinulus at its base.

The leaflets diverge in shape, apex, and venation. They may vary from widely elliptic to linear, obovate to oblanceolate. The apex is often mucronate or apiculate, and the apiculus can be stiff and poignant. The venation type is eucamptodromous with excurrent attachment to the midvein. However, they vary in the secondary veins' number, angle, and spacing.

Moreover, one notable characteristic is the presence of a conspicuous marginal vein, which can reach the apex or only ¾ of the blade (Fig. 1C, D, E). When it reaches only ¾ of the blade, another secondary vein completes the marginal vein toward the apex. The conspicuity of the vein is stated by the size of fiber caps attached to the phloem in the mesophyll (Gissi *et al.* 2022*b*).

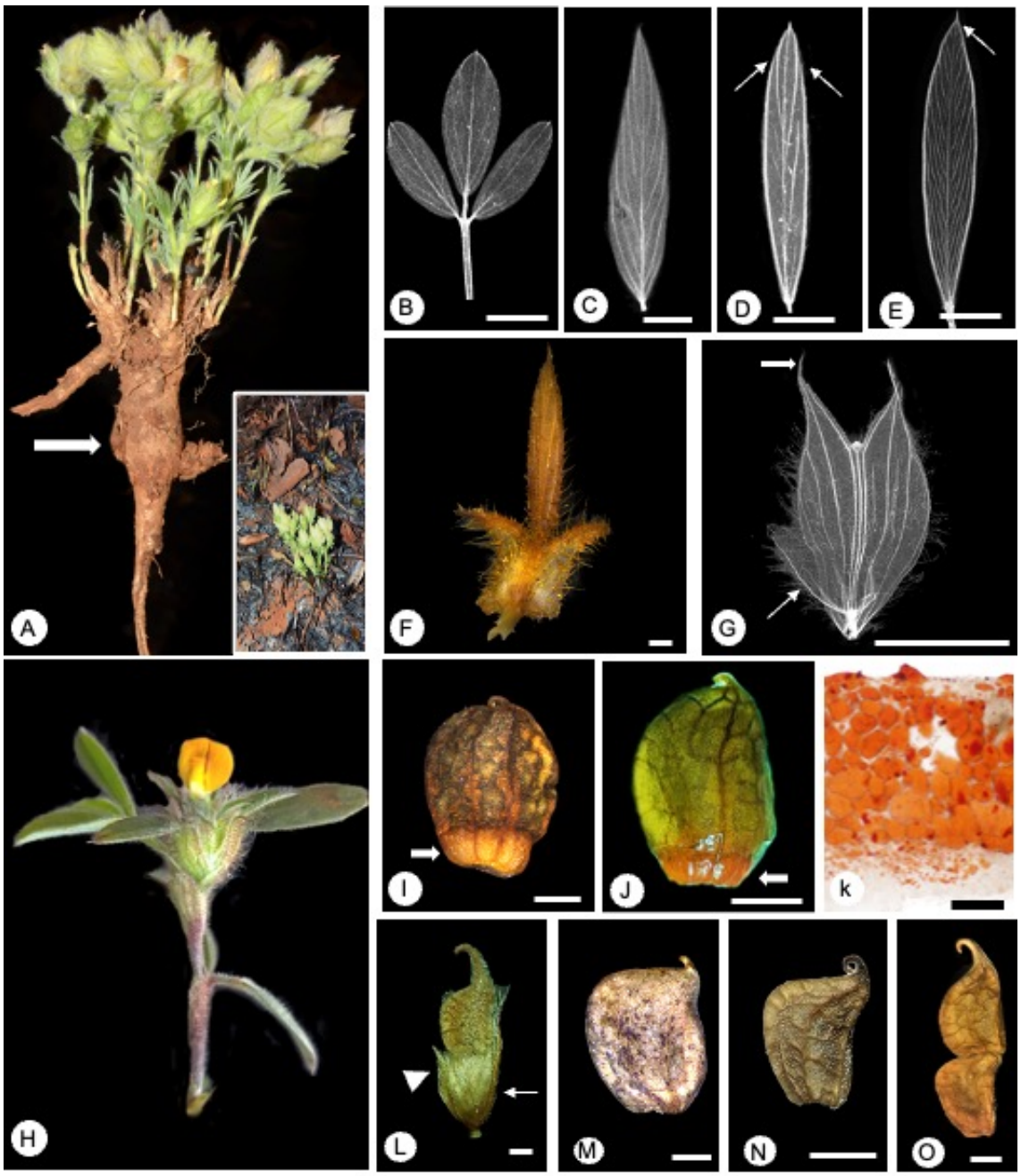

Fig. 1. Morphological aspects of *Stylosanthes* **A.** *S. bracteata* with xylopodium and flowering after the fire passage. (photos by B. Schindler). **B.** Leaf X-ray of *S. viscosa* showing the three leaflets, the petiole, and the rachis **C.** Leaflet X-ray of *S. humilis* showing secondary venation without marginal vein **D.** Leaflet X-ray of *S. montevidensis* showing secondary venation with marginal vein reaching up to ¾ of the blade **E.** Leaflet X-ray of *S. aurea* showing secondary venation with marginal vein reaching the apex of the blade **F.** External bract of *S. nunoi* showing the sheath and the bract's leaflet **G.** Bract X-ray of *S. capitata* showing the plumose appendage and bract's teeth. In this case, the leaflet has already fallen. **H.** Inflorescence and flower of *S. guianensis*. **I.** Loment of *S. guianensis* highlighting the conspicuous oil glands (arrow). **J.** Loment of *S. guianensis* with the oil glands stained with Sudan IV (arrow). **K.** Photomicrograph of a transverse section of the oil glands at the loment base of *S. guianensis*, treated with Sudan IV, showing cells impregnated with lipophilic material **L.** Loment of *S. scabra.* Arrowhead poiting to the outer bracteole, and thin arrow indicating the plumose appendage. **M.** Upper article of *S. gracilis* **N.** Upper article of *S. viscosa* **O.** Loment of *S. leiocarpa.* **Scale bars: B–J, L–O:**1mm. **K:** 100 μm.

Inflorescences in *Stylosanthes* can be a simple or a crowded heterothetic double spike with inconspicuous rachis. Although structurally the same, the shapes of the inflorescences are diverse, mainly due to the shape of the bracts and the number of spikes. They can be globose and capitate as in *S. gracilis* Kunth or *S. guianensis* (Fig. 1H), ovoid as in *S. macrocephala* M.B. Ferreira & Sousa Costa and *S. bracteata* (Fig. 1A), oblong as in *S. capitata* Vogel or *S. viscosa* (L.) Sw., elongate, terete, or narrowly oblong as in *S. angustifolia*, or cupuliform as in *S. pauciflora*, especially when there is a single spike. Each spike is supported by a bract called external or inflorescence bract. The bracts that support the flowers are called internal or flower bracts. In *Stylosanthes*, the bracts are stipule-like (Fig. 1F, G). They form a sheath that protects the flower and the loment. In the same way that the stipules bear the leaf, the bracts can bear reduced leaves, with 1 or 3 leaflets. The leaflets of the bracts may be persistent or caducous (Fig. 1F, G). Inside each flower bract, there is only one flower, and each flower is surrounded by two or three bracteoles, one external and one or two internal. The number of bracteoles is taxonomically valuable and was used two separate the sections within the genus.

The species that possess two inner bracteoles also present a structure generally called a rudimentary axis (Fig. 1G, J) (’t Mannetje 1984; Costa & Ferreira 1984; Kirkbride & Kirkbride 1987; Calles & Schultze-Kraft 2010*a*). This plume-like appendage is assumed to be a non-developed flower, and in some materials, it is possible to see a perianth at the tip of the axis (Taubert 1890; ’t Mannetje 1984; Calles & Schultze-Kraft 2010*a*). It makes sense regarding the number of bracteoles since the second inner bracteole may be due to this abortive flower. Further ontogenetic studies may help elucidate the true origin of this structure. In this monograph, we prefer to adopt the term “**plumose appendage**” since the term axis may be related to other meanings (Font Quer 1993; Harris & Harris 2001; Beentje 2010).

The fruits are loments derived from one carpel and separated transversely between seed sections into articles (Radford *et al.* 1974; Font Quer 1993; Harris & Harris 2001). In the genus, the loment may have only one or two articles (Fig. 1I–M). The upper article presents a rostrum derivative from the remaining style, and its shape is significant for distinguishing species. The rostrum may be coiled as in *S. montevidensis* Vogel, uncinate in *S. scabra* Vogel (Fig. 1J), or reduced in *S. guianensis*. Some species have long rostrums surpassing the upper article size and exerting the inflorescence, such as *S. hamata* (L.) Taub., *S. angustifolia* and *S. humilis* Kunth. Externally, the loment is reticulated and covered, or not, with trichomes and papillae. In some species, mainly belonging to the *S. guianensis* complex (sensu 't Mannetje 1977), there are oil glands at the base of the article (Fig. 1I–K). This was confirmed by personal observation since these glands were stained with Sudan IV, an oil reagent (Johansen 1940).

The seeds are reniform or oval, depending on the shape of the article, and they vary in color, including yellow, brown, black, or even maculated with vinaceous spots.

In many species, the whole aerial body of the plant is covered by two kinds of appendages: non-glandular trichomes and secretory emergences (Gissi *et al.* 2022*b*). Since emergences are not usually used in systematic treatments, we preferred to adopt the term bristles (Payne 1978; Harris & Harris 2001; Beentje 2010).

Distribution and habitat

Stylosanthes occur in open area vegetation, especially savannas and grasslands. The Cerrado phytogeographic domain harbor 34 species distributed in different vegetations (Ribeiro & Walter 2008) such as typical cerrado (*cerrado típico*), rocky fields (*campo rupestre*), campo sujo, campo limpo, grasslands, pastures, veredas, and anthropic areas. *Stylosanthes acicularis*, *S. campestris*, *S. linearifolia*, *S. longicarpa*, *S. maracajuensis*, *S. pohliana*, *S. ruellioides*, *S. tomentosa,* and *Stylosanthes* sp. are

restricted to this domain. 16 species occur in Caatinga, but only *S. seabrana* is endemic. 11 species occur in savanna vegetations of the Amazon, especially in sandy soils. The most common are *S. angustifolia* and *S. hispida*, which also occurs in *Cangas*.

Some species are commonly found in southern Brazil, northern Argentina, Uruguay and

Paraguay, occurring in the Pampean and Chacoan provinces. They are *S. montevidensis*, *S. hippocampoides*, *S. leiocarpa*, *S. macrosoma*, *S. longiseta*, *S. rostrata*, and *S. recta*.

Of all the studied species, only six don't occur in Brazil. *Stylosanthes falconensis, S. venezuelensis,* and *S. sericeiceps* are exclusive to Venezuela, occurring in tropical grasslands. *Stylosanthes recta* is endemic to the Chaco, in Paraguay. *Stylosanthes rostrata* occurs only in Corrientes, Argentina, in flooded grasslands. And *S. sympodialis* happens in Peru and Ecuador, including the Galapagos islands, in scrublands and savanna areas.

Only *S. hamata*, *S. scabra*, *S. guianensis*, *S. humilis,* and *S. viscosa* present broader distribution reaching outside South America, especially in Central America, and Mexico.

Conservation

The only species of *Stylosanthes* accessed by the IUCN red list is *S. bracteata,* as Least concern (LC) (Groom 2012), and by the CNCFlora is *S. nunoi*, as Data deficient (DD) (CNCFlora 2012).

Of the 43 species from South America, 21 are accessed here as LC, including *S. bracteata*. Most species are widespread throughout South America and are commonly found. They have extensive AOO (area of occupancy) and EOO (extent of occurrence) and don't qualify for any vulnerability criteria. Some species, like *S. guianensis*, *S. scabra,* and *S. viscosa,* occur in anthropic areas and have ruderal behavior. *Stylosanthes nunoi* and *S. seabrana* are accessed as Vulnerable (VU) because they have AOO < 2,000

km, their populations are severely fragmented, and continuing declines can be observed, estimated, inferred, or projected in quality of habitat, number of locations, and number of mature individuals. Most *Stylosanthes* species occur in the Cerrado phytogeographic domain, a highly threatened environment, especially by deforestation, the spread of exotic grasses, fire, and advances in large-scale agriculture (Klink & Machado 2005). Not only the Cerrado but also the Caatinga phytogeographic domain is susceptible to agriculture expansion, fires, deforestation, and invasive species (Juncá *et al.* 2005).

15 species are accessed as Endangered (EN), mainly because of the AOO < 500 km² and the threatens to their environment. The only extra-Brazilian species is *S. sericeiceps* because it is endemic to Mérida with only a few known populations. Most of the endangered species occur in the Cerrado or Caatinga. *S. ruellioides* and *S. tomentosa* are sympatric and endemic to the *Espinhaço* Range, which is highly threatened by unruled agriculture and mining activities, sometimes even culminating in disasters (Silveira *et al.* 2016; Primo *et al.* 2021). *S. vallsii* occurs in the transition of seasonally semideciduous forest, in the Atlantic Forest domain, and only a few populations were recorded near agricultural sites. Protecting these threatened environments is crucial to preserve the diversity of the genus.

The only Critically Endangered (CR) species is *S. falconensis* which has a low AOO and EOO. The species was collected outside protected areas, in the State of Falcón, Venezuela, and are prone to agriculture menaces.

Stylosanthes acicularis, *S. recta*, *S. rostrata,* and *S. venezuelensis* are accessed as data deficient because only the type materials were analyzed.

Taxonomic treatment

Stylosanthes Sw., Nova Genera et Species Plantarum seu Prodromus 7, 108. 1788. Type: — *Stylosanthes hamata* (L.) Taub. = *Hedysarum hamatum* L. Type: Jamaica.

Sloane, Voy. t. 119, fig. 2. 1707 (BM! [BM589680], lectotype designated by Kirkbride & Kirkbride [1987: 457]).

=*Astyposanthes* Herter, Revista Sudamericana de Botánica 7: 209. (1943). nom. illeg. superfl.

=*Stylosanthes* sect. *Astyposanthes* (Herter) Mohlenbr., Annals of the Missouri Botanical Garden 44: 327. 1958. Type: *Stylosanthes humilis* Kunth. Designated by Mohlenbrock (1958: 327).

=*Stylosanthes* sect. *Styposanthes* Vogel, Linnaea 12: 68. 1838.

=*Stylosanthes* sect. *Eustylosanthes* Vogel, Linnaea 12: 63. 1838., nom. inval.

Subshrubs, erect, decumbent or prostrate, perennial, rarely annual, xylopodium present or absent. **Stems** pilose, pubescent, scabrous, hispid, rarely glabrous, viscid or not. **Leaves** alternate, trifoliolate; stipules amplexicaul, bidentate; channeled petiole; venation eucamptodromous, marginal vein present or absent. **Inflorescences** simple or double spikes, rachis not visible, globose, capitate, ovoid, oblong, terete or cupuliform, axillary or terminal, and pedunculate. External bract of the inflorescence uni or trifoliolate, bract of the flower unifoliolate. **Flowers** with an external bracteole and one or two internal bracteoles; plumose appendage present or absent; campanulate calyx, lobed with apices emarginated to obtuse; corolla yellow, rarely creamy, with vinaceous nectar guides; papilionaceous, stamens monadelphous with 10 dimorphic stamens, anthers dorsifixed and suborbicular in the five smallest stamens, basifixed and oblong in the five largest; ovary bi-ovulate, elongated style, persistent in the fruit. **Loments** with one or two articles; rostrum coiled, uncinate, reduced, glabrous, papillose or pilose; reticulated. **Seeds** black, brown, yellowish, or maculated.

Key to the species of *Stylosanthes* in South America

1. Bracts wider than long, more than 10mm broad **2**

– Bracts longer than wide, up to 10mm broad **5**

2. Xylopodium present, stipules and petiole pilose, leaflets villous, lower article absent **3**

– Xylopodium absent, stipules and petiole pubescent, leaflets glabrous to pubescent, bracts oblong, bract leaflet elliptical, lower article present..... **4**

3. Leaflets oblong, with whitish, soft trichomes, without bristles ..... ***S. bracteata***

– Leaflets linear, with long bristles .....***S. linearifolia***

4. Inflorescence elliptical, bract leaflet elliptical, 5–7m long ..... ***S. capitata***

– Inflorescence ovoid, bract leaflet linear, 4–5mm long ..... ***S. macrocephala***

5. Marginal vein thicker than the other secondary veins (conspicuous marginal vein) ... **6**

– Marginal vein equal to the other secondary veins or without marginal vein **14**

6. Loment with conspicuous oil glands at the base ..... ***S. pauciflora***

– Loment without conspicuous oil glands **7**

7. Bracts without bristles, pubescent .....***S. acuminata***

– Bracts with golden bristles, hispid **8**

8. Terminal leaflet broadly obovate, spatulate, more than 0.5 mm wide ..... ***S. longiseta***

– Terminal leaflet lanceolate, elliptic, if obovate, less than 0.5 mm wide **9**

9. Upper article longer than 5 mm, obovoid ..... ***S. macrosoma***

– Upper article shorter than 5 mm **10**

10. Rostrum distinctly coiled, exerting the bracts, loment pubescent, strongly reticulate, few branched plants ..... ***S. montevidensis***

– Rostrum uncinated, loment glabrous, papillose or pubescent, branched plants **11**

11. Marginal vein reaching ¾ of the leaflet blade..... **12**

– Marginal vein reaching the tip of the leaflet blade..... **13**

12. Loment with 1–2 articles, if 1 article, pedunculated; upper article 4–5 mm, leaflets elliptical and concolorous, seeds brown ..... ***S. longicarpa***

– Loment with 1 article, sessile; upper article 3–4 mm, leaflets obovoid and discolorous, seeds black .....***S. campestris***

13. Plants up to 2 m high, stems erect, not branched at the base, sometimes leafless .. ***S. gracilis***

– Plants up to 0.5 m high, stems decumbent to prostrate, branched at the base, leaves always present ..... ***S. aurea***

14. Inflorescence elongate, terete or narrowly oblong, rostrum with more than 4mm long ..... ***S. angustifolia***

– Inflorescence short, elliptical, cupuliform, obovoid, globose or capitate, rostrum 0.5–4 mm long..... **15**

15. Rostrum strict, straight. Plants endemic from Paraguay ..... ***S. recta***

– Rostrum reduced, coiled, uncinate, or curved **16**

16. Rostrum strongly coiled **17**

– Rostrum reduced, uncinate or curved **24**

17. Flowers and fruits subtended by a plumose appendage; inner bracteoles 2 ..... **18**

– Flowers and fruits **not** subtended by a plumose appendage; inner bracteole 1 ..... **21**

18. Inflorescence covered by dense and ferruginous indumentum. Plants from Ecuador, Galapagos, and Peru ..... ***S. sympodialis***

– Inflorescence covered by hyaline indumentum. Plants from Brazil..... **19**

19. Plants hispid, with long bristles, ca. 5 mm long, non–viscous, leaves and branches sparsely arranged ..... ***S. pilosa***

– Plants strigose, with short bristles, less than 2 mm long, viscous, leaves and branches densely arranged, endemic to the Espinhaço Range **20**

20. Plants 0.6–1.5m tall, leaflets elliptical to oblong, 20–40 mm long, standard 11–13 mm long, fruit sparsely pilose..... ***S. ruellioides***

– Plants up to 0.5m tall, leaflets narrow–elliptical to linear, 10–20 mm long, standard 6–8 mm long, fruit densely pilose ..... ***S. tomentosa***

21. Upper article sigmoid (costal face concave, ventral face convex, the rostrum dislocated), ca. 2mm long, straw. Very common ..... ***S. viscosa***

– Upper article without these set of characters **22**

22. Bracts' teeth reflexed, with golden bristles ..... ***S. hispida***

– Bracts' teeth erect, with hyaline or ferruginous bristles..... **23**

23. Inflorescences narrowly ellipsoid (length/width ratio >3), stipules 3–4 pairs of inconspicuous veins, upper article pubescent, smoothly reticulated..... ***S. maracajuensis***

– Inflorescences capitate (length/width ratio <3), stipules 4–5 pairs of conspicuous veins, upper article glabrous ..... ***S. vallsii***

24. Leaflets linear, less than 2mm broad..... ***S. acicularis***

– Leaflets elliptical, more than 2mm broad **25**

25. Rostrum longer than the upper article **26**

– Rostrum shorter than the upper article **27**

26. Bracts without bristles (emergences), covered only by non-glandular trichomes..... ***S. hamata***

– Bracts with bristles (emergences), viscid or not.....***S. humilis***

27. Flowers and fruits subtended by a plumose appendage; inner bracteoles 2 ..... **28**

– Flowers and fruits **not** subtended by a plumose appendage; inner bracteole 1 ..... **33**

28. Stems prostrate with adventitious roots..... **29**

– Stems erect without adventitious roots..... **30**

29. Leaflets elliptical, mucronate apex, fruits with lower segment aborted, upper segment pilose or pubescent ..... ***S. minima***

– Leaflets obovate, acute apex, fruits with lower segment present, upper segment glabrous to glabrescent ..... ***S. mitzii***

30. Stems scabrous and distinctly viscid, leaflets with short bristles on the abaxial and adaxial blade ..... ***S. scabra***

– Stems pubescent, if scabrous, not viscid, leaflets with bristles only on margin and midribs **31**

31. Upper article densely pubescent. Plants endemic from Bahia, Brazil..... ***S. seabrana***

– Upper article glabrous or ciliate. Plants endemic to Venezuela **32**

32. Stems canescent, tomentose .....***S. falconensis***

– Stems scabrous, with short bristles .....***S. venezuelensis***

33. Plants lacking bristles, covered only by non-glandular trichomes **34**

– Plants with bristles, at least in the bracts **35**

34. Inflorescence ellipsoid. Loment pilose, without conspicuous oil glands at the base, rostrum uncinate. Plants from Mérida, Venezuela ..... ***S. sericeiceps***

– Inflorescence capitate. Loment papillose, with conspicuous oil glands at the base, rostrum reduced. Plants from Brazil and Bolivia ..... ***S. pubescens***

35. Inflorescence ellipsoid. Loment with 2 articles ..... ***S. leiocarpa***

– Inflorescence capitate, obovoid or cupuliform. Loment with 1 article **36**

36. Rostrum >1.5 mm long..... ***S. rostrata***

– Rostrum <1 mm long..... **37**

37. Leaflets with more than 7 secondary veins, narrowly spaced **38**

– Leaflets with less than 7 secondary veins, widely spaced..... **39**

38. Leaflets elliptical. Inflorescence capitate, densely hispid, especially in the bracts' leaflets. Article strongly reticulate..... ***S. nunoi***

– Leaflets narrowly elliptical. Inflorescence cupuliform, tomentose. Article smoothly reticulate .....***S. pohliana***

39. Bristles < 1 mm long or absent..... **40**

– Bristles >1 mm long **41**

40. Stems nearly glabrous or only with non-glandular trichomes. Leaflets < 15 mm long. Loment oblong (2:1), with conspicuous oil glands at the base. Seeds yellow ..... ***S. microcephala***

– Stems pilose-scabrous. Leaflets > 15 mm long. Loment widely oblong (6:5) without conspicuous oil glands at the base. Seeds black..... ***Stylosanthes* sp.**

41. Secondary veins abaxially conspicuous ..... ***S. hippocampoides***

– Secondary veins abaxially inconspicuous **42**

42. Plants covered with golden bristles, non-viscid. Article without conspicuous oil glands ..... ***S. grandifolia***

– Plants covered with hyaline bristles, distinctly viscid. Article with conspicuous oil glands at the base ..... ***S. guianensis***

Stylosanthes acicularis Gissi & Fort.-Perez in Brittonia X: XX, 2022. Type: Brazil. Maranhão, Carolina, Parque Nacional Chapada das Mesas, 337 m elevation, 07°18'53.2"S, 47°02'28.0"W, 06 Apr 2017, *R. V. C. Saraiva s.n.* (holotype: SLUI herb. no. 4987!).

Fig. 8

Iconography: Gissi et al. (2022*a* pp. 3–5.). Fig 1–3.

Distribution and Habitat — This species is known for the type collection at the Parque Nacional Chapada das Mesas in Maranhão. It was collected in a typical Cerrado area.

Conservation status — Data Deficient (DD). Since only one collection was found of *S. acicularis*, it is impossible to access the status according to the IUCN

standards (IUCN 2019). In addition, the species was collected in a conservation park, but the surrounding areas are still threatened by agriculture and fire (Saraiva *et al.* 2020).

This species has stems pilose-scabrous, viscid, with scattered bristles up to 1 mm long and numerous non-glandular trichomes, leaflets linear, primary vein imperceptible, secondary veins regular spacing, inflorescences obovoid, and loment rostrum ca. 1 mm long, coiled. *Stylosanthes acicularis* share morphological characteristics with *S. hippocampoides* and *S. angustifolia*, but *S. hippocampoides* has hispid-pubescent, non-viscid stems, with bristles up to 4 mm, leaflets elliptical, primary vein easily discernible, the secondary veins with irregular spacing and *S. angustifolia* has hispid-pubescent, non-viscid stems, with bristles up to 2 mm, inflorescence narrow-elongated and loment rostrum more than 4 mm long.

Stylosanthes acuminata M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais; Uberaba, BR-050, km12, de Uberaba-Uberlândia, 1 Oct 1976, *N. M. de Sousa Costa 750* (holotype: RB! [RB00540416], isotype: PAMG! [PAMG005428]).

Stylosanthes guianensis var. *marginata* Hassl., Repert. Spec. Nov. Regni Veg. 16: 223. 1919. Type: Paraguay, In campis siccis Punta Porá, *E. Hassler 9938* (holotype: G, isotype: K! [K264202]).

Fig. 2M–N, 3J, 8

Distribution and Habitat — This species occurs in Cerrado vegetation or in the transition with Seasonally Semideciduous Forests, ranging from Pernambuco to São Paulo, reaching Bolivia and Paraguay.

Conservation status — Least concern (LC). *S. acuminata* is widely distributed in savanna areas.

Stylosanthes acuminata is recognized by the leaflets with prominent complete marginal veins and acuminate apex, poignant to the touch. The inflorescences are obovoid, covered with ochraceous trichomes, lacking long bristles, and generally maculate seeds.

Vanni (2017) treated this species as a synonym of *S. guianensis* var. *gracilis* (Kunth) Vogel in a broader sense of *S. guianensis*. Here, we prefer to treat this species as a separate taxon since the plants of *S. gracilis* are covered with long, golden bristles, and *S. guianensis* lack marginal veins. Besides these morphological differences, *S. acuminata* can be easily recognized in the field by its smaller size (up to 30cm) and few branched plants. At the same time, *S. guianensis* and *S. gracilis* are bigger plants reaching more than 1 m tall.

In the protologue, Ferreira and Costa (1977) state that there are isotypes at NY and F. However, these specimens were not located, and we probably suggest that these specimens were never sent to these herbaria. Therefore, we prefer not to indicate NY and F as isotype holders. Similar cases are frequently seen for the species published by Ferreira and Costa (1977).

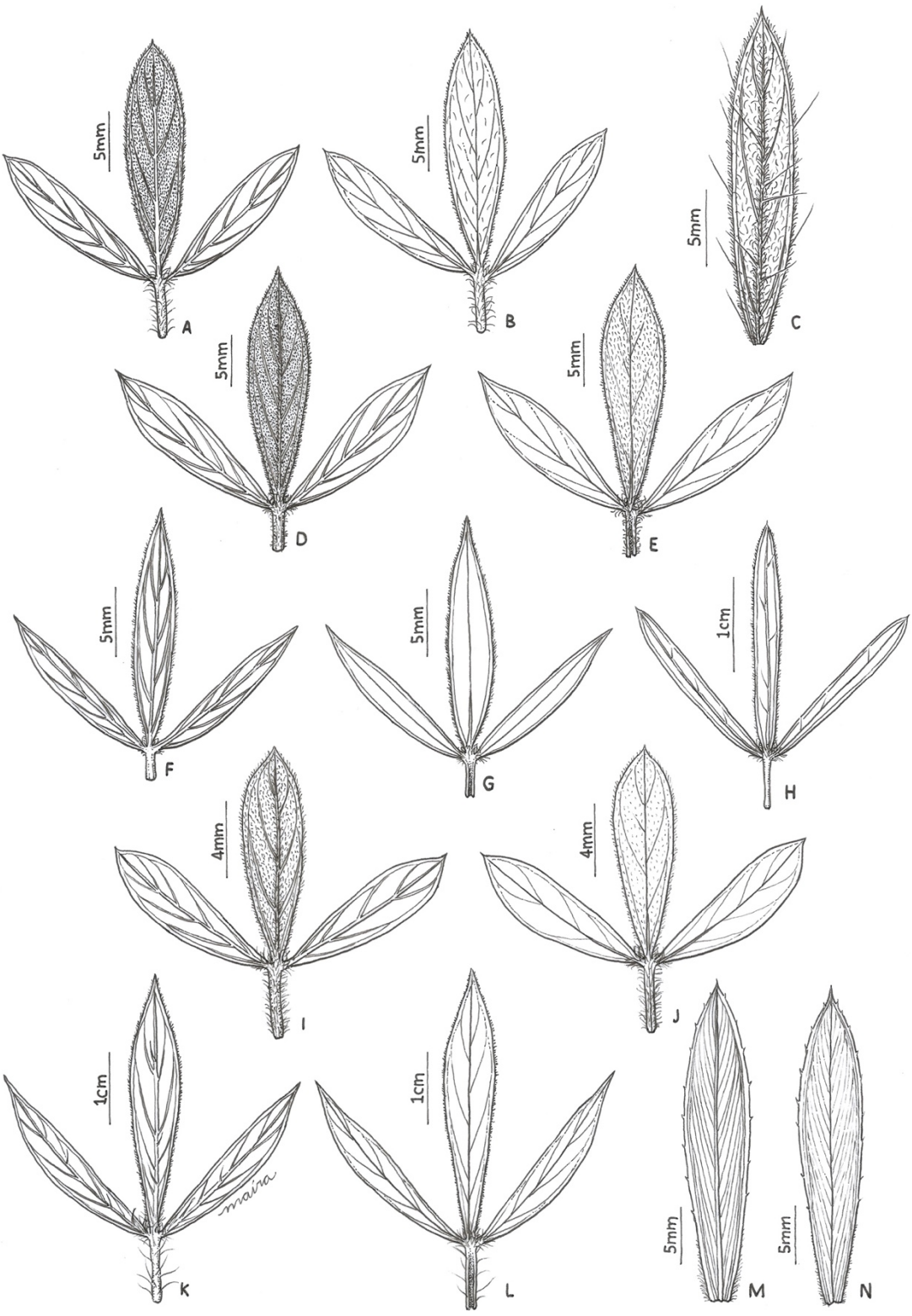

Fig. 2. Leaves of some the species of *Stylosanthes* showing diferences in the venation and indumenta. *S. guianensis* **A.** abaxial surface. **B.** adaxial surface. *S. gracilis*. **C.** abaxial surface of the central leaflet. **H.** abaxial surface of the central leaflet. *S. pubescens*. **D.** abaxial surface. **E.** adaxial surface. *S. microcephala*. **F.** abaxial surface. **G.** adaxial surface. *S. pauciflora.* **I.** abaxial surface. **J.** adaxial surface. *S. grandifolia*. **K.** abaxial surface. **L.** adaxial surface. *S. acuminata.* **M.** abaxial surface of the central leaflet. **N.** adaxial surface of the central leaflet. **A. B.** *L. Coradin 8425*; **C.** *A.C. Sevilha 6431*; **D. E.** *L. Coradin 8152;* **F. G.** *L. Coradin 8397*; **H.** *G. Pereira-Silva 6097*; **I. J.** *L. Coradin 8105*; **K. L.** *G. Pereira-Silva 3380*; **M. N.** *J.F.M. Valls 8946*.

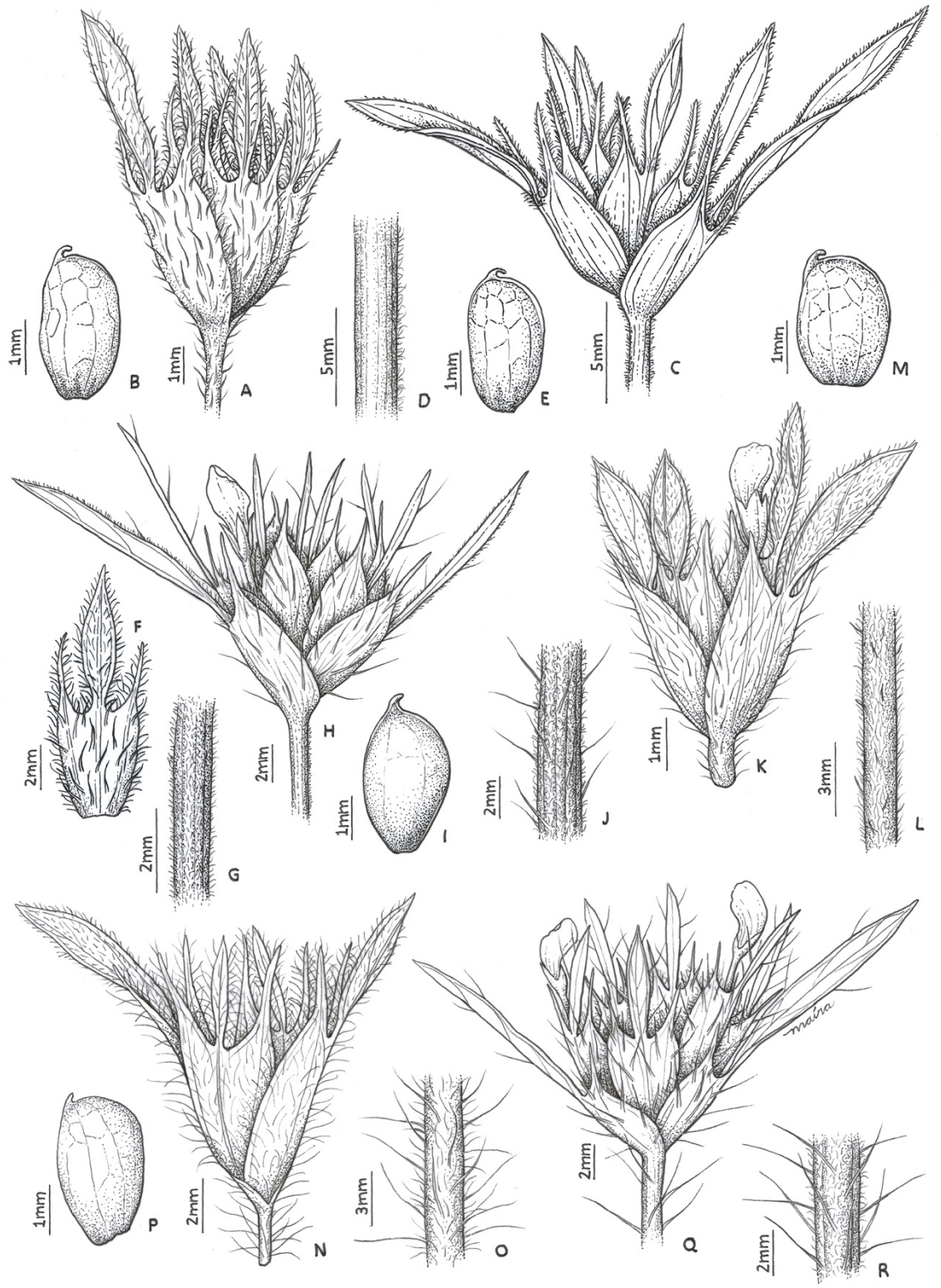

Fig. 3. Inflorescences, articles and stems of some species of *Stylosanthes*. *S. microcephala* **A.** Inflorescence. **B.** Article. **F.** Outer bract. **G. S**tem. *S. pubescens* **C.** Inflorescence. **D.** Stem. **E.** Article. *S. gracilis* **H.** Inflorescence. **I.** Article. *S. acuminata*. **J.** Stem. *S. pauciflora*. **K.** Inflorescence. **L.** Stem. **M.** Article. *S. guianensis*. **N.** Inflorescence **O.** Stem. **P.** Article *S. grandifolia*. **Q.** Inflorescence **R.** Stem. **A. B. F. G.** *L. Coradin 8397*; **C. D. E.** *L. Coradin 8152;* **H. I.** *G. Pereira-Silva 6097*; **J.** *J.F.M. Valls 8946*; **K. L. M.** *L. Coradin 8105*; **N. O. P.** *L. Coradin 8425*; **Q. R.** *G. Pereira-Silva 3380.*

Stylosanthes angustifolia Vogel, Linnaea 12: 63. 1838. Type: Brazil, merid., inter Campos et Victoria, inter Victoria et Bahia, *F. Sellow s.n.* (holotype: B, destroyed, lectotype, here designated: SI! [SI004054], fragment).

= *Astyposanthes angustifolia* (Vogel) Herter, Revista Sudamer. Bot. 7: 209. 1943.

Stylosanthes angustissima Klotzsch, Reis. Br.-Guiana 3: 1200. 1848. Type: Guyana, Vanacum. 1 Oct 1842. *R.H. Schomburgk 816* (holotype: P! [P00206027])

Fig. 8

Distribution and Habitat — This species is found mainly in the Amazon, Caatinga, and Cerrado phytogeographic domains, common in open vegetation areas like sandy savannas. It occurs at lower latitudes, north of 15ºS, from Bahia, reaching the Guianas and Venezuela.

Conservation status — Least concern (LC). *S. angustifolia* is widely distributed in the Northern regions of South America.

Stylosanthes angustifolia is easily recognized by linear leaflets, elongated, terete spikes, and the loment rostrum more than 4 mm in length. It is similar to *S. acicularis*, but the inflorescence shape and rostrum size can differentiate it. While *S. angustifolia* has elongated inflorescences, *S. acicularis* has short and obovoid ones.

Vanni (2017) designated *A. Glaziou 10511* (P00206027) as a neotype for *S. angustifolia*. However, fragments of the type were found in the Darwinion herbarium. Professor H. Harms from Berlin sent samples to A. Burkart on 2 March 1938 alongside a photograph. We have seen a photograph of the material deposited in Darwinion herbarium, and even though it is only a fragment, it contains an inflorescence with fruits

that are accurate to the species description and illustrations. Here, we designate the material in SI as a lectotype.

Stylosanthes aurea M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais, Diamantina, Altitude 1100 m, N. M. de Sousa Costa, 787; (holotype: RB! [RB00200926], isotype: PAMG! [PAMG005465])

Fig. 8

Distribution and Habitat — This species is endemic to Brazil and can be found in Cerrado and Caatinga phytogeographic domains.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *S. aurea* is a rare species with only a few collections and an AOO <50 km².

Stylosanthes aurea is very similar to *S. acuminata* and *S. gracilis* mainly because of the presence of a prominent marginal vein and acuminate apex at the leaflets and suborbicular loment with papillae but differs by presenting prostrate and much more branched habit (vs. erect with few ramifications in *S. acuminata* and *S. gracilis*), and golden bristles throughout the plant body, especially in the bracts. Also, the leaves of *S. aurea* present a yellowish or golden color in the dried material.

This species is also part of the *Stylosanthes guianensis* complex and was put in the synonymy of *S. guianensis* var. *gracilis* by Vanni (2017). However, we prefer to refer to them as separate species regarding the differences observed in the herbarium material.

Stylosanthes bracteata Vogel, Linnaea 12: 70–71. 1838. Type: Brazil. Hbt. In Brazil merid. *F. Sellow 4734* (holotype: B!, destroyed, photo at F: [F0BN002244], lectotype, here designated: K! [K00264206]).

Fig. 1A, 9

Distribution and habitat — This species can be found in cerrado (*sensu lato*) vegetation, especially in central Brazil, Paraguay, and Bolivia.

Conservation status — Least Concern (LC). *S. bracteata* is not considered endangered by its wide distribution in South America. However, it's significant to say that the species is affected by out-of-control fire regimes that may threaten the Cerrado (Klink & Machado 2005).

Stylosanthes bracteata presents xylopodium, which provides resistance to fire, a common characteristic in other groups of plants restricted to Brazilian Cerrado (Appezzato-da-Glória *et al.* 2008; Simon & Pennington 2012). This species commonly blooms after the fire passage. Additionally, it has large-oval inflorescences, papyraceous bracts covered by ochraceous and long non-glandular trichomes, flowers subtended by a plumose appendage, and two inner bracteoles. It is very similar to *S. linearifolia,* but it differs from the latter by presenting oblong to elliptical leaflets (see *S. linearifolia* comments).

The holotype of *S. bracteata* was destroyed in B, and only a photograph in F remained (Berlin types, F neg. 2244). According to the International Code of Nomenclature for algae, fungi, and plants (Turland *et al.* 2018), a photograph of the type does not constitute original material (Art. 9.4). Therefore, a lectotypification of one of the syntypes is required.

Stylosanthes campestris M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais: Datas, BR 259, 35 km após Datas-Serro, 1100 msm, 18 Jan 1977, *N.M. de Sousa Costa 795* (holotype: RB! [RB00540419], isotype: PAMG! [PAMG005507]).

Fig. 9

Distribution and habitat — This species can be found in the Cerrado areas, mainly in the *Espinhaço* range. It is endemic in Brazil.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *S. campestris* is rare, and it is found only in the Cerrado phytogeographic domain, which is a highly threatened domain, especially by deforestation, the spread of exotic grasses, fire, and advance in large scale agriculture (Klink & Machado 2005).

Stylosanthes campestris is characterized by erect and very branched habit; stems lacking bristles; leaflets discolorous, mostly obovate to elliptical with a conspicuous marginal vein, reaching up to ¾ of the leaflet and acuminate apex, bristles only on the margin and midvein, conferring a serrate aspect; and inflorescence capitate, with up to 3 spikes. The loment presents only one fertile article with a short rostrum, reticulate with papillae. This species can often be erroneously determined as *S. nunoi* or *S. pohliana,* but the leaflet's shape, indumentum, and venation can differentiate it from the others.

Stylosanthes capitata Vogel. Type: Brazil. Hab. in Brazil; inter Victoria et Bahia, *F. Sellow s.n.* (holotype: B, destroyed). Brazil. [Bahia]. Provincia Bahiensis, Vila Caxoeira et Feira da Conceição, Feb 1819, *C.F.P. von Martius obs. 2209* (neotype designated by Vanni [2017: 557]: M).

Fig. 1G, 10

Distribution and habitat — *Stylosanthes capitata* is a widespread species throughout South America. In Brazil, it can be found in several states in open areas such as Caatinga, Cerrado, and grasslands. It also occurs in open vegetation in the Guianas and Colombia.

Conservation status — Least Concern (LC). *S. capitata* is a common species and does not fulfill the criteria for vulnerability.

Stylosanthes capitata presents large bracts in the inflorescences (wider than longer), flowers with a plumose appendage, two inner bracteoles, loments with two fertile articles, and rostrum uncinate. It shares these characteristics with *S. macrocephala*, sometimes not easily distinguishable as seen in many herbarium materials. However, *S. capitata* differs from *S. macrocephala* by larger inflorescences and leaves, spikes oblong, bracts with leaflets generally present, and chromosomic number 2n = 40.

Alongside *S. macrocephala*, *S. capitata* composes the cultivar 'Estilosantes Campo Grande' developed by Embrapa Gado de Corte, which consists of a physical mixture of these two species from accesses that were selected for anthracnose resistance, high productivity, and seeds production. These plants are cultivated to form pastures for bovine livestock with a high success rate. The reasons lie mainly in the adaptation to low fertility soils, high dry-matter production, richness in proteins, high nitrogen fixing profile, prolific seed production with high natural reseeding, and an increase in biological activity in soils (Fernandes *et al.* 2005; Embrapa Gado de Corte 2007; Karia *et al.* 2010).

Stylosanthes falconensis Calles & Schultze-Kr., Kew Bulletin 65: 73–75. 2010. Type: Venezuela, Falcón, alrededores de Carrizalito, a unos 300 m de la salida hacia Cucaire, 1170 m, 11°7'49"N 69°45'28"W, 12 Feb 2006, *T. Calles & R. Schultze-Kraft 1006* (holotype: VEN; isotypes: HOH, K! [K00780076], M! [M00233784], MO! [MO100434426], NY! [NY1546403], US).

Fig. 9

Distribution and habitat — This species is known from a few collections in the State of Falcón, Venezuela, occurring in dry deciduous forests on well-drained slopes (Calles & Schultze-Kraft 2010*b*).

Conservation status — Critically Endangered (CR). B1B2ab(iv, v) *S. falconensis* is locally abundant but has a low AOO and EOO. The species was collected outside protected areas and are prone to agriculture menaces.

Stylosanthes falconensis presents a plumose appendage and it is similar to *S. hamata.* The stems of *S. falconensis* are covered by a white-tomentose indumentum, and the bracts and leaflets bear bristles, while *S. hamata* stems are almost glabrous, and lack bristles. The rostrum in *S. falconensis* is lightly curved, while in *S. hamata* is uncinate and surpasses the article length.

Stylosanthes gracilis Kunth, Nov. Gen. Sp. 6: 507. 1824. Type: Venezuela, Sucre, lower part of Turimiquiri Mountain, vicinity of El Cocollar, 10°10'44" 63°48'40"W, elevation 900 m a.s.l., 10 Feb. 2008, *T. Calles & R. Schultze-Kraft 1037* (neotype: VEN; isoneotypes: HOH, K, US, designated in Calles [2010:234]).

= *Astyposanthes gracilis* (Kunth) Herter, Revista Sudamer. Bot. 7: 209. 1943.

Stylosanthes guianensis var. *gracilis* (Kunth) Vogel, Linnaea 12: 66. 1838.

Stylosanthes surinamensis Miq., Linnaea 18: 567. 1845. Type: Suriname, Para, Onoribo, Sep 1844*, H.C. Focke 1009* (lectotype: U! [U3616], designated in Calles [2010: 234]).

Fig. 2C, H., 3H–I., 10.

Distribution and habitat — This species can be found widespread throughout South America, being one of the most commonly collected species of *Stylosanthes*. It occurs in Caatinga, Cerrado, grasslands, Amazonian savanna vegetation, and anthropic areas like roadsides and wastelands.

Conservation status — Least Concern (LC). *S. gracilis* does not punctuate in the threatened criteria of IUCN.

Stylosanthes gracilis is a controversial species since it is recognized differently in some taxonomic treatments. Some authors considered it a variety of *S. guianensis* (Bentham 1859; Mohlenbrock 1957; 't Mannetje 1984; Vanni 2017). Others treated *S. gracilis* as a distinct species (Burkart 1939; Costa *et al.* 2008; Calles & Schultze-kraft 2010; Fortuna-Perez *et al.* 2011). We prefer to recognize it as a distinct species by its morphological differences. *Stylosanthes gracilis* can be easily distinguished by the erect habit, very tall plants reaching up to 2 m high, spaced internodes, almost glabrous at the distal portions of the plant, leaflets with complete marginal vein, and globose inflorescences with golden bristles. The loments are sub-rounded, light brown, with two fertile articles. The upper article has an uncinate rostrum, covered with papillae, and lacks conspicuous oil glands at the base. Anatomic analysis was able to distinguish *S. gracilis* from *S. guianensis* by the difference in the stem chlorenchyma cells that are elongated in *S. gracilis* while rounded in *S. guianensis,* and the size of the fiber caps in the mesophyll (Gissi *et al.* 2022*b*). This species is also very similar to *S. montevidensis* Vogel, and herbarium specimens are often misidentified. The two species share the long internodes, golden bristles at the inflorescences, leaflets chartaceous with conspicuous marginal veins, and elongated chlorenchyma cells. However, *S. montevidensis* differs from *S. gracilis* by the loments with only one fertile article and rostrum strongly coiled, more than 1 mm long.

Stylosanthes grandifolia M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais, Caeté, a 12 km da cidade para a BR 262. 4 Mar 1976, *N.M. de Sousa Costa & M.B. Ferreira 425* (holotype: RB! [RB00540421], isotype: PAMG! [PAMG8573]).

Stylosanthes guianensis var. *robusta* 't Mannetje, Austral. J. Bot. 25: 357. 1977.

Type: Brazil. Minas Gerais. Viçosa, State Agricultural School, Viçosa. 17 Feb 1959, *H.S. Irwin 2647* (holotype: NY! [NY003923], isotypes: K! [K00264201], US! [US001973]).

Fig. 2K–L; 3Q–R; 10.

Distribution and habitat — This species can be found in central South America, including the savannas of Brazil, Bolivia, and Paraguay. They inhabit typical cerrado, rocky fields, grasslands, pastures, and anthropic areas.

Conservation status — Least Concern (LC). This species is commonly found in ruderal and conservation areas.

Stylosanthes grandifolia can be recognized by the prostrate habit, golden bristles throughout the plant body, leaves without conspicuous marginal veins, capitate inflorescences, and black seeds. It is also a member of the *S. guianensis* complex, sometimes referred to as a synonym of *S. guianensis* var. *gracilis* (Vanni 2017). *S. grandifolia* differs from *S. gracilis, S. aurea,* and *S. acuminata* by the leaves without the conspicuous marginal veins and from *S. guianensis* by long golden bristles, loments without conspicuous oil glands, and seeds always black.

Stylosanthes guianensis (Aubl.) Sw., Kongl. Vetensk. Acad. Handl. 1789: 291. 1789. Type: French Guiana, Macouria, *F. Aublet s.n.* (lectotype designated in t'Mannetje [1977: 351]: BM! [BM00611204]).

= *Trifolium guianense* Aubl., Hist. Pl. Guiane: 776. 1775.

= *Trifolium fluminense* Vell. Fl. Flumin.: 316 .1829. Type: [illustration] published in Vellozo, Fl. Flumin. Icones 7: t. 143. 1831.

= *Trifolium mediterraneum* Vell. Fl. Fumin.: 317. 1829. Type: [illustration] published in Vellozo, Fl. Flumin. Icones 7: t. 144. 1831.

= *Astyposanthes guianensis* (Aubl.) Herter, Revista Sudamer. Bot. 7: 209. 1943.

Stylosanthes biflora var. *guianensis* (Aubl.) Kuntze, Revis. Gen. Pl. 1: 209. 1891.

Stylosanthes guyanensis var. *subviscosa* Benth., Fl. Bras. 15 (1A): 92. 1859. Type: Brazil, Minas Gerais, Córrego do Jaraguá et Rio Jequitinhonha, 1836, *J.E. Pohl s.n.* (lectotype designated in Calles [2010: 313]: K! [K205133]). *syn. nov.*

Stylosanthes guianensis var. *subviscosa* f. *viscosissima* Hassl., Repert. Spec. Nov. Regni Veg. 16: 221. 1919. Type: Paraguay. In colle, Tobaty, March. *E. Hassler* 4010 (syntype: G). In campo Nandurucay Sierra de Maracayu, Oct. *E. Hassler 6454* (syntype: GH! [GH26778], NY! [NY3924])

Stylosanthes guianensis var. *vulgaris* M.B. Ferreira & Sousa Costa, Gen. *Stylosanthes*: 45. 1979. Type: Brazil. Minas Gerais. Betim. *M.B. Ferreira & N.M. de Sousa Costa 310* (holotype: RB!, isotype: PAMG).

Fig. 1H–K, 2A–B, 3N–P, 10.

Distribution and habitat — *Stylosanthes guianensis* is widely distributed from Mexico to Argentina in savanna environments, grasslands, pastures, swamps, roadsides, and even anthropic and disturbed areas.

Conservation status — Least Concern (LC). Due to its wide distribution and ruderal characteristic.

Stylosanthes guianensis was first described in the genus *Trifolium* by Aublet (1775) and combined with *Stylosanthes* by Swartz (1789). Since then, several taxonomic changes have been proposed related to *S. guianensis* (Chodat 1898; Hassler 1919; 't Mannetje 1977, 1984; Vanni 2017). Mohlenbrok (1958) recognized two subspecies and considered more than 20 synonyms under *S. guianensis*, considering that the morphological variety is gradated and without geographical disjunctions. 't Mannetje (1977) revised the varieties of *S. guianensis,* recognizing six infraspecific names. When studying the Brazilian specimens, Mitzi Brandão and Nuno M. S. Costa (1977) described several new species of *Stylosanthes* for Minas Gerais, and later, four varieties for *S.*

guianensis (Ferreira & Costa 1979; Brandão *et al.* 1990). Vanni (2017) considered two varieties for the species and several names as synonyms.

After analyzing several specimens from Brazil and abroad and collecting specimens in the field, we prefer to adopt a strict definition of *S. guianensis* which comprises plants with prostrate to decumbent habit, very branched stems, herbaceous, covered by viscid, long bristles (more than 1 mm), and whitish non-glandular trichomes, elliptical leaflets, inconspicuous secondary veins, lack of a marginal vein, globose inflorescences with multiple spikes, absence of a plumose appendage, only one inner bracteole, flowers always yellow, only one fertile article, obovoid, with a vestigial rostrum, and evident oil glands at the article base.

Considering all these morphological variations in only one name may suppress all the biodiversity expressed by the other published names. We also prefer to separate the varieties of *S. guianensis* proposed (Ferreira & Costa 1979; Brandão *et al.* 1990) as distinct species. Anatomical and molecular studies have corroborated our decision (Karia 2008; Santos-Garcia *et al.* 2012; Gissi *et al.* 2022*b*).

Several cultivars of *S. guianensis* are used as fodder in South America, Africa, Asia, and Australia for beef cattle and other animals. In Brazil, the most common cultivars are Mineirão and Bela (Chakraborty 2004; Karia *et al.* 2010; Corte 2019). They stand out by the high capacity of nitrogen fixation and the incorporation of organic matter into the soil, which helps recover the soil. Furthermore, 'Estilosantes Bela' is more adaptable for argillic soils than other cultivars and may even be used for nematode control (Corte 2019). By its invasive behavior, this species can also be considered a weed in cultures and anthropic areas (Lorenzi 2008; Carvalho 2013).

Stylosanthes hamata (L.) Taub., Verh. Bot. Vereins Prov. Brandenburg 32 (1): 22. 1890.

= *Hedysarum hamatum* L., Syst. Nat. (ed. 10), 2: 1170. 1759. Type: Jamaica. Sloane, Voy. t. 119, fig. 2. 1707 (lectotype, designated by Kirkbride & Kirkbride [1987: 457]: BM! [BM00589680]).

= *Anonis americana* Aubl., Hist. Pl. Guiane 2: 763. 1775.

Stylosanthes eriocarpa S.F. Blake, Contr. U.S. Natl. Herb. 24: 4. 1922. Type: Guatemala. Izabal. On an open rocky hillside along the trail from Los Amates to Izabal, 31 May 1919, *S.F. Blake 7792* (holotype: US! [US001977], isotype: GH! [GH0026775]).

Ononis cerrifolia Rchb. ex DC., Prodr. 2: 316. 1825., nom. inval.

Stylosanthes humilis Rich. ex Hemsl., Biol. Cent.-Amer., Bot. 1: 272. 1879. nom. illeg.

Stylosanthes procumbens Sw., Prodr. Veg. Ind. Occ.: 108. 1788. nom. illeg.

Fig. 9.

Distribution and habitat — *Stylosanthes hamata* is more common in Central America, the Caribbean, and Northern South America, especially in Colombia, Venezuela, and Colombia. Some specimens were collected in the Caatinga and Cerrado regions of Brazil.

Conservation status — Least Concern (LC). although it is not so common in South America, with only 116 km² of AOO in the continent, it is preferred to keep the status as LC since *S. hamata* is very widespread in the Caribbean.

Stylosanthes hamata share with *S. seabrana* and *S. scabra* erect habit, leaflets often with red spots on the abaxial side, bracts elliptical, flowers subtended by a plumose appendage, two inner bracteoles, uncinate rostrum, and pubescent articles. However, *S. hamata* differs from both species by presenting a rostrum longer than the upper article

and leaflets narrow elliptical and without bristles. *S. hamata* is similar to *S. falconensis,* but the first lacks bristles on the stems.

Stylosanthes hippocampoides Mohlenbr., Ann. Missouri Bot. Gard. 44 (4): 339. 1958. Type: Argentina, Córdoba, Sierra de Achala, entre Arroyo La Puerta y pie de la Cuesta de la Ensenada. 31°41'29"S 65°6'5"W, 4 Jan 1895, *F. Kurtz 8303* (holotype: NY!, isotypes: R! [R00064930], CORD! [CORD002950]).

Stylosanthes montevidensis var. *intermedia* Vogel, Linnaea 12: 67. 1838.

Stylosanthes guianensis var. *intermedia* (Vogel) Hassler, Repert. Spec. Nov. Reg. Veg. 16: 221. 1919. Type: Paraguay. Ad margine silvae Cord. de Altos, *E. Hassler 1803* (lectotype designated in Vanni [2017: 567]: G).

Stylosanthes guianensis var. *subviscosa* Benth. emend Hassler, Repert. Spec. Nov. Regni Veg. 16: 221 1919. Type: Paraguay. In campo, pr. fluminis. Corrientes, Dec., *E. Hassler 5858* (lectotype designated in Vanni [2017: 559]: G), *syn. nov.*

Stylosanthes gracilis Kunth var. *subviscosa* (Benth. ex Mart.) Burkart, Darwininana 3: 248. 1939.

Fig. 11.

Distribution and habitat — This species can be found in grasslands and savannas, especially in the South of Brazil, Paraguay, and North of Argentina. Some specimens were collected in NE of Brazil.

Conservation status — Least Concern (LC). *S. hippocampoides* is widely distributed and easily collected in the Cerrado and Pampa regions.

Stylosanthes hippocampoides can be recognized by the whole plant covered with golden and long bristles (up to 4 mm); elliptical leaflets, with up to 7, spaced, and easily discernible secondary veins in the herborized material; obovoid to capitate inflorescence; loments presenting only one fertile article, suborbicular to ovoid; the rostrum may vary

from coiled, uncinate to reduced. Although the shape of the rostrum is generally used to separate species in the genus, a gradation of shapes was found in the material analyzed, and no other morphological difference was recognized. Some materials from North Argentina, including the type and paratypes specimens, have coiled rostrum (up to 1.5 mm), hence the epithet name. Specimens from Brazil have generally reduced rostrum, very similar to *S. guianensis*.

Stylosanthes hippocampoides is very similar to *S. nunoi.* However, it can be distinguished by the number and spacing of secondary veins in the leaflets (up to 6 in *S. hippocampoides* against more than 7 in *S. nunoi*).

Burkart (1939), without having seen the authentic material, combined *S. guianensis* var. *subviscosa* Benth. in *S. gracilis* var. *subviscosa* (Benth. ex Mart.) Burkart. By his description and illustrations, we may consider this name a synonym of *S. hippocampoides*, as Vanni (2017) and Costa (2006) did.

Stylosanthes hispida Rich., Actes Soc. Hist. Nat. Paris 1: 112. 1792. Type: French Guiana, Cayenne, *L.C. Richard s.n.* (lectotype designated in Calles [2017:4]: P! [P00202653]).

Stylosanthes cayennensis Mohlenbr., Ann. Missouri Bot. Gard. 44 (4): 337-338. 1958. Type: French Guiana, Vic. of Cayenne, 25 Jul 1921, *W.E. Broadway 972* (holotype: GH! [GH0026773], isotype: K! [K00263046]).

Fig. 11.

Distribution and habitat — This species is mainly found in the Guianas and Northern Brazil, in Amapá, Mato Grosso, Mato Grosso do Sul, and Pará, in flooded fields, *Cangas*, and Amazonian savanna.

Conservation status — Least Concern (LC). *S. hispida* has a large EOO and AOO. The areas of occurrence of the species are frequently threatened by mining activity.

Mohlenbrock (1958) treated *S. hispida* a synonym of *S. guianensis,* and described *S. cayennensis*, which is clear that he had not seen the type material. *Stylosanthes hispida* can be recognized by the hispid indumentum in the plant body, with long and golden bristles, especially in the bracts. The bracts' teeth are distinctly recurvate.

Stylosanthes humilis Kunth, Nov. Gen. Sp. 6: 506. 1824. Type: Venezuela. Crecit to Orinocum, prope Carichaná, *Humboldt & Bonpland. s.n.* (holotype: P! [P00659968]).

Stylosanthes figueroae Mohlenbr., Ann. of the Mis. Bot. Gard., 44: 342-343. 1958. Type: Colombia. Cauca, Cali, *A. Figueroa 897* (holotype: US! [US001976]).

Fig. 12.

Distribution and habitat — *S. humilis* is widespread in the Americas, from Mexico, and the Caribbean to Southern Brazil, in dry savannah areas. Furthermore, *S. humilis* can be found naturalized in Australia.

Conservation status — Least Concern (LC). *S. humilis* is widely distributed and occurs in disturbed areas.

Stylosanthes humilis is easily recognized by the leaflets narrowly ovate, the leaflet rachis slightly winged, and the very long uncinate rostrum more than 3 mm long. This species is annual, and it was the first species to be set as forage, being cultivated in Australia and receiving the name Townsville stylo (Karia *et al.* 2010).

Stylosanthes leiocarpa Vogel, Linnaea 12: 64-65. 1838. Type: Uruguay: Hbt. in Brasilia; in Montevideo, *F. Sellow s.n.* (holotype: B! [F0BN002245], isotypes: K! [K00264214], [K00264215], L! [L0019315], M! [M0066486], G! [G00367821]).

= *Astyposanthes leiocarpa* (Vogel) Herter, Revista Sudamer. Bot. 7: 209. 1943.

Stylosanthes leiocarpa var. *diffusa* Vogel, Linnaea 12: 64-65. 1838. nom. illeg.

Stylosanthes debilis M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais, Chaveslândia, nas proximidades do Canal de São Simão, 14 May 1976, *N.M. de Sousa Costa 619* (holotype: RB! [RB00540420]; isotypes: PAMG! [PAMG5474]), *syn. nov.*

Fig. 1O, 12.

Distribution and habitat — This species is found from Bahia to the North Argentina, Uruguay, and Central Paraguay in Cerrado, Atlantic Forest, and Pampa phytogeographic domains, in grasslands, Cerrado (*lato sensu*), and border of seasonally semideciduous forest.

Conservation status — Least Concern (LC). *S. leiocarpa* has a large EOO and can be easily found in the occurrence areas.

Stylosanthes leiocarpa has elongate, oblong inflorescences, oval bracts, loments with two fertile articles, wholly glabrous or with scattered trichomes, mainly in the suture, and uncinate rostrum. It is similar to *S. maracajuensis* and *S. vallsii* but can be differentiated by the abovementioned characters.

Vanni (2007) considered *S. debilis* as a synonym of *S. viscosa*, however, there are noteworthy differences between these two species. For example, the last has a shorter upper article (>2mm) and coiled rostrum.

Nevertheless, analyzing the type specimen and vast material from *S. leiocarpa*, we notice overlapping characters that complicate these taxa's delimitation.

Interestingly, specimens from southern Brazil, Argentina, and Uruguay have shorter bristles covering the plant (up to 1 mm), and the loment is always glabrous. In contrast, specimens from Minas Gerais and Bahia, including *S. debilis*, have longer bristles (> 2 mm), and sometimes the loment has trichomes and is more reticulated. Since this delimitation still requires further analysis, including molecular, we prefer to keep *S. debilis* as a synonym of a widespread species, *S. leiocarpa*.

Stylosanthes linearifolia M.B.Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais, Uberaba, BR-050, Uberaba - Uberlândia km 12, 19º45'S, 47º55'W, 850 msm, 1 Oct 1976, *N.M. de Sousa Costa 753* (holotype: RB [RB00540425]! isotype: PAMG [PAMG005542]!)

Fig. 12.

Distribution and habitat — *Stylosanthes linearifolia* is endemic to Brazil, in Cerrado areas from Minas Gerais, São Paulo, Goiás, and Mato Grosso do Sul.

Conservation status — Endangered (EN). B2ab(ii,iii,iv,v); *S. linearifolia* is a rare species with only few collections in Cerrado regions. Due to the low AOO and the occurrence in a threatened region (Klink & Machado 2005), it is better classified as endangered.

It is very similar to *S. bracteata,* especially in the large papyraceous bracts and the presence of a xylopodium. *S. linearifolia* differs only by linear leaflets with long bristles, while *S. bracteata* has oblong leaflets and does not have secretory bristles, only non-glandular trichomes. Phylogenetically, these plants group together and are diploids (Vander Stappen *et al.* 2002). Even though considering *S. linearifolia* as a synonym of *S. bracteata* is tempting, we prefer to recognize them as different taxa, mainly because of the secretory bristles and linear leaflets. Further studies using molecular data may help elucidate this complex.

Stylosanthes longicarpa Brandão & Sousa Costa, Daphne 2 (3): 5. 1992. Type: Brazil, Minas Gerais: Salto da Divisa, *J.F. Valls 6718* (lectotype here designated: CEN! [CEN00120727]; isolectotype: BOTU! [BOTU36158]).

Fig. 6L, 7I–J, 12.

Distribution and habitat — *Stylosanthes longicarpa* is collected in Minas Gerais and Goiás, in typical cerrado areas, rock outcrop vegetation, and nearby aquatic environments.

Conservation status — Endangered (EN). B2ab(iii,iv,v);D; *S. longicarpa* is found only in Cerrado of Minas Gerais and Goiás, Brazil, outside protected areas. These areas are highly threatened by deforestation, fire, expansion of agriculture, and mining activities, sometimes even culminating in disasters (Klink & Machado 2005; Primo *et al.* 2021).

This species can be easily differentiated by the upper article long-ovoid, with 4–5 mm long, straight costal side, papillose to pilose, reticulate, rostrum 0.5 mm long, coiled, covered with trichomes. It also has conspicuous marginal veins and the margin of the leaflets with short bristles, conferring a serrate aspect and obovoid inflorescence with one or two spikes. *Stylosanthes longicarpa* is sympatric and similar to *S. campestris* but is differentiated by the leaflets, inflorescence, and upper article shape. *S. campestris* has leaflets mostly obovate to elliptical, inflorescence capitate, with up to 3 spikes, and loment suborbicular.

In the protologue, the authors say that the type specimen was deposited in the PAMG herbarium, but the material was never incorporated in this herbarium. Duplicates of the collected material were found in the CEN herbarium. Therefore, we prefer to indicate the isotype in the CEN herbarium as a lectotype.

Stylosanthes longiseta Micheli, Mém. Soc. Phys. Genève 28 (7): 18 tab. IV. 1883. Type: Paraguay. In campis prope Caaguazú, 10 Nov 1874., *B. Balansa 1842* (holotype: G, isotype: P! [P00202684]).

Stylosanthes guianensis subsp. *anomala* var. *longiseta* (Micheli) Hassler, Repert. Spec. Nov. Reg. Veg. 16: 221. 1919. Type: Paraguay, in regione fluminis Yhú, Oct 1905. *E. Hassler 9532* (holotype: K! [K00264200]).

Fig. 12.

Distribution and habitat — *Stylosanthes longiseta* is a rare species collected only in Paraguay, Mato Grosso do Sul, and Paraná, in Cerrado vegetation outside protected areas.

Conservation status — Endangered (EN). B2ab(iii,iv,v);D; *S. longiseta* has a small EOO and AOO <50 km². Only five collections were recorded outside protected areas and only one collection with less than 50 years. Furthermore, the Cerrado vegetation is highly threatened by deforestation, the spreading of exotic grasses, fire, and large-scale agricultural advances (Klink & Machado 2005).

It can be easily recognized by the spatulate or obovate leaflets, covered in very long bristles (more than 2mm long), with an acuminate apex, conspicuous marginal vein up to 2/3 of the leaflet, and the inflorescence is globose. It was considered a variety to *S. guianensis* by the loment with only one article, rounded with reduced rostrum, and covered with capitate papillae. However, the abovementioned characters distinguish *S. longiseta* from *S. guianensis* and every other species.

Stylosanthes macrocephala M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais, Brasília de Minas, 2 km após a cidade de

São Francisco, 900 msm, 16 11 S 44 29 W, 3 May 1975, *M.L. Gavilanes 229* (holotype: RB! [RB00540426], isotype: PAMG! [PAMG9739])

Fig. 13.

Distribution and habitat — *S. macrocephala* has been found only in Brazil, in Cerrado and Caatinga phytogeographic domains.

Conservation status — Least Concern (LC). *S. macrocephala* is widely distributed in the savanna areas.

This species is very similar to *S. capitata*, and Vanni (2017) considered them synonyms. Nevertheless, there are several arguments for considering them as separate species. They differ morphologically, being *S. macrocephala* smaller plants (up to 60 cm), with leaflets narrow elliptical, ovoid, and apiculate inflorescences, bracts generally reddish or purplish colors, with many veins (8-10), bract leaflets often absent or reduced, not extending the teeth, while *S. capitata* are bigger plants (up to 1.20 cm), with leaflets broad-elliptical, oblong and elongated inflorescences, bracts hyaline, not colored, with fewer veins (4-8), bract leaflet often present, exceeding the teeth. Furthermore, *S. macrocephala* is a diploid species, 2n = 20, while *S. capitata* is tetraploid, 2n = 40 (Stace & Cameron 1984; Vieira *et al.* 1993). *Stylosanthes macrocephala* and *S. capitata* are widely cultivated and known as 'Estilosantes Campo Grande' (see *S. capitata* notes).

Stylosanthes macrosoma S.F. Blake, Proc. Biol. Soc. Washington 33 (9): 52. 1920. Type: Paraguay. Sin loc. "central Paraguay", 1888-1890, *T. Morong 255* (holotype: US! [US01049712], isotypes: K! [K00118498], NY! [NY007543], GH! [GH0026782]).

Fig. 13.

Distribution and habitat — *Stylosanthes macrosoma* occurs in Northeastern Argentina and Paraguay, in the Chacos, and with only one collection in Brazil, in Rio Grande do Sul, on the border with Uruguay, in the Pampean province.

Conservation status — Endangered (EN). B2ab(iii,iv,v);D; *S. longiseta* has a small EOO of 79,860 km² and AOO of 16 km². Few collections were recorded outside protected areas.

This species is very similar to *S. montevidensis* and *S. hippocampoides*. However, it has smaller cupuliform to oblanceolate single spikes, up to 7 flowers, more than 5mm long obovoid fruits, and a coiled rostrum.

Stylosanthes maracajuensis Sousa Costa & Van den Berg, Kew Bull. 58: 743. 2003. Type: Brazil. Mato Grosso do Sul, Aquidauana, Serra de Maracaju, 10 km Leste de Piraputanga, 12 Feb 1993, *G. Hatschbach* 58987 (holotype: MBM! [MBM156583], isotype: K! [K00263047, K00263048])

Fig. 4, 13.

Distribution and habitat — This species occurs in the Cerrado areas of Mato Grosso do Sul and Bolivia.

Conservation status — EN; B2ab(iii,iv,v); *S. maracajuensis* is represented by a few collections in the Serra of Maracaju area.

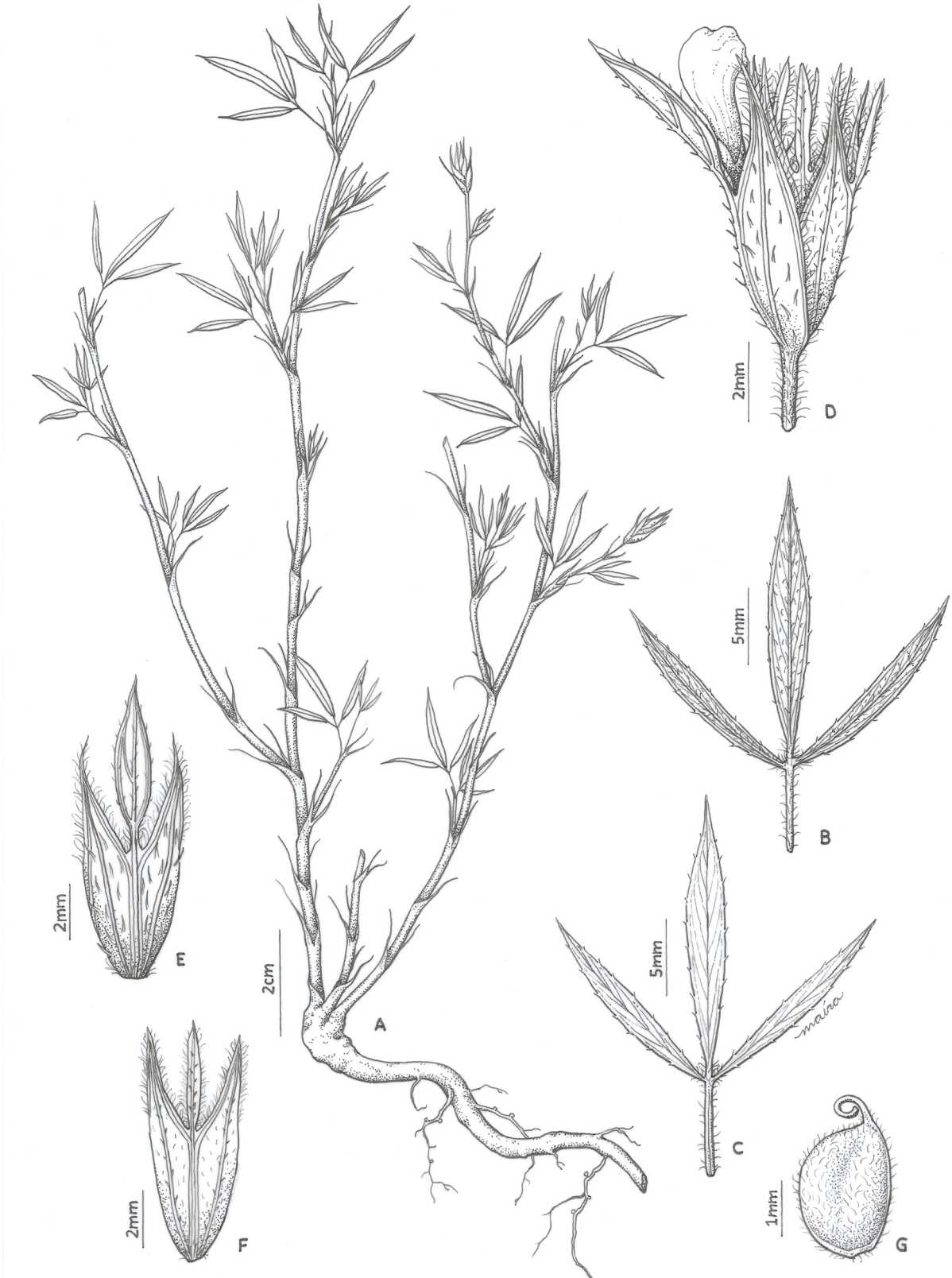

Fig. 4. *S. maracajuensis* **A.** Plant habit **B.** abaxial surface of the leaf **C.** adaxial surface of the leaf **D.** Inflorescence. **E.** Outer bract **F.** Inner bract **G.** Upper article **A-F.** *L. Costa 390* **G.** *A. Pott 10054*

Stylosanthes maracajuensis is similar to *S. leiocarpa* and *S. vallsii*. However, it distinguishes by the narrowly elliptical leaflets, inflorescences narrowly ellipsoid (length/width ratio > 3, while in the other species, the inflorescence is shorter, ellipsoid to obovate), and the pubescent upper article (while in *S. leiocarpa* and *S. vallsii* the upper article is entirely glabrous). In addition, some specimens present rhythmic growth.

Stylosanthes microcephala (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez. comb. & stat. nov.

Basionym: *Stylosanthes guianensis* var. *microcephala* M.B. Ferreira & Sousa Costa, Gen. *Stylosanthes*: 46. 1979. Type: Brazil, Minas Gerais, Caeté, 4 Mar 1976, *M.B. Ferreira & N.M. de Sousa Costa 306* (holotype RB! [RB00200930], isotype: PAMG! [PAMG5548]).

Stylosanthes guianensis var. *gracilis* f. *esetosa* Hassl. Repert. Spec. Nov. Regni Veg. 16: 221. 1919. Type: Paraguay. Gran Chaco, Santa Elisa, 23º10′S, 5 Oct. 1903. *E. Hassler 2834* (lectotype designated in Calles [2010: 313]: K! [K264199]; isolectotypes: BM! [BM538202], W! [W1906-1175], NY!), *syn. nov.*

Fig. 13.

Distribution and habitat — *S. microcephala* occurs in Paraguay and Brazil, in Cerrado, grassland, and pastures.

Conservation status — Least Concern (LC). *S. microcephala* is rich throughout the Brazilian and Paraguayan savanna areas.

This species can be recognized by the prostrate habit, stems glabrescent or covered with short bristles (< 1 mm), and non-glandular trichomes. The plant generally possesses smaller leaflets than *S. guianensis* (10–15 mm in *S. microcephala* vs. 20–40 mm in *S. guianensis*). The inflorescence is formed by one, rarely two, spikes, in cupuliform shape, with 6–10mm long, in opposition to capitate or globose from *S.*

guianensis. The loment is oblong and more elongated than *S. guianensis,* with conspicuous oil glands in the base. The flowers vary from yellow to cream and white. It is similar to *S. hippocampoides,* but the late has indumentum with long golden bristles, capitate inflorescence, and orbicular upper article.

We decided to elevate it to its own species status since there are morphological traits that can make *S. guianensis* var. *microcephala* distinguishable from the typic variety.

Stylosanthes minima J.J.S.Ferreira & J.Santos-Silva, Phytotaxa 456 (2): 161. 2020. Type: BRAZIL. Bahia: Caetité, subida do cruzeiro, elev. Ca. 825 m, 14º04'08"S, 42º29'49"w, associada a solos areno-argilosos e pedregosos, 27 Feb 2015, *J.J.S. Ferreira 26* (holotype: BOTU!, isotypes: RB, HUNEB-Coleção Caetité, HUNEB-Coleção Paulo Afonso).

Fig. 14.

Distribution and habitat — This species can be found in the Chapada Diamantina and the Serra Geral in southwestern Bahia. It occurs in Cerrado and Caatinga vegetation or grows in anthropic areas such as pastures and along roadsides on rocky, sandy-clayey, or sandy soils.

Conservation status — Endangered (EN). B2ab(iii,iv,v); although this species is found in anthropic areas, its distribution is restricted to southwestern Bahia, which is threatened by agriculture and deforestation (Juncá *et al.* 2005).

Stylosanthes minima can be recognized by the prostrate habit with adventitious roots emitted from the stems, only one fertile article, the inferior generally aborted, pilose or pubescent, and uncinate rostrum. Similar to *S. macrocephala* by sharing secondary bracts paleaceous and bract leaflets linear, but *S. macrocephala* has an erect or decumbent

habit, ovoid spikes, and articles with an elongated and curved rostrum. It is sympatric with *S. mitzii*.

Stylosanthes mitzii J.J.S.Ferreira & J.Santos-Silva, Phytotaxa 456 (2): 162. 2020. Type: BRAZIL. Bahia: Caetité, loteamento UPA, elev. ca. 810 m, 14º05'35"S, 42º29'36"w, em Caatinga antropizada, solo areno-argiloso, 2 Mar 2019, *J.J.S. Ferreira 301* (holotype: BOTU!; isotypes: RB, HUNEB-Coleção Caetité, HUEFS, HUNEB-Coleção Paulo Afonso)

Fig. 14.

Distribution and Habitat — *Stylosanthes mitzii* is found in Cerrado, highland rocky fields, and Caatinga vegetations from the Serra Geral to the Chapada Diamantina in southwestern, central southern, and western Bahia. It was associated with *S. macrocephala*, *S. capitata*, and *S. minima*.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *S. mitzii* suffers the same menaces as *S. minima* (v. *S. minina*). Both species are restricted to a small area in southwestern Bahia.

Stylosanthes mitzii shares with *S. minima* the prostrate habit and adventitious roots emitted from the stems but differs by the obovate leaflets, acute apex, loments with lower article present, and upper article glabrous to glabrescent. In contrast, *S. minima* has elliptical leaflets, mucronate apex, and loments with lower article aborted, upper article pilose, or pubescent. It is also similar to *S. capitata* and *S. macrocephala*, mainly by sharing yellow flowers without spots on the standard, bract leaflets pilose, and secondary bracts hyaline. However, *S. capitata* and *S. macrocephala* have the erect or decumbent habit, without adventitious roots, loments 4–5 mm long in *S. capitata* and 3–4 mm long in *S. macrocephala,* while in *S. mitzii* the loments are up to 2mm.

Stylosanthes montevidensis Vogel, Linnaea 12: 67. 1838. Type: Uruguay. Hbt. In Brasilia merid.; in Montevideo, 1820-1821, *F. Sellow s.n.* (holotype: B! [F0BN002246]; isotypes: K! [K00264204], [K00264205], HBG! [HBG00519107], G! [G00367820], M! [M0110710], [M0094620], GH! [GH0026783]).

Stylosanthes juncea Micheli, Mem. Soc. Phys. Genève 28 (7): 19. 1883. Type: Paraguay. Itape, cuarporturs, Dec 1874, *B. Balansa 1507* (holotype: P! [P00202692], isotype: P! [P00202705]).

Stylosanthes juncea var. *setosa* Chodat & Hassler, Bull. Herb. Boissier, sér. 2, 4 (9): 884.1904. Type: Paraguay. In regione fluminis Carimbatay, Dec 1900. *E. Hassler 5825* (holotype: G; isotypes: P! [P00202698], GH! [GH26779], UC! [UC940835]).

Stylosanthes montevidensis f. *setosa* (Chodat & Hassler) Hassler, Repert Spec. Nov. Reg. Veg. 16: 223. 1919.

Stylosanthes juncea var. *setosa* f. *intermedia* Chodat & Hassler, Bull. Herb. Boissier, sér. 2, 4 (9): 884.1904. Type: Paraguay. San Bernardino, in campo. *E. Hassler 3781*. (lectotype here designated: P! [P00202696]).

Stylosanthes montevidensis var. *juncea* f. *setosa* (Chodat & Hassler) Hassler, Repert. Spec. Nov. Reg. Veg. 16: 223. 1919. Type: Paraguay. Bellavista, in regione cursus superioris fluminis Apa, Dec. 1901/2, *E. Hassler 8122*. (lectotype here designated: NY! [NY3927]).

Stylosanthes montevidensis Vogel f. *glabrata* Hassler, Repert. Spec. Nov. Reg. Veg. 16: 223. 1919. Type: Paraguay. Cordillera de Altos, Jan, *E. Hassler 1798*. (lectotype designated in Vanni [2017:573]: G).

Stylosanthes montevidensis Vogel var. *heterophylla* Burkart, Darwiniana 3: 260. 1939. Type: Brazil. Paraná: Capão Grande, Ponta Grossa, in campo, 17 Feb.1911, *P. Dusen s.n.* (holotype: SI! [SI002543]).

= *Astyposanthes intermedia* (Vogel) Herter, Revista Sudamer. Bot. 7: 209. 1943.

= *Astyposanthes montevidensis* (Vogel) Herter, Revista Sudamer. Bot. 7: 210. 1943.

Stylosanthes linearis S.F.Blake, J. Washington Acad. Sci. 14: 287. 1924. Type: Argentina. Chaco. Las Palmas. Common in esteras. Nov 1917. *P. Jörgensen 2693* (holotype: US! [US1971]; isotypes: GH! [GH26780]).

Fig. 14.

Distribution and habitat — *Stylosanthes montevidensis* is mainly found in the Pampean and Chacoan provinces, high-altitude grasslands, and savanna vegetation. It has been recorded mainly in southern Brazil, Uruguay, Paraguay, Argentina, and Bolivia.

Conservation status — Least Concern (LC). *S. montevidensis* is widely distributed, even in disturbed areas.

S. montevidensis can be recognized by erect plants, long internodes, long bristles covering the plant body, leaflets with conspicuous marginal veins, capitate inflorescences with more than 20 flowers, loments with only one fertile article, and rostrum strongly coiled, which differs from *S. gracilis*.

Stylosanthes nunoi Brandão, Daphne 2 (1): 5. 1991. Type: Brazil. Minas Gerais, Urucuia, solo arenoso, relevo suave ondulado, 500 msm, *N.M. de Sousa Costa 15* (holotype: RB, not found; isotype: PAMG, not found). Mato Grosso, São Felix do Araguaia, Beira do Rio Araguaia, entre São Félix do Araguaia e o encontro com o Rio das Mortes, Praia do Gado, *V. C. Souza 14245* (neotype here designtated: PAMG! [PAMG44619], isoneotype: ESA! [ESA38368], MBM! [MBM244492])

Fig. 6G–I,K, 14.

Distribution and habitat — *Stylosanthes nunoi* occurs in Cerrado phytogeographic domain in Cerrado vegetation and grasslands, and it's endemic to Brazil.

Conservation status — Vulnerable (VU). B2ab(iii,iv,v); *S. nunoi* is restricted to Central Brazil, in Cerrado areas. Deforestation, fire, expansion of agriculture highly threaten these areas (Klink & Machado 2005).

S. nunoi is very similar to *S. hippocampoides*. However, it can be distinguished by the number of secondary veins (up to 6 in *S. hippocampoides* vs. more than seven and less spaced in *S. nunoi*) and the seed color (brown in *S. hippocampoides* vs. black in *S. nunoi*).

Vanni (2017) cites *J. Ramos & R. Sousa 66* (holotype RB, isotype, P) as types of *S. nunoi*, but that is not the material designated by Brandão (1991), and no official neotypification was made according to the Code requirements (Turland *et al.* 2018). Since we could not find the type material of *S. nunoi*, we based our recognition of this species on the original description and other materials identified by M. Brandão. We chose *V. C. Souza 14245* (PAMG44619) as the neotype because no other materials were found from the type locality. The neotype reflected the description and was identified by the species' author. Moreover, there are duplicates in two reference herbaria, MBM and ESA.

Stylosanthes pauciflora (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez, comb. & stat. nov.

Basionym: *Stylosanthes guianensis* var. *pauciflora* M.B. Ferreira & Sousa Costa, An. Cong. Nac. Bot. 36: 236. 1985. Type: Brazil, Minas Gerais, João Pinheiro, 29 May 1976, *N.M. de Sousa Costa 628*, (lectotype here designated: PAMG! [PAMG5548]).

Stylosanthes viscosa var. *acutifolia* Benth. Fl. Bras. 15(1A): 91. 1859. Type: Brazil. Pernambuco. Olinda. Sep 1837. *G. Gardner 972* (lectotype designated in Calles [2010: 313]: K! [K205132], isolectotypes: P! [P00204807, P00204808], K! [K000205131]). *syn. nov.*

Fig. 2I–J, 3K–M, 16.

Distribution and habitat — *S. pauciflora* occurs in Brazil, Venezuela, Peru, and Paraguay, especially in savanna environments such as Cerrado, Chaco, highland rocky fields, grassland pastures, and anthropic areas. The main distribution center is in Central Brazil.

Conservation status — Least Concern (LC). *S. pauciflora* is widely distributed in South America.

Stylosanthes pauciflora presents *an* erect shrubby habit, viscid indument with abundant secretory bristles, only one fertile article with conspicuous oil glands at the base, and generally yellow seeds. It can be differentiated from the *S. guianensis* by presenting leaflets with conspicuous marginal veins and cupuliform inflorescences with only 1-2 spikes in opposition to the capitate and globose, with multiple spikes in *S. guianensis*.

In the protologue of *S. guianensis* var. *pauciflora* (Brandão *et al.* 1990), the specimen at RB was selected as the holotype. However, the material was not found, and we believe that the authors have never sent the material to RB. Therefore, we designate the PAMG material, previously the isotype, as a lectotype.

After collecting this material in the field, we notice that it is an entirely different species from *S. guianensis*. It also presents anatomical differences with large fiber caps at the border of the leaflets, which does not occur in *S. guianensis* (Gissi *et al.* 2022*b*). Molecular studies corroborate the separation of this variety from the others of *S. guianensis* (Karia 2008; Matida *et al.* 2012; Santos-Garcia *et al.* 2012). The cultivars 'Bandeirante' and 'Tardio' refer to this species, which is acknowledged by the anthracnose's high tolerance (Karia *et al.* 2010).

Stylosanthes pilosa M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 – 100, 1977. Type: Brazil, Minas Gerais: Buritizeiro, BR 365, km 201, 478 msm, 17º27'S,

44º58'W, 28 Feb 1976, *N.M. de Sousa Costa & M.B. Ferreira 362* (holotype: RB! [RB00200922], isotype: PAMG! [PAMG5716]).

Stylosanthes bahiensis G.P. Lewis & L. `t Mannetje, Kew Bull. 37: 125. 1982. Type: Brazil. Bahia: Serra Du Acuruá, 5-6 km S de São Ignacio on the road to Gentio do Ouro. Disturbed caatinga, 27 Feb 1977, *R. M. Harley et al. 19134* (holotype: CEPEC [CEPEC37191]; isotypes: K! [K00205020], [K00205021], WAG! [WAG002022], RB! [RB00540418]).

Fig. 16.

Distribution and habitat — This species occurs in Caatinga and Cerrado phytogeographic domains, in Cerrado, grasslands, and deciduous forest vegetation. It is endemic in Brazil.

Conservation status — Least Concern (LC). *S. pilosa* is widely distributed in the NE of Brazil.

Stylosanthes pilosa is very similar to *S. capitata*, and, with *S. macrocephala, S. pilosa* is even considered one of the diploid progenitors of *S. capitata* (Liu *et al.* 1999; Oliveira *et al.* 2021). However, it can be distinguished by the bracts with long bristles and the upper article with a coiled rostrum, while *S. capitata* has bracts with shorter bristles and an uncinate rostrum. Vanni (2017) treated this species as a synonym of *S. viscosa.* Still, they can be separated by long bristles, the presence of a plumose appendage and two inner bracteoles in *S. pilosa* and scabrous viscid indument, absence of a plumose appendage, and only one inner bracteole in *S. viscosa*.

Stylosanthes pohliana Taub., Verh. Bot. Vereins Prov. Brandenburg 32: 29. 1890. Type: Brazil. Hab. in Brasiliae provincia Bahiensis et provincia ignota ad Corgodo Padre,

1836, *J.B.E. Pohl 1997*. (lectotype here designated: W! [W10014]; isolectotypes: M! [M0110711], NY! [NY3928], K! [K00328045]).

Fig. 6M, 7I–J, 16.

Distribution and habitat — *Stylosanthes pohliana* is endemic to Brazil in the States of Goiás and Bahia, in cerrado, rock outcrop vegetation.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *S. pohliana* is represented by few collections outside protected areas. These areas are Cerrado vegetation and are menaced by the expansion of agriculture, deforestation, and out-of-control fires (Klink & Machado 2005).

Stylosanthes pohliana can be recognized by the erect habit, indumentum setose-sericeous, viscid, with non-glandular trichomes and long bristles (1–3 mm), leaf rachis indistinguishable or very short (0.5 mm), leaflets narrowly elliptic, linear to narrowly oblanceolate, papyraceous, lower surface setose-sericeous, with bristles widespread through the blade, midvein eccentric, secondary veins apparent, 10 – 14 pairs, alternate, without marginal vein. Inflorescence terminal formed by 1 spike, obovate, loment with one or sometimes two fertile articles, oblong, glabrous or scattered trichomes at the base, weakly reticulate, beak 0.5 mm long, coiled, and glabrous. Some specimens were identified as *S. campestris*, but the leaflets and inflorescences can differentiate them.

S. pohliana was generally treated as a synonym of *S. guianensis*, but after finding the type material, it was clear that it was a completely different species. In the protologue, Taubert (1890) does not designate the herbarium, only saying "*Pohl 1997* (V. s. herb. Monac., Vindob.)", thus, here we designate the collection in W as the lectotype and the others as isolectotypes.

Stylosanthes pubescens (Pilger) Gissi & Fort.-Perez. comb. & stat. nov.

Basionym: *Stylosanthes guianensis* var. *pubescens* Pilger, in Engl. Bot. Jahrb. 30: 160. 1901. Type: Brazil, Mato Grosso. Rio Ronuro, May 1899, *R. Pilger 625* (holotype: B! [B10024417]).

Stylosanthes guianensis var. *canescens* M.B. Ferreira & Sousa Costa, Gen. *Stylosanthes*: 44. 1979. Type: Brazil, Minas Gerais, Caeté, 4 Feb 1976, *N.M. Sousa Costa & M.B. Ferreira 308*, (holotype: RB! [RB00200920], isotype: PAMG! [PAMG5561]), *syn. nov.*

Fig. 2D–E, 3C–E, 15

Distribution and habitat — In Brazil, *S. pubescens* occurs in Cerrado, grassland, pastures, and roadsides. It also is recorded for Bolivia in urban environments.

Conservation status — Least Concern (LC). *S. pubescens* is widely distributed in South America and frequently collected in disturbed areas.

This species can be recognized by the absence of bristles in the whole plant body. The stems and inflorescences are covered only by whitish non-glandular trichomes, especially in the bracts conferring a canescent aspect. In the stem, the non-glandular trichomes are present only on the side, adjacent to the axillary buds, alternating in distribution along the stem.

Stylosanthes guianensis var. *pubescens* was considered a synonym of *S. guianensis* by several authors (Calles & Schultze-Kraft 2010*a*; Vanni 2017). When *S. guianensis* var. *canescens* was described, the authors did not analyze Pilger`s material. Vanni (2007) considered all these names synonyms of *S. guianensis* var. *guianensis*. After comparing the type of *S. guianensis* var. *canescens* with *S. guianensis* var. *pubescens*, we noted that they refer to the same taxon.

Furthermore, seeing the types, the examined material, and collecting in the field made us realize there were enough characteristics to up-rank this variety. *Stylosanthes*

pubescens differs anatomically from *S. guianensis* by the absence of bristles (secretory emergences) in the stem and the leaves (Gissi *et al.* 2022*b*). Secretory structures are considered valuable characters to differentiate species and other taxonomic levels (Lersten & Curtis 1996; Jiang *et al.* 2010; Bombo *et al.* 2012; Fortuna-Perez *et al.* 2012). Furthermore, molecular studies also support the distinction of this variety as a different species (Karia 2008; Santos-Garcia *et al.* 2012).

Stylosanthes recta Vanni, Candollea 50 (1): 247. 1995. Type: Paraguay. Boquerón: Parque Valle Natural, 25 km S de Filadelfia, 7 Dec.1992, *A. Krapovickas 44219* (holotype: CTES; isotypes: G! [G0075625], SI[SI2544]).

Fig. 16.

Distribution and habitat — *Stylosanthes recta* is endemic to northwestern Paraguay in savanna areas.

Conservation status — Data deficient (DD). *S. recta* is known only by one population in Paraguay.

This species can be differentiated from others by the loment with only one fertile article, 5–6 mm long, ovoid, and rostrum short, straight, and erect. It resembles *S. hippocampoides* by the long bristles in the stems, but *S. hippocampoides* has a suborbicular article with a distinct rostrum and leaflets with conspicuous secondary veins abaxially.

Stylosanthes rostrata (Burkart) Vanni, Novon 19 (2): 259-260. 2009.

Basionym: *Stylosanthes gracilis* Kunth var. *rostrata* Burkart, Darwiniana 3 (2): 251, 1939. TYPE: Argentina. Corrientes: Granja de Bella Vista, 18 July 1905, *C. Spegazzini* 54, Min. Agr. 14648 (holotype: SI! [SI4158], isotype: BAB! [BAB500]).

Fig. 16.

Distribution and habitat — *Stylosanthes rostrata* occurs in Argentina, especially in Corrientes and Uruguay (Vanni 2009).

Conservation status — Data deficient (DD). Since we could not analyze further material from this species, we prefer to access it as DD.

This species closely resembles *S. hippocampoides*, even in the protologue *S. rostrata* is compared with it, differentiated only by the rostrum shape. While *S. hippocampoides* has a short coiled or reduced rostrum, *S. rostrata* has a long, ca. 1.5 mm, and uncinate rostrum.

After analyzing several materials from *S. hippocampoides*, it was noticed that the rostrum has different shapes, varying from short and reduced to coiled and developed, especially in the type specimens. It is possible that *S. rostrata* may be included in this variation. However, it was not possible to analyze the material from this species. Therefore, we prefer to agree with Vanni (2009, 2017).

Stylosanthes ruellioides Mart. ex Benth., Fl. Bras. 15 (1A): 90. 1859. Type: Brazil. Minas Gerais. Hbt. In campis editis ad Serra do Itambé do Mato dentro. *C.F.P. von Martius s.n.* (lectotype here designated: M! [M0110707]).

Fig. 17.

Distribution and habitat — *S. ruellioides* is endemic to the Espinhaço Range in Minas Gerais, in Cerrado, and highland rocky fields.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *S. ruellioides* is restricted to the *Espinhaço* Range, with an AOO of < 500 km². Additionally, this region is threatened by unruled human activity (Silveira *et al.* 2016; Primo *et al.* 2021).

S. ruellioides can be easily recognized by strigose viscid indument, with short bristles (2 mm long), leaves and branches densely arranged, flowers subtended by a plumose appendage, two inner bracteoles, articles pilose with a coiled rostrum. It is

similar and sympatric to *S. tomentosa*, which Vanni (2017) recognized as a synonym, but they can be separated by the size of the plant, leaflets, and standard. While *S. ruellioides* forms bigger plants with elliptical to oblong leaflets, 20–45 mm long, standard 11–13 mm long, and articles sparsely pilose, *S. tomentosa* forms smaller plants with narrow-elliptical to linear leaflets (10–20 mm long), standard 6–8 mm long, and loment densely pilose. They also differ in the number of chromosomes. While *S. ruellioides* is 2n=40, *S. tomentosa* is 2n = 20. Further genetic studies would help to elucidate this taxonomic complex.

Stylosanthes scabra Vogel, Linnaea 12: 69. 1838. Type: Brazil. Hbt. In Brasil merid.: in Serra da Moeda, 1840. *F. Sellow s.n.* (holotype: B!, destroyed [F0BN002248]!, lectotype designated in Calles & Schultze-Kraft (2010*a*, p. 325): K! [K00264211]).

Stylosanthes bangii Taub. ex Rusby, Memoirs of the Torrey Botanical Club 4(3): 206–207. 1895. Type: Bolivia, Cochabamba, 1891, *A. M. Bang 936* (holotype: MO; isotypes: NY! [NY3921], GH! [GH0026771], M! [M0066472], MICH [MICH1104319], US [US001936]).

Stylosanthes diarthra S.F.Blake, Proc. Biol. Soc. Washington 33: 49. 1920. Type: Venezuela, Trujillo, Valera, 31 Oct 1910, *A. Jahn 169* (holotype: US! [US001934]).

Stylosanthes gloiodes S.F.Blake, Proc. Biol. Soc. Washington 33: 45. 1920. Type: Ecuador, Loja, Cariamanga, 24 Nov 1910, *C.H.T. Townsend A57* (holotype: US! [US001974]).

Stylosanthes plicata S.F.Blake, Proc. Biol. Soc. Washington 33: 46. 1920. Type: Brazil, Mato Grosso, Jul 1892, *C.E.O. Kuntze s.n.* (holotype: US! [US001966], isotypes: SI! [SI002608], [SI002609], NY! [NY623249]).

Stylosanthes scoparia Standl. & L.O.Williams, Ceiba 1: 145. 1950. Type: Honduras, Morazán, Santa Clara Creek, Río Yeguare Valley, 17 Dec 1946, *L.O. Williams*

& A. Molina 11261 (holotype: US! [US001958]; isotypes: LL! [LL00371401], GH! [GH0026794], F, MO [MO3147418]).

Stylosanthes subsericea S.F. Blake, Proc. Biol. Soc. Washington 33: 50. 1920. Type: Mexico, Oaxaca, Cerro de Picacho, Jul 1914, *C.A. Purpus 7152* (holotype: US! [1956]; isotypes: NY! [NY3920], GH! [GH26796], BM! [BM78848]).

Stylosanthes nervosa J. f. Macbr., Field Mus. Nat. Hist., Bot. ser. 13(3/1): 411. 1943. Type: Peru, Cajamarca, Jaen, near the confluence of Chinchipe and Marañón, May 1912, *A. Weberbauer 6215* (holotype: F! [F0360591F]; isotype: US! [US1967], GH! [GH26785]).

Stylosanthes tuberculata S. F. Blake in Proc. Biol. soc. Wash. 33(9): 48–49. 1920. Type: Bahamas, New Providence, Southwest landing, 11 Feb 1905, *E. G. Britton 3336* (holotype: US! [US1979]; isotype: NY! [NY31987]).

Fig. 1L, 15.

Distribution and habitat — *Stylosanthes scabra* occurs widespread throughout South America, from Colombia to Argentina, in several types of vegetation like caatinga (*stricto sensu*), high altitude grasslands, grasslands, highland rocky fields, cerrado (*lato sensu*), seasonally deciduous forest, seasonally semideciduous forest, coastal forest (restinga), Amazonian savanna, pastures and even in anthropic areas.

Conservation status — Least Concern (LC). *S. scabra* is widely distributed and has ruderal behavior.

This species can be recognized by erect habit, elliptical to obovate leaflets, pubescent, covered in short bristles, viscid, flowers subtended by a plumose appendage, two inner bracteoles, two fertile articles, uncinate rostrum, shorter than the superior article.

Stylosanthes scabra may be confused with *S. hamata* and *S. seabrana*. However, *S. hamata* presents rostrum longer than the upper article and indument pubescent without

viscid bristles, and *S. seabrana* presents leaflets narrowly elliptical and glabrous on the adaxial surface. *Stylosanthes scabra* is an allotetraploid species (2n = 40) and its putative diploid donors are *S. hamata* (2n = 20) and *S. viscosa* (2n = 20) (Marques *et al.* 2018).

Stylosanthes seabrana B.L. Maass & 't Mannetje, Novon 12 (4): 497-499. 2002. Type: Brazil. Bahia: State Rd. BA 052, from Irecê 80 km to Xique-Xique, 10º56′S, 42º29′W, 29 Jun 1983, *L. Coradin et al. 6261* (holotype: CEN!; isotypes: K! [K00205077], M! [M0028873]).

Fig. 15.

Distribution and habitat — *Stylosanthes seabrana* is endemic from Bahia, in Caatinga vegetation.

Conservation status — Vulnerable (VU). B2ab(iii,iv,v); *S. seabrana* is endemic to Caatinga. Some collections were made in Chapada Diamantina National Park, however, the Caatinga phytogeographic domain is susceptible to agriculture expansion, fires, deforestation, and invasive species (Juncá *et al.* 2005).

S. seabrana is characterized by presenting erect habit, narrowly-elliptical leaflets, and glabrous at the abaxial side, with short bristles only in the margin or the midvein, and curved rostrum.

This species was described based on materials identified as *S.* aff. *scabra* (Maass & ’t Mannetje 2002). These specimens not only had morphological differences but behaved differently in agricultural tests, being more productive and resistant to drought, frost, and hard soils (Edye *et al.* 1998). Some studies proposed to treat *S. seabrana* as a synonym of *S. scabra* (Vanni & Fernandez 2011; Vanni 2017), but Cook and Schultze-Kraft (2020) reunited several arguments to defend the recognition of *S. seabrana* as a distinct species. Furthermore, *S. seabrana* has a diploid genome while *S. scabra* is an

allotetraploid (Liu *et al.* 1999; Marques *et al.* 2018). Reuniting all this information, we prefer to adopt *S. seabrana* as an acceptable species in this study.

Stylosanthes sericeiceps S. F. Blake, Contr. U.S. Natl. Herb. 20 (13): 524. 1924. TYPE: Venezuela. Mérida: Lagunillas, 6 Oct. 1921, *A. Jahn 678* (holotype: US! [US1957]; isotypes: SI! [SI002545], G! [G00367845], GH! [GH026795], NY!).

Fig. 16.

Distribution and habitat — *Stylosanthes sericeiceps* is endemic to savannas in the State of Mérida, Venezuela.

Conservation status — Endangered (EN). B2ab(iii,iv,v);D; *S. sericeiceps* has a small EOO km² and AOO. It is endemic to Mérida, with only a few known populations.

The absence of bristles can characterize it - the whole plant is covered only by non-glandular trichomes, inflorescence ellipsoid reaching up to 3cm long, loments with two fertile articles, densely pubescent and coiled rostrum.

Stylosanthes sericeiceps was described as presenting plumose appendage only on the basal flowers of the inflorescence and only one inner bracteole (Blake 1924; Mohlenbrock 1957). According to Calles (Calles & Schultze-Kraft 2010*a*), the plant does not present a plumose appendage. The outer bracteole is deeply bipartite, being bisected, misleading the author that there is an axis. In our study, we have not found the axis in the analyzed specimens, and in the dried material was very difficult to state that the bracteoles were connate at the base. Ontogenetic studies, analyzing live material, may help elucidate this deadlock.

Additionally, all the known allopolyploid species bear the plumose appendage, and two inner bracteoles (Stace & Cameron 1984) and *S. sericeiceps* is considered tetraploid, probably with *S. viscosa* and *S. hamata* being the putative donors (Liu *et al.* 1999; Vander Stappen *et al.* 2002). So, the absence of the axis in this species is curious.

Stylosanthes sympodialis Taub., Verh. Bot. Vereins Prov. Brandenburg 32 (1): 19-20. 1890. Type: Ecuador, Chanduy, *Spruce 6373* (holotype: B, photo 2249 B!; isotypes: K! [K0118499], F! [F0BN002249], G! [G00367844], P [P00202769]).

Stylosanthes psammophila Harms, Fedde Rep. Sp. Nov. 19: 69. 1923 Type: Peru, between Piura and Nhómala, Mar 1912, *A. Weberbauer 5936* (holotype: G! [G00367843]; isotype: GH! [GH026790]).

Fig. 16.

Distribution and habitat — *Stylosanthes sympodialis* is distributed in Peru and Ecuador, including the Galapagos islands, in savanna areas.

Conservation status — Least Concern (LC). *S. sympodialis* is widely distributed in Ecuador and Peru.

Stylosanthes sympodialis is mainly characterized by the stems covered by dense whitish indument with scattered or without bristles, inflorescence oblong with only one or two spikes, densely covered with ferruginous trichomes, presence of two inner bracteoles and plumose appendage, and loments densely pilose with a coiled rostrum.

Some plants may have stems almost glabrous, erect habit, and leaflets narrowly elliptical, mainly from Peru and Galapagos, which were treated as *S. psammophila* (Harms 1923; Mohlenbrock 1957). However, analyzing materials from the NY herbarium, we noticed an intergradation of these characters. Therefore, we prefer to keep these names as synonyms.

Stylosanthes tomentosa M.B. Ferreira & Sousa Costa, Anais Soc. Bot. Brasil, 28: 77 - 100, 1977. Type: Brazil, Minas Gerais, Datas, Datas – Serro km 20, 1100 msm, 18

37 S 43 37 W, 19 Jan 1977, *N. M. de Sousa Costa 794* (holotype: RB! [RB00540429], isotype: PAMG! [PAMG1760]).

Fig. 17.

Distribution and habitat — *Stylosanthes tomentosa* is endemic to the *Espinhaço* Range in Minas Gerais, in Cerrado and highland rocky fields. It's sympatric to *S. ruellioides*.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *S. tomentosa* is restricted to the *Espinhaço* Range, sympatric to *S. ruellioides,* and susceptible to the same threats (Silveira *et al.* 2016; Primo *et al.* 2021).

Stylosanthes tomentosa presents strigose viscid indument with short bristles (2 mm long), leaves and branches densely arranged, flowers subtended by a plumose appendage, two inner bracteoles, articles pilose with a coiled rostrum. It shares these characteristics with *S. ruellioides*, which also occurs in the *Espinhaço* Range. However, they can be distinguished by the size of the plant, leaflets, standard (See *S. ruellioides* discussion), and chromosome numbers, being *S. ruellioides* tetraploid and *S. tomentosa* diploid (Liu *et al.* 1999).

Stylosanthes vallsii Sousa Costa & Van den Berg, Neodiversity 4: 9. 2009. Type: Brazil, Paraná, Guarapuava, main road to Cascavel (BR-277), ca 35.5 km W of Guarapuava, 25º 26' 00" S, 51º 48' 00" W, 1060 m above sea level, 29 Dec 1987, *J.F.M. Valls et al. 11380* (holotype: CEN [CEN00049189]!, isotypes: RB! [RB00752802], K! [K000978012], US! [US01269201], MBM [MBM382290], IBPGR, LISI).

Fig. 16.

Distribution and habitat — *Stylosanthes vallsii* is endemic to Paraná, with only a few collections nearby the type locality.

Conservation status — Endangered (EN). B2ab(iii,iv,v);D; *S. vallsii* has a small EOO and AOO. Furthermore, it was represented by a few collections near agricultural sites.

Stylosanthes vallsii has hispid-pilose, non-viscid stems, narrowly elliptic leaflets, covered with short bristles, short obovoid or ellipsoid inflorescence, loments with both articles pilose with a coiled rostrum. This species is very similar to *S. maracajuensis* and *S. leiocarpa* but differs in the aforementioned characters.

Stylosanthes venezuelensis Calles & Schultze-Kr., Acta Botanica Venezuelica 32: 153–157. 2009. Type: Venezuela, Distrito Capital: colinas detrás del Jardín Botánico de Caracas, 10°49,43' N, 66°54,09' O, 10 Feb 2006, *T. Calles et al. 1001* (holotype: VEN; isotypes HOH, K! [K00780077], M! [M0233800], MO [MO100434429], NY! [NY1546404], US).

Fig. 16.

Distribution and habitat — This species is only known by a few collections around Caracas, Venezuela. It grows in open areas in semideciduous forests.

Conservation status — Data deficient (DD). Since it was not able to analyze additional material from this species, we prefer to access it as DD.

Stylosanthes venezuelensis is similar to *S. scabra*, but the first lacks bristles, and the upper article is glabrous except for a thin ciliate margin.

Stylosanthes viscosa (L.) Sw. Prodr. (Sw.): 108. 1788.

= *Hedysarum hamatum* var. *viscosum* L., Syst. Nat. ed. 10, 2: 1170. 1759. Type: Jamaica. Loto pentaphyllo siliquoso villoso similis anonis non spinosa, foliis cisti instar glutinosis & odoratis. In Sloane, Voy. Jamaica, 1: 186, t. 119, f. 1. 1707. *H. Sloane s.n.* (lectotype designated by Kirkbride & Kirkbride [1987: 456]: BM! [BM589678]).

= *Astyposanthes viscosa* (L.) Herter, Revista Sudamer. Bot. 7: 209. 1943.

Stylosanthes glutinosa Kunth, Nov. Gen. Sp. 6: 507. 1824. Type: Mexico. Acapulco. Crescit in arenosis, prope Acapulco, ad litus Maris Pacifici. *A.J.A. Bonpland & F.W.H.A. von Humboldt 3865.* (holotype: P! [P00659969]).

Stylosanthes prostrata M.E. Jones, Contr. W. Bot. 15: 135. 1929. Type: Mexico. Baja California. San Jose del Cabo. 18 Jan 1828. *M. E. Jones 24002* (lectotype designated by Mohlenbrock [1958:341]: GH! [GH0026786]; isolectotype: MICH! [MICH1104321]).

Stylosanthes viscosa var. *minor* Micheli, Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn 1875: 72. 1876. Type: Brazil. Rio de Janeiro. Tahipu. 18 Jun 1867. *A. Glaziou 1374* (holotype: P! [P00204569]).

Fig. 1M, 5A–B, 17

Distribution and habitat — *Stylosanthes viscosa* can be found throughout the Americas, from the United States to the North of Argentina. It does not tolerate freezing temperatures, occurring in latitudes north of 30ºS, in open areas like Caatinga, Cerrado, grasslands, highland rocky field, coastal forest (restinga), Amazonian and Guianan savannas, pampas, and anthropic areas. This species is a ubiquitous weed (Lorenzi 2008; Carvalho 2013).

Conservation status — Least Concern (LC). *S. viscosa* is widely distributed and has ruderal behavior.

Fig. 5. Photographs of *Stylosanthes viscosa* in the field showing morphological differences **A.** Decumbent habit with cream flowers **B.** Erect habit with yellow flowers (photo by C. Toledo).

Due to its extensive distribution, *S. viscosa* presents remarkable morphological plasticity. One of these differences is the habit, sometimes prostrate and herbaceous or erected shrubs, especially in the "restinga". Some studies evaluated that these differences may be responses to the xeromorphic environments (Dirksen & De Melo Júnior 2018). Differences in the leaflet shape were also observed in the examined material, varying from elliptical to obovate, with acute to rounded apex. Nevertheless, all the examined material shares constant characters like the whole plant overgrown with short viscid bristles - sometimes the plant becomes covered in a black tar due to the oxidized secretion – inflorescence oblong and elongate, bracts' leaflets patent, standard with vinaceous stripes, two fertile articles, upper article sigmoid (costal face concave, ventral face convex, the rostrum dislocated), straw color, around 2 mm, and rostrum coiled. Perhaps anatomical and population genetics studies may elucidate if these morphotypes may be different species or not.

Stylosanthes sp.

Type: Brazil, Tocantins, Arraias. Estrada Vicinal no trevo de Arraias para Campos Belos (TO-050). 8 Mar 2015, *P. H. Labiak, 5989* (holotype: RB! [RB01053500]; isotypes: BOTU!; CEPEC! [CEPEC149991]).

Fig. 6A–F, 7C–H, 18.

Perennial subshrub 0.8 – 1 m tall, branched from the base. Stems erect, ligneous near the base, upper branches green with spaced internodes, striate, indumentum pilose-scabrous, viscid, with non-glandular trichomes and short bristles (0.2 mm). Stipules amplexicaul with a pilose-scabrous indumentum, sheath 7 – 12 mm long, teeth needle-like, 3 – 5 mm long. Leaves trifoliolate. Petiole densely scabrous, adaxially channeled with a tuft of long (ca. 1 mm), non-glandular trichomes, and bristles at the apex, 7 – 11 mm long. Rachis 1.5 – 2.5 mm long, pilose, rarely with bristles, pulvinule, 0.5 mm long, pilose. Leaflets narrowly elliptic, linear to narrowly oblanceolate, 17 – 45 × 2 – 6 mm, mucronate, rounded at the base, papyraceous, upper surface V-shaped, sparsely scabrous with scattered short bristles above the blade and margins, also with appressed non-glandular trichomes, secondary veins inconspicuous, lower surface scabrous, with bristles concentrated mainly above the midvein, midvein slightly eccentric, secondary veins apparent, 6 – 10 pairs, alternate, without marginal vein. Inflorescence terminal and axillary, formed by 1–2(3) spikes, obovate to oblong, 6 – 10 mm long, peduncles 1 – 11 mm long. External bract 1– 3-foliolate, sheath, 5 – 6 × 3 – 4 mm, with golden bristles, teeth of bracts triangular, acute, and aristate in the tip; inner bracts unifoliate or without leaflets. Bracteoles 2, hyaline, margins ciliate, outer bracteole entire or with a small lobe at the side, 5 mm, inner bracteole entire, 4 mm, plumose appendage absent. Flowers exserted with a pedicel 1.5 mm long; calyx 3 – 5 mm long, 5-lobed, margin ciliate, internal and external surfaces glabrous, upper lobes 2 – 3.5 mm, obtuse, slightly truncate,

lateral lobes 2 – 3 mm, acute, lower lobe 3 – 4 mm, the longest, acute, keel-like. Corolla yellow, glabrous, standard petal with red stripes, suborbicular, unguiculate, retuse apex, 9.5 – 11 × 10 – 11 mm; wings elliptic, spurred at the base, 7 × 2 mm, keel petals fused at the apex, falcate, spurred at the base, 7 x 4 mm; androecium monadelphous; anthers dimorphic, the shorter 5 basifixed, the longer 5 dorsifixed, ovary biovulate. Loment with one fertile article, sometimes with one aborted article, widely oblong 2.5 – 3 × 2 – 2.2 mm, papillose, strongly reticulate, beak 1 mm long, short hooked, covered with long papillae. Seed purplish-black.

Distribution and habitat — This species occurs south of Tocantins and north of Goiás in the Cerrado areas.

Conservation status — Endangered (EN). B2ab(iii,iv,v); *Stylosanthes* sp. is represented by few collections outside protected areas. These areas are Cerrado vegetation and are menaced by the expansion of agriculture, deforestation, and out-of-control fires (Klink & Machado 2005).

Stylosanthes sp. is characterized by viscid, pilose-scabrous stems with very short bristles (0.2 mm), leaves with long rachis (1.5–2.5mm), leaflets narrowly-elliptic, 6–10 pairs of secondary veins, alternate, without marginal vein, spaced (>1mm), loments with only one fertile article, widely oblong, reticulate, covered with papillae and short trichomes, rostrum reduced or short-hooked, and seeds black, reniform. This species is similar to *S. nunoi*, but the late has leaves with more than 10 secondary veins, less spaced (<1mm), and inflorescence capitate, golden-hispid.

Additional examined specimens: BRAZIL. **Goiás,** Monte Alegre de Goiás, ca. 25km by road SW of Monte Alegre de Goiás. 12/III/1973. *W.R. Anderson 6933* (NY, UB).

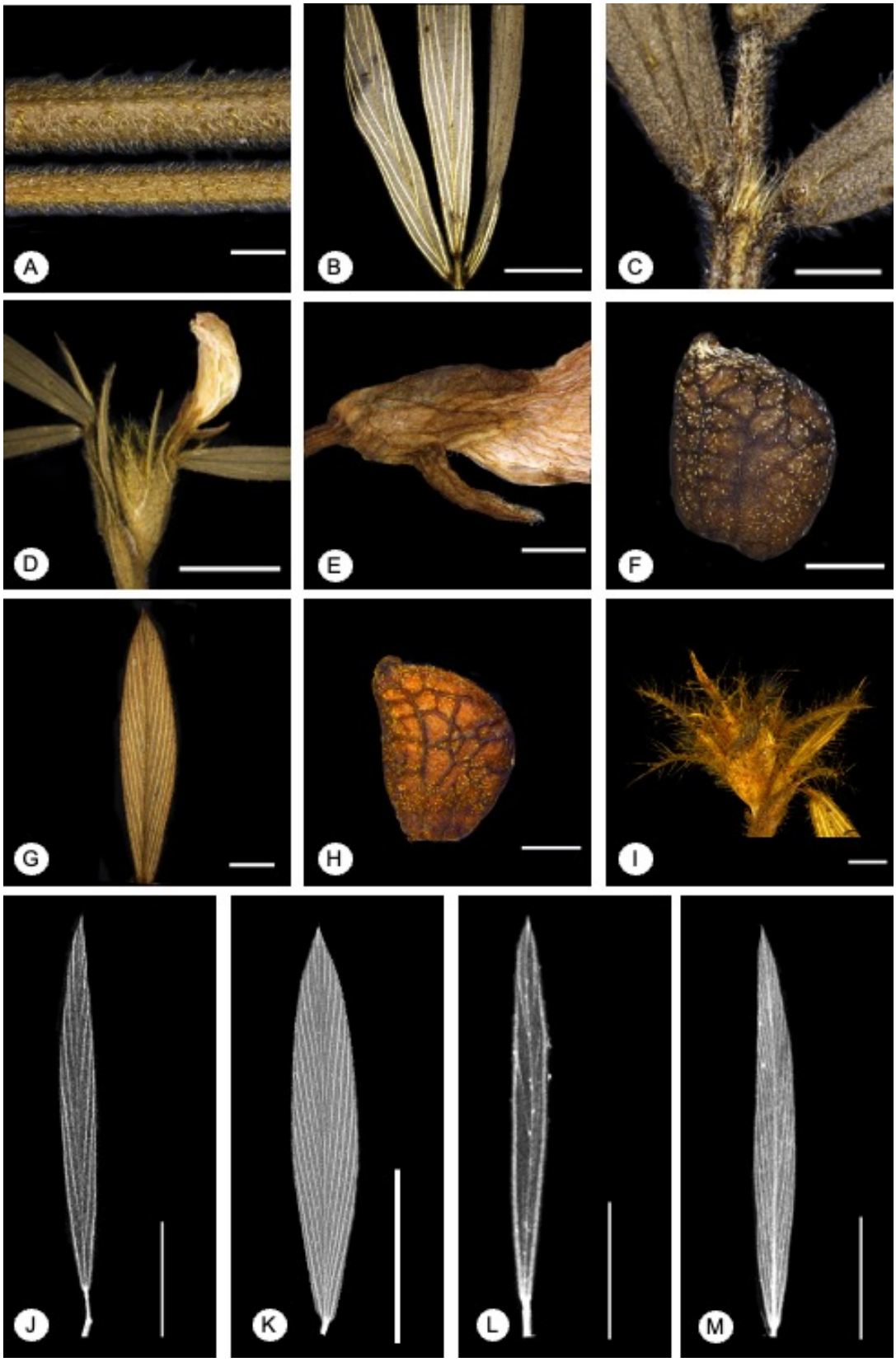

Fig. 6. A–F. *Stylosanthes* sp. **A.** stems. **B.** leaf. **C.** Leaf detail with the end of the petiole with a tuft of trichomes and the rachis. **D.** Inflorescence with flower. **E.** calix. **F.** loment with only one article. **G–I.** *S. nunoi* **G.** leaflet. **H.** loment. **I.** inflorescence. **J–M.** Leaflets x-ray. **J.** *Stylosanthes* sp. **K.** *S. nunoi*. **L.** *S. longicarpa.* **M.** *S. pohliana*. Scale bars: **A**;**C**; **E**; **F**; **H**: 1 mm; **B**; **D**: 5 mm; **G**; **I**: 2 mm; **J**–**M**: 10 mm. **A–F, J**: *Labiak 5989*; **G–I**: *Onishi 980*; **K**: *Nave 1259*; **L**: *Souza 28280* **M**: *Pereira-Silva 5309*

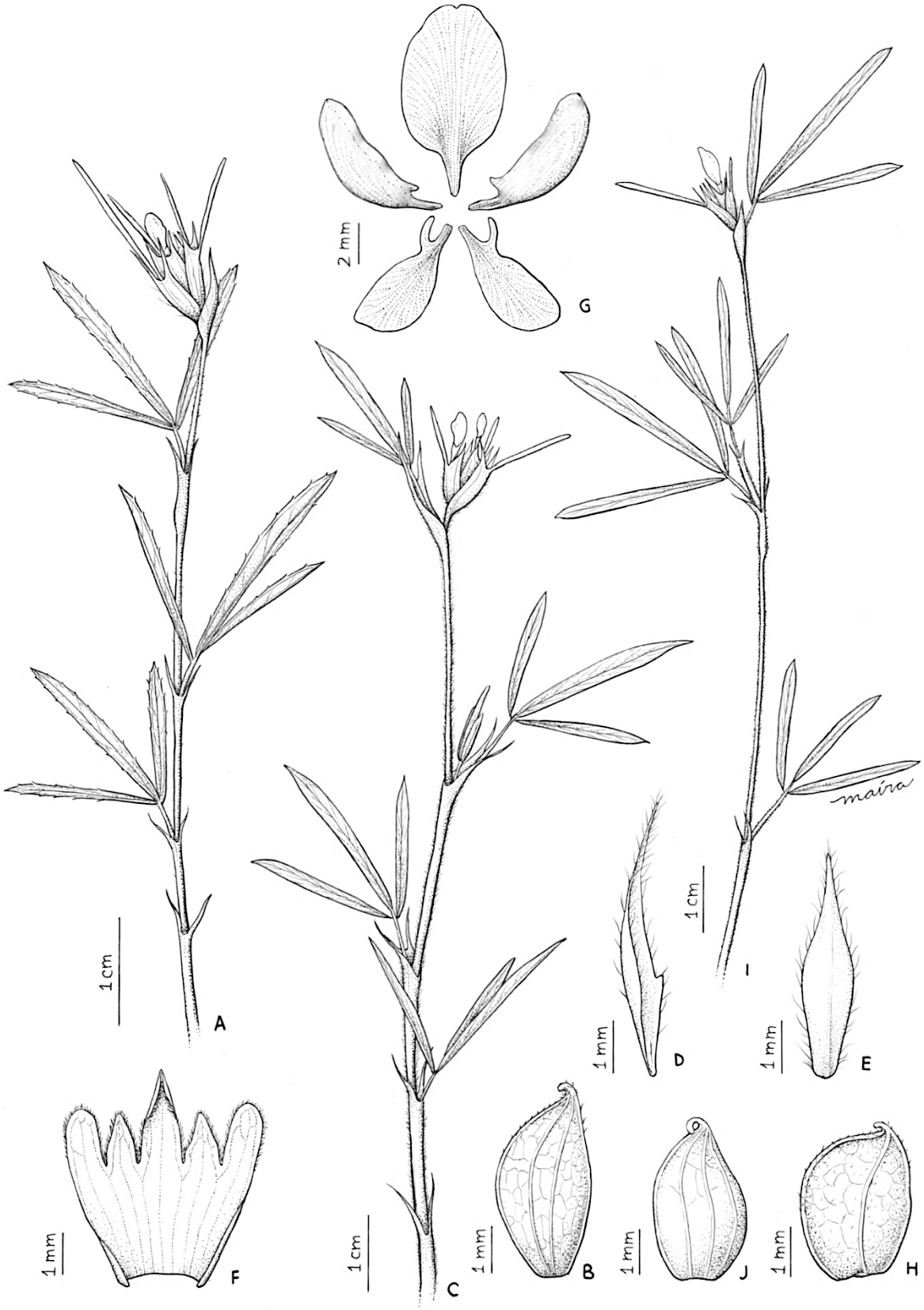

Fig. 7. A–B. *S. longicarpa* **A.** habit. **B.** loment. **C–H.** *Stylosanthes* sp. **C.** Habit **D.** bractéola interna **E.** bractéola externa. **F.** cálice. **G.** corolla. **H.** loment. **I–J.** *S. pohliana.* **I.** habit. **J.** loment **A–B:** *Souza 28280* **C–H**: *Labiak 5989*; **I–J**: *Pereira-Silva 5309*

Excluded name

Stylosanthes tenuifolia G.Don, Gen. Hist. 2: 281. 1832. Nom. Illeg.

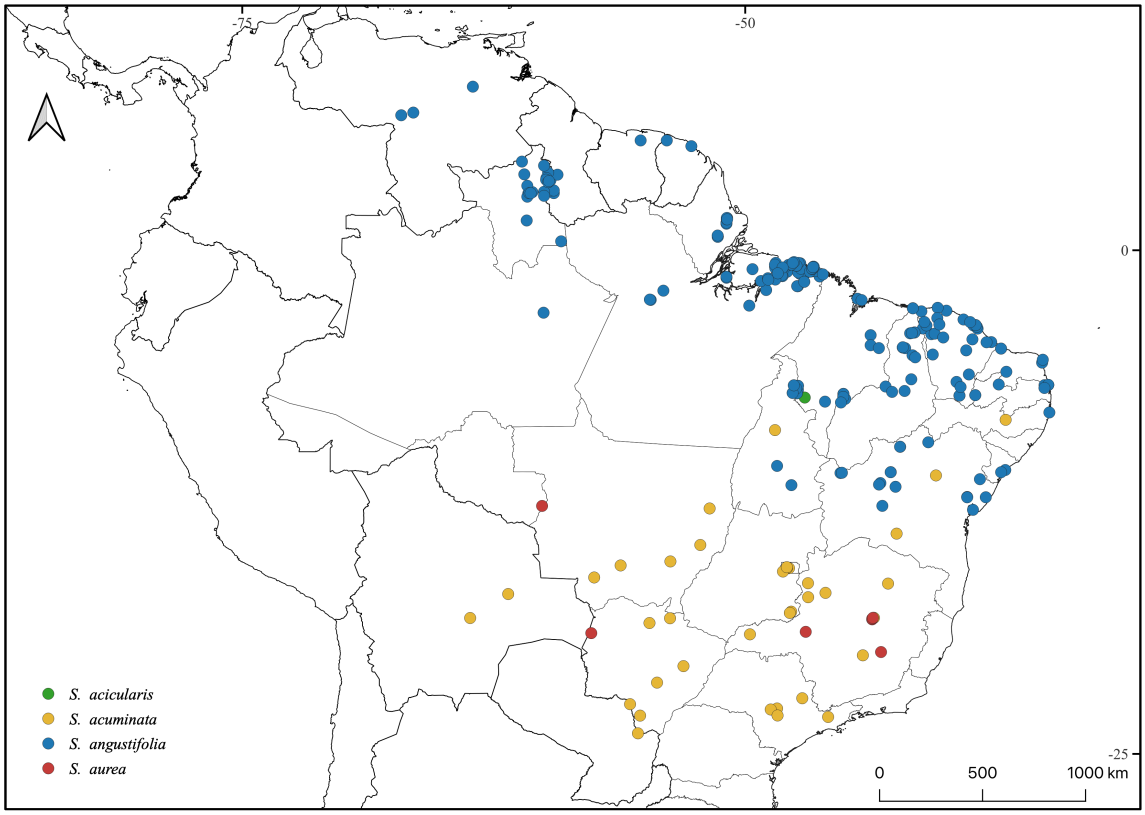

Fig. 8. Distribution maps of *S. acicularis*, *S. acuminata*, *S. angustifolia*, and *S. aurea*

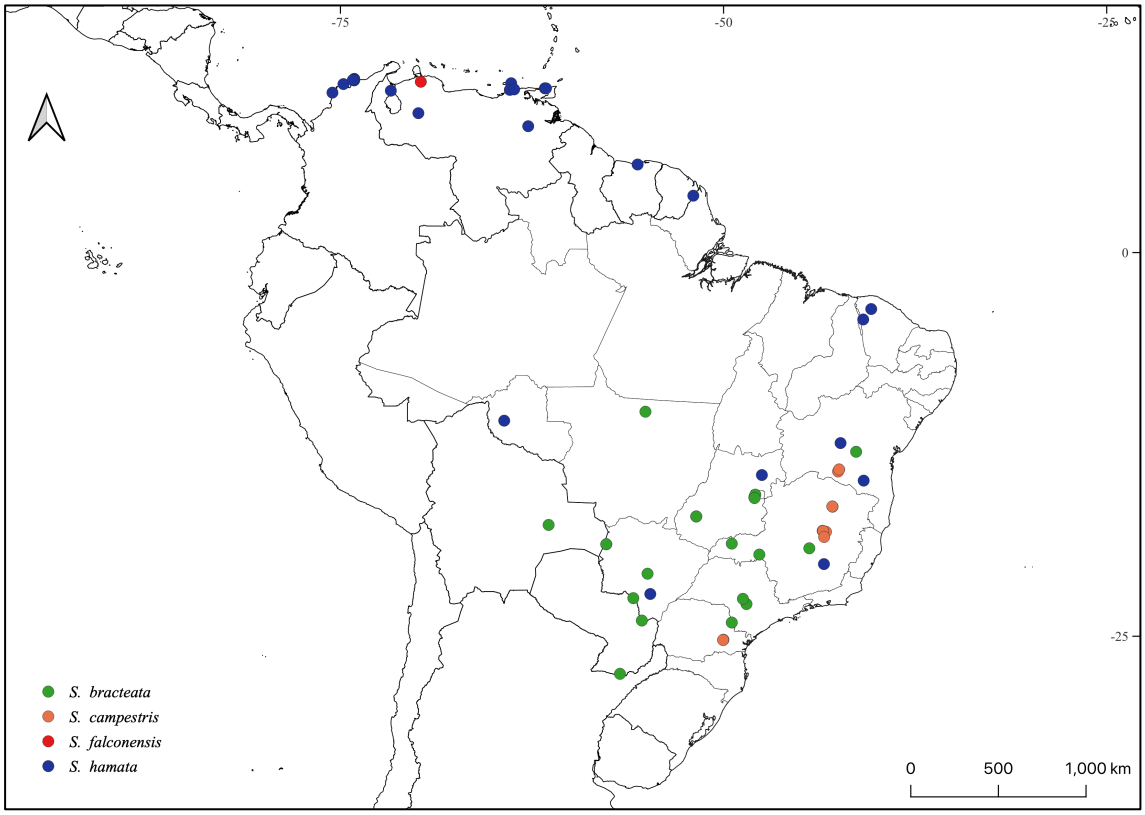

Fig. 9. Distribution maps of *S. bracteata*, *S. campestris*, *S. falconensis*, and *S. hamata.*

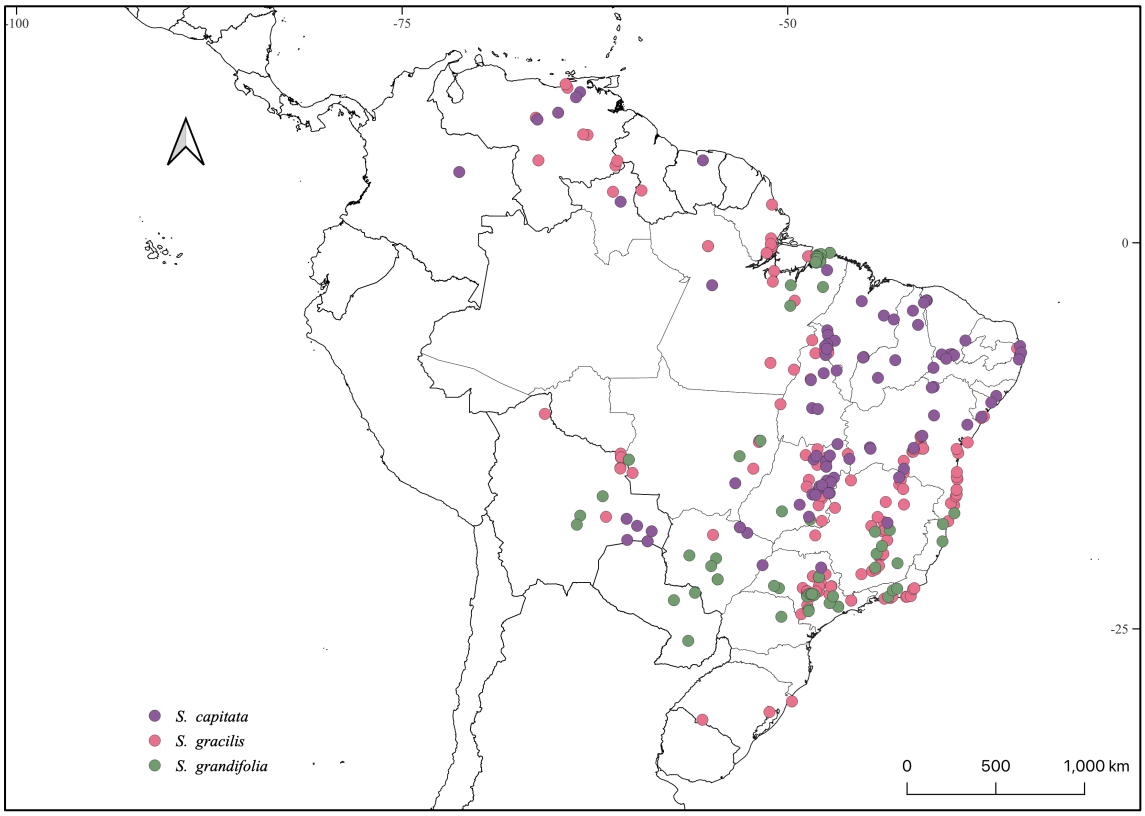

Fig. 10. Distribution maps of *S. capitata*, *S. gracilis*, and *S. grandifolia.*

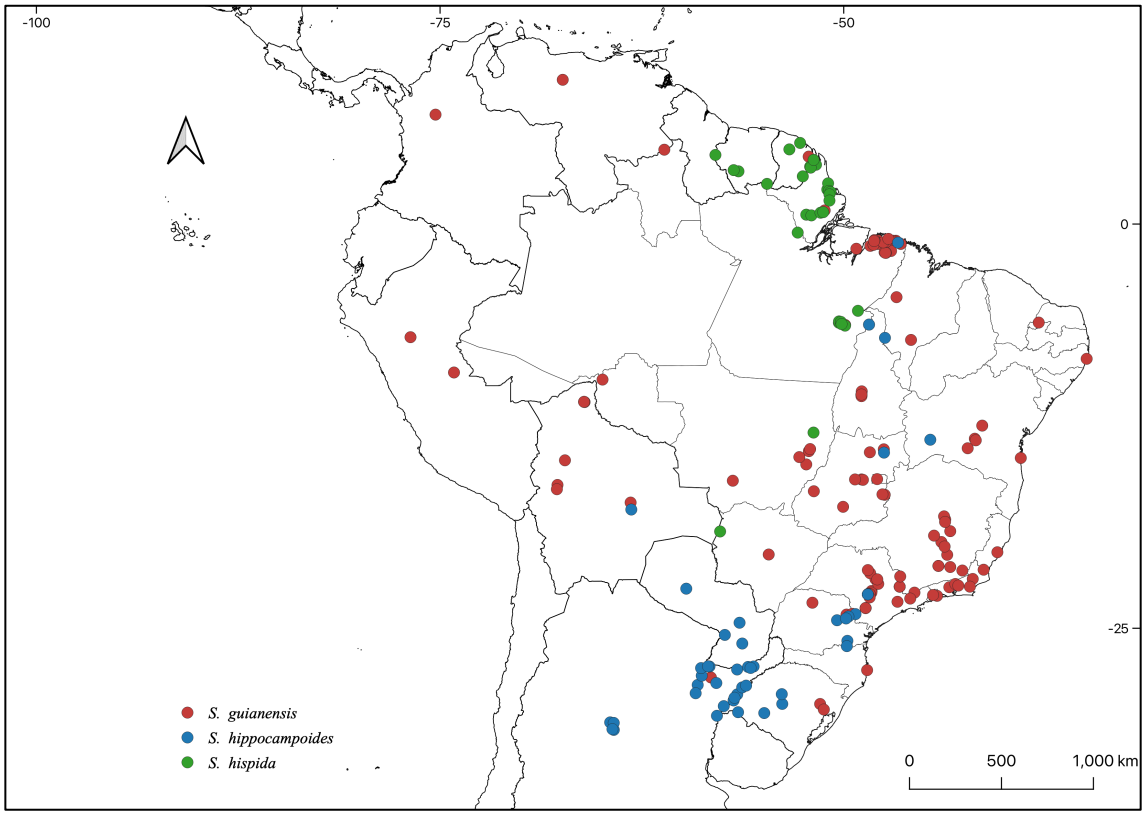

Fig. 11. Distribution maps of *S. guianensis*, *S. hippocampoides*, and *S. hispida*

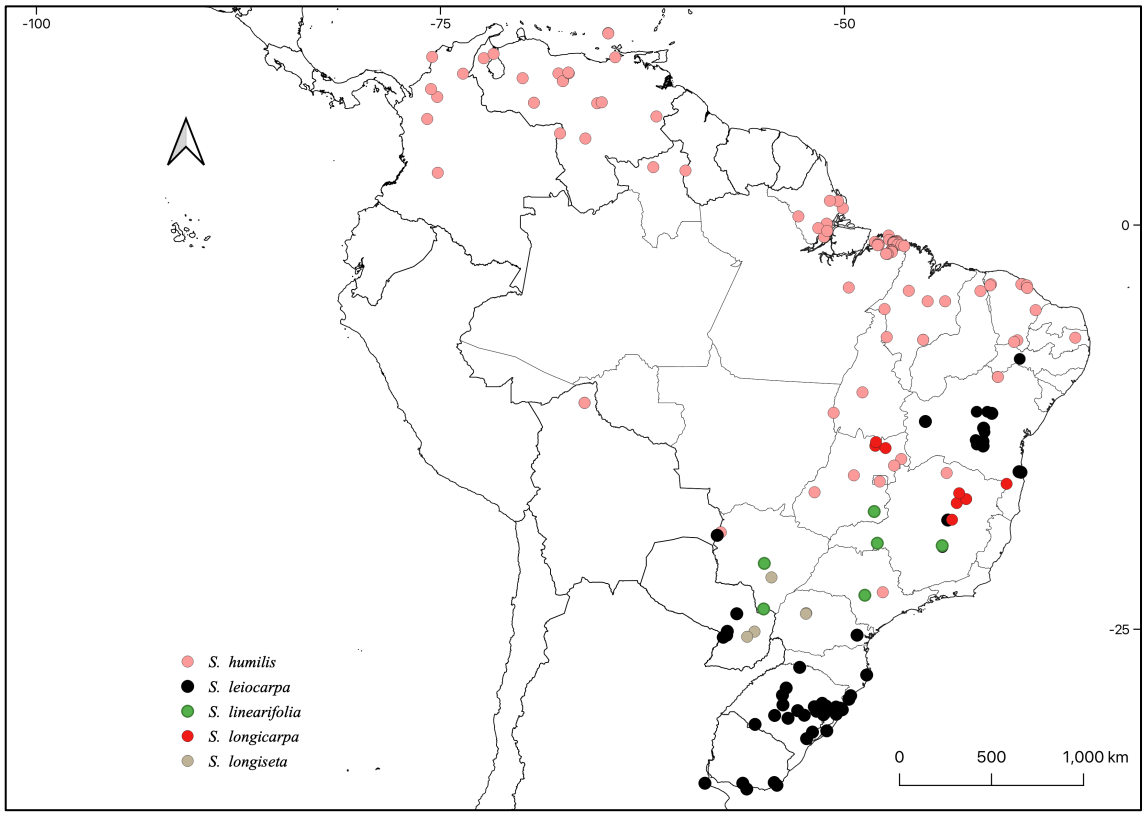

Fig. 12. Distribution maps of *S. humilis*, *S. leiocarpa*, *S. linearifolia*, *S. longicarpa*, and *S. longiseta*

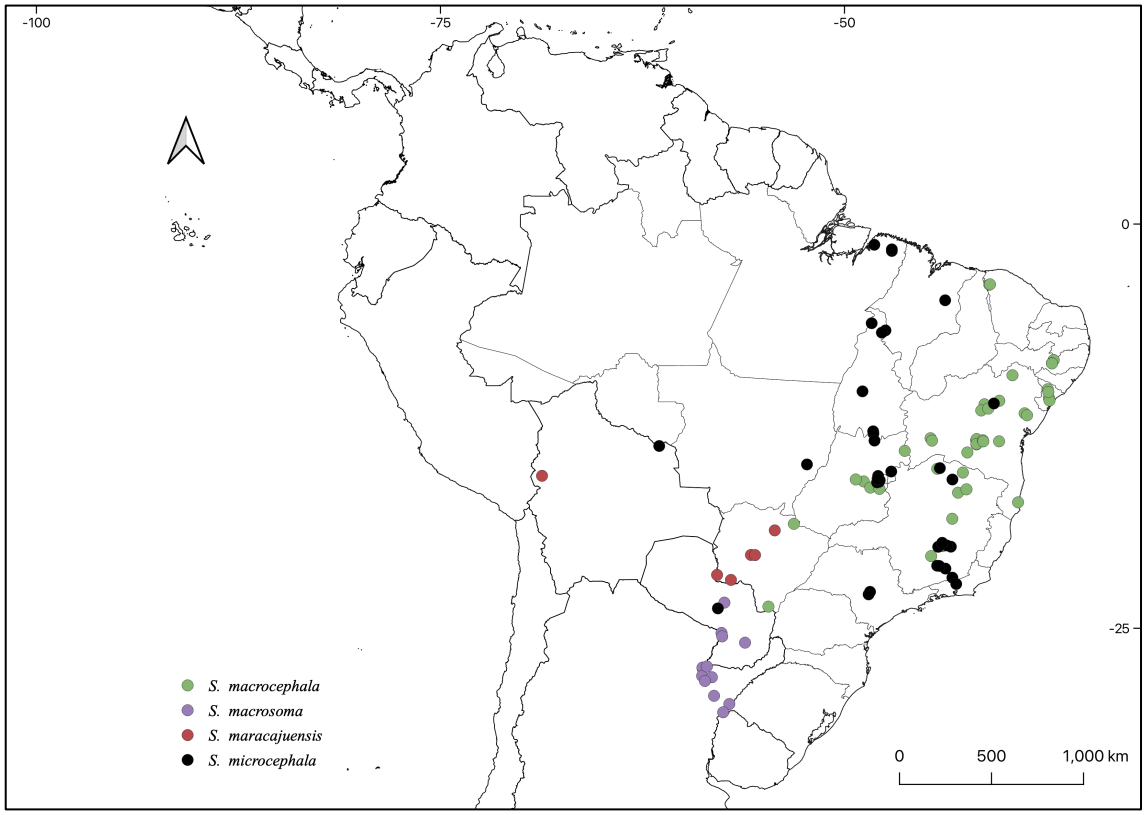

Fig. 13. Distribution maps of *S. macrocephala*, *S. macrosoma*, *S. maracajuensis*, and *S. microcephala.*

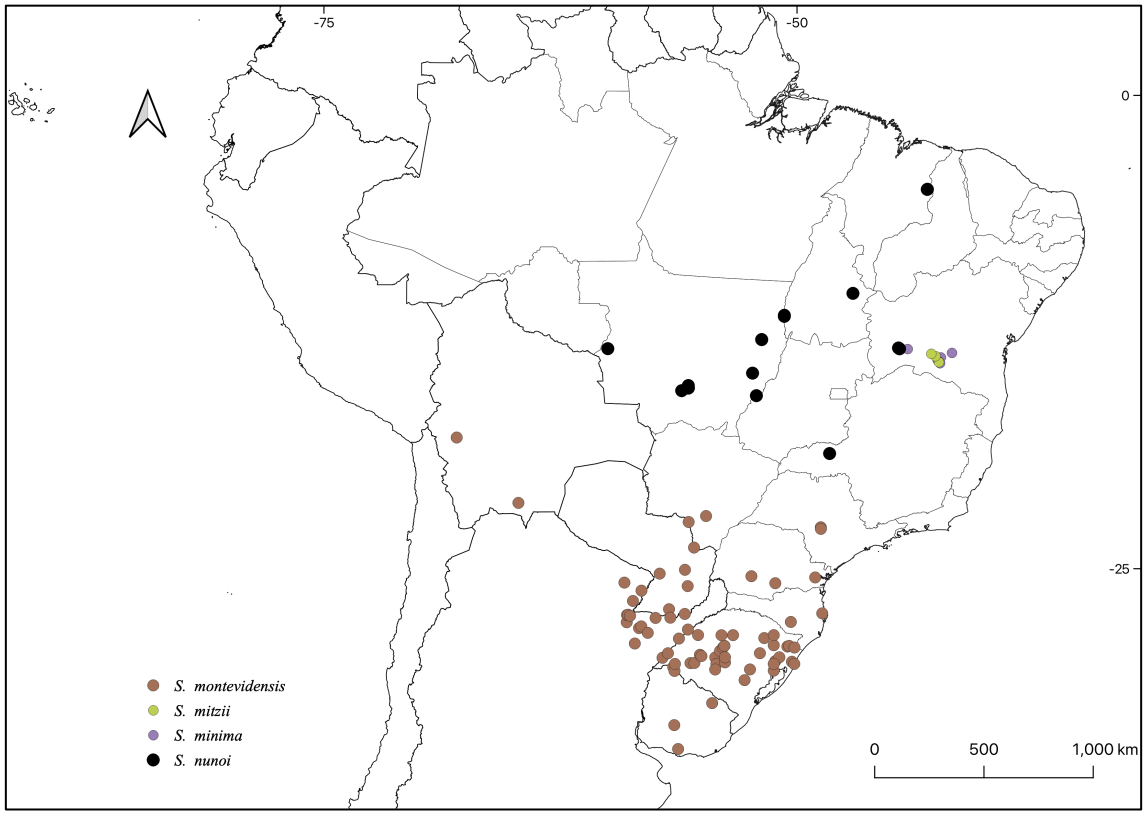

Fig. 14. Distribution maps of *S. montevidensis*, *S. mitzii*, *S. minima*, and *S. nunoi.*

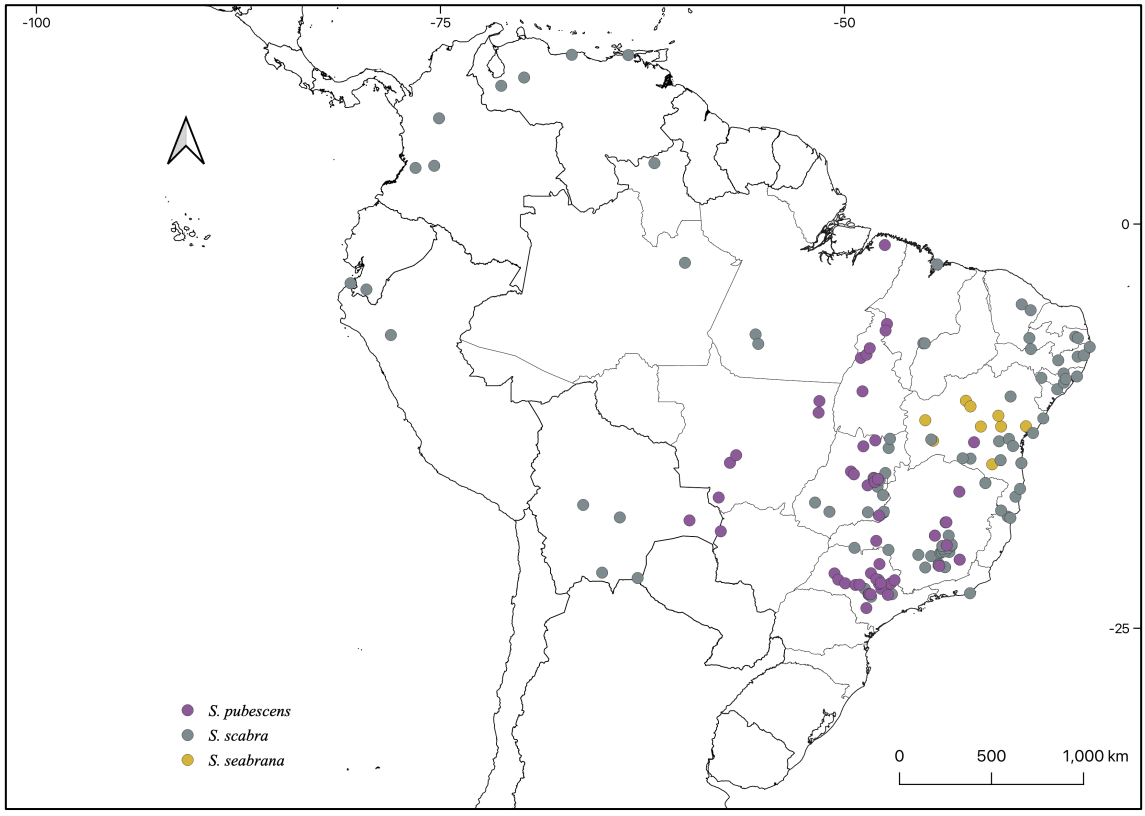

Fig. 15. Distribution maps of *S. pubescens*, *S. scabra*, and *S. seabrana.*

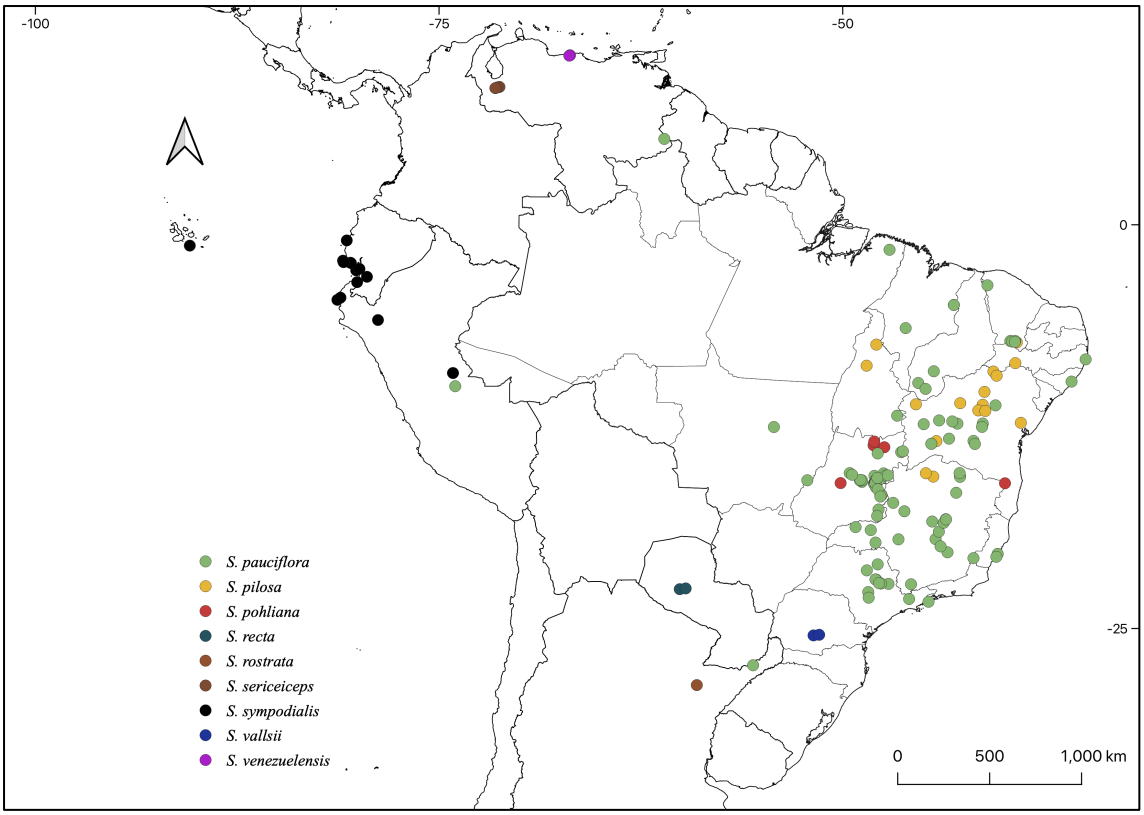

Fig. 16. Distribution maps of *S. pauciflora*, *S. pilosa*, *S. pohliana*, *S. recta*, *S. rostrata*, *S. sericeiceps*, *S. sympodialis*, *S. vallsii*, and *S. venezuelensis*.

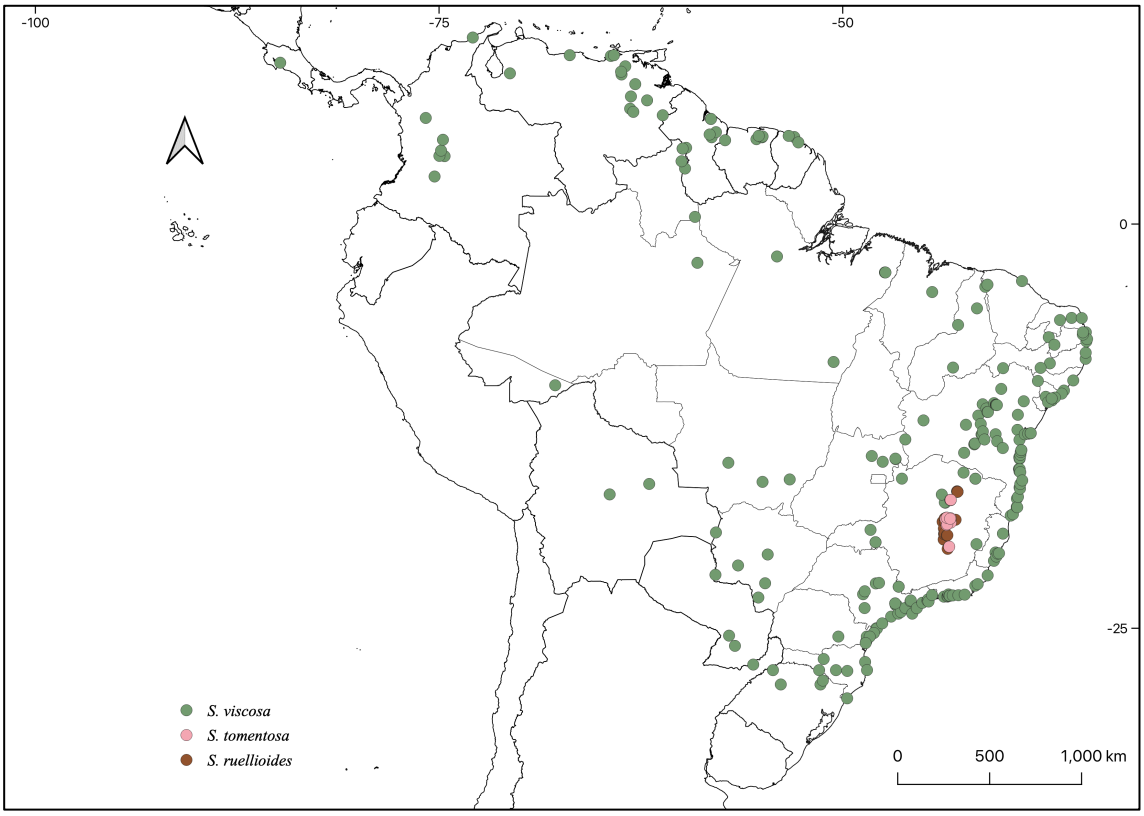

Fig. 17. Distribution maps of *S. viscosa*, *S. tomentosa*, and *S. ruellioides*.

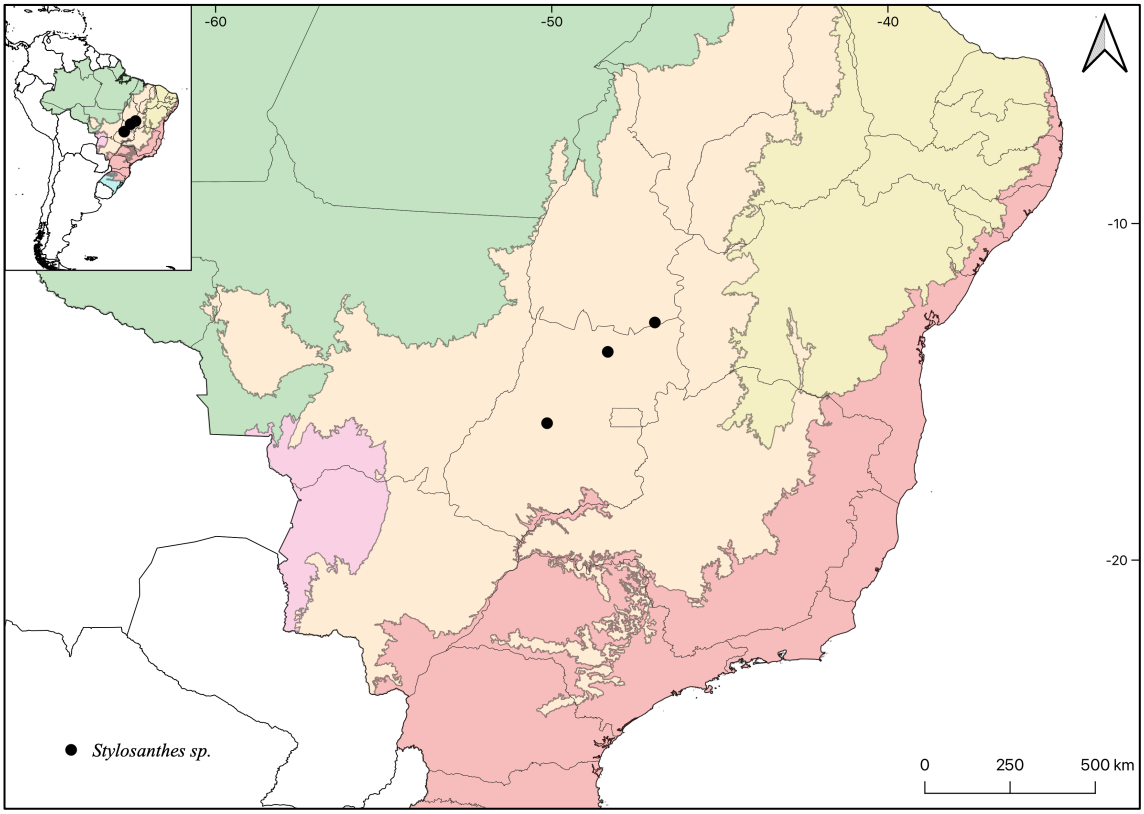

Fig. 18. Distribution maps of *Stylosanthes* sp.

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Appendix 1. Examined specimens.

1. *Stylosanthes acicularis* Gissi & Fort.-Perez

BRAZIL. Maranhão: Carolina, Parque Nacional Chapada das Mesas, 06/IV/2017, *R.V.C. Saraiva s.n.* (SLUI 4987).

2. *Stylosanthes acuminata* M.B. Ferreira & Sousa Costa

BOLIVIA. Santa Cruz: Ñuflo de Chaves, Estancia San Miguelito, 14/III/1995, *A. Fuentes 445* (MO); Floria, Bella Vista, 3/II/2007, *M. Vargas 338* (MO)
BRAZIL. Bahia: Caetité, 18 Km da cidade. Localidade de Santa Luzia. Área de Caatinga herbácea arbustiva em solo arenoso-pedregoso, com afloramento rochoso esparso, 10/III/1994, *V.C. Souza 5423* (ESA); Jacobina, Serra do Tombador, 29/VIII/1981, *G.C.P. Pinto 282* (UB); **Distrito Federal**: Brasília, Estrada Planaltina a S.J. da Aliança, km 5., 26/XI/1976, *G.J. Shepherd 325* (NY); Summit of Chapada da Contagem, ca. 10 km E. of Brasília, 12/I/1966, *H.S. Irwin 11601* (NY); Rodovia Brasília-Anápolis, 23/II/1965, *R.P. Belém 471* (NY); Gama. Embrapa CTZL., 04/III/2013, *A.M. Alonso 304* (CEN); Parque Nacional de Brasília, Borda da estrada entorno da trilha Cristal próximo ao Decantador, 13/I/2019, *C.R. Martins 3167* (CEN); Rodovia DF-003., 06/XI/1976, *A.C. Allem 387* (CEN, RB); Parque Nacional de Brasília. Área de coleta no entorno da antiga pista de ultra leve, 18/III/2012, *C.R. Martins 1211* (CEN); Parque Rural-Patios do CENARGEN-Brasília., 31/II/1977, *A.C. Allen 858* (RB); **Goiás**: Catalão, Contraforte Central, ca. 25 km N.E. of Catalão, 21/I/1970, *H.S. Irwin 25064* (NY); Contraforte Central, Serra do Facão, ca. 35 km N.E. of Catalão, 24/I/1970, *H.S. Irwin 25286* (NY); Peixe, in aerodromo, 17/I/1940, *Rambo, B. s.n.* (PACA-AGP); **Mato Grosso**: E. of km 242, Xavantina-Cachimbo road, 04/I/1968, *D. Philcox 3871* (NY, UB); Cáceres, 15,5 km Sw do restaurante Oásis, ao longo da BR-070, a leste de Cáceres, 30/V/1985, *J.F.M. Valls 8946* (BOTU, CEN); Várzea Grande, entroncamento das rodovias, Cuiabá Santarém e Porto Velho, arredores do aeroporto., 2/II/1979, *M.G. Silva 4373* (NY); Chapada dos Guimarães, ca 5 km N of town., 6/I/1996, *B. Dubs 2065* (NY); **Mato Grosso do Sul**: 68 km de Ponta Porã, camino a Dourados, 19/I/1979, *A. Krapovickas 34307* (NY); Alcinópolis, Estrada para Vila Buriti, 8 km N de Alcinópolis., 02/III/2002, *A. Pott 9583* (CEN); Amambaí, Área Indígena, 14/II/1983, *G. Hatschbach 46221* (MBM, MO); Estrada de Caarapó - Amambaí a 15 desta., 27/IV/1999, *N. Costa 3085* (CEN); Antonio João, A 40 km de Ponta Porã na estrada para Antônio João., 28/IV/1999, *N. Costa 3088* (CEN); Campo Grande, Alrededores de Campo Grande, camino a Sidrolandia, 10/II/1979, *A. Krapovickas 34539* (NY); A 22 km de Campo Grande para 3 Lagoas., 30/IV/1999, *N. Costa 3097* (CEN); Corumbá, Fazenda Firme, Pantanal da Nhecolândia., 00/XI/1978, *J.A. Comastri Filho 5* (CEN); Coxim, Rod. BR-163, km 760, 3/V/1995, *G. Hatschbach 62157* (MBM); Nioaque, Fazenda Ipanema, rodovia MS-060, km 545,5, 8km S de Nioaque., 23/II/2006, *A. Pott 14050* (CEN); Nova Alvorada do Sul, BR-163, Km 388, sentido Campo Grande a Nova Alvorada do Sul, ca 6Km S do Córrego de Santa Luzia., 11/IV/2009, *L.C.P. Lima 574* (HUEFS); Ponta Porã, Pacari, 12/XII/1982, *G. Hatschbach 45930* (MBM); Selvíria, Faz. de Ensino e Pesquisa da UNESP-"Campus" de Ilha Solteira., 26/III/1991, *O. Tiritan 563* (RB); Três Lagoas, Parque Natural Municipal do Pombo, 08/II/2020, *B.H. Campos 221* (UEC); **Minas Gerais**: Braslândia de Minas, Fazenda Brejão, 22/III/1999, *A.A. Azevedo 2* (BHCB); Brumadinho, Córrego do Feijão., 12/IV/2013, *E. Miranda 1024* (BHCB); Diamantina, Estrada para Milho Verde, cerca de 7 km de Diamantina. Campo rupestre, 8/I/2003, *A.O. Araújo 255* (ESA); Diamantina, Estrada Diamantina/Serro, próximo a Datas., 16/XII/1979, *G. Martinelli 6282* (RB); Grão Mogol, Estrada para Francisco Sá, km 6 Rio Itacambiruçu, Serra do Jambreiro., 9/V/1979, *G. Martinelli 5807* (RB); Estreito do Riacho Ribeirão., 26/VI/1990, *R. Simão-Bianchini 13125* (RB); Paracatú, Serra da Anta, summit of chapada, ca. 5 km N.W. of Paracatú, 4/II/1970, *H. S. Irwin 25977* (NY); Rancho Alegre, BR-365 São Simão - Ituiutaba. Trevo Gurinhatã., 18/V/1999, *N. Costa 3117* (CEN); Uberaba, BR-050, km12, de Uberaba-Uberlândia, 1/X/1976, *N.M. de Sousa Costa 750* (PAMG, RB), Unaí, 20 km S of Unaí on road to Paracatú (MG 188)., 11/II/1988, *W.W. Thomas 5840* (NY); Serra do Espinhaço, 9 km by road SW of Mendanha and the Rio Jequití on road to Diamantina, 14/IV/1973, *W.R. Anderson 8870*

(NY); **São Paulo**: Botucatu, Near the airport, along the road to the water storage station of Botucatu. Mata Pinheirinhos., 17/I/1979, *G.K. Gottsberger 21-17179* (NY); Distrito de Rubião Júnior, 1-2km da Faculdade de Ciências Médicas e Biológicas de Botucatu., 30/X/1972, *I.S. Gottsberger 301072* (BOTU); Moji-Guaçu, Perto de Pádua Sales, Fazenda Campininha., 28/XII/1961, *J. Mattos 9640* (NY); Pardinho, Estrada João Emílio Roder, 18/III/2019, *D. S. Gissi 434* (BOTU); Pratânia, Fazenda Palmeira da Serra, 20/I/2009, *K.L. Ishara 261* (BOTU); São José dos Campos, Parte superior da encosta leste do vale do Córrego da Ressaca (ao longo da Rodovia Pres. Dutra) da saída para Sao José dos Campos, 100-500 m ao lado SE da rodovia, 19/II/1962, *I. Mimura 287* (NY); **Tocantins**: Guaraí, 10 km S. of Guará., 19/III/1968, *H. S. Irwin 21495* (NY);
PARAGUAY. Canindeyú: Reserva Natural del Bosque Mbaracayu., s.d., *L. Bernardi 19477* (MO). In campis siccis Punta Porá, *E. Hassler 9938* (K).

3. *Stylosanthes angustifolia* Vogel

BRAZIL. Amapá: Rio Araguari. 20 minutes downriver from Porto Platon, 17/IX/1961, *J. M. Pires 51016* (NY, US); **Amapá**: Amapá, BR-156, km 38 do trevo de Amapá para Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2245* (BOTU, CEN); Amapá, BR-156, 48 km do trevo de Amapá para Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2247* (BOTU, CEN); Ferreira Gomes, A 1 km do Entroncamento da BR-156 para Porto Grande, 28/VIII/1988, *N.M.S. Costa 2172* (BOTU, CEN); Macapá, Km 92 da BR-156, 27/VIII/1988, *N.M.S. Costa 2122* (BOTU, CEN)**;** Tartarugalzinho, BR-156, 13 km Sul de Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2252* (BOTU, CEN); BR-156, 17 km de Tartarugalzinho para Ferreira Gomes, 3/IX/1988, *N.M.S. Costa 2262* (BOTU, CEN); **Amazonas**: Rio Branco, civit. Amazonas, 01/I/1913, *J.G. Kuhlmann 3185* (U); Flor. Amazon. In campis arenosis insulae Colares, VI/1832, *E. F. Poeppig s.n.* (NY); Manaus, Linha de Flores, terreno firme, arenoso, campo, 23/V/1956, *J. Chagas 3867* (CEN, IAN, SP, US); **Bahia**: Taboleiro bei Remanzo, 01/XII/1906, *E. Ule 7372* (L); 10 km W São Inacio-Xique-Xique Road, Lagoa Itaparica, 26/II/1977, *R.M. Harley 19116* (P); Serra do Assuruá, Lagoa Itaparica 10 km W of the São Inácio-Xique-Xique road at the turning 13.1 km N of São Inácio, 26/II/1977, *R. M. Harley 19116* (*NY,* US); Alagoinhas, BR-101, Alagoinhas - Entre Rios, km 18, 17/VII/1980, *L. Coradin 3021* (CEN); Barreiras, BR-242-km 938,Rodovia Brasília-Fortaleza, beira de estrada, 29/IX/1978, *L. Coradin 1175* (BOTU, CEN);**Bahia**: Barreiras. Cerrado on slopes of Espigao Mestre, ca, 25km W. of Barreiras, 03/III/1971, *H. S. Irwin 31349* (NY, WAG, UB); Feira de Santana, Campus da UEFS, atrás da quadra de educação física, 16/XI/1994, *L.P. de Queiroz, 4052* (CEN, HUEFS); Campus da UEFS, atrás do núcleo de Educação Física, 28/VIII/1995, *L.P. de Queiroz 4447* (HUEFS); Campus da UEFS, 19/VIII/1996, *Harley, R.M. 28467* (ESA, HUEFS); Formosa do Rio Preto, Aldeia, 02/XI/2007, *G. Araújo 359* (HUEFS); Formosa do Rio Preto, Fazenda Val, 16/V/1982, *A. Fernandes s.n.* (EAC11339); Ipupiara, Serra do Carranca, 13/VI/2015, *M.L. Guedes 23609* (ALCB); Itanagra, Fazenda Lontra, 24/IV/1994, *M.C. Ferreira 584* (HUEFS); Itanagra, Litoral Norte, 20/IV/1994, *M.C. Ferreira 584* (ALCB); Itaparica, Região Metropolitana Salvador, IX/1974, *Pinto, GCP 42419* (ALCB); Juazeiro, km 5 estrada Juazeiro - Salvador, 28/III/1985, *G. Fotius 3943* (HUEFS); Morpará, Médio São Francisco, Fazenda de São Domingos, 29/III/1984, *H.P. Bautista 897* (ALCB, MBM); Olindina, Nordeste, s.d., *Pinto, GCP s.n.* (ALCB); Paratinga, Estrada Chapadão de Cima - São Bento, 16/III/1998, *G. Hatschbach 67841* (MBM); Pilão Arcado, 1 Km depois da ponte sobre o riacho de lage, 30 Km de Remanso na estrada para Pilão Arcado, 28/IV/2001, *L.P. de Queiroz 6620* (HUEFS); Remanso, Baixo Médio São Francisco, Estrada para Pilão Arcado, entrada a direita, ca. de 29 km da cidade, 16/VI/2001, *T.S. Nunes 465* (ALCB, HUEFS); São Desidério, Fazenda Estiva, Córego Galheirão, 9/IV/1989, *R.C. Mendonça 1457* (RB); Sobradinho, Estrada para Sento Sé, 26/VII/2009, *J. Paula-Souza 10228* (HVASF); **Ceará**: Fortaleza, V/1859, *Freire Allemão de Cysneiro 360* (R); Barra do Ceará, 25/VI/1955, *G.A. Black 18303* (IAN); Cariús. Estrada Carituaba-Angico, 09/VII/1985, *A. Fernandes s.n.* (HUEFS); Rerituaba. Juré, 25/V/1981, *A. Fernandes s.n.* (HUEFS); Entre Lavras da Mangabeira e Várzea Alegre, 17/V/1985, *A. Fernandes s.n.* (EAC13168); Aracati, Estrada Aracatí-Itaiçaba, 30/V/1987, *A. Fernandes* (EAC15267); Aracati, CE-040, 15/VI/2012, *A.M.M. Carvalho s.n.* (EAC); Beberibe, Faz. St. Ant. das Aroeiras, Solo arenoso, 02/VII/2007,

M.I.B. Loiola 1154 (EAC); Campos Sales, BR-230/Campos sales - Fronteiras, km 13, 24/V/1980, *L. Coradin 2568* (CEN); Cariús, Estrada Cariutaba-Angico, 09/VII/1985, *A. Fernandes* (EAC13280); Caucaia, APA Lagamar do Cauípe, 29/X/2008, *D.J.L. Sousa 67* (EAC); Caucaia, Parque Botânico do Ceará, 25/III/1998, *E. Nunes* (EAC26277, HUEFS); Caucaia, Fazenda Invernada, 29/VII/1989, *M.A. Figueiredo s.n.* (EAC); Caucaia, Matões, IV/2013, *F.N. Costa s.n.* (EAC); Chaval, margem da rodovia entre Chaval e Parnaíba, 28/VI/1984, *A. Fernandes* (EAC12722); Crateús, RPPN Serra das Almas, 09/V/2002, *F.S. Araújo 1512* (EAC); Eusébio, APA do Rio Pacoti, trilha do Centro de Estudos Ambientais Costeiros (CEAC/UFC), 24/IV/2018, *S.T. Rabelo 38* (EAC); Eusébio, Pucaba-Mangabeira, 10/X/2004, *A.S.F. Castro 1535* (EAC); Fortaleza, Fragmento de vegetação de cerca de 25 ha na zona urbana de Fortaleza (CE), adjacente Av. Oliveira Paiva, pertencente aos Correios; bairro Cambeba, 17/VII/2008, *M.F. Moro 604* (EAC); Fragmento de vegetação de cerca de 25 ha na zona urbana de Fortaleza (CE), adjacente à Av.Oliveira Paiva, pertencentes aos Correios; bairro Cambeba. Tabuleiro pré-litorâneo, 17/VII/2008, *M.F. Moro, 604* (HUEFS); Fortaleza, Bairro do Tauápe, 26/VIII/1935, *F. E. Drouet 2366* (NY, US); Fortaleza, Barra do Ceará, 06/VI/1960, *A. Fernandes s.n.* (EAC2008, HUEFS); Fortaleza, Itaperi-Parangaba, 10/VIII/1955, *A. Fernandes s.n.* (EAC1466, HUEFS); Fortaleza, Campo da Escola de Agonomia, 10/VI/1978, *A. Fernandes EAC9962* (HUEFS); Fortaleza, Sítio Taperoaba-Parangaba, 22/V/1954, *Bezerra, P. s.n.* (EAC); Granja, CE-362 ca. 10 km de Granja em direção a Martinópole, 21/V/2015, *E.B. Souza 3448* (EAC);**Ceará**: Guaraciaba do Norte, Chapada da Ibiapaba, 07/III/1981, *A. Fernandes* (EAC10336, HUEFS);**Ceará**: Guaraciaba do Norte, Andrade, 26/V/1981, *A. Fernandes s.n.* (EAC); Guaraciaba do Norte, Andrade, 08/IV/1982, *P. Martins s.n.* (EAC11186, HUEFS); Guaraciaba do Norte, Andrade, 05/III/1981, *P. Martins EAC9846* (EAC, HUEFS); Guaraciaba do Norte, Chapada da Ibiapaba, 07/III/1981, *A. Fernandes s.n.* (EAC9875); Jijoca de Jericoacoara, Lagoa do Meio, Solo arenoso, borda de lagoa, 05/V/2000, *L.Q. Matias265* (EAC); Juazeiro do Norte, Rodovia Juazeiro do Norte - Crato, km 2, (pista dupla), 24/VI/1987, *L. Coradin 7766* (BOTU, CEN); Orós, Próximo ao local denominado Condadinho, 09/VII/1984, *F.C.F. da Silva 200* (ALCB); Paraipaba, APA Dunas de Lagoinha, 18/VII/2004, *D.V. Azevedo 14* (EAC); Quixadá, 28/VI/1955, *G.A. Black 18253* (IAN); Quixadá, Fazenda Normal, 28/VI/1955, *G.A. Black 18418* (IAN); Quixadá, Fazenda Iracema, 05/VI/1982, *Nunes, E. s.n.* (EAC11537, HUEFS); Quixeramobim, CE Km 54/Quixeramombin - Crateús, 16/VI/1979, *L. Coradin 1998* (CEN); Reriutaba, Juré, 25/V/1981, *A. Fernandes s.n.* (EAC10307); Santa Quitéria, Fazenda Herval, 07/VII/1956, *A. Fernandes s.n.* (EAC); São Gonçalo do Amarante, Estação Ecológica do Pecém, Arenoso, V/1999, *H. Magalhães 02* (EAC); São Gonçalo do Amarante, Estação Ecológica do Pecém, Substrato arenoso, IV/1999, *H. Magalhães 213* (EAC); **Ceará**: São Luis do Curu, BR-222, km 70, Fortaleza - Sobral, beira da estrda, 13/VI/1979, *L. Coradin 1896* (BOTU, CEN); Senador Sá, CE-362, entre Massapê e Senador Sá, 13/VI/2014, *E.B. Souza 3116* (EAC); Sobral, Fazenda Macapá, 05/VI/1966, *A. Fernandes s.n.* (EAC, HUEFS); Tianguá, Santa Rita, 23/VIII/2004, *L.W. Lima-Verde 3022* (EAC); Tianguá, Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1/VII/1987, *L. Coradin 7889* (BOTU, CEN); Várzea Alegre, Naraniú, 18/V/1985, *A. Fernandes s.n.* (EAC13206); Viçosa do Ceará, Chapada da Ibiapaba, 07/VI/1991, *A. Fernandes* (EAC17598); **Maranhão**: Na estrada entre São João dos Patos e Barão de Grajaú, 02/V/1979, *A. Fernandes s.n.* (EAC6064); Alcântara, 10/IV/1954, *R.L. Fróes 30753* (IAN); Alto Parnaíba, Entrada de Alto Parnaíba desde Balsas na área da caixa d'água municipal, 21/V/1991, *J.F.M. Valls 13046* (BOTU, CEN); Balsas, Borda de ampla lagoa 12 km ao sul de Balsas na saída para Alto Parnaíba, fazenda Brejo da lagoa, 20/V/1991, *J.F.M. Valls 13031* (BOTU, CEN); Cachucha, BR-316/135, Codó-Bacabal, Km 223, 28/V/1980, *L. Coradin 2667* (CEN); Carolina, Parque Nacional Chapada das Mesas, acesso E no km 612 da BR- 0230, 20 km em estrada vicinal em direção á localidade Buenos Aires, próximo ao rio Farimha, 7/IV/2016, *M.F. Simon 2746* (BOTU, CEN); Carolina, Laje de Arenito ao longo do rio Farinha, 7/IV/2016, *A.C. Sevilha 5664* (BOTU, CEN); Carolina, Rodovia BR-010, Carolina-Estreito, km 26, entrada para a cachoeira do Dodô, 24/IV/2008, *G. Silva-Pereira 13265* (BOTU, CEN); Carolina, Margem esquerda do rio Farinha, próximo à ponte na BR-010, 25/IV/2008, *Silva-Pereira, G. 13321* (BOTU, CEN); Caxias, a 5km de São Bernardo, 15/IV/1979, *E. Nunes s.n.* (EAC, HUEFS); Codó, BR-316 Caxias-Codó, Km 98, 28/V/1980, *L. Coradin 2654* (CEN); Coroatá, Rodovia Caxias - Peritoró (BR-316), km 47, 02/VII/1987, *L. Coradin 7946* (CEN); Itapicuru, 09/VII/1954, *G.A. Black 16498* (IAN, NY);

Loreto, "Ilha de Balsas" region, between the Rios Balsas and Parnaíba. About 5 1/2 km. south of Loreto. Ca. 3 1/2 km. S of Rio Balsas on trail to Fazenda Aldeia, 11/IV/1962, *G. Eiten 4253* (NY, SP, US); Loreto, "Ilha de Balsas" region, between the Balsas & Parnaíba Rivers. Several km east of main house of Fazenda "Morros", ca. 35 km south of Lorêto. Trail from "Morros" to "Sambaíba". Ca. 1 km west of house at "Sambaíba", 18/V/1962, *G. Eiten 4622* (NY, US); Loreto, "Ilha de Balsas" region, between the Rios Balsas and Parnaíba. About 25 km south of Lorêto. About 350 meters N of main house of Fazenda Santa Rita on trail to Faz. Trabalhosa, 7/IV/1962, *G. Eiten 4169* (NY, US); Peritoró, Rodovia Caxias-Peritoró (BR-316), km 48, 2/VII/1987, *L. Coradin 7946* (BOTU, CEN); São Luís, Base do Cabral, Araçagi, 13/IV/1988, *M. Ribeiro 51* (SLUI); **Pará**: Cerca de 2,4km do entrocamento da rodovia BR-316 para Vígia, 26/X/1987, *R.F.de A. Veiga 185* (HUEFS); Rio Camará, Fazenda Gurupatuba, campo aberto, 09/VII/1950, *G.A. Black 9961* (IAN); Ilha de Mosqueiro, near Pará, 3/XI/1929, *E. P. Killip 30423* (NY, US); **Pará**: Estr. para Vigia, Campo da Palha, 26/VIII/1959, *E. Pereira s.n.* (WAG); Augusto Correa, Estrada PA-242 Augusto Correia km 2,2, 25/I/1988, *N.M.S. Costa 2423* (BOTU, CEN); Augusto Corrêa, Ilha do Rodrigues, terreno elevado com solo arenoso, circundado por manguezais, aprox. 14 km ao leste de Augusto Corrêa. Bosque na porção central da ilha, 03/VIII/2010, *M. J. Silva 108* (HBRA); Belém, Marambáia, Estrada da Marinha. Terra firme arenosa, 07/IV/1970, *E. Oliveira 5193* (IAN); Bom Jesus, Rodovia Transcapeta [Transcametá], km180,9, 20/X/1987, *Veiga, R.F.de A. 116* (CEN, HUEFS); Bragança, Entroncamento - Bragança-PA. Mirasselvas, 23/XI/1988, *N.M.S. Costa 2391* (CEN); Bragança, Península de Ajuruteua, Praia de Ajuruteua, campo e dunas baixas entre beira do mar e manguezal, 23/VII/2003, *R.M. Silva 55* (HBRA); Bragança, Restinga da Vila Bonifácio (campo temporariamente alagado), V/2010, *M. Falcão da Silva, 105* (MFS); Bragança, Península de Ajuruteua, Salinas dos Roques/Jabuti, campo entre a 4ª e a 5ª ilha de terra firme, 23/IV/2005, *U. Mehlig 119* (HBRA); Bragança, Península de Ajuruteua, margem da estrada Bragança-Ajuruteua (PA-458), 24/V/2005, *C. C. L. Santos 148* (HBRA); Bragança, Península de Ajuruteua, Salinas dos Roques/Jabuti, área ruderal próximo casa demolida da antiga fazenda, 05/VII/2009, *E. S. Oliveira 183* (HBRA);**Pará**: Bragança, Península de Ajuruteua, Praia de Ajuruteua, 01/VII/2010, *L. Oliveira 273* (HBRA); Bragança, Península de Ajuruteua, dunas e campos ao noroeste da vila Bonifácio. Pequena duna no campo 0,5 km oeste do 1º cordão de dunas. Areia branca, vegetação aberta, 10/V/2007, *Mehlig, U 321* (INPA); Entroncamento- Bragança-PA, Mirasselvas, 23/XI/1988, *N.M.S. Costa 2391* (BOTU, CEN); Capanema, Capanema-Bragança, km 5, 22/XI/1988, *N.M.S. Costa 2371* (BOTU, CEN); Castanhal, Rodovia PA-136, Castanhal-Curuçá, km23, 19/XI/1988, *N.M.S. Costa 2325* (BOTU, CEN); Curuçá, Rodovia Curuçá - Marudá km 1,4, 19/XI/1988, *N.M.S. Costa 2329* (BOTU, CEN); Igarapé-Miri, Campinarama, 25/IV/2015, *S. da C. Lopes s.n.* (MFS); Ilha do Marajó, Fazenda Procidência, Sr. Raimundo Rocha, margem do rio, campo de terra firme, 23/X/1982, *M.P. das Neves 212* (MFS); Ilha do Marajó. Arari, 1877, *Schwacke 85 (I-174)* (RB); Ilha do Marajó, Fazenda Ribanceira, terreno arenoso, campo de pastagem, 05/XI/1969, *E. Oliveira 5063* (IAN); Irituia, Capitão Poço-Irituia, km 34, 28/XI/1988, *N.M.S. Costa 2460, 2464* (BOTU, CEN); **Pará**: Maracanã, Ilha de Algodoal,Praia da Princesa, Restinga (paleodunas), 4/IX/2009, *M. Falcão 40, 50* (MFS); Maracanã, Ilha de Maiandeua, Restinga (paleodunas), 5/IX/2009, *M. Falcão 59* (MFS);**Pará**: Maracanã, Ilha de Algodoal.Praia da Princesa.restinga (campo entre Dunas), 26/V/2010, *131* (MFS); Marapanim, Restinga do Crispim (sobre dunas), 17/IV/2010, *M. Falcão 83* (MFS); Monte Alegre, campos, 07/V/1953, *D. Andrade-Lima 1419* (IAN); Monte Alegre, 26/III/1924, *J.G. Kuhlmann 1770* (RB); Muaná, Rio Muaná, Estrada de Pedro Ferreira. capoeira, terra firme arenosa, 21/II/1970, *E. Oliveira 5108* (IAN); Nova Timboteua, Nova Timboteua - Salinópolis-PA, km 10, 20/XI/1988, *N.M.S. Costa 2340* (BOTU, CEN); Ourém, Ourém- Capitão Poço, km 3,7, 27/XI/1988, *N.M.S. Costa 2445* (BOTU, CEN); Ponta de Pedras, Ilha do Marajó, próximo ao Igarapé Rucunaré, 12/X/1970, *B.S. Pena 198* (IAN); Salinópolis, Alto da praia do Atalaia, 20/XI/1988, *N.M.S. Costa 2347* (BOTU, CEN); Salinópolis, Salinópolis, 26/VIII/1971, *G.T. Prance 14728* (INPA, NY); Salvaterra, Joanes, Marajó, 15/IX/1975, *N.C. Carmo 11* (INPA); Salvaterra, Praia do Salazar; Ilha do Marajó, Moita, 18/IX/2014, *M. Falcão da Silva 507* (MFS); Santa Isabel do Pará. Cerca de 2,4 Km do entroncamento da rodovia BR-316 para Vígia, 26/X/1987, *R.F.A. Veiga 185* (CEN); Santa Isabel do Pará, Trevo da BR-010- Vigia, cerca de 700m, 17/XI/1988, *N.M.S. Costa 2275* (BOTU, CEN); **Pará**: Santarém, VI/1850, *R. Spruce 902* (P, NY); Oeiras, 1877-1878, *Jobert 1024* (P); Santarém, Rodovia Santarém - Curuaúna, km 2,

05/IX/1984, *L. Coradin 7175* (CEN); São João de Pirabas, Entroncamento PA-124, Capanema km 2, 21/XI/1988, *N.M.S. Costa 2361* (BOTU, CEN); Soure, Praia do Caju - Una; Ilha do Marajó, Brejo, 17/IX/2014, *M. Falcão da Silva 455* (MFS); Soure, Fazenda Santa Iria, Joanes, campo aberto em associação com o Axonopetum, 30/V/1954, *P.V.D. Ledoux 1022, 1025* (IAN); Soure, Fazenda Uchí, parte alta do Mondongo, 16/III/1950, *G.A. Black 9199* (IAN); Vigia, Estrada de Santa Isabel do Pará - Vigia km 48, 17/XI/1988, *N.M.S. Costa 2292* (BOTU, CEN); Vigia, Saída para Santa Isabel do Pará, 18/XI/1988, *N.M.S. Costa 2296* (BOTU, CEN); Vigia, Campina do Palha, 29/IX/1948, *G.A. Black 3261* (IAN); Viseu, Beira da praia, terreno sêco, próximo ao farol, 21/VI/1950, *U. Tavares 13* (IAN, NY); Viseu, Estrada PA-242 Viseu - Bragança km 41, desvio para a rodovia Pará - Maranhão, 26/XI/1988, *N.M.S. Costa 2434* (BOTU, CEN); **Paraíba**: 30/VIII/1959, *J.C. de Moraes 2233* (US); Baía da Traição, Dunas fixas utilizadas como pasto, 27/VII/2001, *V.C. Souza 26626* (ALCB, ASE, ESA, UEC); Mamanguape, Reserva Biológica Guaribas. Área I - Capim Azul, 20/VIII/2002, *A.C. Sevilha 2266* (CEN); Mamanguape, Reserva Biológica Guaribas, 09/VII/2004, *S.M.C. Barbeiro 2530* (HUEFS); Mamanguape, BR-101 Mamanguape - Div. Paraiba/R. G. do Norte, km 2, 21/VII/1980, *L. Coradin 3173* (CEN); Monte Herobe, Sítio Pinga, 23/VIII/2012, *R.A. Silva 2182* (HUEFS, HVASF); **Pernambuco**: Petrolina, Entre Caboclo e Dormente, 22/IV/1971, *E.P. Heringer 275* (UB); Petrolina, Rodovia Petrolina-Santa Maria da Boa Vista, km 87, 5/IV/1979, *L. Coradin 1293* (BOTU, CEN); Recife, Peixinhos, X/1936, *V. Sobrinho 245* (IAN); **Piauí**:Prov. Piauhy, s.d., *G. Gardner 2094* (L, NY, P); Alto Longa, Posto Experimental de Área Seca- DNOCS, 20/IV/1977, *J.J. Viana 119* (CEN); **Piauí**: Brazileira, Fazenda Jardim, 12/IV/2001, *J.M. Costa 293* (HUEFS); Campo Maior, 08/V/1991, *S. Bona 90* (EAC); Campo Maior, Fazenda Lourdes, Alto do Comandante, 16/IV/2002, *R.R. Farias 512* (HUEFS); Castelo do Piauí, Percurso da Raposa, 14/IV/2004, *J.M. Costa 184* (HUEFS); Demerval Lobão, BR-316 a 39 Km do Entronc. BR-316/ BR-343 (40 Km de Teresina), 25/V/1980, *L. Coradin 2621* (CEN); **Piauí**: Irati, 19/IV/1994, *M.S.B. Nascimento 205* (HUEFS); Laguna, 23/III/1994, *J.H. Carvalho 627* (HUEFS); Luis Correia, Próximo a praia de Macapá, 08/IV/2006, *F.S. Santos-Filho 458* (HUEFS); Nazaré, 02/IV/1984, *C.A. Miranda 433* (HUEFS); Oeiras, Ca. 6Km de Oeiras, na estrada para Teresina, 13/III/2005, *L.P. de Queiroz 10144* (HUEFS); Parnaíba, Próximo à lagoa do Portinho, 16/VI/2006, *F.S. Santos-Filho 662* (HUEFS); Piracuruca, Parque Nacional de Sete Cidades, área A1 do levantamento fitossociológico, 12/V/2007, *M.R.A. Mendes 11* (UB); Piracuruca, Parque Nacional de Sete Cidades, área A1 do levantamento fitossociológico, 07/VII/2007, *M.R.A. Mendes 66* (UB); Piracuruca, Sambaíba (7ª cidade). Parque Nacional de Sete Cidades, 22/VII/1999, *M.E. Alencar 713* (HUEFS); Piracuruca, Divisa CE/ PI-teresina (BR-222), km 52, 1/VII/1987, *L. Coradin 7914* (BOTU, CEN); Ribeiro Gonçalves, 13/V/2009, *A.M. Miranda 5941* (HUEFS); São Sebastião, 21/IV/1994, *M.S.B. Nascimento 123* (HUEFS); Valença do Piauí, 02/II/1979, *J.P. Filho s.n.* (EAC); **Rio Grande do Norte**: Angicos, 29/V/1934, *J.R. Swallen 4715* (US); Ceará-Mirim, Porto-Mirim, 13/V/2011, *J.L. da Costa Lima 485* (NY); Extremoz, APA Jenipabu, área entre as duas lagoas principais, 03/IX/2011, *E.O. Moura 38* (ALCB); Jucurutu, RPPN Stoessel de Britto, 04/VI/2008, *A.A. Roque 612* (HUEFS); Mossoró, Rodovia Grossos - Tibau, km 6, 12/VIII/1994, *G. Pereira-Silva 2474* (CEN, HUEFS); Natal, Margem da Lagoa do Jiqui, 17/IV/1957, *S. Tavares 453* (US); Serra Negra do Norte, 03/VIII/2006, *M.L. Silva 131* (EAC); **Roraima**: Bl. tiefgelb am Fullsufes bei der Serra de Moll. Rio Branco, Surumu [interpreted], VIII/1909, *E.H. Ule 8161* (US); Igarapé caranã, 20/VIII/1951, *G.A. Black 12788* (IAN); Rio água Boa, fazenda Bom Intento, 31/VIII/1951, *G.A. Black 13096* (IAN); Boa Vista, Campus Experimental Água Boa, Campus Experimental Água Boa (EMBRAPA), 29/VIII/2003, *R.I. Barbosa 58* (INPA); Boa Vista, Estrada BR-174, Boa Vista-Venezuela, na beira do Rio Caomé, lado direito, 05/VIII/1986, *J.A.C. da Silva, 625* (INPA, NY); Boa Vista, Cauamé region, 8 km NW of Boa Vista, by Cauamé river, 16/X/1977, *L. Coradin 730* (CEN, INPA, NY); Boa Vista, Rodovia Boa Vista - Mucajaí - BR-174 - km 1 - Próximo Igarapé Grande, 23/XI/1981, *L. Coradin 4879, 4885* (CEN); Boa Vista, Rodovia Boa Vista - Bonfim, km 32, 26/XI/1981, *L. Coradin 5000* (CEN); Boa Vista, Lago Caracaraña/Estrada para Fazenda Iara, próximo Normandia, 27/XI/1981, *L. Coradin 5026* (CEN); Boa Vista, Lago Caracaraña/Estrada para Fazenda Iara, próximo Normandia, 27/XI/1981, *L. Coradin 5028* (CEN); Boa Vista, Beira do Rio Tucutu passagem para Normandia, 27/XI/1981, *L. Coradin 5038* (CEN); Boa Vista, Boa Vista - BV8 BR-174, km 52, 01/XII/1981, *L. Coradin 5083* (CEN); Boa Vista, Boa Vista - BV8 BR-174, km 110, 01/XII/1981, *L. Coradin 5093* (CEN); Boa Vista, Boa Vista,

campo em redor da cidade, 15/VIII/1951, *G.A. Black 12481* (IAN); Boa Vista, Água Boa, Grade de Savana do PPBio na região do Água Boa, 27/XII/2007, *R.I. Barbosa 214* (INPA); Caracaraí, Parque Nacional do Viruá, Estrada vicinal ao lado da BR 147, do lado direito da ponte sobre o Rio Baraúna, no sentido Boa Vista-Manaus, 16/IX/2010, *C.M. Siniscalchi 76* (INPA, RB); Normândia, Pista do aeroporto, Pista do aeroporto, 06/XI/1954, *W.A. Rodrigues 34* (INPA); Normândia, Maloca do Napoleão, Maloca do Napoleão, 13/X/1995, *I.S. Miranda 1142* (INPA); Margem do Rio Cauame nas proximidades da praia do Casari, 18/II/1977, *N.A. Rosa 1558* (INPA, NY); Rio Arraia. Próximo da fronteira com a Guiana. Projeto Radam, Ponto 8, 26/VI/1974, *J.M. Pires 14727* (IAN, NY); Território do Rio Branco, Campos Gerais da região de Caracarahy, 6/II/1948, *R. de Lemos Fróes 23664* (IAN, NY, US); **Sergipe**: Aracaju, Campus Universitário, 17/VIII/1983, *G. Viana 729* (ASE); Estancia, BR-101 - Aracajú - Estância, SE, km 55, 24/VII/1980, *L. Coradin 3355* (CEN); Pirambu, Povoado Alagamar Assentamento São Sebastião, 13/VIII/2013, *T. Carregosa 452* (ASE, UEC); **Tocantins**: Babaculândia, margem do rio Taboca, 26/XI/2009, *G. Silva-Pereira 14797* (BOTU, CEN); Darcinópolis, Margem direita do rio Curicaca, cachoeira da fazenda do Sr. Marcelo, 17/IV/2008, *G. Silva-Pereira 13005* (BOTU, CEN); Natividade, 8 Km da cidade, na estrada de Cachoeira do Paraíso, 03/II/2012, *R.M. Harley 56727* (HUEFS); Porto Nacional, 07/XVII/2000, *V.C. Souza 24147* (ESA); *W. J. Burchell 9004* (NY); *Jobert 174* (P); inter Campos et Victoria, inter Victoria et Bahia, *F. Sellow s.n.* (SI)

FRENCH GUIANA. *Leprieur, F.M.R. 18* (P); environs de Kourou, V/1969, *J. Petitbon 46* (P); Cayenne, /II/1859, *Sagot, P.A. 1238* (P); Route Kourou-Sinnamary, km 19, 28/IX/1963, *H.S. MacKee 10732* (L, P); Estrada Kourou-Sinnamary, km 15, lugar arenoso, 26/X/1954, *G.A. Black 17321* (IAN); Cayenne, *Le Guillou* (P); Roche Elizabeth, II/1901, *A. Lemée s.n.* (P); Cayenne, 1845, *H.C. Rothery* (NY); Kourou: Centre Spatial Guyanais. White sand savanna, 30/VIII/2005, *P. J. M. Mass 9692* (NY, U); Laussat: Bassin de la Basse Mana, 15/IV/1989, *G. Cremers 10628* (NY); Route de Sinnamary, entreé de Marosi, 1/VI/1957, *Hoock s.n.* (NY); Pacaraima, 1/X/1842, *R. Schomburgk 816* (P); 12/VII/1995, *M.J. Jansen-Jacobs 4402* (P); Roraima, III/1842, *R. H. Schomburgk 536* (NY, P);

GUYANA: Rupunini: Dadanawa, Between Dadanawa and Mountainpoint, 3/X/1992, *M. J. Jansen-Jacobs 2721* (NY); Manari, 20/X/1979, *P.J.M. Mass 3659* (NY); Rupunini: Manari, 12/VII/1995, *M. J. Jansen-Jacobs 4402* (NY); Mountain Point, 13/VI/1995, *M.J. Jansen-Jacobs 4054* (NY); Rupunini: Sand Creek, X/1969, *D.H. Davis 1702* (NY); Rupunini: St. Ignatius, 12/VII/1958, *S.G. Harrison 1257* (NY); Rupununi, Lethem, Moka creek flood plain. Stand 18, 5/IX/1963, *R. Goodland 607* (NY); Rupununi savanna. Lethem, 28/X/1987, *M.J. Jansen-Jacobs 567* (NY); **R**upununi Distr, entre Dadanawa et Mountainpoint, 3/X/1992, *M.J. Jansen-Jacobs 2721* (P); Rupununi Distr, Mountain Point, 13/VI/1995, *M.J. Jansen-Jacobs 4054* (P); **U. Takutu-U. Essequibo**: Lethem, Rupununi Dist, 13/IV/1956, *H. S. Irwin 551* (US); **U. Takutu-U. Essequibo**: Sand creek to Shea village, 28/V/1996, *H.D. Clarke 1774* (U); Manari, 12/VII/1995, *M.J. Jansen-Jacobs 4401* (US); Essequibo, South Rupununi savanna, Dadanawa, 17/VI/1989, *L.J. Gillespie 1638* (NY); Sand Creek, Sand creek to Shea Village, 1996/V/1996, *D. Clarke 1774* (NY); Karanambo, Savanna near airstrip; Sandy clay with na overlay of lateritic gravel, 4/IX/1988, *P.J.M. Mass 7228* (NY); Waranama Ranch. Intermediate savanna. Berbice River, 10/VI/1958, *S. G. Harrison 1083* (NY); Vanacum, 1/X/1842. *R.H. Schomburgk 816* (P);

SURINAME: 1843, *Hostmann, F.W.R. 1018* (P); Zanderij I, 14/XI/1934, *W. A. Archer 2813* (US); *F.L. Splitgerber s.n.* (P); Blakawatra bij J'sav. vak 10A, 01/VIII/1962, *Boerboom J* (WAG); in savannis arenosis prope plant Onoribo in Para, Surinami, 07/III/1838, *F.L. Splitgerber* (L); in savannis Parae, 01/III/1838, *Splitgerber FL* (L); Onoribo, *H.C. Focke* (L); **Coebiti**: Saramacca, 28/XII/1982, *A.P. Everaarts 729* (NY); **Paramaribo**: Zanderij, Vicinity of Zanderij, 50Km S. of Paramaribo. Zanderij Savanna on white sand, near Matta, 19/IX/1976, *S. Mori 8357* (NY); Wayambo River, 15/XI/1923, *D.H. Linder 97* (NY); *Hostmam 1018* (NY); V/1846, *H.A.H. Kegel 1113* (NY);

VENEZUELA. **Apure**: Pedro Camejo, P.N. Santos Luzardo. Río Cinaruco, 30 min abajo del paso Cinaruco, camino al Orinoco, 2/XI/1989, *A. Castillo 3110* (NY); **Bolivar**: Cerro San Borja, 12/XII/1955, *J. J. Wurdack & J. V. Monachino 39850* (US); Cedeño, Caicara del Orinoco, I/1989, *S. Elcoro 210* (NY); Cedeño, Entre los km 12-120 de la carretera Caicara del Orinoco - Pto. Ayacucho. Al sur de Caicara del Orinoco, 18/XI/1984, *G. Aymard 3142* (NY); Cerro San Borja, Middle Orinoco, 12/XII/1955, *J.J. Murdack 39850* (NY); Ciudad Bolívar, Laguna de Los

Francos, XI/1958, *L. Aristeguieta 3707* (US); **Guárico**: 39 km S of Las Mercedes along Hwy. 12 to Cabruta, 20/XI/1973, *G. Davidse 4266* (US); 70 km S of Calabozo, 17/X/1963, *H. S. McKee 10842* (US); 70 km S Calabozo, 17/X/1963, *H.S. MacKee 10842* (P).

4. *Stylosanthes aurea* M.B. Ferreira & Sousa Costa

BRAZIL. Mato Grosso do Sul: Corumbá, Morro do Urucum, 7/XI/1978, *A.C. Allem 2462* (NY); **Minas Gerais**: Baependi, Toca dos Urubus, 2/II/2005, *F.M.Ferreira 834* (RB); Datas, Serra do Espinhaço, ca. 15 km S of Diamantina, 5/II/1972, *W.R. Anderson 35551* (NY); Diamantina, Altitude 1100 m, *N.M. de Sousa Costa 787* (PAMG, RB). Área de Proteção Ambiental Pau de Fruta (COPASA), 13/II/2001, *J.R. Stehmann 2720* (BHCB); Diamantina, Serra do Espinhaço, ca. 30 km S.W. of Diamantina on road to Gouveia, 13/I/1969, *H.S. Irwin 21860* (NY); Diamantina, Serra do Espinhaço, ca. 12 km S.W. of Diamantina, 23/I/1969, *H.S. Irwin 22459* (NY); Hermilio Alves, Cachoeira, 10/I/1948, *Duarte 1091* (RB); Patrocínio, Morro da Pedras, ca. 25 km N.E. of Patrocínio, 28/I/1970, *H S. Irwin 25503* (NY); Patrocínio, Ca. de 37 km ao NE de Patrocínio, 29/I/1970, *H.S. Irwin 25605* (NY, UB); **Rondônia**: Vilhena, Arredores do Aeroporto, 2/I/1979, *M. G. da Silva 4089* (NY);

5. *Stylosanthes bracteata* Vogel

BOLIVIA. Santa Cruz: Chiquitos, *A.D. d' Orbigny 871* (P); *J.R.I. Wood 23451* (MO);
BRAZIL. *F. Sellow 4734* (MO); *F. Sellow 4734* (K). **Bahia**: 2 km al N de Mucugê, camino a Andaraí, 20/I/1997, *M.M. Arbo 7579* (MO); **Distrito Federal**: Confluence of Rio Torto with Lagoa Paranoa, Brazilia;. Swampy area and adjacent cerrado., 9/X/1965, *H.S. Irwin 9083* (MO); Catetinho., 6/X/1980, *E.P. Heringer 17894* (MO); Brasília, Campus Asa Norte- Residencial, 20/VII/1967, *U. Lôbo de Anhanguera 35* (NY); Brasília, Campus Universitário - Perto do Lago., 21/VIII/1965, *B.D. Sucre 761* (NY); Brasília, Ca. 10 km S. of Brasília, on road to Belo Horizonte, 23/IX/1965, *H.S. Irwin 8580* (UB, NY); Brasília, Confluence of Rio Torto with Lagôa Paranoá., 9/X/1965, *H.S. Irwin 9083* (NY); Brasília, Catetinho., 6/X/1980, *E.P. Heringer 17894* (NY); **Goiás**: Ca. 60km S of Caiapônia on road to Jataí, 27/X/1964, *H.S. Irwin 7453* (UB); Jataí, Serra do Caiapó, ca. 60 km S. of Caiaponia on road to Jataí., 30/X/1964, *H. S. Irwin 7576* (NY, WAG); **Mato Grosso**: Juscimeira, 20 km a sudoeste de São Lourenço de Fátima na estrada para o Ribeirão da Prata, 21/X/1985, *J.F.M. Valls 9297* (BOTU, CEN); **Mato Grosso do Sul**: a plain 12km. from Campo Grande., 23/IX/1981, *T. Sano 227* (MO); Near Capao seco, 25 km SSE from Campo Grande, along the RT. BR-163., 4/XI/1987, *S. Tsugaru 1976* (MO); Corumbá, Morro do Urucum, 7/XI/1978, *A.C. Allem 2461* (NY); Corumbá, Serra do Urucum., 15/IV/1972, *G. Hatschbach 29529* (MO); Sidrolândia, Near Capão seco, 25 km SSE from Campo Grande, along the Rt. BR-163., 4/XI/1987, *S. Tsugaru B-1976* (NY); **Minas Gerais**: Ituiutaba, , 26/IX/1948, *A. Macedo 1241* (MO); Paraopeba, 25/XI/1965, *R. Goodland 211* (NY); Uberaba, Rodovia Uberlândia - Uberaba (BR-050) km 93, 21/VIII/1987, *L. Coradin 8126* (BOTU, CEN); **Paraná**: 10/XI/1950, *Joly, AB 1165* (UB); **Paraná**: Jaguariaíva, Bank of Rio Reis, 5 km S of Jaguariaíva., 15/X/1966, *J.C. Lindeman 3040* (NY, RB); Palmeiras, II/1955, *M. Frank s.n.* (PACA-AGP); Ponta Grossa, Parque Estadual Vila Velha - Próximo à taça, 9/I/2017, *K.S. Valdemarin 593, 604* (RB); Ponta Grossa, Parque Estadual Vila Velha., 28/X/1983, *A.C. Cervi 2234* (NY); Ponta Grossa, Campo de Villa Velha., 3/X/1928, *F.C. Hoehne 23368* (NY); Ponta Grossa, Villa Velha. Ex. 1° Seção: Botanica e Agronomia do Instituto Biologico., 24/X/1977, *F.C. Hoehne s.n.* (NY); Ponta Grossa. Río Tibagí, 2/II/1951, *G. Hatschbach 2597* (MO); Sengés, Rio dos Bugres., 12/XI/1974, *G. Hatschbach 35417* (MO); Vila Velha, BR 376, Furnas, 2 km past turning to Vila Velha in direction of Ponta Grossa, 28/I/1985, *G.P. Lewis 1386* (NY); Vila Velha, 14/I/1964, *E. Pereira 8267* (NY); **São Paulo**: Botucatu, Distrito de Rubião Júnior, 11/X/2017, *T.P. Tunes 24* (BOTU); Botucatu, 25/IX/1986, *L.R.H. Bicudo 1503* (BOTU); Botucatu, , 16/XI/2003, *C.J. Campos s.n.* (BOTU); Rio Pardo, *L. Riedel 7* (NY);
PARAGUAY. Fleuve Tapiraguay, campo Opepu, 2/X/1900, *E. Hassler 4363* (P); In burned campo Estancia Prinezen [interpreted], II/1932, *P. Jörgensen 4677* (US); **Amambay**: Estrella, /IX/1933, *T. Rojas 6299* (MO); **Caaguazú**: Entre Yhú y San Blas, en matorral seco sobre suelo

arenoso y suelto., 23/IX/1980, *F. Casas 3837* (MO); **Itapúa**: Yacyreta dam island reserve, 7/XII/2002, *E. M. Zardini 59525* (MO); **N. Paraguay**: Zwischen Rio Apa und Rio Aquidaban., 01/I/1908, *K. Fiebrig 5028* (L); *E. Hassler 4363* (NY); Estancia Primera, II/1932, *P. Jorgernsen 4877* (NY).

6. *Stylosanthes campestris* M.B. Ferreira & Sousa Costa

Bahia: Caetité, Brejinho das Ametistas; Após a cidade e próximo à extração de minério das ametistas e linha da FIOL, 13/III/2022, *E.H Souza 1501* (HURB); Caetité, 18 km da cidade. Localidade de Santa Luzia, 10/III/1994, *V.C. Souza 5423* (HUEFS, NY); **Minas Gerais**: Datas, BR 259, 35 km após Datas-Serro, 1100 msm, 18/I/1977, *N.M. de Sousa Costa 795* (PAMG, RB); Diamantina, Estr. Diamantina - Curralinho, até km 7, 2/XII/1975, *G. J. Shepherd 3986* (NY); Diamantina, Rodovia Diamantina-Mendanha, km 16, 4/IX/1987, *L. Coradin 8447* (BOTU, CEN); Diamantina, Rio dos Cristais, 18/II/1965, *A.P. Duarte 9083* (BOTU, RB); Diamantina, Serra do Espinhaço, ca. 25 km N.E. of Diamantina, on road to Mendanha, 30/I/1969, *H. S. Irwin 22914* (NY, P); Diamantina, Serra do Espinhaço, ca. 25 km E. of Diamantina, near Rio Jequití, 15/III/1970, *H. S. Irwin 27551* (NY, P); Grão Mogol, Serra de Grão Mogol., 08/I/2003, *L.P.de Queiroz 7548* (HUEFS); Grão Mogol, Rio Itacambiruçu. Ca. 10km west of Grão Mogol, road to Cristália, 19/II/1969, *H.S. Irwin 23565* (NY, UB, US); Ao norte de Graõ Mogol., 27/XI/1984, *R.M. Harley CFCR6499* (HUEFS); Grão Mogol, Vale do rio Itacambiruçu, 26/II/1986, *T. Cavalcanti CFCR9677* (F); Grão Mogol, Trilha da Tropa, no Alto da Serra, 11/XII/1989, *P.T. Sano CFCR12521* (UB); Grão Mogol, Estreito do Riacho Ribeirão, 16/VI/1990, *R. Simão-Bianchini CFCR13125* (MBM, NY); Grão Mogol, Margens de córrego à saída da cidade, na estrada para o rio Ventania, 25/II/1986, *N.L. Menezes CFCR9646* (MBM); São Gonçalo do Rio Preto, Parque estadual do Rio Preto, 28/III/2008, *P.L Viana 3483* (BHCB); Serro, Estrada para Milho Verde, 06/II/2008, *P.C. Natividade 66* (HUEFS); **Paraná**: 23 Turma, in campo, 23/I/1910, *P.K.H. Dusén 9083* (NY).

7. *Stylosanthes capitata* Vogel

BOLIVIA. Santa Cruz: Chiquitos, 33 km O de San José de Chiquitos, por ruta 4 cmaino a Roboré, 19/VII/2013, *J.P. Coulleri 545* (MO); Chiquitos, Lourdes, 50 km al S de Roboré, 28/VIII/1997, *A.F. Fuentes 2095* (MO); Chiquitos, s.d., *J.R.I. Wood 24738* (MO); Chiquitos, Roboré. 4 km W de Santiago, camino a Roboré, 1980, *A.C. Krapovickas 36459* (MO); Cordillera, Parque Nacional Kaa-Iya del Gran Chaco, Paleodunas 25 Km. al NE de Palmar de las Islas, 12/II/1998, *A.F. Fuentes 2304* (MO); Germán Busch, 78,8 km E de Aguas Calientes, camino a Puerto Suarez, 20/VII/2013, *J.P. Coulleri 598* (CEN);
BRAZIL. Alagoas: Junqueiro, SE. BR 101- Aracaju - Maceió. 45 Km norte Rio São Francisco, 18/VII/1980, *L. Coradin 3071* (CEN); **Bahia**: Near Piau, ca. 150km S.W. of Barreiras, 15/IV/1966, *H.S. Irwin 14908* (UB); Abaíra, Saída de Catolés de Baixo em direção a Ribeirão Baixo, 1ª Ponte, 20/IX/1999, *A.S. Conceição 409* (UB); Barreiras, Ca. 10km W of Barreiras, 02/III/1971, *H.S. Irwin 31283* (UB); Barreiras, Valley of the Rio das Ondas. Ca. 10 km W. of Barreiras, 2/III/1971, *H.S. Irwin 31283* (NY); Correntina, BR-020, 309, Brasília - Fortaleza, beira de estrada, 27/IX/1978, *L. Coradin 1142* (BOTU, CEN); **Bahia**: Correntina, (Drainage of the Rio Corrente, Western Bahia). Rio Piau, ca. 225 km. S.W. of Barreiras on road to Posse, Goiás, 12/IV/1966, *H. S. Irwin 14649* (NY); **Bahia**: Correntina, Chapadao Ocidental da Bahia. 12 km. N. of Correntina, on the road to Inhaúmas, 28/IV/1980, *R. M. Harley 21877* (NY); **Bahia**: Ibotirama, Estrada Ibotirama-Bom Jesus da Lapa km 8, 1/VII/1983, *L. Coradin 6308* (NY); **Bahia**: Inhambupe, Ca. 28km N de Inhambupe na estrada para Olindina (BR-110), 23/VIII/1996, *Queiroz, LP 4541* (UB); **Bahia**: Inhambupé, Ca. De 29Km de Inhambupé para Olindina, 26/VIII/2008, *Fortuna-Perez, A.P. 312* (UEC); Jacobina, Proximidades do hotel, 22/VI/1987, *L. Coradin 7701* (BOTU, CEN); Lençóis, 1 Km leste da estrada Lençóis BR-242 (entrada no km 8), 5/VII/1983, *L. Coradin 6484* (NY); Serrinha, 9 km de Serrinha, 14/VII/1964, *L. Duarte 390* (NY); Serrinha, Perto de Serrinha, 14/VIII/1964, *A. Castellanos 25117* (NY); Vanderlei, Ca. 45 km W of Vanderlei along Highway BR-242. Cerrado on sandy soil. Aristida and Axonopus the dominant

grasses, 7/IV/1976, *G. Davidse 12059* (MO); Licínio de Almeida: Rod. BA-S/C Caculé/Licínio de Almeida, 38.3 km, 30/III/2001, *J.G. Jardim 3240* (NY); **Ceará**: Cratéus, BR-045, km17/ Cratéus-Tauá, beira da estrada, 18/VI/1979, *L. Coradin 2030* (BOTU, CEN); Crato, Rodovia-Araripina, km 22-aeroporto desativado de Crato, Chapada do Araripe, 24/VI/1987, *L. Coradin 7772* (BOTU, CEN); Crato, Entroncamento da rodovia Crato-Santana do Cariri-Buritis, km 3, chapada do Araripe, 26/VI/1987, *L. Coradin 7820* (BOTU, CEN); Juazeiro do Norte, Rodovia Juazeiro do Norte - Crato, km 2, 23/VI/1987, *L. Coradin 7763* (BOTU, CEN); Missão Velha, Rodovia Juazeiro do Norte, entroncamento da BR-1116, km 23, 27/VI/1987, *L. Coradin 7828* (BOTU, CEN); Sobral, BAG-Forrageiras CNP-Caprinos, 19/VI/1979, *L. Coradin 2076* (BOTU, CEN); Tianguá, Proximidades Serra Grande Hotel- Chapada da Serra do Ibiapaba, 1/VII/1987, *L. Coradin 7876* (NY); Tianguá, Proximidades do Serra Grande hotel, chapada da serra de Ibiapaba, 1/VII/1987, *L. Coradin 7880* (BOTU, CEN); Tianguá, Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1/VII/1987, *L. Coradin 7885* (BOTU, CEN); **Ceará**: Tianguá, Rodovia Tianguá- Teresina (BR-22), km 25, 1/VII/1987, *L. Coradin 7895* (BOTU, CEN); Tianguá, Rodovia Tianguá- Teresina (BR-22), km 26, 1/VII/1987, *L. Coradin 7896* (BOTU, CEN); **Distrito Federal**: Brasília, Catetinho, 12/IV/1963, *E.A.A. dos Santos 1652* (NY); Bacia do Rio São Bartolomeu, 14/IV/1980, *E.P. Heringer 4356* (MO, NY); On hillside above dam from Lago Paranoá. Paranoá. c. 10 km E of Brasília and Rio Paranoá, 1/V/1968, *D. Philcox 4808* (NY); **Distrito Federal**: Brasília, Bacia do Rio São Bartolomeu, 25/III/1981, *E.P. Heringer 6595* (MO, NY); Reserva Ecológica do IBGE, 27/III/1981, *E.P. Heringer 6637* (MO); Ribeirão Sobradinho, ca. 5 km S. of Sobradinho, 29/I/1966, *H.S. Irwin 12110* (NY); Reserva Ecológica do IBGE, 24/III/2016, *V.C. Souza 40212* (ESA); **Goiás**: Alto Paraíso de Goiás, 14/V/2016, *M.S. Siqueira 144* (UB); **Goiás**: Alto Paraíso de Goiás, Chapada dos Veadeiros, 2 km W do Alto Paraíso ao Córrego Almécegas, 29/IV/1984, *J.H. Kirkbride 5539* (UB); Anápolis, 1km S da fonte da Água Mineral Indaiá, 22/IV/1983, *M.C.G. Kirkbride 1635* (UB); Caldas Novas, Near Caldas Novas, 11/VII/1987, *S. Tsugaru 100* (MO, NY); Campos Belos, 5-10 km ao sul, Goiás, 09/XI/1991, *G. Hatschbach 55996* (UB); Colinas do Sul, Porto do rubão para Colinas do Sul, 9,2 km antes do porto do Rubão, 26/VI/2001, *G. Silva-Pereira 5156* (BOTU, CEN); Cristalina, Margem esquerda do rio Arrependido, a Noroeste da área de empréstimo, 6/III/2002, *G. Silva-Pereira 6047* (BOTU, CEN); Formosa, Rodovia entre Brasília-Fortaleza (BR-020) Km 82 entre Formosa e posse, 14/VI/1983, *L. Coradin 5672* (NY); Formosa, Formosa, Rio Tiqueiro, 18/IV/1967, *E.P. Heringer 11432* (UB); Formosa, Ca. 50km N.E. of Formosa, 23/IV/1966, *H.S. Irwin 15285* (UB); Formosa, Serra do Morcêgo, Côrrego Estrema, ca. 50 km N.E. of Formosa, 23/IV/1966, *H.S. Irwin 15285* (NY); Hidrolândia, 26-31 km S of Goiânia along Highway BR-153, 10/IV/1976, *G. Davidse 12281* (NY); Luziana, Fazenda Corumbá, margem esquerda do rio Corumbá, próximo ao eixo da barragem, 8/IV/2003, *G. Silva-Pereira 7446* (BOTU, CEN); Mineiros, Parque das Emas, 09/IV/2011, *A.P. Fortuna-Perez 1536* (BOTU); Niquelândia, Base (quarto inferior) da Serra Negra; area dentro da Fazenda Niquel-tocantins. Próximo ao Rio Bagagem, 15/IV/1992, *B.M.T. Walter 1405* (NY); Posse, Rio da Prata, vicinity of Posse, 09/IV/1966, *H.S. Irwin 14533* (UB); São Domingos, 19/VIII/2006, *A.P. Fortuna-Perez 246* (BOTU); São João d'Aliança, Region of the Chapada dos Veadeiros: 20 km N of Sao Joao da Aliança, 14/IV/1956, *E.Y. Dawson 14190* (NY); São João d'Aliança, Ca. 3km S of São João da Aliança, 16/III/1971, *H.S. Irwin 31927* (UB); Silvania, Fazenda do Sr. Jeová, 2/VI/2003, *G. Silva-Pereira 7724* (BOTU, CEN); Teresina de Goiás, Rod. GO-118, próximo ao Rio Sucuri, 10/II/1994, *G. G. Hatschbach 60313* (NY); **Maranhão**: Açailandia, BR-010, Belém-Brasília, km 533, 18/IX/1979, *L. Coradin 2156* (BOTU, CEN); Açailandia, BR-010, Belém-Brasília, km 533, 18/IX/1979, *L. Coradin 2157* (BOTU, CEN); Açailandia, BR-010, Belém-Brasília, km 656, Imperatriz-Porto Franco, 18/IX/1979, *L. Coradin 2163* (BOTU, CEN); Balsas, Km 410, Carolina-MA/Pastos Bons, 21/IX/1979, *L. Coradin 2226* (BOTU, CEN); Carolina, Ilha dos Botes, a duas léguas abaixo de Carolina. Rio Tocantins, 24/V/1950, *J. M. Pires 1994* (NY); Carolina, Estreito-Carolina, km 34, 18/IX/1979, *L. Coradin 2190* (BOTU, CEN); Carolina, Estreito-Carolina, km 34, 18/IX/1979, *L. Coradin 2192* (BOTU, CEN); Carolina, Km 111, BR-230- Carolina-Balsas, 18/IX/1979, *L. Coradin 2200* (BOTU, CEN); Carolina, Gleba II, Parque Nacional da Chapada das Mesas, Ponto 07, 9/IV/2016, *A.C. Sevilha 5726* (BOTU, CEN); Carolina, Margem esquerda do rio Farinha, próximo à ponte na BR-010, 25/IV/2008, *G. Silva-Pereira 13323* (BOTU, CEN); Estreito, Km 0-Rodovia Transamazônica, 18/IX/1979, *L. Coradin 2173* (BOTU, CEN); Estreito, Estrada de acesso ao

canteiro da obra do UHE Estreito, 7/III/2007, *G. Silva-Pereira 11239* (BOTU, CEN); Imperatriz, Bananal, 15 km S of Imperatriz along Belém-Brasília highway (BR 010), 29/II/1980, *T. C. Plowman 9357* (NY); Loreto, "Ilha de Balsas" region, between the Balsas & Parnaíba Rivers. 2 km south of main house of Fazenda "Morros", about 35 km south of Loréto. Along "Morros"-"Picada" trail, 24/III/1962, *G. Eiten 3758* (NY); Loreto, "Ilha de Balsas" region, between the Rios Balsas and Parnaíba. About 40 km. south of Lorêto. Near place called "Picada", about 300 m. S of the brook, "Riacho da Picada", 25/III/1962, *G. Eiten 3808* (NY); Loreto, "Ilha de Balsas" region, between the Rios Balsas and Parnaíba. About 40 km. south of Lorêto. Near place called "Picada", about _ km. S of the creek "Riacho da Picada", 27/III/1962, *G. Eiten 3867* (NY);Loreto, Ilha de Balsas region, between the Rios Balsas and Parnaiba. About 25km south of Loreto. In front of main house of Fazenda Santa Rita, 7/IV/1962, *G. Eiten 4118* (NY); **Maranhão**: Montes Altos, Rodovia Imperatriz - Porto Franco (BR-010), km 51, 4/VII/1987, *L. Coradin 7994* (BOTU, CEN); Peritoró, Rodovia Caxias-Peritoró (BR-316), km 47, 2/VII/1987, *L. Coradin 7942* (BOTU, CEN); Porto Franco, BR-010, km 707 Belém-Brasília, 18/IX/1979, *L. Coradin 2170* (BOTU, CEN); Santa Inês, Rodovia Bacabal -Santa Inês (BR-316), km 73, 3/VII/1987, *L. Coradin 7958* (BOTU, CEN); Timon, Rodovia Timon-Caxias (BR-316), km 33, 2/VII/1987, *L. Coradin 7925* (BOTU, CEN); **Mato Grosso**: General Carneiro, Pouco a leste da Vila Paredão, em local com ravina logo ao sul da rodovia, 3/VI/1985, *J.F.M. Valls 9035* (BOTU, CEN); **Mato Grosso do Sul**: Chapadão do Sul, Linha São Francisco, 07/VI/2005, *L.C. Costa 363* (UB); Corumbá, Serra de Urucum, 15/IV/1972, *G.G. Hatschbach 29529* (NY); Costa Rica, Margem da rodovia vindo de Mineiros para Costa Rica, ca. de 18 km de Costa Rica, 26/VI/2015, *J.E.Q. Faria 4657* (RB, UB); Três Lagoas, 08/IV/1999, *A. Amaral Jr 368* (BOTU); **Minas Gerais**: Couto de Magalhães, 21/VII/2017, *T.C. Monteiro 99* (BOTU); Diamantina, Rodovia Diamantina- Mendanha, km 16, 4/IX/1987, *L. Coradin 8448* (BOTU, CEN); Diamantina, 25 km by road NE of Diamantina, ca. 1.5 km from Rio Jequití, 12/IV/1973, *W.R. Anderson 8722* (NY); Diamantina, Ca. 15km E. of Diamantina, 18/III/1970, *H.S. Irwin 27830* (UB); Santo Antônio do Retiro, Sítio 10, ponto 7, 17/III/2017, *A.C. Sevilha 6537* (BOTU, CEN); Unai, Cerca de 1 km á montante do eixo da barragem, margem direita do rio Arrependido, 27/III/2002, *L. Coradin 6300* (BOTU, CEN); **Pará**: Belterra, Flona Tapajós, km 911 da BR 163 - Santarém Cuiabá, 14/II/2017, *Vidal F Mansano 1183* (RB); Irituia, BR-010, km 210, Belém -Brasília, 17/IX/1979, *L. Coradin 2116* (BOTU, CEN); Parauapebas, Floresta Nacional de Carajás. Serra dos Carajás, Serra Norte N1. Lagoa de canga secando, próximo ao alojamento de N1. Margem direita, 25/VI/2015, *N.F.O. Mota 3422* (RB); **Paraíba**: Alhandra, Loteamento Changrilá, 3/VIII/2012, *P. da C. Gadelha Neto 3338* (NY); Baía da Traição, 18/X/1959, *J.C. de Moraes Vasconcelos 2283* (NY); João Pessoa, Near João Pessoa, along the BR-101. At the thicket on sandy soil, 29/VIII/1987, *S. Tsugaru B-1307* (MO, NY); **Paraíba**: Mata Redonda, 15/IX/1954, *J.I.A. Falcão 1110* (NY); **Pernambuco**: Araripina, Nos campos da Serra Araripe, próximo Est. Exp. Araripina, 24/VI/1952, *D. Andrade-Lima 1077* (IAN); Exu, Chapada do Araripe, solo mexido, 23/V/1980, *L. Coradin 2507* (CEN); Exu, Estrada Araripina - Crato(20 Km descida Exu), 23/V/1980, *L. Coradin 2512* (CEN); Exu, Arara-Chapada do Araripe, 06/V/1998, *M.A. Figueiredo EAC26778* (EAC, HUEFS); Goiana, Eng. Itapirema do Meio, 02/X/1949, *D. de Andrade-Lima 325* (IAN); Goiana, VI/1936, *P. P. Mello 4152* (CEN); Ouricuri, Rodovia Trindade - Santa Filomena Km 63, 14/X/1995, *G. Pereira-Silva 3104* (CEN); Petrolina, Rodovia Petrolina-Santa maria da Boa Vista, km 53, 5/IV/1979, *L. Coradin 1284* (BOTU, CEN); Petrolina, Estrada para Pau a Pique. Ca. 11km da BR 235, 14/VII/2009, *J. Paula-Souza 10037* (HVASF); **Piauí**: Castelo do Piauí, Mun. Castelo do Piauí Fazenda Cipó de Cima Transicao caatinga/cerrado. a área está situada em relevo plano, sendo atualmente utilizada como pastagem natural. Solo arenoso, apresentando boa drenagem. Presenca de picarra na superficie do solo, 13/VI/1995, *M.S. Bona Nascimento 1048* (MO); Cristino Castro, Rodovia Bom Jesus-Canto do Buriti, km 44, 20/VI/1983, *L. Coradin 5905* (NY); Cristino Castro, Rodovia Bom Jesus-Canto do Buriti Km 103, 21/VI/1983, *L. Coradin 5909* (NY); Itaueira, , 17/V/1997, *Félix, LP 7876* (UB); Oeiras, Exu, 15/IV/2007, *F.C.S Oliveira 98* (RB); Piripiri, Entroncamento da BR-22/BR-343, campo maor, km 22, 1/VII/1987, *L. Coradin 7918* (BOTU, CEN); VIII/1912, *P. von Luetzelburg 112* (NY); Piauhy, *G. Gardner 2093* (NY); **Rio Grande do Norte**: Serra na localidade dos Cosos, após o açude da cidade, 24/VI/2014, *J.L. Costa-Lima 1338* (RB); **Roraima**: Boa Vista, Campus Experimental Água Boa, Campus Experimental Água Boa (EMBRAPA), 29/VIII/2003, *R.I. Barbosa 57* (INPA); **São Paulo**: Matão, 1966, *IRI Experimental*

Garden s.n. (NY); Ribeirão Preto, Via Anhanguera 11 km norte de Ribeirão Preto, 21/VIII/1987, *L. Coradin 8147* (BOTU, CEN); **Sergipe**: Estância, BR-101 - Aracajú - Estância, SE, km 55, 24/VII/1980, *L. Coradin 3357* (CEN); Japoatã, 26/IX/1981, *G. Viana 156* (ASE); **Tocantins**: Araguaina, Cerca de 4,2 k a sudeste do rebeirão Jacuba, na saída de Araguaiana, em direção a Filadélfia, 19/V/1991, *J.F.M. Valls 13014* (BOTU, CEN); Darcinópolis, Margem direita do rio Curicaca, cachoeira da fazenda do Sr. Marcelo, 17/IV/2008, *G. Silva-Pereira 12999* (BOTU, CEN); Goiatins, União das Aldeias Kapey, 11/VIII/2006, *A.A. Santos, 2868* (BOTU, CEN); Guaraí, Rodovia Guaraí-paraíso do Tocantins (BR-153), km 7, 5/VII/1987, *L. Coradin 8023* (BOTU, CEN); Monte do Carmo, Estrada para Ponte Alta do Tocantins, 15 km de Monte do Carmo, 18/VII/2000, *V.C. Souza 24204* (UB); Porto Nacional, Área do Campus de Porto Nacional, próximo ao laboratório de Ictioflora, 19/IV/2001, *N.S. Pedrosa 5* (UB);
COLÔMBIA. Meta: Puerto Gaitán, Estación Carimagua, 9/I/1995, *F.A. González 3342* (NY);
PARAGUAY. Alto Paraguay: Chovoreca. Moist sandy soil along pond in open Cerrado vegetation, 12/VIII/1983, *W.J. Hahn 1595* (MO);
SURINAME. Saramacca: Experimental farm Coebiti Distr. Saramacca, 17/XI/1982, *A.P. Everaarts 694* (U); Experimental farm Coebiti, Cultivated in CIAT trial, 5/VII/1984, *A.P. Everaarts 999* (US);
VENEZUELA. Anzoátegui: 3 km noreste de San Diego de Cabrutica, 17/VIII/1982, *R.A. Montes 1323A* (MO); **Guárico**: A 17 km al sur de Santa Rita, carretera Las Mercedes-Cabruta, 18/XI/1995, *R. Ortiz 3186* (MO); **Monagas**: Unos 3 km noreste de Aguasay, 12/IX/1984, *R.A. Montes 2613* (MO); Sabana de Jusepin dominada por *Axonopus* en flor, 29/VIII/1970, *L. Aristeguieta 7588* (MO); Jusepin-Río Amana, 24/VIII/1970, *L. Aristeguieta 7551* (MO);

8. *Stylosanthes falconensis* Calles & Schultze-Kr.

VENEZUELA. **Falcón:** alrededores de Carrizalito, a unos 300 m de la salida hacia Cucaire, 1170 m, 11°7'49"N 69°45'28"W, 12/II/2006, *T. Calles & R. Schultze-Kraft 1006* (K, M, MO, NY).

9. *Stylosanthes gracilis* Kunth

BOLIVIA. Santa Cruz: Andrés Ibáñez, 10-15km al SW de la ciudad de Santa Cruz, 18/IV/1993, *C.B. Mostacedo 514* (NY); Nuflo de Chavez, Estancia San Miguelito, 200 Km NE de Santa Cruz, puesto La Pascana, 14/III/1995, *A.F. Fuentes 461* (NY); Ñuflo de Chavez, 3km desde San Javier, camino desde la propiedad El Eden hacia la curtiembre subiendo a la serrania, 13/III/2008, *D. Soto 957* (UB); Velasco, Parque Nacional Noel Kempff M. Cerca al campamento viejo de Los Fierros, 3/V/1994, *E. Gutiérrez 725* (NY); Velasco, Parque Nacional Noel Kempff M. Cerca al campamento viejo de Los Fierros, 30/VI/1993, *M. Saldias 2818* (MO, NY); Velasco, Parque Nacional Noel Kempff M. Serrania de Huanchaca 1, 9/VI/1994, *C.B. Mostacedo 2158* (MO, NY); Parque Nacional Noel Kempff M. serrania La Torre, 11/V/1994, *E. Gutiérrez 928* (NY); Velasco, Parque Nacional Noel Kempff Mercado. 1,5 km al S de la Pista Noel Kempff Mercado. Vegetacion cerrado alto. Ecotono entre bosque alto y sabana arbolada (cerrado abierto). Suelo rojizo, arcillo arenoso, 12/V/1994, *C.B. Mostacedo 1663* (MO); **Vaca Diez:** Beni, 37 km E of Riberalta on road to Guayaramerín, 1/VI/1982, *J.C. Solomon 7879* (NY); **La Paz:** Charopampa, Mapiri, /XI/1907, *O. Buchtien 1787* (MO); Sud Yungas, Sirupaya, s.d., *O. Buchtien 83* (MO);
BRAZIL. Amapá: Amapá, BR-156, 12 km do trevo de Amapá para Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2233* (BOTU, CEN); Calçoene, Á 2 km ao norte de Calçoene na BR-156, 1/IX/1988, *N.M.S. Costa 2213* (BOTU, CEN); Calçoene, BR156, 17 km NW of Calçoene, 8/XII/1984, *B.V. Rabelo 2916* (NY); Macapá, Á 15 km do Entroncamento da BR-156 para o rio Pedreira, 25/VIII/1988, *N.M.S. Costa 2093* (BOTU, CEN); Macapá, Campo de Santana. Local Coração, 7/X/1979, *D.F. Austin 6970* (NY); Macapá, Estrada do Curiau, 25/IV/1982, *B.V. Rabelo 1581* (NY); Macapá, Km 92 da BR-156, 27/VIII/1988, *N.M.S. Costa 2125* (BOTU, CEN); Macapá, Saída para a BR-156, próximo á CODEASA, 25/VIII/1988, *N.M.S. Costa 2972* (BOTU, CEN); Macapá, Saída para a BR-156, próximo à CODEASA, 25/VIII/1988, *N.M.S. Costa 2072* (BOTU, CEN); Coastal Region. Road to Amapá, Km 48, 7/VII/1962, *J. M. Pires 51987* (NY); **Bahia:** *de Candolle s.n.* (MO); Abaíra, Caminho Boa Vista - Riacho Fundo pelo Toucinho,

27/I/1994, *W. Ganev 2893* (NY); Barra da Estiva, 16 km. N. of Barra da Estiva on the Paraguaçú road, 31/I/1974, *R.M. Harley 15740* (NY); Barreiras, Serra ca. 30 km W of Barreiras, 3/III/1972, *W.R. Anderson 36513* (NY); Belmonte, 24 km S.W. of Belmonte on road to Itapebi. High evergreen restinga forest, low restinga and damp open areas on white sand, 24/III/1974, *R.M. Harley 17373* (MO); Belmonte, 24 km. S.W. of Belmonte on road to Itapebi, 24/III/1974, *R.M. Harley 17573* (NY); Caetité, Caetité. 12-20Km da cidade em direçao a Brejinho das Ametistas, 8/III/1994, *V.C. Souza 5366* (NY); Caetité, Serra Geral de Caitité, 5 km S from Caetité along the Brejinhos das Ametistas road, 9/IV/1980, *R.M. Harley 21139* (NY); Cairu, Ilha de Boi Peba. Mirante, no sentido NE da Ilha, 25/VI/2000, *F.S. Juchum 19* (NY); Correntina, BR-020, 309, Brasília - Fortaleza, beira de estrada, 27/IX/1978, *L. Coradin 1146* (BOTU, CEN); Espigão Mestre, Cerrado on slopes of Espigão Mestre, ca. 25 km W. of Barreiras, 3/III/1971, *H.S. Irwin 31346* (NY); Espigão Mestre, ca. 100 km WSW of Barreiras, 5/III/1972, *W.R. Anderson 36625* (NY); Espigão Mestre, ca. 100km WSW of Barreiras, 7/III/1972, *W.R. Anderson 36808* (NY); Feira de Santana, BR-324- km 14 Feira de Santana-Salvador, beira de estrada, 1/X/1978, *L. Coradin 1213* (BOTU, CEN); Ilhéus, 9 Km. sul de Ilhéus, estrada Ilhéus-Olivença. Cururupé, 29/XI/1981, *G.P. Lewis 709* (NY); Near Junco, ca 15 km W.N.W. of the town of Rio de Contas, with open damp sandy areas. with small streams with poorly developed gallery forest, 22/I/1974, *R.M. Harley 15606* (MO); Lagoa Encantada, 19 km. N.E. of Ibicoara near Brejão, 1/II/1974, *R.M. Harley 15800* (MO, NY); Lençóis, BR 242, Km 216, a 12 km ao N de Lençóis, 1/III/1980, *S.A. Mori 13331* (NY); Lençóis, Ca 8 km NW de Lençóis. Estrada para Barro Branco, 20/XII/1981, *G.P. Lewis 914* (NY); Luiz Eduardo Magalhães, Oeste baiano, Moriçoca, 29/XI/2003, *B.A. Anjos 168* (NY); Mucugê, Regiao Serra Sincorá, 19/II/1943, *R. de Lemos Fróes 20128* (NY); Mucuri, A 7 km a NW de Mucuri, 14/IX/1978, *S.A. Mori 10496* (NY); Porto Seguro, 5 kms w of Porto Seguro on rd to Eunapolis, 13/XI/1988, *R. Kral 75672* (NY); Porto Seguro, Parque Nacional Monte Pascoal. Along park road 1-2 km. east of path to peak and visitor center, 17/VII/1997, *W.W. Thomas 11580* (NY); Prado, Estrada entre Barra do Cahy e Cumuruxatiba, 19/VI/2014, *L.F.A. de Paula 773* (RB); Rio de Contas, ca. 7 km da cidade, em direção ao vilarejo de Bananal, 5/III/1994, *N. Roque CFCR14882A* (NY); Salvador, BR-110, km 37 Salvador-Alagoinhas, beira de estrada, 2/X/1978, *L. Coradin 1221* (BOTU, CEN); Salvador, Itapoã, 14/VII/1983, *H.P. Bautista 796* (NY); Santa Cruz de Cabrália, Estrada velha de Sta. Cruz de Cabrália, 2-4 km a W de Sta. Cruz de Cabrália, 28/VII/1978, *S.A. Mori 10362* (NY); São Desidério, BR-020 entre Posse e Barreiras km 50, 15/VI/1983, *L. Coradin 5692* (NY); São José, 16 km E de São José, 16/III/1994, *V.C. Souza 5520* (NY); Seabra, Serra da Agua de Rega. Ca. 24 km N. of Seabra, road to Água de Rega, 24/II/1971, *H.S. Irwin 30963* (NY); Una, Ca. 5 km na estrada de Comandatuba, 4/XII/1991, *A.M. Amorim 502* (NY); Valença, Camino a Guaibim, a 4 km de la rodovia Valença-Nazaré, 14/I/1997, *M.M. Arbo 7178* (NY); Drainage of the Rio Corrente. Campinas, ca. 10 km S of Rio Piau, ca 150 km SW of Barreiras, 13/IV/1966, *H.S. Irwin 14713* (NY); Espigão Mestre, ca. 100 km WSW of Barreiras, 6/III/1972, *W.R. Anderson 36648* (NY); 1835, *J.S. Blanchet s.n.* (NY); *L. Riedel 182* (NY); **Distrito Federal:** Brasília, Locally common. Creek margin near, waterfall, ca. 25 km S.W. of Brazilia, D.F, 19/II/1966, *H.S. Irwin 13016* (MO, UB); Brasília, 15 km S. of Brasília on road to Belo Horizonte, 27/VIII/1964, *H.S. Irwin 5660* (NY); Brasília, APA Gama-Cabeça de Veado, ARIE do Córrego do Cedro - R.A. do Núcleo Bandeirante. Lagoa do Córrego do Cedro. Em frente ao SMPW Q16 conj. 1 lote 04, 09/XII/2002, *M.L. Fonseca 3920* (UB); Brasília, Asa Norte Residencial, 10/XII/1968, *R.P. Belém 4019* (NY); Brasília, Bacia do Rio São Bartolomeu, 22/IV/1981, *E.P. Heringer 6823* (NY); Brasília, Ca. 1 km N. of Barragem Paranoá, DF-9, 27/II/1970, *H.S. Irwin 26710* (NY); Brasília, Ca. 12 km E. of Lago Paranoá, DF-6, 24/II/1970, *H.S. Irwin 26579* (NY); Brasília, Ca. 2 km E. of Lago Paranoá, DF-6, 26/II/1970, *H.S. Irwin 26674* (NY); Brasília, Fercal, 20/V/1967, *E.P. Heringer 11516* (NY); Brasília, Praia de Sernambetiba (Recrei dos Bandeirantes), 4/IV/1952, *L.B. Smith 6359* (NY); Brasília, Rio São Bartolomeu, 28/III/1963, *E. Pereira 7413* (NY); Sobradinho, Ribeirão Sobradinho, 06/IV/1983, *J.H. Kirkbride 5190* (UB); **Espírito Santo:** Linhares, Reserva Natural Vale do Rio Doce (Particular), 14/V/1985, *G. Martinelli 10992* (BOTU); Margem da BR-080, Km 161, sentido Uruaçu/Barro Alto, 11/I/2010, *J. Faria 721* (UB); **Goiás:** Alto Paraíso de Goiás, Chapada dos Veadeiros, Alto Paraíso (formerly Veadeiros), 21/III/1969, *H.S. Irwin 24808* (NY); Alto Paraíso de Goiás, Region of the Chapada dos Veadeiros, 28 km. southwest of Veadeiros, 3/V/1956, *E.Y. Dawson 14813* (NY); Campinaçu, Region of the southern Serra Dourada. 20 km east of Formoso,

16/V/1956, *E.Y. Dawson 14862* (NY); Catalão, Contraforte Central, ca. 24 km N.E. of Catalão, 22/I/1970, *H.S. Irwin 25102* (NY); Catalão, Contraforte Central, Serra do Facão, ca. 40 km N.E. of Catalão, 24/I/1970, *H.S. Irwin 25312* (NY); Cavalcante, 12 km a leste do rio Tocantins, em direção a Cavalcante, 22/II/2002, *G. Silva-Pereira 5880* (BOTU, CEN); Cavalcante, Chapada dos Veadeiros, ca. 12 km south of Cavalcante, 9/III/1969, *H.S. Irwin 24152* (NY); Cavalcante, Chapada dos Veadeiros, ca. 40 km N of Alto Paraíso, 24/III/1971, *H.S. Irwin 33121* (NY); Cocalzinho de Goiás, 15 km N. of Corumbá de Goiás on road to Niquelândia, in valley of Rio Corumbá. Serra dos Pirineus, 17/I/1968, *H.S. Irwin 18709* (NY); Cocalzinho de Goiás, 75 km N. of Corumbá de Goiás on road to Niquelândia, valley of Rio Maranhão. Serra dos Pirineus, 22/I/1968, *H.S. Irwin 18993* (NY); Cristalina, 16 km S de Cristalina na estrada a Belo Horizonte . Área mexida perto da estrada, 3/VI/1984, *M. Cristina 1683* (RB); Cristalina, 35 km by road E of Cristalina, 6/IV/1973, *W.R. Anderson 8314* (NY); Cristalina, BR-040. Ca 32 Km de Cristalina em direção a Luziânia. Campo, 21/I/2005, *J. Paula-Souza 4268* (RB); Cristalina, Estrada de acesso á área de empréstimo, cerca de 600 m da jasida, 7/III/2002, *G. Silva-Pereira 6097* (BOTU, CEN); Cristalina, Serra dos Cristais, ca. 3 km E. of Cristalina, 7/III/1966, *H.S. Irwin 13714* (NY); Luziana, Rodovia Brasília-Cristalina (BR-040), 48, 20/VIII/1987, *L. Coradin 8097* (BOTU, CEN); Luziânia, 25/II/1980, *E.P. Heringer 17846* (NY); Niquelândia, ca. 15 km S. of Niquelândia, 21/I/1972, *H.S. Irwin 34650* (NY); Niquelândia, ca. 25 km S. of Niquelândia, 24/I/1972, *H.S. Irwin 34955* (NY); Niquelândia, Margem da Rodovia GO-132. 27/XI/2014, *J.A. Oliveira 565* (RB); Posse, Rodovia Brasília-Fortaleza, 220 km de Formosa, 8/I/1965, *R.P. Belém 110* (NY); Posse, Serra Geral de Goiás, Rio da Prata, ca. 6 km S. of Posse, 5/IV/1966, *H.S. Irwin 14385* (NY); São João d'Aliança, 3 km by road S of São João da Aliança. Serra Geral do Paraná, 23/III/1973, *W.R. Anderson 7760* (NY); São João d'Aliança, Serra Geral do Paraná, ca. 3 km S.of São João de Aliança, near Riacho, 16/III/1971, *H.S. Irwin 31946* (NY); Km 47 BR-20.Brazilia/Formosa, s.d., *A. Allem s.n.* (CEN, RB); **Maranhão:** Carolina, Parque Nacional Chapada das Mesas, acesso E no km 596 da BR-0230, 7 km E em estrada vicinal, 12/IV/2016, *M.F. Simon 2912* (BOTU, CEN); Carolina, Parque Nacional Chapada das Mesas, acesso E no km 612 da BR0230, 20 km em estrada vicinal em direção á localidade Buenos Aires Ribeirão das Lages, 6/IV/2016, *M.F. Simon 2729* (BOTU, CEN); Carolina, Trasamazonian Highway, BR230 and BR010; Pedra Caida, 35 km. N of Carolina. Top of Serra de Baleia, 14/IV/1983, *E.L. Taylor E1214* (NY); Estreito, Estrada de acesso ao canteiro da obra do UHE estreito, 7/III/2007, *G. Silva-Pereira 11236* (BOTU, CEN); Estreito, Margem direita do riacho Santana, 13/I/2008, *G. Silva-Pereira 12583* (BOTU, CEN); Estreito, Rodovia Transamazônica-km 0, 18/IX/1979, *L. Coradin 2176* (BOTU, CEN); "Ilha de Balsas" region, between the Balsas & Parnaíba Rivers. Ca. 40 km south of Lorêto. Near place called "Picada", on north side of the creek, "Riacho da Picada", 28/III/1962, *G. Eiten 3916* (NY); Barra do Corda to Grajahu, 1/III/1934, *J. R. Swallen 3642* (NY); **Mato Grosso:** Cuiabá, Cuiabá-Cáceres highway km 30, N. Sra. do Livramento, Cuiaba, 12/II/1980, *M. Duarte Macedo 1476* (NY); Nova Xavantina, 2 km. S. of Xavantina on Aragarças road, 20/XI/1967, *D. Philcox 3178* (NY); Nova Xavantina, 2 km. S. of Xavantina, 26/IX/1964, *H.S. Irwin 6372* (NY); Ribeirão Cascalheira, Xavantina -Cachimbo road, 215 km from Xavantina, camp site at end of abandoned stretch of road, 27/V/1966, *D.R. Hunt 5611* (NY); Vila Bela de Santíssima Trindade, Serra de Ricardo Franco, trilha para a cachoeira Jatobá, 20 km NW de Vila Bela, 21/III/2014, *M.F. Simon 2168* (NY); E. of km 229, Xavantina-Cachimbo road, 20/XII/1967, *D. Philcox 3602* (NY); E. of km 261, Xavantina-Cachimbo Road, 4/XII/1967, *D. Philcox 3357* (NY); Near the Base Camp of the Expedition. (close to the Xavantina-São Felix road), 6/IV/1968, *J.A. Ratter R859* (NY); Rio Turvo, ca. 210 km. N. of Xavantina. Serra do Roncador, 27/V/1966, *H.S. Irwin 16108* (NY); **Mato Grosso do Sul:** Rio Verde de Mato Grosso, Serra da Pimenteira, 28/VIII/1973, *G.G. Hatschbach 32444* (NY); **Minas Gerais:** Serra da Pimenteira (mun. Rio Verde), 28/VIII/1973, *G.G. Hatschbach 32444* (MO); Berilo, Chapada próxima à Lelivéldia, 30/IV/1991, *MGC 215* (BHCB); Carmo da Cachoeira, Rodovia Fernão Dias. Km 677, 2/I/1996, *J.P. Souza 307* (ESA); Corinto, Ca. 12 km W of Corinto, 4/III/1970, *H.S. Irwin 26898* (NY); Corinto, Ca. 15 km W of Corinto, near Minas Gerais, 2/III/1970, *H.S. Irwin 26770* (NY); Diamantina, Biri-Biri, 15/XI/1971, *G.G. Hatschbach 27992* (NY); Diamantina, Estrada para Conselheiro Mata, 21/III/2016, *D.M. Neves 2145* (RB); Diamantina, Serra do Espinhaço, Ca. 15 km E. of Diamantina, 18/III/1970, *H.S. Irwin 27833* (NY); Diamantina, Serra do Espinhaço, ca. 3 km N. of São João da Chapada, 24/III/1970, *H.S. Irwin 28216* (NY); Formoso, Parque Nacional

Grande Sertao Veredas; estrada que liga o alojamento da FUNATURA à Fazenda do Sr. Laudelino (Ladú), 1/XII/1997, *R.C. de Mendonça 3328* (NY); Gouveia, Ca. 30km S.W. of Diamantina on road to Gouveia, 13/I/1969, *H.S. Irwin 21860* (UB); Gouveia, Reservatório PCH Quartel I, 8/VI/2007, *D.T. Souza 210* (BHCB); Indianópolis, Indianópolis, Fazenda Bela Tanda and neighbouring fazendas. Fazenda Seriema, 2/III/1986, *G.K. Gottsberger 111-2386* (NY); Joaquim Felício, On middle slopes of Serra do Cabral, immediately E. of Joaquim Felício, 6/III/1970, *H.S. Irwin 27037* (NY); Lagoa Dourada, 8 Km de Lagoa Dourada em direção a Entre Rios de Minas. Fazenda do Bom Retiro, 8/III/1995, *V.C. Souza 7975* (ESA); Moeda, Serra da Moeda, 11/XI/2009, *D.S. Ferreira et al. 8* (BHCB); Moeda, Serra da Moeda, 27/III/2010, *E.D.P. Castro 90* (BHCB); Moeda, Serra da Moeda, 7/II/2010, *M.S. Silva et al. 58* (BHCB); Moeda, Serra da Moeda, 7/II/2010, *M.S. Silva et al. 66* (BHCB); Nazareno, BR-265, 19/XI/2012, *M. Sobral 15162* (BHCB); Ouro Preto, Parque Estadual do Itacolomi, Calais, 8/V/2004, *V.F.Dutra 233* (RB); Paracatú, Serra da Anta, summit of chapada, ca. 10 km N.W. of Paracatú, 3/II/1970, *H.S. Irwin 25852* (NY); Paraopeba, Horto Florestal, Paraopeba, 23/XI/1965, *R. Goodland 149* (NY); Pedra Azul, Ligacão Rod. Br 116 a Divisopolis (mun. Pedra Azul), 13/IX/1984, *G.G. Hatschbach 48161* (MO); Pedras de Maria da Cruz, Rod. BR-135, km 16, 21/IV/2007, *O. S. Ribas 7786* (MBM); Pirapora, 11/I/1989, *A. Krapovickas 42880* (MBM); Rio Acima, Região Córrego Fazenda Velha, 14/IV/2015, *S.G. Rezende 5612* (BHCB); Rio Acima, Região do Rio do Peixe. Próximo a RPPN Capitão do Mato, 14/IV/2015, *S.G. Rezende & A.G. Justo 5429* (BHCB); Rio Pardo de Minas, Parque Estadual da Serra Nova, 26/III/2012, *L.A.A. Góes-Neto 805* (BHCB); Rio Pardo de Minas, Vereda Funda, parcela 9, 12/XII/2008, *A.C. Sevilha 5050* (BOTU, CEN); Santana do Riacho, Serra do Cipó. Alto da Boa Vista, 27/IV/2010, *N.F.O. Mota et al. 1526* (BHCB); Santo Antônio do Retiro, Sítio 11, ponto 1, 16/III/2017, *A.C. Sevilha 6431* (BOTU, CEN); São João Del Rei, Serra do Lenheiro, 12/XII/2013, *M. Sobral 15633* (BHCB); Uberlândia, Rodovia Uberlândia -Uberaba (BR-50) Km 6 (a partir do Entroncamento da BR-050/BR-365/BR452, 21/VIII/1987, *L. Coradin 8118* (BOTU, CEN); Unai, Campo sujo em topo de morro, cerca de 500 m a Oeste do portão central da AHE queimado, 25/III/2002, *G. Silva-Pereira 6205* (BOTU, CEN); Unaí, 20 km S of Unaí on road to Paracatú (MG-188), 11/II/1988, *W.W. Thomas 5837* (NY); Várzea da Palma, Faz. Mae d'Agua, 22/XI/1962, *A.P. Duarte 7473* (NY); 5 km by road NE of Rio Manso and Couto de Magalhães, 13/IV/1973, *W.R. Anderson 8740* (NY); Entre Várséa da Palma e Pirapora, 31/I/1965, *R.P. Belém 422* (NY); Entre Várséa da Palma e Pirapora, 31/I/1965, *R.P. Belém 422* (NY); Lower slopes of Serra da Piedade, ca. 10 km E. of Caeté, 9/I/1959, *H.S. Irwin 2410* (NY); Paraopeba, 2/IV/1963, *E. Pereira 7518* (NY); Serra do Cipó, km 132, (ca. 153km N. of Belo Horizonte), 16/II/1968, *H.S. Irwin 20204* (NY); Serra do Espinhaço, ca. 30 km S.W. of Diamantina on road to Gouveia, 13/I/1969, *H.S. Irwin 21862* (NY); Serra do Espinhaço, Serra dos Três Irmãos, ca. 25 km west of Montes Claros, road to Agua Boa, 23/II/1969, *H.S. Irwin 23691* (NY); Serra do Espinhaço. Steep rocky lower slopes of Pico de Itacolomí, ca. 3 km S. of Ouro Preto, 1/II/1971, *H.S. Irwin 29563* (NY); **Pará:** Conceição do Araguaia, Alacilândia, 42 km west of Conceição do Araguaia along highway PA-287 at Rio Arraias do Araguaia, 23/II/1980, *T.C. Plowman 9052* (NY); Cumaru do Norte, "Reserva Florestal de Gorotire" (Kayapó-Indian Reservation). Surroundings of Gorotire village at Rio Fresco. This stand: 5 km downstream from village, 31/I/1983, *G.K. Gottsberger 21-31183* (NY); Salvaterra, Marajó, Campos de Joanes, 16/IX/1976, *N.A. Rosa 921* (NY); São Graldo do Araguia, Parque estadual das Andorinhas, margem esquerda do rio Araguaia, 23/IV/2004, *G. Silva-Pereira 9001* (BOTU, CEN); Tucuruí, margem direita do Rio Tocantins, BR 263, Km 16, 30/I/1980, *P.L.B. Lisboa 1295* (NY); Vigia, Estrada de Santa Isabel do Pará - Vigia km 48, 17/XI/1988, *N.M.S. Costa 2293* (BOTU, CEN); Vigía, 17 km southeast of Vigia along road (PA-140.) to Belém, 30/III/1980, *G. Davidse 17646* (NY); Vigía, Estrada Joao Côelho, km 40, 1/IV/1952, *G.A. Black 52-14186* (NY); Alto Tapajós, Rio Cururú, Erererí, 8/II/1960, *W.A. Egler 1261* (NY); Estr. da Vigia, Campo de Caimbé, 26/VIII/1959, *E. Pereira 4965* (NY); Estrada da Vigia, km 40, Campo do Caimbé, 22/VIII/1974, *H.P. Bautista 57* (NY); Rio Camará, ilha do Marajó; fazenda Santa Rita, 8/VII/1950, *G.A. Black 50-10024* (NY); Sete Varas airstrip on Rio Curua, 10/VIII/1981, *J.J. Strudwick 4447* (NY); Sete Varas airstrip on Rio Curua, 6/VIII/1981, *J.J. Strudwick 4257* (NY); **Paraíba:** João Pessoa, Near Joan Pessoa, along the Rt. Br-101, 29/VIII/1987, *S. Tsugaru 1308* (MO, NY); Mamanguape, Estrada para Barra de Mamanguape, cerca de 5 km da BR 101. 27/VII/2001, *V.C. Souza 26607* (ESA); 31/V/1959, *J.C. de Moraes Vasconcelos 2141* (NY);

Paraná: Palmeira, Recanto dos Papagaios, 10/XII/2013, *E.D. Lozano 2208* (MBM); Vila Velha, Em campo alrededor de la iglesia, 15/I/1987, *A. Krapovickas 40883* (MBM); **Rio de Janeiro:** Barra de Tijuca, Km 15 W from Barra de Tijuca on Rodovia Rio-Santos, 26/II/1988, *W.W. Thomas 6164* (NY); Cabo Frio, Praia Seca. Restinga de Massambaba, 15/VII/2006, *J. Paula-Souza 6012* (RB); Cabo Frio, W of town, 18/III/1964, *K. Lems s.n.* (NY); Macaé, Estrada para Carapebus, Faz. Jurubatiba, 9/V/1987, *H.C. de Lima 2896* (NY); Rio das Ostras, Entre Macaé e Rio das Ostras, 15/V/1993, *J. R. Pirani 2875* (NY); Rio de Janeiro, APA de Massambaba, 15/IX/2011, *A.S.R. Carvalho AC075* (RB); Rio de Janeiro, Avenida das Américas, esquina com a Av. Gláucio Gil, entrada do bairro Recreio dos Bandeirantes, 26/VIII/1987, *L. Coradin 8272* (BOTU, CEN); Rio de Janeiro, Entre a Barra da Tijuca e o Recreio dos Bandeirantes, a 5 km da Ponte sobre o Canal da Barra da Tijuca, de 3 a 4 metros da Estrada Rio-Santos, 1/V/1972, *M. Dublasievicz 4* (NY); Rio de Janeiro, Guanabara, Km. 5, Estrada Rio Santos, 24/X/1964, *W. Hoehne 5869* (NY); Rio de Janeiro, Jacarepaguá, fr. Pedra do Urubu, 4/V/1966, *J.P. Lanna Sobrinho 1627* (NY); Rio de Janeiro, Recreio dos Bandeirantes, 30 km W of Rio de Janeiro, 5/III/1964, *K. Lems* (NY); Rio de Janeiro, Restinga dos Bandeirantes, 28/I/1967, *E. Pereira 10532* (MBM); Rio de Janeiro, 13/VII/1964, *W. Hoehne 5817* (NY); Entre Macaé e Rio das Ostras, 27/IX/1964, *Z.A. Trinta 973* (NY); **Rio Grande do Norte:** Base Aérea de Natal, 23/I/1968, *N. Lima 91* (NY); **Rio Grande do Sul:** Portão, 18/XI/1934, *B. Rambo* (PACA-AGP); Quaraí–, Faz. do Jarau, I/1945, *B. Rambo* (PACA-AGP); Santana do Livramento, Fazenda de Francisco Prolego, 19/I/1966, *A. Kappel* (BLA); **Roraima:** Alto Alegre, Ilha de Maracá. On road between SEMA Estaçao and Boa Vista, 14 km from Island, 17/VI/1986, *M.J.G. Hopkins 832* (NY); Dormida, foothills of Serra da Lua, 12/I/1969, *G.T. Prance 9233* (NY); On an Azimuth of 49°5' from Boa Vista at a distance of 50 kms. (BR 401). Fazenda Quixabeira, 13/X/1977, *L. Coradin 643* (NY); Serra Tepequen, sub-base Surucucú, 3/II/1975, *N.A. Rosa 356* (NY); **São Paulo:** Municipio de São Carlos: 3.5 km NNW of center of city of São Carlos. Open grassy field at side of road. (General vegetation here is "cerrado"), 14/VI/1961, *G. Eiten 2904* (MO); Agudos, 24/III/1994, *A.P Bertoncini 111* (BOTU); Agudos, Fazenda da Cia e Cervejaria Brahma, 13/I/1994, *A.P Bertoncini 61* (BOTU); Agudos, Próximo à cervejaria, 17/V/1996, *S.R. Christianini 247* (BOTU); Assis, Estação Experimental do Instituto Florestal, em área de cerrado, cerradão, 18/II/1988, *H.F. Leitão 20110* (RB); Bauru, Campus universitário de Bauru, 02/II/1987, *L.H. Soares e Silva 76* (BOTU); Bauru, Reserva ao lado do IPMet (UNESP), 25/XI/2015, *G.D. Colletta 2448* (RB); Bom Sucesso de Itararé, Rio Verde. Estrada Itararé - Capão Bonito. Cerrado, 12/XII/1997, *S.I. Elias 120* (ESA); Botucatu, 07/I/1986, *L.R.H. Bicudo 241* (BOTU); Botucatu, 15/I/1986, *L.R.H. Bicudo 287* (BOTU); Botucatu, 21/I/1986, *L.R.H. Bicudo 338* (BOTU); Botucatu, 04/II/1986, *L.R.H. Bicudo 473* (BOTU); Botucatu, 04/II/1986, *L.R.H. Bicudo 536* (BOTU); Botucatu, 25/II/1986, *L.R.H. Bicudo 598* (BOTU); Botucatu, 04/III/1986, *L.R.H. Bicudo 667* (BOTU); Botucatu, 11/III/1986, *L.R.H. Bicudo 743* (BOTU); Botucatu, 22/IV/1986, *L.R.H. Bicudo 979* (BOTU); Botucatu, 13/V/1986, *L.R.H. Bicudo 1097* (BOTU); Botucatu, 17/VI/1986, *L.R.H. Bicudo 1234* (BOTU); Botucatu, 18/IX/1986, *L.R.H. Bicudo 1456* (BOTU); Botucatu, 15/II/1978, *N.B.M. Brantjes 702203* (BOTU); Botucatu, 09/V/1972, *C.J. Campos 12* (BOTU); Botucatu, 18 km north of Botucatu, (14 km east of São Manuel). Along the São Manuel-Piracicaba highway. Near ex-RR station, "13 de Maio", 2/III/1970, *I.S. Gottsberger 2* (BOTU, NY); Botucatu, 18 km north of Botucatu, (14 km east of São Manuel). Along the São Manuel-Piracicaba highway. Near ex-RR station, "13 de Maio", 16/IV/1970, *I.S. Gottsberger 126* (NY); Botucatu, 18km north of Botucatu (14 km east of São Manuel). Botucatu, 18km north of Botucatu (14 km east of São Manuel). Along the São Manuel- Piracicaba highway. Near ex-RR station, 13 de Maio, 11/III/1971, *I.S. Gottsberger 11371* (BOTU); Botucatu, À margem da rodovia João Melão, que liga São Manuel à Avaré, no Km 296, 06/V/1986, *L.R.H. Bicudo 1084* (BOTU); Botucatu, À margem da rodovia municipal (Estrada do Roberto), 18/III/1986, *L.R.H. Bicudo 773* (BOTU); Botucatu, À margem da rodovia municipal (Estrada do Roberto), 28/V/1986, *L.R.H. Bicudo 1179* (BOTU); Botucatu, À margem da rodovia municipal (Estrada do Roberto), 10/VI/1986, *L.R.H. Bicudo 1216* (BOTU); Botucatu, Distrito de Rubião Júnior, 08/III/1999, *A.O. Araújo 7* (BOTU); Botucatu, Distrito de Rubião Júnior, 28/V/1984, *L.R.H. Bicudo 25* (BOTU); Botucatu, Distrito de Rubião Júnior, 07/I/1982, *Y. Yanagizawa 48* (BOTU); Botucatu, Distrito de Rubião Júnior, em frente ao Haras Apache WO, 29/IX/2018, *D.S. Gissi 407* (BOTU); Botucatu, Distrito de Rubião Júnior, morro da Igreja de Santo Antônio, 18/X/2017, *T. Monteiro 78* (BOTU);

Botucatu, Distrito de Rubião Júnior. Em frente ao Haras Apache WO, 29/IX/2018, *D.S. Gissi 407* (BOTU); Botucatu, Município de Botucatu, próximo ao aeroporto municipal pela estrada de acesso à represa de abastecimento de água da Prefeitura de Botucatu, 17/I/1979, *I.S. Gottsberger 17179* (BOTU); Botucatu, Proximidades do Parque das Cascata, indústria CAIO e linha férrea, 11/II/2015, *J. Alcantara 31* (BOTU); Botucatu, Rubião Júnior, 24/IV/2017, *Paciello, G. 38* (BOTU); Botucatu, Rubião Júnior, Morro da igreja Santo Antônio, 16/III/2016, *T. Monteiro 10* (BOTU); Botucatu, Santa Maria do Araquá, 13/III/1978, *C.J. Campos 18* (BOTU); Botucatu, Vitoriana, road to Botucatu, 2/III/1978, *I.S. Gottsberger 15-2378* (NY); Brotas, 3 km. NW of RR station at Campo Alegre, 16/VI/1961, *G. Eiten 2989* (NY); Itirapina, Rodovia Ulisses Guimarães, 31/III/2016, *T.B. Flores 2421* (ESA); Matão, IRI Experimental Garden, 1966, *IRI Experimental Garden 2414* (NY); Moji-Guaçu, "Campos das Sete Lagôas", Fazenda Campininha, just north of Rio Moji-Guaçu, 10km NNE of Pádua Sales (About 27 km NW of city of Moji-Mirim), 19/IV/1961, *G. Eiten 2682* (NY); Moji-Guaçu: "Campos das sete Lagoas--about 10 km from river and village of Padua Sales dense secondary forest, 10/VII/1961, *G. Eiten 3260* (MO); Moji-Guaçu, "Campos das Sete Lagôas". Fazenda Campininha, just north of Rio Moji-Guaçu. 6.6 km. NNW of Padua Sales. (About 27 km. NW of city of Moji-Mirim.), 13/IV/1961, *G. Eiten 2575* (NY); Moji-Guaçu, "Campos das Sete Lagôas". Fazenda Campininha, just north of Rio Moji-Guaçu. 8.5 km. NNE of Padua Sales. (About 27 km. NW of city of Moji-Mirim), 9/VII/1961, *G. Eiten 3239* (NY); Moji-Guaçu, Faz. Campininha, 3,4 km NNW de Padua Sales, 17/XI/1960, *J. R. Mattos 8453* (NY); Nova Odessa, Instituto de Zootecnia, Campo de Introduçao de Leguminosas Forrageiras, 20/IX/1978, *R.B.R. Gomes 17* (NY); Pirassununga, Estrada Pirassununga-Emas, 23/IX/1980, *E. Forero 8289* (RB); Pratânia, Fazenda Palmeira da Serra, 01/IV/2008, *K.L. Ishara 91* (BOTU); Pratânia, Fazenda Palmeira da Serra, 13/II/2015, *K.R. Mendes 137* (BOTU); Pratânia, Reserva Particular Palmeira da Serra, 10/VII/2002, *C.J. Campos 99* (BOTU); Pratânia, Reserva Particular Palmeira da Serra, 05/III/2003, *C.J. Campos 221* (BOTU); Santa Maria da Serra, Rodovia Geraldo de Barros (SP191), Próximo ao trevo, sentido Piracicaba, 23/II/2019, *D.S. Gissi 429* (BOTU); São Carlos, 10.0 km SE of São Carlos. 1 3/4 km ENE of RR station "Conde do Pinhal", or 7 km south from turnoff to São Carlos along the São Carlos-São Paulo highway, 29/XI/1961, *G. Eiten 3378* (NY); São José dos Campos, 6-6 1/2 km ao SW (ao longo da Rodovia Pres. Dutra) da saída para São José dos Campos, 100-500 m ao lado SE da rodovia, 15/I/1962, *I. Mimura 188* (NY); São José dos Campos, Ca. 9,6 km SSE em linha reta da praç principal de São José dos Campos, 19/II/1962, *I. Mimura 300* (NY); São Paulo, Butantan, 9/II/1918, *F.C. Hoehne 137* (NY); São Paulo, Jabaguara, 6/I/1949, *O. Handro 27* (NY); São Pedro, 20/II/1996, *V.C. Souza 11003* (BOTU); São Simão, 265 km N of São Paulo, W side of road, 18/V/1966, *R. Goodland 374* (NY); Butantan, 16/III/1948, *W. Hartley SH203* (NY); **Sergipe:** Estância, Rodovia Estância/Abais, com entrada no Km 11 da Rod. BR 101 (Trecho Estância/Aracajú); 20 Km ao Leste do entroncamento, 15/VI/1994, *L.A. Mattos Silva 3011* (NY); Santa Luzia do Itanhi, Cerca de 2,5 km do distrito de Crasto, na estrada para Sta Luzia do Itanhi, 6/X/1993, *S.C. de Sant'Ana 376* (NY); **Tocantins:** Araguaína, Ca. 5 km N. of Araguaína, 14/III/1968, *H.S. Irwin 21174* (NY); Babaculândia, Margem norte da ferrovia Norte-Sul, 22/IV/2008, *G. Silva-Pereira 13197* (BOTU, CEN); Guaraí, 26/III/1976, *G.G. Hatschbach 38365* (NY); Lagoa da Confusão, Ilha do Bananal. Parque Nacional do Araguaia, 20/III/1999, *R. C. de Mendonça 3916* (NY); Tocantinopolis, Canteiro de obras da AHE Estreito, margem direita do rio Tocantins, 18/II/2005, *G. Silva-Pereira 9306* (BOTU, CEN); Ad Rio Claro & Paracatu, s.d., *J.B.E. Pohl 407* (NY); *J.B.E. Pohl 2039* (NY); *J. C. Mikan s.n.* (NY); *Martius 1123* (NY); *W.J. Burchell 4439* (NY);

GUYANA. Basin of Rupununi River: near mouth of Charwair-Creek, 1/XI/1937, *A.C. Smith 2376* (MO); **Upper Takutu - Upper Essequibo:** NW Kanuku Mountains. 12 Km ESSE Nappi Village in foothills, 10/II/1993, *B. Hoffman 3674* (NY); 1837, *R.H. Schomburgk 240* (NY);

PARAGUAY. San Pedro: Primavera, Alto Paraguay, 1958, *A.L. Woolston 965* (MO); **SURINAME. Para:** Onoribo, IX/1844*, H.C. Focke 1009* (U).

VENEZUELA. Amazonas: Atures, Alrededores de Puerto Ayacucho, 27/II/1982, *O. Huber 6279* (NY); Atures, Cuenca del río Manapiare, 16/X/1977, *O. Huber 1182* (NY); **Anzoátegui:** Distrito Bolívar: Rocky mountain savanna, just S of El Zamuro, Fila El Purgatorio, 9 airline km NE of Bergantín, 24/XI/1981, *G. Davidse 19386* (MO); **Bolívar:** Gran Sabana; ca 10 km SW of Karaurin Tepui at junction of Río and Río Asadon (Río Sanpa), 2/V/1988, *R.L. Liesner 24130*

(MO); Raul Leoni Sabanas graminosas en alrededores del Cerron Pelon, 14 km al S.W. de El Pao de la Fortuna, III/1987, *A. Fernández 4165* (MO); **Bolívar:** Gran Sabana, San Ignacio de Yuruaní, 8/V/1988, *R.L. Liesner 24364* (MO); Piar, Junction of Río Paragua and Caroni. San Pedro de las Dos Bocas, W bank of river, 24/VII/1978, *R.L. Liesner 5506* (MO); **Guárico:** Cabruta, A 90 km al sur de las Mercedes, carretera Cabruta, estado Guárico, 9/VII/1995, *R. Ortiz 2573* (MO); **Monagas:** 55 km NWN of San Felix and the Río Orinoco along Highway 10 to Maturin. Treeless Trachypogon vestitus savanna with sand more than 1 m deep, 1/XII/1973, *G. Davidse 4611* (MO); **Sucre:** 5 km SW of Santa Fé along Hwy. 9 between Puerto La Cruz and Cumaná. Hills with Trachypogon, Curatella, Byrsonima savanna, gullies with low forest; soil rocky, 15/XII/1973, *G. Davidse 4992* (MO); Sucre, 8 km directly S of Santa Fe by road, 19/XI/1981, *G. Davidse 19106* (MO).

10. *Stylosanthes grandifolia* M.B. Ferreira & Sousa Costa

BOLIVIA. Santa Cruz: Andrés Ibáñez, on road to Santa Cruz to Camiri, 17/XII/1992, *M. Nee 43118* (NY); Florida, Bella Vista, a orillas del camino, serca a la escuela, 3/II/2007, *M. Vargas 338* (NY); Ichilo, 3 Km SW of El Hondo, "Potrerillo", 12/II/1994, *M. Nee & I. Vargas 44875* (NY); Nuflo de Chavez, Rancho Puesto Nuevo, 40Km S of Concepción, 1/III/1987, *T. Killeen 2347* (NY);
BRAZIL. Bahia: Alcobaça, Rodovia para Itamaraju, km 1520, 11/VIII/1995, *G. Hatschbach 62968* (MBM); Picadas. Área de Aracruz Celulose, 23/VIII/1993, *H.L. Guedes s.n.* (RB); **Distrito Federal**: Brasília, Campo Experimental do IRI, 18/II/1967, *A. Cardoso 1126* (NY); 18/II/1967, *A.C. Cardos 1257* (NY); **Espírito Santo**: Entre Taquara e Morro d'Anta, 13/XII/1962, *J.R. Mattos 10749* (SP); Linhares, Est. 143, Km 0,060, lado direito, 25/IX/1980, *I.A. Silva 183* (RB); **Goiás**: Acreúna, Fazenda de Agua da Prata. 800 km from São Paulo, 6/I/1980, *K. Mizoguchi 1439* (NY); Caldas Novas, Alternativa 4 régua de leitura de vazão da hidrometria, mara ciliar antropizada próximo ao leito do rio, 27/II/1996, *G. Silva-Pereira 3380* (BOTU, CEN); **Mato Grosso**: Alto Araguaia, Córrego Rancho, 14/XI/1974, *G. Hatschbach 34198* (P); Canarana, 16/II/2010, *M.R.V. Zanatta 255* (UB); Comodoro, 30/XI/2012, *E.C. Antunes 456* (RB, UB); Rondonópolis, Serra da Petrolina, rocky slopes above BR-364, 14/II/1975, *W.R. Anderson 11377* (NY); Plateau central, route Xavantina-Cachimbo, km 246, 11/I/1968, *D. Philcox 3963* (NY, P); **Mato Grosso do Sul**: Aquidauana, Pousada Retiro São Lourenço, Fazenda Santana, sub-região Aquidauana, Pantanal, 04/II/2006, *A. Pott 13851* (CEN); **Mato Grosso do Sul**: Campo Grande, Reserva da UFMS., 07/I/2006, *L.C. Costa 375* (ESA, SP); Campo Grande, Saída de Campo Grande para 3 Lagoas a 1 km, 30/IV/1999, *N.M.S. Costa 3095* (CEN); Dourados, A 300 m da estrada BR 163 de Dourados - Caarapó. A 1 km ao Sul do rio Dourados, 26/IV/1999, *N.M.S. Costa 3079* (CEN); Miranda, Estrada Guaicurus, vila Presidente Médici, a 16 km da estação de Guaicurus - Serra da Bodoquena, 11/XII/1976, *A.C. Allem 675* (CEN); Rio Brilhante, Rio Sta Luzia, 6/II/1975, *W.R. Anderson 11237* (NY); Sidrolandia, Faz. Eldorado-Mun. Sidrolândia, 22/V/1978, *A.C. Allem 1979* (CEN); **Minas Gerais**: Caeté, a 12 km da cidade para a BR 262. 4/III/1976, *N.M. de Sousa Costa & M.B. Ferreira 425* (PAMG, RB); Lagoa Santa, s.d., *E. Warming s.n.* (P); Brumadinho, Inhotim, 22/I/2008, *J.G. Oliveira 127* (RB); Divino, Fazenda de Rochedo, 11/III/1992, *L.S. Leoni 1801* (RB); Lavras, E.S.A.L, 5/IV/1939, *E.P. Heringer 198* (NY); Mariana, Área da Samarco, 17/II/2000, *S.M. de Faria 1957* (RB); Nova Lima, Entroncamento BR-040/BR- 135, Curvelo, km 8, 2/IX/1987, *L. Coradin 8434* (BOTU, CEN); Ritápolis, BR-494, 28/XII/2012, *M. Sobral 15301* (BHCB); Serro, Estrada para Gouveia, ca. 10 km de Serro (km 425), 27/II/2002, *V.C.Souza 28502* (ESA); Viçosa, State Agricultural School, Vicosa, 17/II/1959, *H.S. Irwin 2647* (NY); Viçosa, Agricultural College lands; base of Horticultural Hill, 28/III/1930, *Y.E.J. Mexia 4523* (NY, VIC); Serra do Espinhaço, at Lapinha, ca. 18km N. of Sêrro on road (MG 2) to Diamantina, 23/II/1968, *H.S. Irwin 20733* (NY); **Pará**: Cerca de 2,4km do entrocamento da rodovia BR-316 para Vígia, 26/X/1987, *R.F.A. Veiga, 183* (HUEFS); 30,8km do entrocamento da BR-316 para Vígia, 26/X/1987, *R.F.A. Veiga 192* (HUEFS); A 43,1km do entrocamento da Br-316 para Vígia, 26/X/1987, *R.F.A. Veiga 203* (HUEFS); Marajó, s.d., *Jobert 380* (P); Margem da estrada Gurupá, Rio Tajapuru, s.d., *N. T. da Silva 5082* (NY); Rio Mojú, Fábrica, 27/V/1954, *G.A. Black 16363* (IAN); Bom Jesus, Rodovia Transcapeta [Transcametá], km 187,9, 20/X/1987, *R.F.A. Veiga 111*

(HUEFS); Castanhal, Castanhal- Curuçá, km 12,5, 18/XI/1988, *N.M.S. Costa 2308* (BOTU, CEN); **Pará**: Castanhal, Rodovia PA-136, Castanhal-Curuçá, km23, 19/XI/1988, *N.M.S Costa 2321* (BOTU, CEN); **Pará**: Castanhal, Estrada Castanhal - São Francisco do Pará, km 6 junto da fazenda Shibayama, 19/XI/1988, *N.M.S. Costa 2331* (BOTU, CEN); **Pará**: Castanhal, Estrada Castanhal - São Francisco do Pará, km 6 junto da Fazenda Shibayama, 19/XI/1988, *Nuno Maria de Sousa Costa 2331* (CEN); **Pará**: Curuca, Terra Alta, saída, desvio à direita, 300 m a 28,8 km de Castanhal, 18/XI/1988, *N.M.S. Costa 2314* (BOTU, CEN); Curuçá, Barra Limpa, a 5 km da estrada de Castanhal - Curuçá, 18/XI/1988, *N.M.S. Costa 2317* (BOTU, CEN); Curuçá, Rodovia Curuçá - Marudá km 1,4, 19/XI/1988, *N.M.S. Costa 2327* (BOTU, CEN); Gurupá, Arredores do aeroporto, 7/VI/1968, *M.G. da Silva 1454* (NY); Ilha de Marajó, Joanes, 27/I/1979, *N.T. da Silva 4960* (NY);: Salinópolis, Alto da praia do Atalaia, 20/I/1988, *N.M.S. Costa 2343* (BOTU, CEN); Santa Isabel do Pará, Trevo da BR-010- Vigia, cerca de 700m, 17/XI/1988, *N.M.S. Costa 2271* (BOTU, CEN); Santarém, Start of road to new airport.-Start of road to new airport, 16/IV/1981, *B.W. Nelson 1115* (NY); Santarém, Estrada do Aeroporto, Km 2, 21/V/1983, *I.L. do Amaral 1394* (NY); Santo Antonio Do Tauá, 30,8 Km do entroncamento da BR-316 para Vígia, 26/X/1987, *R.F.A. Veiga 192* (CEN); Santo Antonio do Tauá, Estrada de Santa Isabel do Pará - Vigia km 26,3, 17/XI/1988, *N.M.S. Costa 2286* (BOTU, CEN); **Pará**: Santo Antônio do Tauá, Saída para Vigia, última rua á direita, a 100 m da BR,travessa santos Dumond, 17/XI/1988, *N.M.S. Costa 2278* (BOTU, CEN); São Caetano de Odivelas, Vigia - São Caetano de Odivelas, 18/XI/1988, *N.M.S. Costa 2299* (BOTU, CEN); São Miguel Do Guama, Rodovia Anápolis-Belém, BR-010, Km 1824-PA, 08/X/1980, *L. Coradin 3703* (CEN); Tucuruí, Margem esquerda do rio Tocantins, BR-422, km 45, antiga estrada de ferro Alcobaça, 1/II/1980, *P.L.B. Lisboa 1366* (NY); Vigia, A 43,1 Km do entroncamento da BR-316 para Vígia, 26/X/1987, *R.F.A. Veiga 203* (CEN); **Pará**: Vigia, Estrada de Santa Isabel do Pará - Vigia km 48, 17/XI/1988, *N.M.S. Costa 2291* (BOTU, CEN); Vigia, Saída para Santa Isabel do Pará, 18/XI/1988, *N.M.S. Costa 2295* (BOTU, CEN); Vigia, Moita de mato em cima de um pequeno monte, 24/I/1950, *Black, GA 8835* (IAN); **Pará**: Campo do Palha, 26/VIII/1959, *W.A. Egler 1114* (NY); Vigía, 36 km southeast of Vigia, along highway PA-140 to Belém, 29/III/1980, *G. Davidse 17538* (NY); Rio Tocantins, nel Tauiry Grande presso il Rebojo do Jahu, 21/VI/1899, *L. Buscalioni 2372* (NY); Rio Tocantins, nel Tauiry Grande presso il Villagem da Prainha, 18/VI/1899, *L. Buscalioni 2469* (NY); Rio Tocantins: Chachoeira do Inferno, 6/VI/1899, *L. Buscalioni 2887* (NY); Rio Tocantins, nella foresta Ilha Tucumanduba, 26/V/1899, *L. Buscalioni 3505* (NY); Estr. para Vigia, Campo da Palha, 26/VIII/1959, *E. Pereira 5018* (NY); Margem da estrada Gurupá, Rio Tajapuru, 9/II/1979, *N.T. da Silva 5082* (NY); **Paraná**: Jaguaraíva, At foot of Pico de Cajurú, 15 km SE of Jaguariaíva, 4/III/1966, *J.C. Lindeman 1455* (NY); Telêmaco Borba, Trilha ao longo de via férrea, 21/IV/2009, *A.G. Faraco 596* (RB); **Piauí**: Bom Jesus, Rodovia Transcapeta, km 187,9, 20/X/1987, *R.F.A. Veiga 111* (CEN); **Rio de Janeiro**: Rio de Janeiro, 1821, *G.H. von Langsdorff s.n.* (P); Petrópolis, Rio de Janeiro, Pétropolis, route de Minas, 20/II/1873, *A. Glaziou 6509* (P); Teresópolis, Rodovia Teresopolis- Nova Friburgo (RJ-130) Km 3, 27/VIII/1987, *L. Coradin 8292* (CEN); **São Paulo**: Brazilia (prope Itu), II/1834, *L. Riedel s.n.* (P); Botucatu, 04/II/1986, *L.R.H. Bicudo 448* (BOTU); Botucatu, 18/II/1986, *L.R.H. Bicudo 573* (BOTU); Botucatu, 25/I/1986, *L.R.H. Bicudo 618* (BOTU); Botucatu, 18km north of Botucatu (14 km east of São Manuel). Along the São Manuel- Piracicaba highway. Near ex-RR station, 13 de Maio, 31/V/1973, *I.S. Gottsberger 31573* (BOTU); Botucatu, 18 km north, 14 km east of Sao Manuel. Along the Sao Manuel-Piracicaba highway. Near ex-railway station "Treze de Maio", 17/II/1977, *I.S. Gottsberger R11-17277* (NY); Buri, Sítio Curral Velho, 28/IV/2018, *D.S. Gissi 373* (BOTU); Buri, Sítio Três Irmãos. Margem da estrada em direção à casa, 29/IV/2018, *D.S. Gissi 388* (BOTU); Buri, Sítio Três Irmãos. Pasto do lado NE, 29/IV/2018, *D.S. Gissi 389* (BOTU); Campinas, 02/III/1937, *J. Santoro 923* (ESA, IAN); Capivari, prov. St Paul, II/1826, *Riedel, L. 213* (P); Paraguaçu Paulista, 6km north of city of Paraguaçu Paulista, 7/II/1965, *G. Eiten 5886* (RB); Rancharia, 14/II/1970, *G. Hatschbach 23498* (MBM); Santa Lucia, Rodovia Ribeirão Preto – Araraquara (SP- 255), Km 53, 22/VIII/1987, *L. Coradin, 8162* (BOTU, CEN); São Manoel, Rod. Geraldo P. Barros, SP 191 km 186,1, estrada de São Manuel para Santa Maria da Serra, 03/XII/1999, *N.M.S. Costa 3053* (CEN, ESA); São Paulo, Butantan, 16/III/1948, *W. Hartley SH202* (NY); *W.J. Burchell 9248* (P); Flor. Amazon. In littore arenoso insulae Colares, V/1832, *E. F. Poeppig 2930* (NY, P);

PARAGUAY. Taaguaza, dans les campos, 7/III/1876, *B. Balansa, 1504* (P); **Amambay**: Pq. Nacional Cerro Corá. Cerro Tuya og. 2km al SO de Ruta 5, 15/II/1987, *S. Ginzbarg 527* (NY); **Caazapá**: Santa Ursula, 55Km NE de Yuty, 23/III/1993, *A. Schinini 27814* (NY); **Central Paraguay**: Caballero, 20/I/1889, *T. Morong 399* (NY); **Central Paraguay**: Villarica, II/1932, *P. Jorgensen 4203* (NY); **San Pedro**: Alto Paraguay, Primavera, 12/III/1955, *A.L. Woolston 478* (NY);

11. *Stylosanthes guianensis* (Aubl.) Sw.

ARGENTINA. Corrientes: Mburucuyá, Estancia Santa Teresa, s.d., *T.M. Petersen 9039* (NY); **BOLIVIA. Beni:** Vaca Diez, Weedy fields and low seconday forest along SE edge of the airfield, riberalta, 6/VI/1982, *J.C. Solomon 7954* (MBM, NY, U); **Beni:** Gral. Ballivián, En el puente del Rio Playa Ancha, cerca de Villa Pucata, 40 km de Rurrenabaque, 11/VII/1997, *S.G. Beck 24262* (MBM); **La Paz:** Nor Yungas, arriba de Coroico, 25/II/1990, *S.G. Beck 17461* (NY); Nor Yungas, de Coroico ca. 4km hacia el Norte, 11/IV/1990, *S.G. Beck 17580* (NY); Sud Yungas, arriba de Yanacachi, 2/IV/1988, *R. Seidel 1280* (NY); Hacienda Simaco sobre el camino a Tipuani. Region Subtropical, I/1920, *O. Buchtien 5423* (US); **Santa Cruz:** Saavedra, CIAT, 24/V/1989, *M. Saldías 714* (NY);
BRAZIL. Amapá: Amapá, Junto à ponte do rio da Ras na BR-156 km 57 do trevo de Caalçoene para Amapá, 1/IX/1988, *N.M.S. Costa 2224* (BOTU, CEN); Ferreira Gomes, BR-156, km 72 de Tartarugalzinho para Ferreira Gomes, ponte do rio Tracajatuba, 3/IX/1988, *N.M.S. Costa 2263* (BOTU, CEN); **Bahia:** Abaíra, Subida da Forquilha da Serra, 23/XII/1991, *D.J.N. Hind 50282* (NY, HUEFS, K); Barreiras, Serra ca. 30 km W of Barreiras, 3/III/1972, *W.R. Anderson 36515* (NY); Correntina, Fazenda Jatobá, 27/VI/1992, *M. Aparecida Silva 1428* (RB); Lençóis, Rodovia Brasília-Fortaleza (BR-242), 8 km leste da estrada para Lençóis, 5/V/1983, *L. Coradin 50783* (NY); Rio de Contas, Encosta da serra dos Frios, Agua Limpa, 25/VIII/1993, *W. Ganev 2113* (NY); Rio de Contas, 24/III/1977, *R.M. Harley 19917* (NY); Uruçuca, Distrito de Serra Grande. Estrada que leva à Prainha, 9/VII/1998, *J.G. Jardim 1800* (NY); **Distrito Federal:** Brasília, Bacia do Rio São Bartolomeu, 30/III/1981, *E.P. Heringer 6646* (NY); Bacia do Rio São Bartolomeu, 9/IV/1981, *E.P. Heringer 6765* (NY); Campus da UnB, 29/III/1968, *N. Lima 147* (NY); Estrada do aéroporto de Brasília, 8/VII/1965, *B.D. Sucre 705* (NY); RECOR Transceto I, 9/VIII/1978, *E.P. Heringer 573* (RB); Lago Norte, perto do Centro de Saúde, 14/IX/1983, *M. Cristina 1669* (RB); **Espírito Santo:** Cariacica, Floresta na beira da estrada para a localidade de Alegre. Floresta Ombrófila Densa Montana, 12/IV/2009, *R. Goldenberg 1446* (RB); **Goiás:** Alto Paraíso de Goiás, Chapada dos Veadeiros, ca. 20 km N of Alto Paraíso, 19/III/1971, *H.S. Irwin 32144* (NY); Alvorada do Norte, Ponto 3 próximo à gruta, 4/XII/2003, *G. Silva-Pereira 8119* (BOTU, CEN); Cocalzinho de Goiás, Serra dos Pirineus, ca. 11 km N. of Corumbá de Goiás, 2/XII/1965, *H.S. Irwin 10905* (NY); Cristalina, Serra dos Cristais, ca. 15 km E. of Cristalina, 8/III/1966, *H.S. Irwin 13776* (NY); Cristalina, Serra dos Cristais, ca. 3 km N. of Cristalina, 2/III/1966, *H.S. Irwin 13265* (NY); Edéia, Usina Tropical, entre os Municípios de Edéia e Porteirão. Fazenda Tupí, 27/III/2012, *C.E.B. Proença 4191* (UB); Formosa, Serra do Morcêgo, Côrrego Estrema, 35 km N.E. of Formosa, 18/IV/1966, *H.S. Irwin 14992* (NY); Goiás Velho, Serra Dourada, ca. 16 km (straight line) S of Goiás Velho; cerrado on SE slopes, 11/V/1973, *W.R. Anderson 10115* (NY); Jaraguá, Rodovia Ceres-Anápolis (BR-153), 117, 7/VII/1987, *L. Coradin 8070* (BOTU, CEN); Niquelândia, Região da Serra Negra; Margem esq. do Rio Bagagem; Próximo a fazenda Aroeira após a Codemim (10 Km desta). Bacia de inundação da UHE Serra da Mesa, 15/IV/1992, *B.M.T. Walter 1355* (NY); Piranhas, Drainage of the Upper Rio Araguaia, 22/VI/1966, *H.S. Irwin 17591* (NY); Pirenópolis, Serra dos Pireneus. Estrada de chão desde a estrada Pirenópolis - Parque estadual dos Pireneus em direção da Faz. Portal do Lázaro, 19/III/2006, *P.G. Delprete 9603* (RB); **Maranhão:** São Raimundo das Mangabeiras, Ca. 45 km due NNE of Balsas, or ca. 45 km WSW of São Raimundo das Mangabeiras; on road between these two cities, 15/III/1962, *G. Eiten 3651* (NY); **Mato Grosso:** Água Boa, Serra do Roncador. Ca. 86 km N of Xavantina, 31/V/1966, *H.S. Irwin 16343* (NY); Poconé, 29 km leste do rio Sangradouro, ao longo da BR-070 (Cuiabá-Cáceres), 17/V/1985, *J.F.M. Valls 8735* (BOTU, CEN); Xavantina, Ca. 25 km. S. of Xavantina. Drainage of the Upper Rio Araguaia, 10/VI/1966, *H.S. Irwin 16878* (NY); Xavantina, Ca. 86 km.

N. of Xavantina. Serra do Roncador, 3/VI/1966, *H.S. Irwin 16511* (NY); Xavantina, Mata galeria. Riacho a 64 km Oeste do município citado, 25/VII/1982, *G. Pedralli 2554* (CEN); 29/VII/1973, *M. Emmerich 3833* (RB); **Mato Grosso do Sul:** Campo Grande, Alrededores de Campo Grande, camino a Sidrolandia, 10/II/1979, *A. Krapovickas 34504* (NY); **Minas Gerais:** Acuruí, Acuruí-Amarantina, 18/IV/2017, *T.C. Monteiro 36, 48, 60, 72* (BOTU); Alpinópolis, Ponta da sub-estação de Furnas, próximo ao Quebra-anzol, 25/VII/1972, *L. Emygdio de Mello Filho 3598* (NY); Cariacica, Condomínio Rural Cantinho do Céu, Boqueirão, Pau Amarelo. Próximo a Igreja de São Paulo de Biriricas, 11/II/1999, *C.N. de Fraga 415* (RB); Cataguases, Entroncamento da BR-116- Cataguases(MG-120) km17, 31/VIII/1987, *L. Coradin 8378* (BOTU, CEN); Couto de Magalhães, 21/VII/2017, *T.C. Monteiro 82, 101* (BOTU); Diamantina, Estrada para Conselheiro Mata, 21/III/2016, *D.M. Neves 2122* (RB); Diamantina, Serra do Espinhaço, ca. 2 km N. of São João da Chapada, 25/III/1970, *H.S. Irwin 28321* (NY); Itabirito, CA. 10 Km da cidade em direção a Belo Horizonte. Campo rupestre, 14/X/1995, *J.P. Souza 227* (RB); Jaboticatubas, Serra do Cipó, Chapeu de Sol, 29/IV/1952, *L.B. Smith 7078* (NY); Lavras Novas, 16/V/2017, *T.C. Monteiro 52* (BOTU); Monte Sião, Rodovia Ouro Fino-Monte Sião (MG-179), km 28, 23/VIII/1987, *L. Coradin 8208* (BOTU, CEN); Monte Sião, Rodovia Ouro Fino-Monte Sião (MG-179), km 28, 23/VIII/1987, *L. Coradin 8211* (BOTU, CEN); Monte Sião, Rodovia Ouro Fino-Monte Sião (MG-179), km 28, 23/VIII/1987, *L. Coradin 8213* (BOTU, CEN); Montes Claros, Estrada de Montes Claros para Boca√∫vas, 8/II/2006, *J.E. Meireles 450* (RB); Nova Lima, Morro das antenas de televisão, 2/IV/1987, *L. Coradin 8425* (BOTU, CEN); Ouro Preto, Entre Ouro Branco y Ouro Preto, 09/V/2012, *M. Carvalho-Silva 1361* (UB); Paraopeba, Hôrto Florestal de Paraopeba, s.d., *E.P. Heringer 3635* (NY, UB); Paraopeba, Hôrto Florestal de Paraopeba, 16/VII/1955, *E.P. Heringer 3972* (NY); Poços de Caldas, Rodovia Poços de Caldas- Caldas (BR-459), 5, 23/VIII/1987, *L. Coradin 8191* (BOTU, CEN); Prados, Rodovia Barbacena - São João Del Rei (BR - 265), km 40, 31/VIII/1987, *L. Coradin 8390* (BOTU, CEN); Prados, Rodovia Barbacena - São João Del Rei (BR - 265), km 40, 1/IX/1987, *L. Coradin 8396* (BOTU, CEN); Rodovia MG - 448, km 7 entre Mercês e Santa Bárbara do Tugúrio, 31/VIII/1987, *L. Coradin 8384* (BOTU, CEN); Serra do Cipó, ca. km. 105 (ca. 130km N. of Belo Horizonte), 17/II/1968, *H.S. Irwin 20379* (NY); Serra do Espinhaço, ca. 30 km S.W. of Diamantina on road to Gouveia, 13/I/1969, *H.S. Irwin 21861* (NY); **Pará:** Augusto Correa, Estrada PA-242 Vila Patal- Viseu km 16, 26/XI/1988, *N.M.S. Costa 2430* (BOTU, CEN); Benevides, BR-010, a a 9 km oeste do Entroncamento para Vigia, 17/XI/1988, *N.M.S. Costa 2270* (BOTU, CEN); Bragança, Bragança- Ajuruteua, km 1,2, 24/XI/1988, *N.M.S. Costa 2400* (BOTU, CEN); Bragança, Tracuateua - campos de Santa Maria, km 4,5, 23/XI/1988, *N.M.S. Costa 2380* (BOTU, CEN); Bragança, Trevo Bragança-Mirasselvas, km 1,3, 23/XI/1988, *N.M.S. Costa 2394* (BOTU, CEN); Capanema, Capanema-Bragança, km 5, 22/XI/1988, *N.M.S. Costa 2370* (BOTU, CEN); Capitão Poço, Capitão Poço - Ourém, km 5,6, 27/XI/1988, *N.M.S. Costa 2447* (BOTU, CEN); Castanhal, Castanhal- Curuçá, km 12,5, 18/XI/1988, *N.M.S. Costa 2309* (BOTU, CEN); Castanhal, Castanhal-Curuçá, km 12,5, 18/XI/1988, *N.M.S. Costa 2311* (BOTU, CEN); Castanhal, Estrada Castanhal - São Francisco do Pará, km 6 junto da fazenda Shibayama, 19/XI/1988, *N.M.S. Costa 2332* (BOTU, CEN); Castanhal, Rodovia PA-136, Castanhal-Curuçá, km23, 19/XI/1988, *N.M.S. Costa 2320* (BOTU, CEN); Curuçá, Terra Alta, saída, desvio à direita, 300 m a 28,8 km de Castanhal, 18/XI/1988, *N.M.S. Costa 2315* (BOTU, CEN); Ipixuma do pará, BR-010 km 255, Belém -Brazilia, 17/IX/1979, *L. Coradin 2120* (BOTU, CEN); Irituia, BR-010 Belém/Brasília- Capitão Poço, 28/XI/1988, *N.M.S. Costa 2459, 2461, 2470* (BOTU, CEN); Muaná, Faz. Cumarú em Marajó, 25/VI/1962, *E. Oliveira 2015* (UB); Nova Timboteua, Nova Timboteua - Salinópolis-PA, km 10, 20/XI/1988, *N.M.S. Costa 2337, 2339* (BOTU, CEN); Parauapebas, Estrada que da acesso a Bocaina (Rio Parauapebas), 26/IV/2012, *L. Tyski 273* (RB); Santa Isabel do Pará, Estrada santa Isabel-Vigia km 2,4, 17/XI/1988, *N.M.S. Costa 2277* (BOTU, CEN); Santa Isabel do Pará, Trevo da BR-010- Vigia, cerca de 700m, 17/XI/1988, *N.M.S. Costa 2273, 2274* (BOTU, CEN); Santo Antonio do Tauá, Estrada de Igarapé-Acú-Nova Timboteua, km 9, 20/XI/1988, *N.M.S. Costa 2334* (BOTU, CEN); Santo Antonio do Tauá, Estrada de Igarapé-Acú-Nova Timboteua, km 9, 20/XI/1988, *N.M.S. Costa 2335* (BOTU, CEN); Santo Antonio do Tauá, Estrada de Santa Isabel do Pará - Vigia km 26,3, 17/XI/1988, *N.M.S. Costa 2287, 2288, 2289* (BOTU, CEN); Santo Antonio do Tauá, Saída para Vigia, última rua á direita, a 100 m da BR, 17/XI/1988, *N.M.S. Costa 2280* (BOTU, CEN); Santo Antônio do Tauá, Campo do Frejó, Estrada de Vigia, 18/I/1977, *R.*

de S. Secco 1 (NY); São João de Pirabas, Entroncamento PA-124, Capanema km 2, 21/XI/1988, *N.M.S. Costa 2360* (BOTU, CEN); São Miguel do Guama, BR-010 km 128, Belém-Brasília, 17/IX/1979, *L. Coradin 2094, 2095* (BOTU, CEN); **Paraná:** Arapoti, Fazenda Araporanga, 10/II/1997, *O.S. Ribas 1690* (ALCB, ESA, MBM); Maringá, Mata ciliar da UEM, Córrego Mandacaru, área antropizada, 10/XI/2017, *M.A. Milaneze-Gutierre 1108* (HUEM); Sengés, Fazenda Morungava, Rio do Funil, 9/IX/1959, *G. Hatschbach 6275* (MBM, US); **Pernambuco:** Santo Agostinho, Near Praia do Guaibu, 25 km S from Recife, 31/VIII/1987, *S. Tsugaru B-1332* (NY); **Rio de Janeiro:** Angra dos Reis, Rodovia Angra dos Reis- Rio de Janeiro (BR-101), km 17, 26/VIII/1987, *L. Coradin 8266* (BOTU, CEN); **Rio de Janeiro:** Campos dos Goytacazes, Rodovia Campos-divisa Rio de Janeiro/Espírito Santo, km 46 (20 km sul da divisa), 29/VIII/1987, *L. Coradin 8322* (BOTU, CEN); Casimiro de Abreu, Estrada Lumiar-Casimiro de Abreu, 2 km norte de Casimiro de Abreu, 28/VIII/1987, *L. Coradin 8304* (BOTU, CENMambucaba, Rodovia Paraty-Angar dos Reis (BR- 101), km 54, 25/VIII/1987, *L. Coradin 8262* (BOTU, CEN); Miguel Pereira, Bairo Cupido, Sítio da Sra. Cláudia Vannier. Em pasto, próximo ao espelho d'água, 13/IV/2014, *M.S. Wangler 1520* (RB); Petropólis, Estrada Itaipava-Pedro do Rio, km 2, 27/VIII/1987, *L. Coradin 8285* (BOTU, CEN); Santa Maria Madalena, 2º Distrito, Triunfo, região serrana, Rodovia Triunfo - Trajano de Moraes, antes da entrada da Estrada Frei de Moraes, 27/IV/1995, *L.C. Giordano 1909* (RB); Santa Maria Madalena, Tamanduá, 18/III/1955, *E. Pereira 1263* (NY); Teresópolis, Rodovia Teresópolis-Nova Friburgo (BR-130), km 3, 27/VIII/1987, *L. Coradin 8290* (BOTU, CEN); Entre Posse e São José do Rio Preto, pr. Tristão Câmara, 19/V/1960, *G. Pabst 21012* (NY); Perto de Tristão Câmara, entre Posse e São José do Rio Preto, 29/V/1960, *G. Pabst 5324* (NY); **Rio Grande do Norte:** Martins, Serra de Martins, mata estacional a direita da rodovia RN 117, ca. de 400 m antes da sede municipal (sentido Serrinha dos Pintos-Martins), no caminho para a localidade Poção, 10/IX/2014, *J.L. Costa-Lima 1729* (RB); Montenegro, IV/1934, *A.A. Araújo 244* (BLA); Porto Alegre, Morro São Pedro, 06/III/2010, *M. Grings 1017* (HVAT, PACA); **Rondônia:** Vicinity of Mutumparaná. Basin of Rio Madeira, 1/VII/1968, *G.T. Prance 5417* (NY); **Santa Catarina:** Florianópolis, Bairro Pantanal/Los Angeles, 12/II/1985, *D.W 2* (MBM); FSC- Pantanal- Los Angeles, 12/XI/1985, *P.W. Bertelli 2* (FURB); **São Paulo:** Angatuba, Estrada para Angatuba via Santo Inácio e Bairro Jacu, ca. 20Km de Itatinga, 24/V/2017, *V.C. Souza 40688* (ESA); Bofete, 13/VIII/1993, *J.C. Nordi 16:4-(3.2)* (BOTU); Botucatu, 20/III/2006, *L.B. Santos 8* (BOTU); Botucatu, 07/IV/2004, *R.B. Bignotto 236* (BOTU); Botucatu, 15/IV/1986, *L. Bicudo 953* (BOTU); Botucatu, Cerca de 4 Km do Rio Tietê, 6/VI/1996, *V.C. Souza 11318 a* (RB); Botucatu, Distrito de Rubião Júnior, morro da Igreja de Santo Antônio, 18/X/2017, *T.C. Monteiro 77* (BOTU); Botucatu, Distrito de Rubião Júnior. Em frente ao Haras Apache WO, 07/II/2019, *D.S. Gissi 425* (BOTU); Botucatu, Estrada Mun. Geraldo Biral. Usina Indiana, 15/IV/2019, *D.S. Gissi 441* (BOTU); Botucatu, UNESP - IBB. Canteiro em frente ao Bom Prato, 8/IV/2019, *D.S. Gissi 436* (BOTU); Buri, Sítio Três Irmãos. Margem de córrego, próximo à rodovia, 29/IV/2018, *D.S. Gissi 385* (BOTU); Campos do Jordão, Fazenda da Guarda, 18/III/1964, *J.C.Gomes Júnior 1645* (UB); Ibaté, 2.3 km along dirt road SW of Ibaté (2.1 km due SW of Largo de São Benedito, a plaza in Ibaté) 13.7 km due WNW of São Carlos, 15/VI/1961, *G. Eiten 2945* (NY); Ipiranga, IV/1912, *H. Luederwaldt 13323* (NY); Itirapina, Rodovia Eng. Paulo Nilo Romano. SP 225, próximo do km 100 em direção a Itirapina, 29/IV/2017, *T. Flores 2589* (ESA); Mairiporã, Reserva Paiva Castro, 28/I/2009, *C.C.L. Macedo 68* (ESA); Moji-Guaçu, "Campos das Sete Lagôas". Fazenda Campininha, just north of Rio Moji-Guaçu. ~4 km NNW of Padua Sales. (About 27 km. NW of city of Moji-Mirim), 20/IV/1960, *G. Eiten 1899* (NY); São Carlos, 3.5 km NNW of center of city of São Carlos, 14/VI/1961, *G. Eiten 2917* (NY); São José dos Campos, 9.6 km SSE of main plaza of São José dos Campos, 8/VII/1961, *G. Eiten 3230* (NY); Taquaritinga, Ca. 10 km south of Taquiritinga, at km 322-323 on the Araraquara-S.José do Rio Preto highway, 17/VI/1961, *G. Eiten 2992* (NY); Rodovia Presidente Prudente - Presidente Epitácio km. 636, 8/VI/1976, *H. de F. Leitão Filho 2030* (NY); **Tocantins:** Cristalina, Rodovia Paraíso do Tocantins-Gurupi (BR-153), km 53, 7/VII/1987, *L. Coradin 8047* (BOTU, CEN); IV/1936, *A.A. Araújo s.n.* (BLA); Rodovia Paraíso do Tocantins - Gurupi (BR-153), km 23,5, 6/VII/1987, *L. Coradin 8037, 8043, 8045* (BOTU, CEN); *J.E.B. Pohl s.n.* (NY2481546)

COLOMBIA. Antioquia: Medellin, Corregimiento Santa Helena, Vereda San Ignacio, corporación Água Monte, 10/VII/1994, *A. Gómez 1053* (NY); San Luis, Vereda San Pablo,

Quebrada Carbonera. Finca Aquelarre, 1/VI/1994, *G. Ramiro Fonnegra 4874* (NY); **Valle del Cauca:** Restrepo, Vereda de Río Grande entre Pavas e Restrepo, abajo del puente, margen derecha, 1/XI/1987, *J. E. Ramos 838* (NY); Valle del Cauca, Hoya del Rio Cali "Pichinde"Coerdillera Occidental, s.d., *J. Duque 1650* (US); **Meta:** San Juán de Arama, cano Guanaya, a 150m de la Estación "Lejanias" del IMAT, 25/IX/1987, *J. Estrada 382* (NY);
FRENCH GUIANA. Mataroni River, Savanne de Virginie. An inselberg, 4/V/2001, *S.A. Mori 25284* (NY); Macouria, *F. Aublet s.n.* (BM).
PERU. Ayacucho: Aina, between Huanta and Rio Apurimac, 7/V/1929, *E.P. Killip & A.C. Smith 22605* (US); **San Martín:** 28/IV/1992, *M. Rimachi Y. 10203* (F, MBM); Valley of San Martín, along río Shilcayo, 3/IX/1937, *C.M. Belshaw 3361* (F);
VENEZUELA. Guárico: Calabozo, Laguna los Patos, 17/XIX/1963, *H.S. MacKee 10848* (P); Sta. Elena, Mata Cutia, 6/IX/1979, *N.A. Rosa 3348* (NY);

12. *Stylosanthes hamata* (L.) Taub.

BRAZIL. Ceará: Croatá, BR- 222, Km 59, 18/VI/1977, *J. Janes Viana 113* (CEN, RB); Sobral, BAG-Forrageiras CNP-Caprinos, 19/VI/1979, *L. Coradin 2077* (BOTU, CEN); **Distrito Federal**: Brasília, Estrada Ibotirama - Lençóis (BR-242), km 125, 9/IX/1992, *L. Coradin 8529* (BOTU, CEN); **Goiás**: São João d'Aliança, Region of the Chapada dos Veadeiros, along road 19-19_ km north of São João da Aliança, 19/IV/1956, *E.Y. Dawson 14405* (NY); **Mato Grosso do Sul**: Dourados, Dourados - Itaum aproximadamente 45 km, 29/IV/1999, *N.M.S. Costa 3092* (CEN); **Minas Gerais**: A lKm NW de Mariana, taludes en una zona con cultivos de Eucapiltus, 11/V/2012, *M. Carvalho-Silva 1590* (UB);
COLOMBIA. Bolívar: La Popa, Near Cartegena, 2/XI/1926, *E.P. Killip 14067* (NY); **Atlántico**: Barranquilla, Costa del Caribe, cerca de Barranquilla, lomas calcareas, 23/XI/1960, *A. Dugand 5435* (US); **Magdalena**: Santa Marta, In very disturbed areas ca. 1 km E of Bonda along road from Santa Marta to Rio Hacho (km 8), 21/X/1972, *J. H. Kirkbride 2475* (US); Santa Marta, Near Masinga, X/1889, *H.H. Smith 59* (NY, P); Playa Brava, 6/VI/1889, *H.H. Smith 2392* (NY);
FRENCH GUYANA. Crique Armontabo, bas Oyapock, 21/III/1981, *Granville, J.J. de 4332* (P);
SURINAME. Saramacca: Coebití, 25/VIII/1984, *A. P. Everaarts 1191* (NY);
TRINIDAD. North end of Scotland Bay, 16/VIII/1977, *D. Philcox 8192* (NY); Scotland Bay, 15/II/1980, *C.D. Adams 14654* (NY); Near Point Sinet on made-up land, W of Carenage, 27/II/1979, *J. Keoghan s.n.* (NY);
VENEZUELA. Bolívar: Caroni, Rio Caroní, margen derecha al Este de la Isla Maravilla, 26/II/1990, *G. Picón 1631* (NY); **Nueva Esparta**: La Asunción, 8/IX/1901, *O.O. Miller 68* (NY); **Nueva Esparta**: Península de Macanao, Alrededores de El Manglillo, 9/X/2013, *A. Fernández 33976* (NY); **Portuguesa**: Guanare, Bosques tropófilos medios, decíduos, intervenidos por actividades mágico-religiosas, 10/XII/1991, *G. Aymard 9658* (NY); **Sucre**: Araya, 20 km NW of Cariaco by air, 17/V/1981, *R. Liesner 12032* (NY); Araya, 4 Km W of Caimancito, 19/V/1981, *R. Liesner 12147* (NY); **Zulia**: Perijá, Carretera Maracaibo-Perijá, 9/X/1977, *G.S. Bunting 5632* (NY); S.I, 10/XI/1975, *R.L. Burt s.n.* (WAG); S.8, 11/II/1976, *R.L. Burt s.n.* (WAG); S.4, 01/I/1976, *R.L. Burt s.n.* (WAG); S.2, 17/XI/1975, *R.L. Burt s.n.* (WAG); S.3, 01/I/1976, *R.L. Burt s.n.* (WAG).
Jamaica. *Sloane s.n.* (BM)

13. *Stylosanthes hippocampoides* Mohlenbr.

ARGENTINA. Córdoba: Sierra de Achala, entre Arroyo La Puerta y pie de la Cuesta de la Ensenada, 4/I/1895, *F. Kurtz 8303* (CORD, NY, R); Sierra Chica, Potrero de Loza, 30/XII/1979, *C. Galander s.n.* (NY); Sierra Chica, Santa Catalina, 28/II/1891, *F. Kurtz 6983* (NY); Sierra Chica, III/1891, *F. Kurtz s.n.* (NY); Unquillo, III/1926, *C. Bruch s.n.* (NY, F); **Corrientes:** Bella Vista, 19 km S de Bella Vista, Est. Cuevas, 24/V/1973, *A. Schinini 6552* (NY); Capital, Santa Catalina, 31/X/1944, *T.S. Ibarrola 928* (NY); Concepción, Estancia Tranquera de Hierro, 66 km al NE de Chavarría, camino a Concepcíon, 3/XII/1996, *M.M. Arbo 6938* (NY); Empedrado, Arroyo Gonzales, 6/III/1974, *G.J. Schwarz 10011* (NY); Empedrado, EE INTA, s.d., *A. Schinini*

16227 (NY); Itatí, Ramada Paso, 11/II/1972, *A. Krapovickas 16478* (NY); Ituzaingó, Ruta 12, Bajo Vedoya, ca 1km al E del peaje, 14/I/2001, *M.M. Arbo 8771* (NY); Ituzaingó, Villa Olivari, ruta 12m 24 km W de Ituzaingó, 21/XII/1983, *R. Vanni 428* (NY); Lavalle, Estancia "La Pastoril", 24/XI/1971, *T.M. Pedersen 10007* (NY); Monte Caseras, Juan Pujol, 8/II/1945, *T.S. Ibarrola 2331* (NY); Paso de los Libres, Bonpland costa rio Uruguay, 19/I/1945, *T.S. Ibarrola 2142* (NY); Paso de los Libres, Ea. "El Recreo", 21 km E de Bonpland, 19/II/1979, *A. Schinini 17345* (NY); San Martín, 14/VII/1944, *T.S. Ibarrola 1683* (NY); San Martín, Yapeyú, Costa del río Uruguay, 12/II/1979, *A. Schinini 16995* (NY); San Martín, Yopeyu, 31/XII/1944, *T.S. Ibarrola 1918* (NY); Santa Teresa, 25/XII/1947, *T.M. Pedersen 79* (NY); Santo Tomé, Cuay Grande, 8/VII/1944, *T.S. Ibarrola 1607* (NY); Santo tomé, Pueblo al NE 2 leguas, s.d., *T.S. Ibarrola 1514* (NY); Between San Cosme and Ramada Paso, 9/XII/1947, *J.L. Stephens 15* (NY); **Misiones:** Candelaria, 2 km de ruta 12, camino a Loreto, 17/XII/1983, *E. Cabral 270* (F); Candelaria, Puerto Santa Ana, 31/I/1945, *G.J. Schwarz 608* (NY); Posadas, Bompland, in Campina trans Martines chico, 20/I/1908, *E.L. Ekman 1742* (NY); **Sará:** Santa Cruz, Lomas secas, campos de Buena Vista, 6/II/1925, *J. Steinbach 6916* (NY);

BOLIVIA. Santa Cruz: Warnes Province, Pampa de Viru-Viru, a 17 Km al N de ciudaded de Sta. Cruz, 13/II/1994, *M. Menacho 450* (NY);

BRAZIL. Bahia: Correntina, 7 km SW de Correntina, 2/II/1963, *A. Krapovickas 30162* (NY); **Goiás:** Alto Paraíso de Goiás, 5-6 km N of Alto Paraíso, peat of E & NE aspect by highway, 30/XI/1988, *R. Kral 75742* (NY); Guará, ca. 9km s. of Guará, 20/III/1968, *H.S. Irwin 21515* (NY); **Maranhão:** Carolina, Transamazonian Highway, BR-230 and BR-010, Pedra Caida, 35 km N of Carolina, ponto turístico W towards Serra de Baleia, 14/IV/1983, *E.L. Taylor E1235* (NY); **Minas Gerais:** Iturama, A 50 Km em direção a Campina Verde, 03/IV/1978, *M. Brandão 7302* (PAMG); **Pará:** Bragança, Desvio da estrada PA-242, no km 15 - Viseu km 7, 25/XI/1988, *N.M.S. Costa 2420* (BOTU, CEN); São Graldo do Araguia, Fazenda Andorinhas, retiro Santa Cruz, margem esquerda do rio Araguaia, 21/IV/2004, *G. Silva-Pereira 8903* (BOTU, CEN); **Paraná:** Lapa, Campo, 5/III/1960, *R. Beaja & R. Laufe 250* (US); Arapeti, Rio das Cinzas, Barra de Perdizes, do cerrado, 26/II/1961, *G. Hatschbach 7937* (US); Jaguariaíva, Above Rio das Mortes on road to Senges, 18/I/1965, *L.B. Smith 14771* (NY); Jaguariaíva, Estrada Jaguariaíva - Arapoti, 16/II/1982, *R. Kummrow 1746* (PAMG); Jaguariaíva, Rio Jaguariaíva, 11/II/1997, *O.S. Ribas 1739* (MBM, PAMG); Lapa, Rio Passa 2, 2/III/1970, *C. Koczicki 253* (NY); Rio Passa Dois, do campo seco, limpo, 17/III/1966, *G. Hatschbach 14044* (US); Piraí do Sul, Fazenda Nova Era, 15/II/2013, *M.L. Brotto 931* (ESA); Ponta Grossa- PR-(proximo a Vila Velha), en campo, s.d., *L. Dombrowski 7066* (US); Tibagi, Along the river southeast of Tibagi, 10/XI/1935, *R. Reiss 75a* (NY); Tibagi, Rod. do Café, rio Capivari, 11/II/1976, *G.G. Hatschbach 38074* (NY); At foot of Pico de Cajurú, 15 km SE of Jaguariaíva, 4/III/1966, *J.C. Lindeman 1455* (NY); **Rio de Janeiro:** Barra do Piraí, II/1972, *P.F. Vieira s.n.* (PAMG); **Rio Grande do Sul:** Quaraí, Cerro do Jarau, 12/XI/1987, *F.R. Galvani s.n.* (HUCS); Santa Maria, Estação Experimental de Silvicultura, 28/II/1956, *O.R. Camargo 5* (BLA); Tupanciretã, Estação Experimental, 07/II/1969, *A. Pott 74* (BLA); 55 km W de Rosário do Sul, 8/XII/1978, *A. Krapovickas 34236* (NY); **Santa Catarina:** Mafra, 7 km northwest of Mafra on the road to Barracas (20 km), 13/III/1957, *L.B. Smith 12090* (NY); **São Paulo:** Botucatu, Distrito de Rubião Júnior, em frente ao Haras Apache WO, 29/IX/2018, *D.S. Gissi 403* (BOTU); Botucatu, Distrito de Rubião Júnior. Em frente ao Haras Apache WO, 7/II/2019, *D.S. Gissi 426* (BOTU); Botucatu, Distrito Rubião Júnior, 08/II/2017, *T.P. Tunes 11* (BOTU); Itirapina, Cerrado da Estrela, 03/II/1993, *F. de Barros 2556* (PAMG); São José dos Campos, 19/II/1962, *I. Mimura 288* (NY);

PARAGUAY. Boquerón: Colonias Mennonitas, 2/V/1995, *R. Vanni 3492* (NY); **Guairá:** Independencia, Arroyo Guazú, camino a San Gervasio, 27/III/1993, *A. Schinini 28079* (NY); **Central:** Near Ituagua, 14/II/1948, *J.L. Stevens 94* (NY); **San Pedro:** 10km W de San Estanislao, bañado del río Tapiracuí, 19/II/1994, *A. Krapovickas 44879* (NY); "In altaplanitie, Sierra de Amambay", 1912, *E. Hassler 12043* (NY, P);

URUGUAY. Colonia: Riachuelo, 30/II/1930, *W.G.F. Herter 1827* (F);

14. *Stylosanthes hispida* Rich.

BRAZIL. Amapá: Paredão, Junto ao portão de entrada da Eletronorte, área da barragem da Eletronorte,na beira beira da estrada, 27/VIII/1988, *N.M.S. Costa 2145* (BOTU, CEN); Amapá, Km 57 do trevo de Calçoene para Amapá na BR-156, junto ao rio Rasa, 1/IX/1988, *N.M.S. Costa 2225* (BOTU, CEN); Amapá, Entroncamento de BR-156 a 4,5 km para Amapá, 2/IX/1988, *N.M.S. Costa 2229* (BOTU, CEN); Amapá, BR-156, 12 km do trevo de Amapá para Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2232* (BOTU, CEN); Calçoene, Cachoeira do rio Amapá Grande, 29/VIII/1988, *N.M.S. Costa 2179* (BOTU, CEN); Calçoene, Á 2 km ao norte de Calçoene na BR-156, 1/IX/1988, *N.M.S. Costa 2214* (BOTU, CEN); Ferreira Gomes, Posto Planton, a 300 m da estação, 28/VIII/1988, *N.M.S. Costa 2167* (BOTU, CEN); Igarapé do Palha, Road to Amapá, Km 110, 20/VII/1962, *J.M. Pires 52237* (NY, RB); Oiapoque, Rio Anotaié, Grande Cachoeira, 31/VIII/2005, *A. Lobão 797* (RB); Oiapoque, Oiapoque, campo de aviação. Campo alagado, 25/IV/1960, *W.A. Egler 1415* (NY); Oiapoque, Airfield, 25/IV/1960, *W.A. Egler 1415* (NY); Oiapoque, Na área do aeroporto, 30/VIII/1988, *N.M.S. Costa 2182* (BOTU, CEN); Oiapoque, Na área do aeroporto, 30/VIII/1988, *N.M.S. Costa 2183* (BOTU, CEN); Oiapoque, A 5 km da saída de Oiapoque, na BR-156, 30/VIII/1988, *N.M.S. Costa 2194* (BOTU, CEN); Oiapoque, Colônia Agrícola Clevelândia do Norte, 30/VIII/1988, *N.M.S. Costa 2196* (BOTU, CEN); Oiapoque, Oiapoque- Calçoene, km 12 da BR-156, 31/VIII/1988, *N.M.S. Costa 2202* (BOTU, CEN); Oiapoque, Oiapoque- Calçoene, km 14 da BR-156, 31/VIII/1988, *N.M.S. Costa 2203* (BOTU, CEN); Oiapoque, Aldeia Indígena de Manga, 31/VIII/1988, *N.M.S. Costa 2204* (BOTU, CEN); Oiapoque, Rio Oiapoque. Cachoeira Cacherí, immediatlely west of mouth of Cricú River, 14/VIII/1960, *J.M. Pires 47536* (NY); Oiapoque, Rio Oiapoque. Roche Mon Pere, 17/VIII/1960, *W.A. Egler 47648* (NY); Pedra Branca do Amaparí, Pedra Branca do Amapari, RDS Iratapuru, igarapé Braço do Amapá, 27/VII/2005, *L.A. Pereira 1216* (RB); Pracuúba, Coastal Region; Rio Flechal, 11/VIII/1962, *J.M. Pires 52489* (NY); Serra do Navio, Parque Nacional Montanhas do Tumucumaque, 31/VIII/2005, *A. Lobão 797* (RB); Tartarugalzinho, BR-156, km 63 do trevo de Amapá para Tartarugalzinho, 2 km ao Sul de Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2250* (BOTU, CEN); **Amapá**: Inselberg Talouakem, Massif des Tumuc-Humac, 10/VIII/1993, *J.J. de Granville 12217* (NY); **Mato Grosso**: Collected near the base camp of the expedition (c. 270 km N of Xavantina), X/1967, *J.F. Ramos 66* (NY); **Mato Grosso do Sul**: Corumbá, Morro do Urucum. Em morro próximo à antena da CLARO, 22/IV/2006, *C.M. Vieira 1710* (RB); **Pará**: Almeirim, Mt. Dourado, Estação Ecológica do Jari - SEMA, 3/VI/1987, *M.J.P. Pires-O'Brien 1669* (NY); Almeirim, Estação Ecológica de Jarí - SEMA, 24/VI/1987, *M.J.P. Pires-O'Brien 1708* (NY); Canaã dos Carajás, Serra da Bocaina, Floresta ombrófila densa, 28/I/2013, *A.J. Arruda 1411* (NY); Marabá, Arredores da estrada p/ N1, 17/V/1982, *R. de S. Secco 217* (NY); Marabá, Serra dos Carajás. N-4, mina pilôto para exploração de ferro. Local onde foi realizado inventário em 05/83, 15/III/1984, *A.S.L. da Silva 1819* (NY); Marabá, Serra dos Carajás. N-1, 26/III/1984, *A.S.L. da Silva 1995* (NY); Marabá, Serra dos Carajás, caminho para o Azul, 3/IV/1977, *M.G. da Silva 3033* (NY); Marabá, Serra dos Carajas. 23 km west of AMZA camp N-5, 16/V/1982, *C.R. Sperling 5727* (NY); Parauapebas, Floresta Nacional de Carajás. Serra dos Carajás, Serra Norte N2, coletada em campo brejoso sobre canga, 28/IV/2015, *A. Gil 449* (RB); Parauapebas, N8; Campo rupestre sobre canga, 23/III/2012, *A.J. Arruda 801* (NY); Parauapebas, Serra dos Carajás, Serra Norte N1. Arredores do acampamento, 29/III/2015, *R.M. Harley 57120* (RB); Parauapebas, Serra dos Carajás, Serra Norte N8, 26/III/2016, *R.M. Harley 57523* (RB); **[Roraima]**. Serra Tepequem, Terr. do Rio Branco, Ridge No. 1, 25/XI/1954, *B. Maguire 40053* (NY);

FRENCH GUIANA. Cayenne: *L.C. Richard s.n.* (P); Vic. of Cayenne, 25/VII/1921, *W.E. Broadway 972* (GH, K); Kourou, SSW Kourou, 9/VI/1989, *G. Cremers 10647* (NY); Haut Oyapock = font St. Marcel, 30/VII/1975, *J.J. Granville 2602* (NY); Bassin du Bas-Oyapoque, 16/IV/1991, *G. Cremers 12158* (NY); Fleuve Oyapock, 18/VII/1969, *B. Oldeman 2570* (NY); Roche Touatou - Bassin de l'Oyapock, 18/V/1995, *J.J. de Granville 12960* (NY); Montagnes de la Trinité - Bassin de la Mana, 17/III/1997, *J.J. de Granville 13412* (NY); VIII/1839, *Martius s.n.* (NY);

SURINAME. Courantyne River, 31/VIII/1935, *Rombonts 166* (NY); Zuid Rivier, 2km above confluence with Lucie Rivier, 5/VI/1963, *B. Maguire 54040* (NY); Zuid Rivier, 25/IX/1963, *H.S. Irwin 57580* (NY);

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AUSTRALIA. Northern Territory: Jabiru, Kakadu National Park, ca. 25 Km NNW of Jabiru, 19/V/1988, *J.Z. Weber 9795* (NY); **Queensland:** Glasshouse mountains in lawn, VI/1958, *H.S. Tutt s.n.* (NY); Townsville, 24/III/1933, *C. T. White 8818* (NY);
BOLIVIA. Vaca Diez: Beni, Weedy fields and low secondary forest along SE edge of the airfield, Riberalta, 6/VI/1982, *J.C. Solomon 7951* (MBM, MO, NY);
BRAZIL. Amapá: Amapá, Vila do Itambal, BR- 156 km 50 do trevo de Amapá para Tartarugalzinho, 2/IX/1988, *N.M.S. Costa 2248* (BOTU, CEN); Ferreira Gomes, BR-156, km 72 de Tartarugalzinho para Ferreira Gomes, ponte do rio Tracajatuba, 3/IX/1988, *N.M.S. Costa 2264* (BOTU, CEN); Macapá, Estrada Fazendinha-Santana, 21/VIII/1984, *B.V. Rabelo 2773* (MO, NY); Macapá, Pátio dos serviços de Extensão Rural, 22/VIII/1988, *N.M.S. Costa 2004* (BOTU, CEN); Macapá, Rodovia Duque de Caxias, cerca de 500 m após o quartel do exército, 23/VIII/1988, *N.M.S. Costa 2011* (BOTU, CEN); Macapá, Rodovia Duque de Caxias, entre o conjunto Caletalzinho e Penitenciária, 23/VIII/1988, *N.M.S. Costa 2026* (BOTU, CEN); Macapá, Saída para a BR-156, próximo à CODEASA, 25/VIII/1988, *N.M.S. Costa 2074* (BOTU, CEN); Mazagão, Transição entre a mata de várzea e a mata de terra firme, 24/VIII/1988, *N.M.S. Costa 2054* (BOTU, CEN); Paredão, junto ao portão de entrada da Eletronorte, área da barragem da Eletronorte,na beira beira da estrada, 28/VIII/1988, *N.M.S. Costa 2147* (BOTU, CEN); Tartarugalzinho, Próximo do posto de gasolina de Tartarugalzinho, 29/VIII/1988, *N.M.S. Costa 2177* (BOTU, CEN); **Bahia:** 1827, *P. Salzmann s.n.* (MO); **Ceará:** Canindé, CE-044, km 2, Canindé-Quixidá, beira de estrada, 15/VI/1979, *L. Coradin 1976* (BOTU, CEN); Crato, Rodovia Crato-Araripina, km 22, aeroporto desativado de Crato, chapaada do Araripe, 24/VI/1987, *L. Coradin 7778* (BOTU, CEN); Fortaleza, Rodovia Fortaleza - Sobral (BR-222), km 451, 29/VI/1987, *L. Coradin 7844, 7850, 7851* (BOTU, CEN); Juazeiro do Norte, Rodovia Juazeiro do Norte-monumento da estátua de padre Cícero, proximidades do local, 25/VI/1987, *L. Coradin 7793* (BOTU, CEN); Maranguape, Low thickets, Açude São Bento, 5/VIII/1935, *F.E. Drouet 2194* (MO, NY); **Ceará:** Sobral, BAG-Forrageiras CNP-Caprinos, 19/VI/1979, *L. Coradin 2078* (BOTU, CEN); Sobral, BR-222, km 26 beira da estrada, Sobral/fortaleza, 13/VI/1979, *L. Coradin 1935* (BOTU, CEN); Tabuleiro do Norte, Rodovia Juazeiro do Norte-Russa à 6 km sul do rio Jaguaribe (BR-116), 27/VI/1987, *L. Coradin 7839* (BOTU, CEN); Tianguá, Proximidades da Serra Grade hotel, chapada da serre de Ibiapaba, 1/VII/1987, *L. Coradin 7881* (BOTU, CEN); Tianguá, Rodovia Sobral-Tianguá (BR-222), km 67 início da subida da serra de Ibiapaba, 30/VI/1987, *L. Coradin 7871* (BOTU, CEN); **Distrito Federal:** Brasília, Escola Fazendária, 19/VIII/1980, *H. Lemes 12* (UB); Reserva Ecológica do IBGE, 27/III/1981, *E.P. Heringer 6636* (MO); **Goiás:** Formosa, Rodovia Brasília-Formosa (BR-020), km 153 entre Formosa e Posse, 14/VI/1983, *L. Coradin 5683* (NY); Formosa, Slope forest, Côrrego, Estrema, ca. 35 km. N.E. of Formosa, 19/IV/1966, *H.S. Irwin 15005* (MO, UB, US); Piranhas, Drainage of the Upper Rio Araguaia, 23/VI/1966, *H.S. Irwin 17684* (NY, UB); Rianápolis, Rodovia Ceres-Anápolis (BR-153), km 20, 7/VII/1987, *L. Coradin 8062* (BOTU, CEN); Simolândia, Rod. BR-020; 15 km N de Alvorada do Norte, 10/III/1979, *G.G. Hatschbach 42020* (NY); **Maranhão:** Açailandia, Rodovia Açailandia-Imperatriz(BR-010), km 31, 4/VII/1987, *L. Coradin 7986* (BOTU, CEN); Bacabal, Rodovia Bacabal -Santa Inês (BR-316), km 6, 3/VII/1987, *L. Coradin 7950* (BOTU, CEN); Carolina, Parque Nacional Chapada das Mesas, acesso E no km 612 da BR- 0230, 20 km em estrada vicinal em direção á localidade Buenos Aires, próximo ao rio Farimha, 7/IV/2016, *M.F. Simon 2746* (BOTU, CEN); Loreto, "Ilha de Balsas" region, between the Balsas and Parnaíba Rivers. Ca. 35 km S of Loreto. Next to house at "Veados". (About 11 km W of Main house of Faz. Morros), 5/IV/1962, *G. Eiten 4002* (NY); Loreto, "Ilha de Balsas" region, between the Rios Balsas and Parnaíba. About 25 km south of Lorêto. In front of main house of Fazenda Santa Rita, 7/IV/1962, *G. Eiten 4134* (NY); Peritoró, Rodovia Caxias-Peritoró (BR-316), 47, 2/VII/1987, *L. Coradin 7944* (BOTU, CEN); Santa Inês, Rodovia Santa Inês (BR316), km 93, 3/VII/1987, *L. Coradin 7961* (BOTU, CEN); **Mato Grosso:** Peixoto de Azevedo, BR-080. Cachoeirinha do Rio Peixoto, 24/IV/1997, *V.C. Souza 15595* (ESA); São Félix do Araguaia, Estrada para Alto da Boa Vista, ca. 9 km de São Félix do Araguaia. Fazenda Engenho Velho. 180 m.s.m. Savana Parque. Área florestada, alagada (buritizal), 18/III/1997, *V.C. Souza 14415* (ESA); **Mato Grosso do Sul:** Corumbá, 28/XI/2006, *L.C. Costa, 396* (UB); **Minas Gerais:** Lajedão,

12/III/1983, *Teixeira & Reis s.n.* (BHCB); **Pará:** Almerim, Estacão Ecológica do Jari - SEMA, 24/VI/1987, *M.J.P. Pires 1708* (MO); Augusto Correa, Estrada Bragança PA-242 Augusto Correia km 2,2, 25/XI/1988, *N.M.S. Costa 2424* (BOTU, CEN); Augusto Correa, Estrada PA-242 Vila Patal- Viseu km 16, 26/XI/1988, *N.M.S. Costa 2429* (BOTU, CEN); **Pará:** Bragança, Bragança - Ajuruteua, km 1,2, 24/XI/1988, *N.M.S. Costa 2398, 2399, 2406* (BOTU, CEN); Bragança, Desvio da estrada PA-242, no km 15 - Viseu km 6, 25/XI/1988, *N.M.S. Costa 2421* (BOTU, CEN); Bragança, Entroncamento- Bragança-PA, Mirasselvas, 23/XI/1988, *N.M.S. Costa 2388* (BOTU, CEN); **Pará:** Bragança, Entroncamento- Bragança-PA, Mirasselvas, 23/XI/1988, *N.M.S. Costa 2389, 2390* (BOTU, CEN); Bragança, Tracuateua - campos de Santa Maria, km 4,5, 22/XI/1988, *N.M.S. Costa 2375, 2376 2385 2386 2387* (BOTU, CEN); Capanema, Mirasselvas-Capanema, km 5,2, 23/XI/1988, *N.M.S. Costa 2395 2396 2397* (BOTU, CEN); Capitão Poço, Capitão Poço - Irituia, 28/XI/1988, *N.M.S. Costa 2455, 2458, 2462 2463* (BOTU, CEN); Capitão Poço, Capitão Poço - Ourém, 27/XI/1988, *N.M.S. Costa 2438, 2444, 2446, 2448, 2450* (BOTU, CEN); Castanhal, Castanhal- Curuçá, 1100 m do trevo, 18/XI/1988, *N.M.S. Costa 2305, 2310* (BOTU, CEN); Castanhal, Estrada Castanhal - São Francisco do Pará, km 6 junto da fazenda Shibayama, 19/XI/1988, *N.M.S. Costa 2333* (BOTU, CEN); Curuçá, Barra Limpa, a 5 km da estrada de Castanhal - Curuçá, 18/XI/1988, *N.M.S. Costa 2316* (BOTU, CEN); Salinópolis, Alto da praia do Atalaia, 20/XI/1988, *N.M.S. Costa 2344* (BOTU, CEN); Santo Antônio do Tauá, Saída para Vigia, última rua á direita, a 100 m da BR, 17/XI/1988, *N.M.S. Costa 2279* (BOTU, CEN); Tucuruí, Km 25 south of Represa Tucuruí on road (BR-422) to Breu Branco. Growing in forest margin along lumber load on white sand, 16/III/1980, *T.C. Plowman 9635* (NY); Viseu, Estrada PA-242 Viseu - Bragança km 41, desvio para a rodovia Pará - Maranhão, 26/XI/1988, *N.M.S. Costa 2433, 2436* (BOTU, CEN); Cacaual Grande; Maria Francisca, 9/VII/1952, *G.A. Black 52-15587* (NY); São João de Pirabas, Entroncamento PA-124, Capanema km 2, 21/XI/1988, *N.M.S. Costa 2358* (BOTU, CEN); **Paraíba:** Areia, Escola de Agronomia do Nordeste, 9/VII/1953, *J.C. de Moraes Vasconcelos 885* (NY); **Paraíba:** 25/V/1959, *J.C. de Moraes Vasconcelos 2129* (NY); **Pernambuco:** Petrolina, BR-428, Petrolina-Salgueiro, beira de estrada, km 32, 3/IV/1979, *L. Coradin 1256, 1268* (BOTU, CEN); Petrolina, Divisa dos estados de Pernambuco e Piauí, BR-407, 7/IV/1979, *L. Coradin 1377, 1398, 1403* (BOTU, CEN); Petrolina, Entre Rajadas e Dormentes, km 5, 7/IV/1979, *L. Coradin 1336* (BOTU, CEN); Petrolina, Rodovia Petrolina-Santa Maria da Boa Vista, km 190, 5/IV/1979, *L. Coradin 1310* (BOTU, CEN); **Piauí:** Piracuruca, Divisa CE/PI-teresina (BR-222), km 51, 1/VII/1987, *L. Coradin 7912* (BOTU, CEN); **Rio Grande do Sul:** Guaíba, Centro Agronômico, 04/V/1971, *I. Boldrini s.n.* (BLA); **Roraima:** Boa Vista, Reserva Ecológica de Maracá, environs of estação sede, 22/X/1987, *G.P. Lewis 1694* (NY); Bomfim, Rodovia BR-401, Boa Vista para Bom Fim, Rio Arraia, perto da Guiana, ponto 8, 27/VI/1974, *J.M. Pires 14705(179)* (NY); **São Paulo:** Boituva, Cultivada a partir de uma coleta realizada em Piracicaba-SP. Parque da Esalq, ao lado da biblioteca central, gramado, 01/V/2018, *D.S. Gissi 395* (BOTU); **Tocantins:** Paraíso doNorte, Rodovia Paraíso do Tocantins-Gurupi (BR-153), km 19, 6/VII/1987, *L. Coradin 8032* (BOTU, CEN);

COLOMBIA. Antioquia: Caucasia, 16 km S of Caucasia, 1/XI/1983, *C.D. Johnson 3177* (MO); Santa Fé de Antioquia, s.d., *G. Gutiérrez 1463* (MO); **Bolívar:** Cartagena, 19 km NE of Cartagena, 30/X/1983, *C.D. Johnson 3160* (MO); Cartagena, 1825, *J.I. Billberg 1975* (MO); **Córdoba:** 53 km SE of Planthan Rica, 28/X/1983, *C.D. Johnson 3142* (MO); **Cauca:** Cali, *A. Figueroa 897* (US). **Huila:** Villavieja, Desierto La Tatacoa, vereda El Cusco, 10/II/1987, *R. Santander 8* (MO); **Magdalena:** Savanna, in shade, Chiriguana, Magdalena Valley, 22/VII/1924, *C. Allen 135* (MO); Crece en las majadas (campos de cultivo) junto a las viviendas y en las cabeceras de los morichales, s.d., *F. Tamayo 4160* (MO); Prope coloniam Tovar, 1854, *A. Fendler s.n.* (MO);

VENEZUELA. Amazonas: Malezas y/o adventicias o silvestres persistentes en lugar alto, sobre terrenos de relleno, permeables con sustrato predominantemente arenoso, muy seco. Oficina del MARNR, a mas o menos 40 m en Pto. Ayacucho. Hora: 6:30 pm. Temperatura del aire a mas o menos 1 m = 33ºC y temperatura del suelo a 10 cm = 35ºC, 11/IV/1986, *B. Trujillo 20177* (MO); Atures, Malezas de los alrededores de la Urb, Simon Bolívar-Chaparralito de puerto Ayacucho, 1/III/1986, *F. Guanchez 4190* (MO); Manapiare, San Juan de Manapiare, 22/VI/1998, *A. Fernández 12890* (NY); **Apure:** 21 km NE of Mantecal along highway to San Fernando de Apure, 9/XI/1973, *G. Davidse 3890* (MO); **Bolívar:** 28 km W of the Río Caura along Highway 19

between Caicara and Ciudad Bolívar. Open Trachypogon vestitus savanna with very few trees, 24/XI/1973, *G. Davidse 4430* (MO, NY); El Dorado, 12/II/1985, *C.D. Johnson 3994* (MO); Sucre, Noreste de Maripa. Sabana seca, VIII/1990, *J. Velazco 1617* (MO); **Distrito Federal:** Isla La Blanquilla. Sector noroeste de la isla, 2/II/2012, *A. Fernández 29913* (MO, NY); **Guarico:** Calabozo, Estación Biológica de los Llanos de la Sociedad Venezuelana de Ciencias Naturales, 31/VIII/1990, *N. Ramírez 2947* (NY); San Juán, Alrededores del hotel, /XI/1958, *L. Aristeguieta 3795* (NY); Ca. 21 km, SSE of Calaboza along road to Cazorla. Grasslands, inundated in the wet season but now dry, dotted with palms (Opernicia), a glaucous Sorghastrum a prominent perennial grass and Schizachyrium brevifolium extremely abundant at this time of year, 5/XI/1973, *G. Davidse 3762* (MO); Ca. 39 km south-southwest of Calabozo on Hato Masaguaral, south of ranch houses, 7/XII/1982, *R. Rondeau 197* (MO); Calabozo, Palmas de las Barbitas, 14/X/1981, *R.A. Montes 763* (MO); Calabozo, Palmas de Las Barbitas, 20/XI/1981, *R.A. Montes 841* (MO); Calabozo, Estación Biológica de los Llanos de la Sociedad Venezolana de ciencias Naturales. Ubicada aproximadamente a 12 km SE de Calabozo, 3/XII/1986, *N. Ramírez 2028* (MO, NY); El Sombrero, Mesa de El Sombrero, 10/IX/1927, *H. Pittier 12489* (MO, NY); **Portuguesa:** Guanare, Quebrada Los Baños, 10/XII/1991, *G. Aymard 9651* (NY); **Sucre:** 57 km E of Cumaná, 4/X/1983, *C.D. Johnson 2975* (MO); **Zulia:** 8 km SW of La Villa del Rosario, 23/IX/1983, *C.D. Johnson 2863* (MO); Maracaibo, Jardín Botánico de Maracaibo, em remanantes del bosque existente em zona de Investigacíon Botánica, 19/IX/1982, *G.S. Bunting 11732* (NY); Maracaibo, Jardín Botánico de Maracaibo, 10/XI/1982, *L. Aristeguieta 12740* (NY); Maracaibo, 10/XI/1922, *H. Pittier 10698* (NY); Crecit to Orinocum, prope Carichaná, *Humboldt & Bonpland s.n.* (P).

16. *Stylosanthes leiocarpa* Vogel

ARGENTINA. Corrientes: Bella Vista, 7 Km E de B. Vista, 7/V/1975, *C.L. Quarín 3082* (MO); **BOLIVIA. Santa Cruz:** Germán Busch, Serranía del Mutún, cima de la montaña, sabanas arboladas a completamente abiertas, 10/III/2008, *D. Villarroel 1903* (MO);
BRAZIL. Bahia: 34 km E of Morro do Chapéu along Highway BA-052; Chapada da Diamantina. Low scrub forest on sandy soil, 3/IV/1976, *G. Davidse 11885* (MO); BR-242, Brasília - Fortaleza, 03/X/1978, *L. Coradin 1222* (PAMG); Rodovia Brasília - Fortaleza, BR-242, entre entrada para Lençois e entrada para Andaraí, Km 5, 21/VIII/1981, *L. Coradin 4392* (PAMG); Estrada Mucugê - Barra da Estiva, Km 24, 23/VIII/1981, *L. Coradin 4510* (PAMG); Abaíra, Subida da Forquila da Serra, 23/XII/1991, *D.J.N. Hind 50274* (NY); Abaíra, Catolés de Cima, encosta da Serra do Barbado, 17/XI/1993, *W. Ganev 2501* (NY); Andaraí, Serra do Andaraí-Capa Bode - Estrada para Mucuge, 30/X/1978, *G. Martinelli 5407* (RB); Barra da Estiva, 04/VII/1983, *L. Coradin 6383* (PAMG); Barra da Estiva, Estrada Barra da Estiva - Mucuje km 31, 4/VII/1983, *L. Coradin 6438* (NY); Barra da Estiva, 04/VII/1983, *L. Coradin 6438* (PAMG); Barra da Estiva, Serra do Sincorá. 3-13km W. of Barra da Estiva on the road to Jussiape, 23/III/1980, *R.M. Harley 20825* (NY); Barreiras, BR-242-Ba Brasília-Fortaleza, beira de estrada, 3/X/1978, *L. Coradin 1222* (BOTU, CEN); Gandu, BR-101, Itabuna - Cruz das Almas, Km 147, 16/VII/1980, *L. Coradin 2955* (PAMG); Lençóis, Caminho para Barro Branco, atrás do cemitério de Lençóis, ca. 8 km de Lençóis, 26/IV/1992, *L.P. de Queiroz 2750* (NY); Morro do Chapéu, ca. 11km de Morro do Chapéu na BA 052 (estrada do feijão), 21/VIII/1993, *L.P. de Queiroz 3531* (MBM, NY); Morro do Chapéu, Rio do Ferro Doido, 18km a leste da cidade, 16/V/1986, *L.R. Noblick 4549* (UB); Palmeiras, Rio Lajeadinho, 09/IV/1992, *G. Hatschbach 56918* (PAMG); Rio de Contas, Margem do Rio Brumado, 25/I/1998, *L.P. de Queiroz 4910* (UB); Una, Margem do Rio Una, 19/V/1965, *R.P. Belém 1019* (NY, UB); **Minas Gerais:** Belo Horizonte, Estação Ecológica UFMG, 5/III/1991, *E. Tameirão Neto 416* (BHCB); Chaveslândia, Divisa Minas - Goiás, Canal São Simão, BR-365, 14/V/1976, *N.M.S. Costa 619* (RB, PAMG); Diamantina, Estr. Diamantina - Curralinho, até km 7, 2/XII/1975, *G.J. Shepherd 3985* (NY); Diamantina, Área de Proteção Ambiental Pau de Fruta (COPASA), 14/II/2001, *J.R. Stehmann 2907* (BHCB); Diamantina, Diamantina - Mendanha, saída da cidade, 03/VII/1980, *M. Brandão 9030* (PAMG); Diamantina, Km 13 após Diamantina - Mendanha, 03/VII/1980, *M. Brandão 9058* (PAMG); Diamantina, A 15 Km de Diamantina para Minas Novas, 26/V/1978, *N.M.S. Costa 861* (PAMG); Diamantina, A 23 Km de Diamantina para Minas Novas, 28/V/1978, *N.M.S. Costa 872* (PAMG); Diamantina,

Estrada para Araçuaí, ca. 2km de Diamantina. Campo rupestre. 1300 m. s. m, 25/II/2002, *V.C. Souza 28370* (ESA); Ouro Preto, s.d., *J. Badini 2323* (PAMG); Prudente de Morais, Fazenda Santa Rita, 04/IV/1987, *M. Brandão 12265* (PAMG); Santana do Riacho, 24/IV/2000, *M. Brandão 29347* (PAMG); Sete Lagoas, 11/IV/1979, *N.M.S. Costa s.n.* (PAMG); **Paraná:** Curitiba, Parque Barigui, 17/XII/1996, *C. Kozera 426* (BOTU, NY); Curitiba, Parque Náutico do Iguaçu, 16/XII/1982, *J. Cordeiro 989* (PAMG); **Pernambuco:** Cabrobó, Serra do Bendó, cerca de 5 Km a esquerda da rodovia BR-116, sentido Belém do São Francisco-Salgueiro, acesso a cerca de 7,5 Km ao N do Posto Vista Bela, 30/I/2015, *J.L. Costa-Lima 2103* (RB); Goiana, BR-101, Recife - João Pessoa, Km 89, 20/VII/1980, *L. Coradin 3150* (PAMG); **Rio Grande do Sul:** 1945, *B. Rambo 9713* (MO); Vila Nova pr. P. Alegre, 26/III/1949, *B. Rambo 40675* (PAMG); 05/XII/1945, *E. Henz s.n.* (PACA); Arroio dos Ratos, 29/I/1942, *B. Rambo s.n.* (PACA); Barra do Ribeiro, 10/I/1952, *B. Rambo s.n.* (PACA); Caçapava do Sul, BR-153, 20/I/1994, *D.B. Falkenberg 6376* (BHCB); Cachoeira do Sul, 9/V/1973, *R. Perello s.n.* (BLA); Cachoeirinha, 26/III/1949, *B. Rambo s.n.* (PACA); Canela, 12 km. E de Canela, camino a São Francisco de Paula, 29/I/1994, *A. Krapovickas 44684* (MO); Capão do Leão, Pedreira do DEPREC, 12/XII/1997, *E.N. Garcia 249* (MBM); Cruz Alta, 03/II/1956, *B. Rambo s.n.* (PACA); Guaíba, Nova Faculdade - Agricultura, 08/III/1962, *V. Fagundes s.n.* (BLA); Montenegro, Pareci, 29/XI/1948, *B. Rambo s.n.* (PACA); Mostardas, Lagoa do Funcho, 15/I/2008, *L. Scur 1187* (MBM); Nonoai, ad flumen Uruguay, 27/XI/1945, *B. Rambo s.n.* (PACA); Osório, Santa Terezinha, 17/XII/1965, *A. Kappel s.n.* (BLA); Osório, 05/IV/1950, *B. Rambo s.n.* (PACA); Osório, Morro Grande, 11/II/1954, *B. Rambo s.n.* (PACA); Palmares do Sul, Lagoa do Cipó, em dunas, 27/XI/2011, *F. Gonzatti 279* (BOTU); Palmares do Sul, Fazenda das Almas, I/1945, *P. Gonçalves s.n.* (PACA); Pantano Grande, Horto Tarumã CMPC - Vila Capivarita, 26/I/2017, *M. Caumo 122* (HVAT); Pântano Grande, Belvedere entre Pântano Grande e Encruzilhada do Sul, 22/I/1994, *D.B. Falkenberg 6510* (BHCB); Pelotas, Instituto Agronômico do Sul, /III/1953, *I.L. Barreto s.n.* (BLA); Porto Alegre, Caixa de Água, 1943, *A. Reckziegel s.n.* (PACA); Porto Alegre, Petrópolis, 09/II/1972, *A. Sehnem 12966* (PACA); Porto Alegre, Morro da Vila Manresa, s.d., *B. Rambo s.n.* (PACA); Porto Alegre, Vila Manresa, 02/V/1949, *B. Rambo s.n.* (PACA); Porto Alegre, Morretes, 24/XI/1949, *B. Rambo s.n.* (PACA); Porto Alegre, Vila Manresa, 1907, *F. Theissen SJ s.n.* (PACA); Porto Alegre, Ruta 290, km 35, Porto Alegre-Osorio, 3/IV/1979, *J.G. Fernández 658* (NY); Santa Maria, 12/XII/1940, *K. Emrich s.n.* (PACA); Santana do Livramento, Fazenda de Francisco Prolega, 19/I/1966, *A. Kappel s.n.* (BLA); Santo António da Patrulha, Próximo à cidade, /III/1953, *I.L. Barreto 984B* (BLA); São Gabriel, Faz. Santa Cecília, I/1945, *P. Buck SJ s.n.* (PACA); São Leopoldo, 08/I/1942, *B. Rambo s.n.* (PACA); São Leopoldo, /I/1944, *B. Rambo s.n.* (PACA); São Leopoldo, 07/I/1949, *B. Rambo s.n.* (PACA); São Leopoldo, Vicinity of São Leopoldo, //1941, *J.E. Leite 124* (NY); São Leopoldo, ad montem Sapucaia, 08/XII/1957, *O.R. Camargo 2777* (PACA); São Lourenço do Sul, BR 2 - Estrada para Camaquã, 14/XII/1962, *A. Kappel s.n.* (BLA); São Sebastião do Caí, Conceição, 17/XII/1948, *B. Rambo s.n.* (PACA); Sapucaia do Sul, 14/XII/1948, *B. Rambo s.n.* (PACA); Taquari, Est. Exp. Pomicultura, /III/1958, *Mattos 6265* (PACA); Taquari, 10/XII/1957, *O.R. Camargo 3052* (PACA); Tavares, 04/III/2007, *C. Araújo s.n.* (HVAT); Torres, prope litus, 19/I/1955, *B. Rambo s.n.* (PACA); Torres, 02/I/1954, *Pivetta 1020* (PACA); Tramandaí, 20/XI/1965, *A. Kappel s.n.* (BLA); Tramandaí, Estrada para Osório, 01/II/1963, *A. Kappel s.n.* (BLA); Tramandaí, 13/I/1933, *B. Rambo s.n.* (PACA); Tramandaí, ad litus atlanticum, III/1945, *B. Rambo s.n.* (PACA); Tupanciretã, 30/I/1938, *W. Rau s.n.* (PACA); **Santa Catarina:** Palhoça, Campo do Massiambú, 5/XI/1953, *R. Reitz 1243* (NY); Sombrio, 5/XII/1945, *R. Reitz 1784* (NY);

PARAGUAY. Central: Tavarory, 2 km from administration on the direction to Arroyo Abai. Savanna, 9/XII/1991, *E.M. Zardini 29300* (MO); Paraguaria Centralis: In regione lacus Ypacaray, III/1913, *E. Hassler 11576* (NY); **Cordillera:** Eastern side of Río Piribebuy basin, 17 km W of Arroyos y Esteros. Cerrado forest, 25/II/1990, *E.M. Zardini 19206* (MO); Eastern side of Río Piribebuy basin, 17 km W of Arroyos y Esteros. Cerrado forest, 3/III/1990, *E.M. Zardini 19676* (MO); Eastern side of Río Piribebuy basin, 17 km W of Arroyos y Esteros. Scrub on basalt, 19/V/1990, *E.M. Zardini 20100* (MO); **San Pedro:** 21/I/1956, *A.L. Woolston 637* (NY); *E. Hassler 7575* (NY);

URUGUAY. Canelones: Balneario Parque del Plata, arroyo Solis Chico, 4/II/1948, *A. Burkart 17524* (MO); *M.B. Berro 8095* (MO); **Montevideo:** Pocitos/Carrasco, I/1925, *W.G. Herter 65*

(MO); **Rocha:** La Paloma, Costa Azúl, I/1981, *A.L. Cabrera 32318* (MO); **Montevideo**: in Montevideo, *F. Sellow s.n.* (B, G, K, L, M); Carrasco, 30/I/1948, *J.L. Stephens 89* (NY); Montevideo, Carrasco, I/1925, *W.G. Herter 76691* (NY); Pocitos, 25/I/1925, *G. Herter 76691* (PAMG); **Rocha:** Calo Santa María, em arenas marítimas, 6/II/1938, *B. Rosengurt 2471* (NY);

17. *Stylosanthes linearifolia* M.B.Ferreira & Sousa Costa

BRAZIL. Goiás: Ipamerí, in aerodromo, 16/I/1940, *B. Rambo s.n.* (PACA-AGP); **Mato Grosso do Sul**: Sidrolândia, 25 km SSE from Campo Grande, along the Rt. BR-163., 4/XI/1987, *S. Tsugaru B-1980* (NY); Tacurú, 5 km O de Tacurú, sobre la estrada que dirije a Iguatemi, 16/XII/1983, *R. Callejas Posada 1962* (NY); **Minas Gerais**: Uberaba, Rodovia Uberlândia - Uberaba (BR-050) km 91, 21/VIII/1987, *L. Coradin 8128* (BOTU, CEN); **Minas Gerais**: Campo alegre, 18/XI/1973, *Hatschbach, G. 33374* (MBM, NY); Uberaba, BR-050, Uberaba - Uberlândia km 12, 850 msm, 1/X/1976, *N.M. de Sousa Costa 753* (PAMG, RB); **São Paulo**: Botucatu, à margem da rodovia João Melão, que liga São Manuel à Avaré, no Km 296., 13/II/1986, *L.R.H. Bicudo 499* (BOTU);

18. *Stylosanthes longicarpa* Brandão & Sousa Costa

BRAZIL. Goiás: Cavalcante, Margem do rio Preto, atingindo pela fazenda Sr. David, beira do rio, 26/VI/2001, *G. Silva-Pereira 5162* (BOTU, CEN); Cavalcante, Canteiro da obra rio São Felix, km 19, margem direita do rio do Carmo, 22/VIII/2001, *G. Silva-Pereira 5309* (BOTU, CEN); Córrego do Boqueirão, 9 km de Terezinha. Cultivado em campo experimental do CPAC da EMBRAPA, VII/1975, *J. Menezes 24* (RB); **Minas Gerais:** Berilo, Barra do Rio Itacambiruça, 28/IV/1991, *M.G.C. & S.T.S. 191* (BHCB); Diamantina, Parque Estadual do Rio Preto. Campos rupestres na localidade de lageado, 19/III/2016, *G. Martinelli 19111* (NY); Grão Mogol, Fazenda Matão. Praias do Rio Itacambiruçu, 28/II/1992, *M.G.C. & S.T.S. 794* (BHCB); Itacambira, Rio Jequitinhonha, 21/V/1985, *N.M.S. Costa 1457* (PAMG); Salto da Divisa, *J.F. Valls 6718* (BOTU, CEN); Turmalina, Estrada Turmalina - Itacambira, afloramento rochoso junto ao Rio Jequitinhonha, 24/II/2002, *V.C. Souza 28280* (ESA);

19. *Stylosanthes longiseta* Micheli

BRAZIL. Mato Grosso: Rio Brilhante, Rio Anhanduí, 23/X/1970, *G. Hatschbach 25143* (MBM); **Paraná:** Campo Mourão, 12/XI/2013, *E.D. Lozano 1750* (MBM); Campo Mourão, 09/XII/1960, *G. Hatschbach 7523* (L, MBM, US, WAG);
PARAGUAY. Caaguazu, dans les campos, 10/XI/1874, *B. Balansa 1842* (P); Fleuve Yhu, X/1905, *E. Hassler 9532* (P);

20. *Stylosanthes macrocephala* M.B. Ferreira & Sousa Costa

BRAZIL. Bahia: Abaíra, Cabaceira. Riacho Fundo, atrás da Serra do Bicota, 25/X/1993, *W. Ganev 2344* (NY); Abaíra, Estrada Catolés-Abaíra, 2 km de Catolés, Lambedor, 14/III/1993, *R.M. Harley 51932* (NY); Abaíra, Garimpo de Engenho, 3/III/1994, *W. Ganev 3034* (NY); Água Fria, Estrada para Cia de Celulose da Bahia, 20/VIII/1984, *M.M. Santos 178* (RB); Aracatu, km 20 na rod. de Brumaco para Vitória da Conquista, 29/XII/1989, *A.M. Carvalho 2712* (RB); Barra da Estiva, Estrada Barra da Estiva - Mucuje km 31, 4/VII/1983, *L. Coradin 6437* (NY); Barreiras, BR-242-km 989, Brasília-Fortaleza, beira de estrada, 29/IX/1978, *L. Coradin 1186* (BOTU, CEN); Caetité, BR -030-Caetité- Brumado, 16,2 km marcados da praça perto do posto Vencedor, 20/V/2004, *G. Silva-Pereira 9088* (BOTU, CEN); Caetité, 19/IV/1983, *A.M. Carvalho 1841* (RB); Capão da Volta, Estrada para Jussiapé, 18/V/1999, *V.C. Souza 22734* (ESA); Cocos, 5km S of Cocos, 16/III/1972, *W.R. Anderson 37085* (NY); Correntina, Chapadão Ocidental da Bahia. 12 km N of Correntina, on the road to Inhaúmas, 28/IV/1980, *R.M. Harley 21876* (NY); Correntina, Chapadão Ocidental da Bahia. About 9 km SE of Correntina, on road to Jaborandí, 27/IV/1980, *R.M. Harley 21850* (NY); Curaçá, Fazenda Ouricuri. Área N 32 Curaçá, extrema

importância biológica, 22/IV/2006, *J.A. Siqueira-Filho 1615* (RB); Maracás, 17/I/1981, *L. Paganucci & M.L. Guedes 104* (BHCB); Mirangaba, km 3 de Mirangaba, 1/IX/1981, *R.P. Orlandi 491* (RB); Morro do Chapéu, Rodovia Morro do Chapéu - Várzea Nova, km 14, 21/VI/1987, *L. Coradin 7693, 7695* (BOTU, CEN); Morro do Chapéu, Rodovia Morro do Chapéu-Irecê (BA-052) km 21, 29/VI/1983, *L. Coradin 6246* (NY); Rio de Contas, Barra do Brumado, 7/IV/1992, *G.G. Hatschbach 56781* (NY); Rio de Contas, Between 2.5 and 5 km S. of Vila do Rio de Contas on side road to W. of the road to Livramento, leading to the Rio Brumado, 28/III/1977, *R.M. Harley 20140* (NY); Rio de Contas, C. 7km S of Rio de Contas on estrada de terra do Livramento do Brumado, 16/IV/1991, *G.P. Lewis 1993* (NY); Rio de Contas, On road to Abaira ca. 8 km to N of town of Rio de Contas, 18/I/1972, *R.M. Harley 15218* (NY); Rio de Contas, 7/IV/1992, *G.G. Hatschbach 56796* (NY); Saúde, Rodovia-Senhor do Bonfim, km 1, 22/VI/1987, *L. Coradin 7735* (BOTU, CEN); Serrinha, 9 km de Serrinha, 14/VII/1964, *L. Duarte 388* (NY); Serrinha, 9 km de Serrinha, 14/VII/1964, *L. Duarte 398* (NY); Serrinha, estrada Biritinga a Sátiro Dias, ca. 10 km de Biritinga, 3/IX/2006, *A.M. Amorim 6222* (NY); **Ceará:** Tianguá, 24/IV/1977, *A. Fernandes EAC3172* (EAC); Tianguá, Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1/VII/1987, *L. Coradin 7884* (BOTU, CEN); **Distrito Federal:** Brasília, 3 km S de Brazlândia na estrada, 27/IV/1983, *M.C.G. Kirkbride 1643* (RB); Barragem de São Bartolomeu, margem do Rio São Bartolomeu, 23/IV/1979, *E.P. Heringer 1215* (RB); Convenio Florestal, 1/VI/1960, *Gomes 1059* (RB); Fazenda Plamerinha lote 49, 20/IV/1984, *L.C. Alvim 8* (RB); Fazenda Sucupira- Borda da mata de galeria, próxima ao bambuzal. Borda de mata de galeria. Relevo ondulado. Latossolo vewrmelho amarelo, 2/V/2007, *C.G. Fontes 184* (RB); Gama, 22/V/1981, *I. Tanaka 4* (NY); Parque Ecológico Norte, 27/XI/1996, *J.A. Ratter 7705* (UB); Rio Saia Velha, 11/IV/1984, *M. Cristina 1677* (RB); Universidade de Brasília, 28/VIII/1965, *H.S. Irwin 7932* (NY); 28/IV/1983, *L .Coradin 5664* (RB); **Goiás:** Alvorada do Norte, BR-020, km 256 da rodovia Brasília-Fortaleza, beira de estrada, 27/IX/1978, *L. Coradin 1130* (BOTU, CEN); Corumbá de Goiás, Corumbá de Goiás, 20/IV/1974, *E.P. Heringer 13204* (UB); Cristalina, 35 km by road E of Cristalina, 6/IV/1973, *W.R. Anderson 8307* (NY, UB, US); Jaraguá, Rodovia Ceres-Anápolis (BR-153), 117, 7/VII/1987, *L. Coradin 8068* (BOTU, CEN); Luziana, Rodovia Brasília-Cristalina (BR-040), 48, 20/VIII/1987, *L. Coradin 8083* (BOTU, CEN); Posse, BR-020 entre Posse e Barreiras Km 7, 15/VI/1983, *L. Coradin 5689* (NY); São João da Aliança, Serra Geral do Parana, ca. 3km. S. of São João da Alianca near riacho, 15/III/1971, *H.S. Irwin 31823* (UB, US); Silvania, Fazenda do Sr. Jeová, 2/VI/2003, *G. Silva-Pereira 7723* (BOTU, CEN); Km 47, BR-20, Brasília/Formosa, s.d., *A. Allem 936* (RB); **Mato Grosso do Sul:** Costa Rica, Rodovia Paraíso das Águas-Costa Rica. A 40 km de Paraíso, 21/VI/2005, *L.C. Costa 362* (ESA, EVB, RB); **Mato Grosso do Sul:** Iguatemi, Fazenda Entre Rios, 6/V/2009, *J.M. Silva 7193* (MBM); **Minas Gerais:** Águas Vermelhas, km 12 da BR 116, 6/V/1979, *E.C. Tenório 1890, 1894* (RB); Belo Horizonte, Campus da UFMG, 6/IV/1999, *J.A. Lombardi & P.O. Morais 2698* (BHCB); Belo Horizonte, Horto Florestal, 21/I/1940, *M. Barreto 10597* (UB); Belo Horizonte, Morro das Pedras, Belo Horizonte, 25/III/1945, *L.O. Williams 6475* (NY, RB); Belo Horizonte, Near the dam at Pampulha, II/1945, *L.O. Williams 5644* (NY); Belo Horizonte, Represa da Pampulha, 1983, *T.S.M. Grandi 212* (BHCB); Brasília de Minas, 3/V/1975, *M.L. Gavilanes 229* (RB, PAMG); Carmópolis de Minas, Estação ecológica da Mata do Cedro, 23/XI/2005, *L. Echternacht 820* (BHCB, MBM); Diamantina, Serra do Espinhaço, Ca. 15 km E. of Diamantina, 18/III/1970, *H.S. Irwin 27830* (NY); Grão Mogol, BR-251, Grão Mogol, km. 50, 18/II/1989, *T.B. Cavalcanti 268* (NY); Grão Mogol, 10/V/1979, *G. Martinelli 5879* (RB); Januária, Distrito de Fabião, 23/V/1997, *J.A. Lombardi & A. Salino 1643* (BHCB); Rio Acima, Região Córrego Fazenda Velha, 14/IV/2015, *S.G. Rezende 5612* (BHCB); Rio Pardo de Minas, 10/V/1979, *E.C. Tenório s.n.* (RB); Rubelita, Sítio 3, ponto 2, 1/XII/2016, *A.C. Sevilha 5994* (BOTU, CEN); Santo Antônio do Retiro, Sítio 11, ponto 1, 16/III/2017, *A.C. Sevilha 6453* (BOTU, CEN); São Gonçalo do Rio Preto, Parque estadual do Rio Preto, 10/V/2004, *P.L. Viana 1756* (BHCB); Serra do Espinhaço. 3.5 km by road SW of Rio Jequití and Mendanha, 14/IV/1973, *W.R. Anderson 8928* (NY); **Pernambuco:** Arcoverde, 11/VII/1997, *B. Borba s.n.* (BHCB, HUEFS); Buique, Catimbau, 17/X/1994, *Z. Travassos 210* (K, PAMG); Buíque, 5 km da estrada de barro para Catimbau, 19/VI/1994, *A.M. Miranda 1719* (HUEFS); **São Paulo:** Campinas, Unicamp- Campinas SP, 29/IV/1982, *J.C. Silva Costa 14727* (RB); **Sergipe:** Areia Branca, Serra de Itabaiana, 12/X/2007, *B.S. Amorim 156*

(ASE); Itaporanga d'Ajuda, Fazenda Caju (EMBRAPA), 19/VII/2008, *A.P. Prata 1446* (ASE); Nossa Senhora da Glória, 25/VI/1984, *G. Viana 984* (ASE, HUEFS); São Miguel do Aleixo, Faz. Tanquinho, 02/VIII/1986, *G. Viana 1585* (ASE, UEC);

21. *Stylosanthes macrosoma* S.F. Blake

ARGENTINA. Corrientes: Capital, Rta. 12, 15 Km NE de la ciudad de Corrientes, 31/III/1980, *R. Vanni 134* (NY); Corrientes, Dto. Capital, Molina Punta, 26/XII/1965, *A. Krapovickas 11753* (P, US); Empedrado, Open woodland on clay, Estancia La Yela, Dep. Empedrado, 28/XI/1961, *T.M. Pedersen 6408* (L, P, US); Mburucuyá, East of Saladas, near the junction of the roads to Mburucuya & Concepcion, 27/I/1956, *T.M. Pedersen 3689* (US); Mburucuyá, Estancia "Santa Maria", Dep. Mburucuya, 3/III/1958, *T.M. Pedersen 4819* (NY, P, U, US); Mercedes, 17/III/1935, *T.S. Ibarrola 2686* (NY); Paso de los Libres, Cabred - cereamias, 29/I/1945, *T.S. Ibarrola 2231* (NY); Saladas, Prov. Corrientes, E Saladas, near the junction of the roads to Mburucuya-Concepción, 27/I/1956, *T.M. Pedersen 3689* (NY, P, U); San Cosme, Prov. Corrientes, San Cosme, 4 km E Paso de la Patria, 20/XI/1969, *A. Krapovickas 14922* (P);
BRAZIL. Rio Grande do Sul: Barra do Quaraí, BR 472 Km 60. Próximo ao Parque Estadual do Espinilho, 21/III/1986, *F.R. Galvani s.n.* (HUCS);
PARAGUAY. Cerro Peron, près de Paraguari, I/1875, *B. Balansa 1502* (P); **Central**: Asunción, 4/XII/1888, *T. Morong 255* (GH, K, NY, US); Villeta, 7/XII/1969, *T.M. Pedersen 9495* (L, MBM, NY, P); **Concepción**: X/1901, *E. Hassler 7606* (P).

22. *Stylosanthes maracajuensis* Sousa Costa & Van den Berg

BOLIVIA. La Paz: Prov. Larecaja, vicinis Ananea, VI/1860, *G. Mandon 698* (P); **BRAZIL. Mato Grosso do Sul:** Aquidauana, Serra de Maracaju, 10 km Leste de Piraputanga, 12/II/1993, *G. Hatschbach* 58987 (K, MBM); Aquiadauna, Piraputanga, 18/II/1970, *G. Hatschbach 23788* (MBM); Aquiadauna, 23Km E of Aquidauana, 3/VIII/1977, *A. Krapovickas 32867* (MBM); Piraputanga, Na formação xerófita, cerrado, solo pedregoso, relevo leve inclinado, forregeira, 02/X/2006, *L.C. Costa 390* (BOTU, MBM, RB, UB); Porto Murtinho, Rod. BR-267, próximo do trevo para Colonia Ingazeiro, 23/V/2002, *G. Hatschbach 73335* (MBM); São Gabriel d'Oeste, Reserva legal da Fazenda Bonito, 15/VI/2002, *A. Pott 10054* (CEN); Caracol, Alto Caracol, 10/II/1993, *G. Hatschbach 58848* (NY);

23. *Stylosanthes microcephala* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez.

Santa Cruz: Velasco, Campo Grande Guarasug'we, 14/VIII/1995, *S. Halloy 4462* (NY);
Bahia: Jacobina, Serra do Tombador, 29/VIII/1981, *G.C.P. Pinto 282/81* (NY); **Distrito Federal:** Brasília, 6 Km S do Catetinho, 4/V/1983, *M.C.G. Kirkbride 1650* (UB); Brasília, ARIE do Cerradão, 12/XI/2008, *J.S. Silva 613* (UB); Brasília, Bacia do Rio São Bartolomeu, 3/VI/1981, *E.P. Heringer 7012* (NY); Brasília, Between dam from Rio Paranoá and hill southwards, 1/V/1968, *D. Philcox 4844* (NY, UB); Brasília, Colina-Campus da Universidade de Brasília, 4/V/1983, *M.C.G. Kirkbride 1660* (UB); Brasília, Córrego Bananal, IV/1983, *J.H. Kirkbride 5227* (UB); Brasília, zona del Jardín Botánico, 14/V/2012, *M. Carvalho-Silva 1665* (UB); Parque Nacional de Brasília. Área ao lado da antiga pista de pouso de ultra-leve, próxima a Administração do Parque, 09/V/2004, *C.R. Martins 395* (UB); **Goiás:** Alto Paraíso de Goiás, Chapada dos Veadeiros, 21/III/1969, *H. S. Irwin 24809* (NY); **Goiás:** Cavalcante, Canteiro de obras, próximo à oficina mecânica, 22/V/2001, *G. Silva-Pereira5051* (BOTU, CEN); **Goiás:** Formosa, Serra do Morcêgo, Côrrego Estrema, 35 km N.E. of Formosa, 18/IV/1966, *H. S. Irwin 14992* (NY); **Maranhão:** Estreito, Canteiro de obras do UHE estreito(área da subestação), 11/III/2007, *G. Silva-Pereira11381* (BOTU, CEN); **Maranhão:** Peritoró, Rodovia Caxias-Peritoró (BR-316), 47, 2/VII/1987, *L. Coradin7945* (BOTU, CEN); **Mato Grosso:** Xavantina, Ca. 25 km. S. of Xavantina. Drainage of the Upper Rio Araguaia, 13/VI/1966, *H. S. Irwin 17062* (NY, UB); **Minas Gerais:** Caeté, 4/III/1976, *M.B. Ferreira & N.M. de Sousa Costa 306* (PAMG, RB); Lavras Novas, 16/V/2017, *Monteiro, T.C. 51* (BOTU); Prados, Rodovia Barbacena - São

João Del Rei (BR - 265), km 40, 1/IX/1987, *L. Coradin 8397* (BOTU, CEN); Vespasiano, Entroncamento BR-040/MG-020 (18 km norte de Belo Horizonre), 2/IX/1987, *L. Coradin 8416* (BOTU, CEN); **Pará:** Capitão Poço, Capitão Poço- Ourém, km 5,6, 27/XI/1988, *Costa, N.M. de Sousa 2443, 2449* (BOTU, CEN); Santa Isabel do Pará, Trevo da BR-010- Vigia, cerca de 700m, 17/XI/1988, *N.M.S. Costa, 2272* (BOTU, CEN); **Paraná:** Paraíso do Norte, Rodovia Paraíso do Tocantins - Gurupi (BR-153), km 19, 6/VII/1987, *L. Coradin 8037* (BOTU, CEN); **Rio de Janeiro:** Petropólis, Estrada Posse-Pedro do Rio , km 2, 27/VIII/1987, *L. Coradin 8286* (BOTU, CEN); **São Paulo:** Botucatu, 18km north of Botucatu (14 km east of São Manuel). Along the São Manuel- Piracicaba highway. Near ex-RR station, 13 de Maio, 25/I/1973, *I.S. Gottsberger 25173* (BOTU); Botucatu, Distrito de Rubião Júnior. Em frente ao Haras Apache WO, 7/II/2019, *D.S. Gissi 421* (BOTU). Estrada Mun. Geraldo Biral. Usina Indiana, 15/IV/2019, *D.S. Gissi 441* (BOTU). **Tocantins:** Ananas, Acampamento de ENGEVIX, estrada de acesso ao porto do acampamento, 16/IV/2004, *G. Silva-Pereira 8676* (BOTU, CEN); Darcinópolis, Rio Tocantins via fazenda do Marcelo, km 8 (Pedra furada), 16/IV/2008, *G. Silva-Pereira 12937* (BOTU, CEN); Palmeirópolis, Estrada Palmeirópolis , fazenda do Sr. Anderson, cerca de 18 km, 14/VII/2007, *G. Silva-Pereira 12024* (BOTU, CEN); Paranã, Canteiro de obras do UHE São Salvador, fazenda do Sr. Mario Franco de Morais, 7/VI/2006, *G. Silva-Pereira 10466* (BOTU, CEN); Paranã, Estrada São salvador balsa do rio Custódio km 45, margens do córrego Rosário, 10/VI/2006, *G. Silva-Pereira 10545* (BOTU, CEN);
PARAGUAY. Gran Chaco: Santa Elisa, 5/X/1903, *E. Hassler 2834* (BM, K, NY, W).

24. *Stylosanthes minima* J.J.S.Ferreira & J.Santos-Silva

BRAZIL. **Bahia:** Caetité, subida do cruzeiro, 27/II/2015, *J.J.S. Ferreira 26* (BOTU).

25. *Stylosanthes mitzii* J.J.S.Ferreira & J.Santos-Silva

BRAZIL. Bahia: Caetité, loteamento UPA, 2/III/2019, *J.J.S. Ferreira 301* (BOTU).

26. *Stylosanthes montevidensis* Vogel

ARGENTINA. Chaco: Resistencia, M. Belém, 31/I/1949, *E. Veja 906* (NY); **Chaco:** Resistencia, M. Belém, 17/XII/1947, *R.M. Aguilar 1163* (NY); **Corrientes:** Concepción, Estancia Santa Rosalia, 3/I/1955, *T.M. Pedersen 3096* (NY); Concepción, Rincón de Luna, 26/II/1957, *T.M. Pedersen 4475* (NY); Concepción, Paso Pucú, 19/II/1969, *T.M. Pedersen 9032* (NY); Empedrado, Ea. 3 Marias, cercano al río Paraná, 20/III/1998, *A. Schinini 34412* (NY); General Paz, Angostura, 20/I/1957, *T.M. Pedersen 4455* (NY); Ituzaingó, Centinela, 5 Km S de San José, camino a Playadito, 19/I/1993, *A. Schinini 27572* (NY); Mburucuyá, Estancia Santa Teresa, 7/V/1955, *T.M. Pedersen 3113* (NY); Paso de los Libres, 8/I/1945, *T.S. Ibarrola 2006* (NY); Saladas, Pago Alegre, 6/III/1969, *T.M. Pedersen 9056* (NY); San Martín, Estación Yapeyú, 30/XII/1944, *T.S. Ibarrola 1893* (NY); San Martín, 6 km SW de La Cruz, sobre el río Uruguay, 8/II/1979, *A. Schinini 16820* (NY); San Miguel, 21 Km S de Loreto, 7/III/1974, *A. Schinini 8815* (NY); San Roque, Chavarría, 28/III/1945, *T.S. Ibarrola 2784* (NY); Santo Tomé, Arroyo Garabí. 10 Km E de Gdor. Virasoro, camino a Garruchos, 8/II/1993, *S.G. Tressens 4360* (NY); Santo Tomé, 35 km SW de Santo Tomé, Arroyo Cuay Grande, 5/II/1979, *A. Schinini 16747* (NY); **Formosa:** Pto. Velaz. Ea. El Tano, Villa Escobar, 6/III/1979, *J.G. Fernández 555* (NY); Pilagá, Ruta 86 al km 101, 15/III/1949, *I. Morel 7503* (NY); Pirané, Cosco - Civé, 15/II/1946, *J. Morel 937* (NY); **Misiones:** Posadas, La Granja, 10/XI/1907, *E.L. Ekman 1743* (NY);
BOLIVIA. *M. Bang 2150* (NY); **Méndez:** Tarija, camino a Victoria, 18/I/1986, *R. Ehrich 18* (NY);
BRAZIL. Mato Grosso do Sul: Dourados, Aeroporto de Dourados, 24/I/1979, *H.M. Saturnino 111* (PAMG); Ponta Porã, A 11 Km de Ponta Porã, 24/I/1979, *H.M. Saturnino 120* (PAMG); **Paraná:** Guarapuava, Parque Municipal das Araucárias, 10/I/2007, *J. Cordeiro 372* (MBM); Lapa, Eng. Bley, 30/I/1949, *G.G. Hatschbach 1174* (PACA-AGP); Lapa, Rio Passa Dois, 15/II/1967, *G.G. Hatschbach 15987* (NY); Laranjeiras do Sul, Km. 127, 12/II/1970, *G.G.*

Hatschbach 21130 (NY); Piraquara, Col. S. Roque, 6/II/1971, *G.G. Hatschbach 26293* (NY); Ponta Grossa, Fazenda Lagoa Dourada, 18/II/1948, *G. Tessmann, 2939* (MBM); Terrinha, 1/II/1912, *P.K.H. Dusén 13718* (NY); **Rio Grande do Sul:** Alegrete, Estrada vicinal VRS-306, beirando a área de proteção ambiental Ibirapuitã, 4/XI/2019, *D.S. Gissi 512* (BOTU); Alegrete, Estrada Osvaldo Aranha, BR290, 5/XI/2019, *D.S. Gissi 513* (BOTU); Bom Jesus, 16/I/1942, *B. Rambo s.n.* (PACA-AGP); Bom Jesus, 15/I/1942, *B. Rambo s.n.* (PACA-AGP); Cachoeirinha, 07/I/1949, *B. Rambo s.n.* (PACA-AGP); Cambará do Sul, II/1948, *B. Rambo s.n.* (PACA-AGP); Canoas, 27/XI/1945, *Frau Frank s.n.* (PACA-AGP); Caxias do Sul, Vila Oliva, 29/I/1946, *B. Rambo s.n.* (PACA-AGP); Caxias do Sul, Vila Oliva, 24/II/1954, *B. Rambo s.n.* (PACA-AGP); Ijuí, Dr. Pestana, 26/I/1955, *Pivetta 1048* (PACA-AGP); Lajeado, Esc. Manoel Viana, 05/I/2007, *E. Santos s.n.* (HVAT); Montenegro, Est. Azevedo, 06/V/1949, *B. Rambo s.n.* (PACA-AGP); Nonoai, ad flumen Uruguay, III/1945, *B. Rambo s.n.* (PACA-AGP); Osório, Faz. do Arroio, 04/I/1950, *B. Rambo s.n.* (PACA-AGP); Pantano Grande, Horto Tarumã CMPC - Vila Capivarita, 26/I/2017, *M. Caumo 107* (HVAT); Porto Alegre, Vila Manresa, /IV/1943, *P. Buck s.n.* (PACA-AGP); Porto Alegre, Vila Manresa, 17/XI/1948, *B. Rambo s.n.* (PACA-AGP); Porto Alegre, Morro das Abertas, 09/I/1949, *B. Rambo s.n.* (PACA-AGP); Porto Alegre, Vila Manresa, 13/II/1932, *B. Rambo s.n.* (PACA-AGP); Quaraí, 14/I/1941, *B. Rambo s.n.* (PACA-AGP); Quaraí, Faz. do Jarau, I/1945, *B. Rambo s.n.* (PACA-AGP); Quaraí, Cerro do Jarau, 8/XII/1987, *F.R. Galvani s.n.* (HUCS); Quevedos, 2,5Km de Quevedos, em direção a rodovia Boca Picada, 05/II/1994, *Eggli 2480* (PACA-AGP); Santa Maria, Estação Experimental de Silvicultura, 02/I/1956, *O.R. Camargo 2065* (BLA); Santa Maria, 06/III/1947, *W. Rau s.n.* (PACA-AGP); Santana do Livramento, Morro Vigia, 12/I/1941, *B. Rambo s.n.* (PACA-AGP); Santo Antônio das Missões, Cerca de 35 km a oeste de S. L. Gonzaga, trevo para Bossoroca, na BR -285, 03/XII/1989, *J.F.M. Valls, 12238* (BOTU); São Francisco de Assis, Fazenda São José, 17/II/1962, *V. Fagundes s.n.* (BLA); São Gabriel, Faz. Santa Cecília, I/1944, *B. Rambo s.n.* (PACA-AGP); Tupanciretã, Ch. Dr. Fernandes, 29/I/1942, *B. Rambo s.n.* (PACA-AGP); Tupanciretã, Ijuizinho, 30/I/1942, *B. Rambo s.n.* (PACA-AGP); Tupanciretã, Jari, 27/I/1942, *B. Rambo s.n.* (PACA-AGP); Vacaria, 27/XII/1946, *B. Rambo s.n.* (PACA-AGP); Vacaria, Faz. da Ronda, 11/I/1947, *B. Rambo s.n.* (PACA-AGP); **Santa Catarina:** Lages, 1935, *A. Bruxel s.n.* (PACA-AGP); **Santa Catarina:** Lajes, Morro Pinheiro Seco, 3 km east of Lajes, 15/I/1957, *L.B. Smith 10035* (NY); Sombrio, 07/II/1946, *B. Rambo s.n.* (PACA-AGP); **São Paulo:** Botucatu, À margem da rodovia João Melão, que liga São Manuel à Avaré, no Km 296, 13/II/1986, *Bicudo, L.R.H. 510* (BOTU); Pratânia, Reserva Particular Palmeira da Serra, 09/I/2003, *Campos, C.J. 189* (BOTU);
PARAGUAY. Amambay: cerca y al sur de Bellavista, 13/II/1982, *J.F. Casas 6313* (NY); **Caaguazú:** Cercanias de Yhú, 22/II/1982, *J.F. Casas 6417* (NY); **Canindeyú:** Ypehú, 12/I/1979, *L. Bernardi 19488* (NY); **Central:** Caballero, 20/I/1889, *T. Morong 399* (NY); **Misiones:** Santiago, Estancia La Soledad, 15/XII/1969, *T.M. Pedersen 9573* (NY); **San Pedro:** Alto Paraguay, Primavera, 18/XII/1955, *A.L. Woolston 628* (NY); *E. Hassler 1798* (NY); *P. Jorgensen 3628* (NY); *E. Hassler 6572* (NY); *E. Hassler 7018* (NY);
URUGUAY. Artigas: Ruta 30, km 140. Borde de camino, 11/XII/1995, *V.S. Neffa 245* (NY); **Canelones:** Atlantida, 5/II/1939, *Rosengurt 2830* (NY); **Cerro Largo:** Río Negro, Palleros, XII/1937, *Rosengurt 79* (NY); **Durazno:** Durazno, Ruta 5, km 196, 11/XII/1997, *V.S. Neffa 412* (NY). in Montevideo, 1820-1821, *F. Sellow s.n.* (B, G, GH, HBG, K, M).

27. *Stylosanthes nunoi* Brandão

BRAZIL. Bahia: Correntina, ca. 43 km W de Santa Maria da Vitória na estrada para Correntina, 15/II/2000, *L.P. Queiroz 6040* (HUEFS); Correntina, 7 km SW de Correntina, 2/II/1963, *A. Krapovickas 30162* (NY); **Maranhão:** Timon, BR-316, Timon - Caxias, Km 40, 28/V/1980, *L. Coradin 2633* (CEN); Timon, BR-316, Timon - Caxias, Km 40, 28/V/1980, *L. Coradin 2634* (CEN); Timon, Rodovia Timon - Caxias (BR - 316), km 33, 02/VII/1987, *L. Coradin 7938* (CEN); **Mato Grosso:** Barra do Garças, 10.0 km a noroeste do acesso a Águas Quentes na estrada Barra dos Garças-Araguaiana, 1/V/1995, *J.F.M. Valls 13795* (BOTU, CEN); Chapada dos Guimarães, at western edge of the Chapada dos Guimarães, 13/II/1973, *W.R. Anderson 11360* (NY); Chapada dos Guimarães, Guarita policial próximo ao Portão do Inferno, 30/I/1989, *M.*

Brandão 14679 (PAMG); Chapada dos Guimarães, Desvio para o Véu da Noiva, 30/I/1989, *M. Brandão 14681* (PAMG); Chapada dos Guimarães, Portão do Inferno, 28/I/1989, *M. Brandão 14683* (PAMG); Chapada dos Guimarães, Após desvio para o Véu da Noiva, 30/I/1989, *M. Brandão 14701, 14704, 14741* (PAMG); Chapada dos Guimarães, 26/II/1997, *A.G. Nave 1259* (ESA, PAMG); Comodoro, Posto Indígena Mamidê, 21/V/1985, *J.F.M. Valls 8828* (BOTU, CEN); Cuiabá, Estrada Cuiabá - Chapada dos Guimarães, 30/I/1989, *M. Brandão 14738* (PAMG); São Félix do Araguaia, Beira do Rio Araguaia, entre São Félix do Araguaia e o encontro com o Rio das Mortes. Praia do Gado, 16/III/1997, *V.C. Souza 14245* (ESA, HUEFS, MBM, PAMG); São Félix do Araguaia, Estrada para Alto da Boa Vista, ca. 9 km de São Félix do Araguaia. Fazenda Engenho Velho. 180 m.s.m. Savana Parque. Área florestada, alagada (buritizal), 18/III/1997, *V.C. Souza 14415* (ESA); Xavantina, Collected near the base camp of the expedition (12°54'S - 51°52'W c. 270 km N of Xavantina), 1967, *J.F. Ramos 66* (P); Xavantina, Acampamento da Expedição Inglesa, 22/II/1969, *E. Onishi 980* (UB); Xavantina, Km 255, Xavantina-Cachimbo road, 4/I/1968, *D. Philcox 3887* (NY, P); **Minas Gerais:** Uberlândia, Reserva Ecológica do Panga, 13/II/1987, *G.M. Araújo 106* (PAMG, HUFU); **Tocantins:** Araguaína, Ca. 10 km S. of Araguaína, 16/III/1968, *H.S. Irwin 21251* (NY); Fortaleza do Tabocão, Ca. 12 km S. of Guará, 20/III/1968, *H.S. Irwin 21576* (NY); Mateiros, Estação ecológica Serra Geral de Tocantins. Estrada Mateiros para Ponte Alta de Tocantins, 4/III/2015, *R.C. Forzza 8535* (RB);

28. *Stylosanthes pauciflora* (M.B. Ferreira & Sousa Costa) Gissi & Fort.-Perez

AREGENTINA. Misiones: San Ignacio, Teyu Cuaré, cmaino al paraje Payal, 20/II/1996, *O. Morrone 1004* (NY);
BRAZIL. Alagoas: Maceió, Santa Rita, suburbs of Maceió, 4/IX/1987, *S. Tsugaru B-1485* (NY); **Bahia:** Barreiras, Estrada Barreiras- Ibotirama (BR-242), km19, 8/IX/1992, *L. Coradin 8500* (BOTU, CEN); Correntina, BR-020, 398, Brasília - Fortaleza, beira de estrada, 27/IX/1978, *L. Coradin 1141* (BOTU, CEN); Correntina, BR-242, km 662, rodovia Braasíliaa-Fortaleza, beira de estrada, 28/IX/1978, *L. Coradin 1166* (BOTU, CEN); Ibotirama, Rodavia BR-242 (Ibotirama-Barreiras) Km 86, 7/VII/1983, *L. Coradin 6627* (NY); Itaberaba, encosta da Serra de Orobó, VIII/1974, *Geraldo Pinto s.n.* (PACA-AGP); Jaborandi, Rod. Jaborandi/Correntina, 9.5 km da sede do município, 19/IV/2001, *J.G. Jardim 3690* (NY); Lençóis, Estrada de Lençois para BR 242, ±5-6km. ao N de Lençois, 19/XII/1981, *G.P. Lewis 870* (NY); Oliveira dos Brejinhos, Serra da Agua Quente, 16/IV/1999, *R.C. Forzza 1262* (NY); Rio de Contas, Cerca de 10 km do povoado de Mato Grosso em direção a Rio de Contas, 15/VII/2001, *V.C. Souza 25994* (ESA); Rio de Contas, Cerca de 2 km N de Rio de Contas, próximo à barragem. 13o34'11"S, 41o49'41"W. 1020 m.s.m. Caatinga, 16/VII/2001, *V.C. Souza 26161* (ESA); Rio de Contas, Pico do Itubira. Cerca de 31 km SW da cidade, caminho para Mato Grosso, 29/VIII/1998, *A.M.V. de Carvalho s.n.* (NY); **Ceará:** Crato, Estrada do Lameiro, km 5 (desde o centro da cidade, praça da Sé, 25/VI/1987, *L. Coradin 7812* (BOTU, CEN); Crato, Estrada do Lameiro, localidade Luanda, sítio São Francisco Ribeiro Parente, 25/VI/1987, *L. Coradin 7802* (BOTU, CEN); Crato, Rodovia Crato-Araripina, km 22, aeroporto desativado de Crato, chapaada do Araripe, 24/VI/1987, *L. Coradin 7773* (BOTU, CEN); Crato, Rodovia Crato-Exu, km 7, subida da Chapada do Araripe, 24/VI/1987, *L. Coradin 7792* (BOTU, CEN); Tianguá, Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1/VII/1987, *L. Coradin 7893* (BOTU, CEN); **Distrito Federal:** Brasília, , V/1975, *E.P. Heringer 14649* (UB); 2 Km S do Catetinho, 1983, *M.C.G. Kirkbride 1647* (UB); Aeroporto, 08/VII/1965, *D. Sucre 705* (UB); ARIE do Cerradão, ARIE do Cerradão, 05/X/2007, *J.S. Silva 114* (UB); Bacia do Rio São Bartolomeu, adjacências do Córrego Forquilha, 7/V/1981, *E.P. Heringer 6922* (NY); Bacia do Rio São Bartolomeu, 22/V/1980, *E.P. Heringer 4859* (NY); Ca. 10 km S. of Brasília, on road to Belo Horizonte, 23/IX/1965, *H.S. Irwin 8592* (NY, UB); Campo Experimental do IRI, 18/II/1967, *A. Cardoso 1410* (NY); Chapada da Contagem, 29/VII/1980, *S.P. Almeida 116* (UB); Chapada da Contagem, 1973, *E.P. Heringer 12809* (UB); Chapada da Contagem, ca. 15 km. E. of Brazilia, 18/VIII/1964, *H.S. Irwin 5282* (NY, UB); Escola Fazendária, /VIII/1980, *L. Fiedler 23* (MBM, UB); Escola Fazendária, VIII/1980, *Maury, C 93* (UB); Fazenda Água Limpa, 1982, *M.C.G. Kirkbride 1617* (UB); Fazenda do Torto, 29/V/1965,

B.D. Sucre 348 (NY, UB); Fazenda Sucupira - campo sujo próximo ao Capril, 11/IX/2006, *G.D. Vale 4* (UB); 14/IX/2006, *T.M. Cipriano 8* (UB); Gorge of Rio São Bartolomeu, immediately E. of Barragem Paranoá, 27/II/1970, *H.S. Irwin 26713* (CEN, NY); Just west of UnB Campus, 15/VII/1974, *A.A. Lasseigne 4348* (NY); Memorial das Idades do Brasil, 05/V/2010, *M.L. Ianhez 109* (UB); Parque Recreativo e Reserva Ecológica do Gama, 16/VI/2000, *D.S. Brito 48* (UB); Planaltina, rodovia Brasília- Formosa, beira de estrada, 25/IX/1978, *L. Coradin 1095* (BOTU, CEN); Proximidades da Barragem Paranoá, 31/V/1983, *L.N. Pamplona 12* (UB); Reserva Ecológica do Gama, 25/V/1965, *B.D. Sucre 285* (NY, UB); Rio Saia Velha, 1983, *M.C.G. Kirkbride 1652* (UB); Rio Saia Velha, s.d., *M.C.G. Kirkbride 1676* (UB); Summit of Chapada da Contagem, ca. 10 km. E. of Brasília, 12/IX/1965, *H.S. Irwin 8237* (NY, UB); Gama, Parque Recreativo e Reserva Ecológica do Gama, 01/II/2001, *B.M. Gomes 212* (UB); Planaltina, Perto da DF 06, 10 Km S de Planaltina, 23/XI/1983, *J.H. Kirkbride Junior 5496* (UB); Sobradinho, 5 Km S de Sobradinho, 14/IX/1983, *M.C.G. Kirkbride 1668* (UB); **Espirito Santo:** Guarapari, Rodovia do Sol, km 20, estrada Vitória-Guarapari (ES-060), 30/VIII/1987, *L. Coradin 8356* (BOTU, CEN); Vila Velha, Rodovia do Sol, km 20, estrada Vitória-Guarapari (ES-060), 29/VIII/1987, *L. Coradin 8350* (BOTU, CEN); **Goiás:** 1 Km S da fonte da Água Mineral Indaiá. Margem da estrada, 23/IV/1983, *M.C.G. Kirkbride 1638* (UB); Alto do Paraíso de Goiás, Caminho para o mirante São Jorge, 27/III/2005, *A.S. Rodrigues 244* (BOTU, CEN); Alto Paraíso de Goiás, Parque Nacional da Chapada dos Veadeiros, São Jorge, Trilha dos Saltos, 24/XI/2014, *M. Verdi 7266* (NY); Caldas Novas, 11/VII/1987, *S. Tsugaru B-151* (NY); Cocalzinho de Goiás, Serra dos Pirineus, ca. 11 km N. of Corumbá de Goiás, 2/XII/1965, *H.S. Irwin 10905* (NY); Corumbá de Goiás, Rio Corumbá at great falls, ca. 12 km N of Corumbá de Goiás, 17/I/1972, *H.S. Irwin 34384* (NY); Cristalina, 10 km de Cristalina em direção a Unaí (GO-309). Serra dos Cristais, 10/IX/1998, *V.C. Souza 21357* (ESA); Cristalina, 30 Km N de Cristalina, BR 040, /V/2002, *S.I. Elias 604* (ESA); Cristalina, Br. 50, Km 100, 1978, *N.B.M. Brantjes 708101* (BOTU); Cristalina, Estrada para Unaí. Ca. 1,5km da BR 040. Campo rupestre degradado, 21/I/2005, *J. Paula-Souza 4295* (ESA); Cristalina, Linha Sera dos Topazios. Centro Oeste. RPPN Linda Serra dos Topázios. Trilha que leva ao poço da Diretoria, 23/III/1996, *G.L. Moretto 52* (UB); Cristalina, Rodovia Cristalina- Catalão (BR-050) km 10, 20/VIII/1987, *L. Coradin 8097* (BOTU, CEN); Cristalina, Rodovia Cristalina-Catalão (BR-050) km 10, 20/VIII/1987, *L. Coradin 8098* (BOTU, CEN); Cristalina, RPPN Linda Serra dos Topázios. Centro Oeste, 18/VI/1996, *C.E.B. Proença 1423* (UB); Cristalina, Serra dos Cristais, ca. 15 km E. of Cristalina, 8/III/1966, *H.S. Irwin 13776* (NY); Cristalina, Serra dos Cristais, ca. 3 km N. of Cristalina, 2/III/1966, *H.S. Irwin 13265* (NY); Formosa, Rodovia entre Brasília-Fortaleza (BR-020) Km 82 entre Formosa e posse, 14/VI/1983, *L. Coradin 5675* (NY); Córrego do Jaraguá, s.d., *J.B.E. Pohl 949* (NY); Luziana, Rodovia Brasília-Cristalina (BR-040), 48, 20/VIII/1987, *L. Coradin 8076* (BOTU, CEN); Luziana, Rodovia Brasília-Cristalina (BR-040), 48, 20/VIII/1987, *L. Coradin 8077* (BOTU, CEN); Luziânia, 18/VII/1978, *T.S. Filgueiras 231* (UB); Pirenópolis, Serra dos Pireneus, Estrada de chão desde a estada Pirenópolis-Parque estadual dos Pirineus em direção da Faz. Portal Lázaro, 19/III/2006, *P. G. Delprete 9603* (NY, UB); Pirenópolis, Serra dos Pireneus. Estrada para a subida da serra desde Pirenópolis, primeira estrada da chão para a Chachoeira da Andorinha, 21/XII/2007, *P. G. Delprete 10508* (NY); Posse, BR-020 entre Posse e Barreiras Km 7, 15/VI/1983, *L. Coradin 5688* (NY); Rialma, Rodovia Ceres-Anápolis (BR153), km 8, 7/VII/1987, *L. Coradin 8055* (BOTU, CEN); Rianápolis, Rodovia Ceres-Anápolis (BR153), km 20, 7/VII/1987, *L. Coradin 8057* (BOTU, CEN); **Maranhão:** Balsas, Br-406 Carolina-MA/Pastos Bons, 21/IX/1979, *L. Coradin 2223* (BOTU, CEN); Grajaú, Serra das Alpergatas, about 80 km S of the village Grajaú, along the road Grajaú-Fortaleza dos Nogueiras, 28/VII/1982, *G.K. Gottsberger 24-28782* (NY); Timon, Rodovia Timon-Caxias (BR-316), km 35, 2/VII/1987, *L. Coradin 7935* (BOTU, CEN); **Mato Grosso:** Eastern base of mountain ca. 9 km NE of Barra do Garças, 5/V/1973, *W.R. Anderson 9736* (NY); **Minas Gerais:** Belo Horizonte, Estação Ecológica UFMG, 30/V/1990, *E. Tameirão Neto et al. 47* (BHCB); Belo Horizonte, Estação Ecológica UFMG, 5/VIII/1999, *R. Loyola s.n.* (BHCB); Belo Horizonte, Estação Ecológica UFMG, 4/VII/1996, *Y. Antonini 90* (BHCB); Canápolis, Along highway BR-365, 24/VII/1974, *G. Eiten A267* (UB); Corinto, Beltrão, 13/III/1997, *G.G. Hatschbach 66162* (NY); Diamantina, 16 Km de Diamantina em direção a Mendanha. Campo rupestre, 6/VII/1996, *V.C. Souza 11920* (ESA); Diamantina, Serra do Espinhaço, ca. 7 km N. of São João da Chapada, road to Inhaí, 29/III/1970,

H.S. Irwin 28615 (NY); Espera Feliz, Divisa MG/ES - Espera Feliz (BR-482), km10, 30/VIII/1987, *L. Coradin 8367* (BOTU, CEN); Gouveia, Rodovia Curvelo-Diamantina. Ca 26km de Gouveia em direção a Curvelo, 5/IV/1998, *V.C. Souza 21020* (ESA); Gouveia, Rodovia Curvelo-Diamantina. Ca 37km de Gouveia em direção a Curvelo, 5/IV/1998, *V.C. Souza 20881* (ESA); Grão Mogol, Vale do Córrego Escurona, 13/VI/1990, *R. Simão-Bianchini CFCR12824* (NY); João Pinheiro, 29/5/1976, *N.M. de Sousa Costa 628* (PAMG); Mariana, A1 NW de Mariana, 11/V/2012, *M. Carvalho-Silva 1589* (UB); Ouro Preto, Lower slopes of Pico de Itacolomí, ca. 2 km S. of Ouro Preto, 30/I/1971, *H.S. Irwin 29358* (NY); Paracatú, Serra da Anta, summit of chapada, ca. 2 km N. of Paracatú, 5/II/1970, *H.S. Irwin 26051* (NY); Pouso Alegre, Rodovia Pouso Alegre-borda da mata(MG -179), km 12, a partir do trevo, 23/VIII/1987, *L. Coradin 8200* (BOTU, CEN); Rio Pardo de Minas, Parque Estadual Serra Nova, 21/III/2012, *D. Araújo 2060* (BHCB); Santana do Pirapama, Serra do Cipó (Serra da Lapa), 20/II/2007, *V.C. Souza 32920* (BHCB); Santo Antônio do Retiro, Sítio 10, ponto 6, 17/III/2017, *A.C. Sevilha 6530* (BOTU, CEN); Uberaba, Rodovia Uberlândia - Uberaba (BR-050) km 92, 21/VIII/1987, *L. Coradin 8127* (BOTU, CEN); **Pará:** Ourém, Ourém-Capitão Poço, a 200 m da ponte da saída da cidade de Ourém, 27/XI/1988, *N.M.S. Costa 2437* (BOTU, CEN); **Paraíba:** 30/VIII/1959, *J.C. de Moraes Vasconcelos 2234* (NY); **Pernambuco:** Near Praia do Gaibu, 25 km S from Recife, 31/VIII/1987, *S. Tsugaru B-1329* (NY); 1836, *G. Gardner 972* (NY); **Piauí:** Gilbués, Rodovia Correntes-Bom Jesus, 2 km leste da cidade de Gilbués, 18/VI/1983, *L. Coradin 19542* (NY); **Santa Catarina:** Campo Alegre, Rodovia Cristalina- Catalão (BR-050) km 145, 20/VIII/1987, *L. Coradin 8105* (BOTU, CEN); **São Paulo:** Botucatu, 18 km north, 14 km east of São Manuel. Along the São Manuel-Piracicaba highway. Near ex-railway station "Treze de Maio", 19/VII/1979, *M. P. Noronha 11-19779* (NY); Ibaté, 11 km due NW of center of city of São Carlos, along the main highway that passes near Ibaté, 21/VI/1961, *G. Eiten 3092* (NY); Ibaté, 11km due NW of center of São Carlos along the main highway that passes near Ibaté, 21/VI/1961, *G. Eiten 3092* (UB); Itirapina, Entroncamento da rodovia Washinton Luiz - Pirassununga (BR-225), km2, 22/VIII/1987, *L. Coradin 8167* (BOTU, CEN); Moji-Guaçu, Martinho Prado, Reserva Biologica da Fazenda Campininha, 26/V/1981, *W. Mantovani 3870* (NY); Pardinho, Estrada João Emílio Roder, 18/III/III, *D.S. Gissi 435* (BOTU); Ribeirão Preto, Via Anhanguera 11 km norte de Ribeirão Preto, 21/VIII/1987, *L. Coradin 8150* (BOTU, CEN); São Carlos, 3.5 km NNW of center of city of São Carlos, 14/VI/1961, *G. Eiten 2917* (NY); Taquaritinga, Ca. 10 km south of Taquiritinga, at km 322-323 on the Araraquara-S.José do Rio Preto highway, 17/VI/1961, *G. Eiten 2992* (NY); Ubatuba, Rodovia Ubatuba-Paraty(BR-101), km 17, 25/VIII/1987, *L. Coradin 8244* (BOTU, CEN); **Tocantins:** Novo Jardim, 20/VII/2000, *V.C. Souza 24286* (ESA);
GUYANA: Orinduik Falls, 15/VIII/1958, *S.G. Harrison 1459* (NY);
PERU. Pasco: Oxapampa, shumahuani Ranch, 29/VIII/1966, *M. S. Chrostowski 1004* (NY);
VENEZUELA. Bolivar: Gran Sabana, ca. 10 km SW of Karaurin Tepui at juction of Rio Karaurin and Rio Asadon, 26/IV/1988, *R. Liesner 23850* (NY); **Miranda:** Caracas, Galipan mountain, V/1874, *O. Kuntze 1524* (NY);

29. *Stylosanthes pilosa* M.B. Ferreira & Sousa Costa

BRAZIL. Bahia: Abaré, Dunas próximo ao rio São Francisco., 16/I/2015, *A.P. Fontana 8985* (RB); Feira de Santana, Campus Universitário entre o 1º e o 4º módulo, 07/X/1996, *M.E.R. Junqueira 8* (UB); Formosa do Rio Preto, Próximo ao Córrego Riachão., 8/IV/1989, *R.C. Mendonça 1410* (RB); Jaborandi, Rod. Jaborandi/Correntina, 9.5 km da sede do municipio., 19/IV/2001, *J. G. Jardim 3682* (NY); Juazeiro , BR-407, Petrolina-Salvador, km 35, 10/IV/1979, *L. Coradin 1413* (BOTU, CEN); Morro do Chapéu, Fedegoso, 28/VIII/1981, *J.D.C.A. Ferreira 43* (NY); Morro do Chapéu, Rodovia Morro do Chapéu-Irecê (BA-052) km 21., 29/VI/1983, *L. Coradin 6240* (NY, RB); Santa Maria da Vitória, Rod. BA-347, km 26-27., 17/III/1995, *G.G. Hatschbach 61989* (NY); Umburanas, Serra do Curral Feio (localmente referida como Serra da Empreitada): à beira do rio Tabuleiro, ca. 10 km NW de Delfino na estrada que sai pelo depósito de lixo, 11/IV/1999, *L.P. de Queiroz 5345* (NY); Xique-Xique, Estrada Xique-Xique-Santo Inacio km 25, 30/VI/1983, *L. Coradin 6280* (NY); **Ceará:** Missão Velha, Rodovia Juazeiro do Norte, entroncamento da BR-1116, km 23, 27/VI/1987, *L. Coradin 7833* (BOTU, CEN);

Maranhão: Timon, Rodovia Timon-Caxias (BR-316), km 34, 2/VII/1987, *L. Coradin 7934* (BOTU, CEN); **Minas Gerais:** Buritizeiro, BR 365, km 201, 28/II/1976, *N.M. de Sousa Costa & M.B. Ferreira 362* (PAMG, RB); Januária, 7.5 km by road W of Rio Pandeiros on road from Januária to Serra das Araras, 18/IV/1973, *W. R. Anderson 9066* (NY); Pedras de Maria da Cruz, Rod. BR-135, km 16., 21/IV/2007, *Ribas, O. S. 7798* (MBM); Rio Pardo de Minas, Parque Estadual Serra Nova, 25/III/2012, *S.N. Moreira 620* (BHCB); **Pernambuco:** Petrolina, Rodovia Petrolina Lagoa Grande (BR-122), km 4, 23/VI/1987, *L. Coradin 7737* (BOTU, CEN); **Tocantins:** Araguaina, Cerca de 4,2 k a sudeste do rebeirão Jacuba, na saída de Araguaiana, em direção a Filadélfia, 19/V/1991, *J.F.M. Valls 13013* (BOTU, CEN); Guaraí, 10 km north of Guaraí along Belém-Brasília highway (BR-153), 26/II/1980, *T. C. Plowman 9149* (NY).

30. *Stylosanthes pohliana* Taub.

BRAZIL. Hab. in Brasiliae provincia Bahiensis et provincia ignota ad Corgodo Padre, 1836, *J.B.E. Pohl 1997* (K, M, NY, W); **Goiás:** Cavalcante, Margem do rio Preto, atingindo pela fzenda Sr. David, beira do rio, 26/VI/2001, *G. Silva-Pereira 5162* (BOTU, CEN); Cavalcante, Canteiro da obra rio São Felix, km 19, margem direita do rio do Carmo, 22/VIII/2001, *G. Silva-Pereira 5309* (BOTU, CEN); Cavalcante, Rio das almas, 29/IX/2011, *J.M. Silva 7923* (MBM); Colinas do Sul, Rodovia para Niquelândia, ponte Rio Tocantins, 14/VI/1993, *G. Hatschbach 59545* (PAMG); Goiás, Córrego Santo Antonio, 7 km SSE de Goiás (Velho), 6/I/1984, *J.H. Kirkbride Jr. 5521* (NY); Teresina de Goiás, Rio São João, 06/XI/1991, *G. Hatschbach 55976* (PAMG); **Minas Gerais:** São Gonçalo do Abaeté, Rod. BR-365, 30 km S do trevo com BR-040, 2/IV/1992, *G. Hatschbach 56452* (NY);

31. *Stylosanthes pubescens* (Pilger) Gissi & Fort.-Perez.

BOLIVIA. Santa Cruz: Chiquitos, Calles de el Pueble de Santiago em dirección hacia el hotel Panorama, 25/XI/2007, *J.R.I. Wood 23955* (NY);
BRAZIL. Bahia: Água Quente, Pico das Almas. Vertente norte. Vale ao oeste da Serra do Pau Queimado, 16/XII/1988, *R.M. Harley 27266* (NY); **Distrito Federal:** Brasília, 1 Km do Cimento Tocantins, 12/V/1983, *M.C.G. Kirkbride 1654* (UB); Brazlândia-Sítio Coité do Cerrado, 08/IV/2014, *A.M. Alonso 1213* (CEN); Campo Experimental do IRI, 18/II/1967, *A. Cardoso 1476* (NY); Campo Experimental do IRI, 18/II/1967, *A. Cardoso 1580* (NY); Gama, Embrapa CTZL, 01/VII/2013, *A.M. Alonso 970* (CEN); Gama, Embrapa CTZL, 31/X/2013, *A.M. Alonso 1314* (CEN); **Goiás:** Alexania, Rodovia Brasília-Anapólis, BR-060, km 78-GO, 03/X/1980, *L. Coradin 3449* (CEN); Campinaçu, Region of the southern Serra Dourada. 20 km east of Formoso, 16/V/1956, *E.Y. Dawson 14880* (NY); Ceres, BR-153 Brasília-Belém, 21/VIII/1978, *A.C. Allem 2079* (CEN); Goiás Velho, Serra Dourada, ca. 17 km (straight line) S of Goiás Velho, ca. 6 km NE of Mossâmedes, in and along margin of forest on lower eastern slope of serra, 12/V/1973, *W.R. Anderson 10198* (NY); Rianápolis, Rodovia Ceres-Anápolis (BR-153), km 20, 7/VII/1987, *L. Coradin 8058* (BOTU, CEN); Serra Branca, rio Preto, fazenda Manoel da construtora, km 4, Canteiro de obras, próximo à estaçao de tratamento de água, 23/V/2001, *G. Silva-Pereira 5117* (BOTU, CEN); **Maranhão:** Estreito, Canteiro de obras próximo a pedreira, 8/III/2007, *G. Silva-Pereira 11321* (BOTU, CEN); Imperatriz, BR-010, Belém-Brasília, km 645, Imperatriz-Porto Franco, 18/IX/1979, *L. Coradin 2160* (BOTU, CEN); Porto Franco, Rodovia Imperatriz-Porto Franco (BR-010), km 76, 4/VII/1987, *L. Coradin 8006* (BOTU, CEN); **Mato Grosso:** Rio Ronuro, V/1899, *R. Pilger 625* (B); Cáceres, Rodovia Cáceres-Caramujo (BR-174), km 15, 26/VIII/1984, *L. Coradin 6940* (CEN); Denise, Rodovia Denise-Arenápolis (MT-343), km 6, 27/VIII/1984, *L. Coradin 7004, 7012* (CEN); Luciara, Rodovia Porto Alegre do Norte entroncamento da BR-158 com a BR-080, km 12, 14/IX/1984, *L. Coradin 7244* (CEN); Nortelândia, Fazenda Camargo (Arrossensal). Reserva Florestal da Fazenda. 20 Km NNE (em linha reta) de Nortelândia. Transição Floresta Estacional/Floresta Ombrófila, 21/V/1997, *V.C. Souza 16737* (ESA); São Félix Do Araguaia, Rodovia sede da fazenda Suiá Missú-São Félix do Araguaia (BR-242), 3 km leste da sede da fazenda, 14/IX/1984, *L. Coradin 7266* (CEN); **Mato Grosso do Sul:** Corumbá, Fazenda Firme, Pantanal da Nhecolândia, 00/XI/1978, *J.A. Comastri*

Filho 6 (CEN); **Minas Gerais:** Caeté, 4/II/1976, *N.M. Sousa Costa & M.B. Ferreira 308* (PAMG, RB); Caeté, Lado Oeste da cidade. Ao fundo vê-se um inselberg que fica por trás duma casa branca de dois andares, 30/III/1999, *N.M.S. Costa 3064* (CEN); Gouvea, Direção Diamantina-Gouvea, 05/III/1999, *N.M.S. Costa 3028* (CEN); Grão Mogol, Assentamento Americana, 22/XI/2014, *A.B. Giroldo 378* (CEN); Paraopeba, Hôrto Florestal de Paraopeba, s.d, *E.P. Heringer 3635* (NY, UB); Prados, Rodovia Barbacena-São João Del Rei (BR-265), km 40, 31/VIII/1987, *L. Coradin 8390* (CEN); Uberaba, Rodovia Uberlândia-Uberaba (BR-050) km 78, 21/VIII/1987, *L. Coradin 8121* (BOTU, CEN); Viçosa, Campus da Universidade de Viçosa, 1979, *W.N. Vidal 16* (NY); Estr. BR.58, pr. Caxambú, 29/III/1964, *Z.A. Trinta 665* (NY); Felixlandia para Brasília, 19/VI/1964, *J.M. Pires 57959* (NY); **Pará:** Capanema, A 4,2 Km do trevo da BR-316 com a BR-010 em direção à Capanema, 27/X/1987, *R.F.A. Veiga 212* (CEN); **Santa Catarina:** Campo Alegre, Rodovia Cristalina-Catalão (BR-050) km 145, 20/VIII/1987, *L. Coradin 8113* (CEN); **São Paulo:** Aguaí, Rodovia Aguaí-São João da Boa Vista (SP-344), km 9, 22/VIII/1987, *L. Coradin 8174* (CEN); Bauru, Bairro Quirombo, 14/III/1985, *K. Mizoguchi 2305* (NY); Botucatu, 08/V/2006, *L.B. Santos 22* (BOTU); Botucatu, Estrada Mun. Geraldo Biral. Usina Indiana, 15/IV/2019, *D.S. Gissi 439, 440, 442* (BOTU); Buri, Sítio Três Irmãos. Margem da estrada em direção à casa, 29/IV/2018, *D.S. Gissi 384* (BOTU); Buri, Sítio Três-Irmãos. Propriedade particular do coletor. Km 8. Bairro dos Costas, 8/VI/2019, *D.S. Gissi 478* (BOTU); Charqueada, Estrada Piracicaba-Charqueada SP 308 km 187, 22/III/1999, *N.M.S. Costa 3056* (CEN); Duartina, Rod. Marília-Bauru km 374,5, canteiro central da rodovia, em frente da entrada para a faz. Lima, 12/III/1999, *N.M.S. Costa 3051* (CEN); Herculândia, a 10 Km da cidade, 07/VI/1976, *H. Freitas Leitão Fillho 2022* (CEN); Ibaté, 2.3 km along dirt road SW of Ibaté, 15/VI/1961, *G. Eiten 2933* (NY); Itirapina, Rod. Eng. Paulo Nilo Romano. SP-225, próximo do km 100 em direção a Itirapina-Cerrado-Área alagada, Itirapina, São Paulo, Brasil, 29/IV/2017, *T. Flores 2589* (ESA); Marília, Saída de Marília pela Av. Stº Antônio, a seguir e no próprio canteiro do balão sobre a placa toponímia, 12/III/1999, *N.M.S. Costa 3048* (CEN); Matão, IRI Experimental Garden, 1966, *IRI Experimental Garden 1477* (NY); Moji-Guaçu, "Campos das Sete Lagôas". Fazenda Campininha, just north of Rio Moji-Guaçu. 3.3 km NNW of Padua Sales, 20/IV/1961, *G. Eiten 2686* (NY); Moji-Guaçu, "Campos das Sete Lagôas", 21/IV/1961, *G. Eiten 2744* (NY); Monte Mor, Haras Vanguarda. Interior de Mata Ciliar, 12/VI/1998, *J. Paula-Souza 2333* (ESA); Piacatu, Km 2,4 Piacatu-Rinópolis, 11/III/1999, *N.M.S. Costa 3043* (CEN); Pinhal, Bairro das Tres Fazendas, Fazenda Santa Tereza, 13/XI/1947, *P. Gonçalves 1513* (NY); Pirassununga, Entroncamento da rodovia Washinton Luiz-Pirassununga (BR-225), km 2, 22/VIII/1987, *L. Coradin 8168* (BOTU, CEN); Ribeirão Preto, Via Anhanguera 11 km norte de Ribeirão Preto, 22/VIII/1987, *L. Coradin 8152* (BOTU, CEN); **Tocantins:** Colinas Do Tocantins, Rodovia Colinas de Goiás-Conceição do Araguaia, (GO-280), 12/IX/1984, *L. Coradin 7194, 7201* (CEN); Nova Olinda, Rodovia Araguaia-Colinas do Tocantins(BR-158), km 61, 5/VII/1987, *L. Coradin 8018* (BOTU, CEN); Paraíso do Tocantins, Rodovia Paraíso do Tocantins-Gurupi (BR-153), km 19, 6/VII/1987, *L. Coradin 8036* (BOTU, CEN).

32. *Stylosanthes recta* Vanni

PARAGUAY. Boquerón: Parque Valle Natural, 25 km S de Filadelfia, 7/12/1992, *A. Krapovickas 44219* (CTES, G, SI).

33. *Stylosanthes rostrata* (Burkart) Vanni

ARGENTINA. Corrientes: Granja de Bella Vista, 18/VII/1905, *C. Spegazzini* 54, Min. Agr. 14648 (BAB, SI).

34. *Stylosanthes ruellioides* Mart. ex Benth.

BRAZIL. Minas Gerais: Hbt. In campis editis ad Serra do Itambé do Mato dentro. *C.F.P. von Martius s.n.* (M); Km 132 (ca. 153km N of Belo Horizonte), 16/II/1968, *H.S. Irwin 20312* (UB); Conceição, Serra do Cipó. Alto do Palácio, 6/II/1938, *Mello Barreto 8994* (F); Conceição, s.d.,

A. de Saint-Hilaire 864 (MNHN); Congonhas do Norte, Serra Talhada (setor nordeste da Serra do Cipo), ca. 6 km SW da estrada Congonhas do Norte-Gouveia, entrada a 3,7 km NW de Congonhas do Norte, estrada pelo alto da serra em local denominado localmente Retiro dos Pereiras., 4/II/2009, *J.R. Pirani 5748* (NY); Datas, Ca. 15km S of Diamantina, 05/II/1972, *W.R. Anderson 35531* (UB); Diamantina, Estrada Diamantina - Biribiri 4,5 km., 16/II/1989, *T.B. Cavalcanti 206* (CEN, HUEFS, US); Diamantina, Estrada para Milho Verde, cerca de 20 km de Diamantina. Campo rupestre, 6/IV/2010, *G.O. Romão 2504* (ESA); Diamantina, Trevo novo no alto de Diamantina para Mendanha, 04/III/1999, *N.M.S. Costa 3026* (CEN); Diamantina, bairro da Cazuza, cachoeira da Toca, 16/II/1991, *M.M. Arbo 5189* (NY); Rodovia Diamantina - Mendanha, km 11., 04/IX/1987, *L. Coradin 8445* (CEN); 12 km S.W. of Diamantina, 19/I/1969, *H.S. Irwin 22199* (NY, UB); Diamantina, Guinda, 13/III/1983, *G. Hatschbach 44662* (MBM); Diamantina, 6/IV/1892, *A.Glaziou s.n.* (MNHN); Diamantina, Cachoeira da Sentinela, afloramento rochoso, 02/III/1999, *F.R. Feres 99-13* (UEC); Diamantina, Estrada para Biri-Biri, 8/IV/1982, *H. Hensold CFCR3130* (MBM); Serra do Espinhaco, 6 km by road N of Gouveia on road to Diamantina; galllery forest along stream and slopes, on side being rocky (quartsizte), the other side having an area of grassy cerrado, 10/IV/1973, *W.R. Anderson 8537* (UB, US); Gouveia, 6km by road N of Gouveia on road to Diamantina, 10/IV/1973, *W.R. Anderson 8577* (UB); Serra do Espinhaco, rocky cerrado slopes, ca. 33 km S.W. of Diamantina, near Gouveia, 19/I/1969, *H.S. Irwin 22275* (UB US); (CEN); Grão Mogol, Ribeirão dos Bois. Estrada Grão-Mogol - São João da Vacaria, na entrada da cidade de Grão-Mogol., 29/IV/1997, *T.B. Cavalcanti 2319* (CEN, HUEFS); Grão Mogol, Arredores, 20/IV/1978, *Hatschbach, G 41233* (UB); Grão Mogol, Grão Mogol, Arredores, 20/IV/1978, *G. Hatschbach 41235* (MBM); Grão Mogol, Em direção nordeste da cidade., 22/V/1982, *M.C.H. Mamede CFCR3469* (HUEFS); Grão Mogol, Margens de córrego à saída da cidade na estrada para o rio Ventania., 25/II/1986, *T.B. Cavalcanti CFCR9643A* (MBM, NY); Grão Mogol, Atrás da Cidade, 13/IV/1981, *I. Cordeiro CFCR793* (ALCB); Itacambira, Estrada Itacambira-Montes Claros, 4 km de Itacambira, subindo a Chapada., 30/IV/1997, *T.B. Cavalcanti 2335* (CEN, HUEFS); Itacambira, Serra da torre na saída da cidade sentido Juramento., 10/III/2015, *D. Cardoso, 3725* (HUEFS); Jaboticatubas, Serra do Cipó, Retiro do Alto do Palácio, 01/V/1993, *F. Barros 2772* (SP); Jaboticatubas, Serra do Cipó, Fda Palacio, 14/II/1973, *G.G. Hatschbach 31599* (NY); Jaboticatubas, Serra do Cipó, km 127 ao longo da rodovia Lagoa Santa-Conceição do Mato Dentro, Diamantina, 07/I/1973, *J. Semir CFSC3801* (SP); Morro do Pilar, Serra do Cipó. Alto do Palácio, *L.C. Rodrigues 102* (BHCB); Rio Vermelho, Pedra Menina, Serra do Ambrósio, 14/VII/1984, *M.G. Wanderley CFCR4467* (F); Rio Vermelho, Pedra Menina, Serra do Ambrósio, 31/VII/1985, *R.M. Silva CFCR7822* (F, MBM); Santa Bárbara, RPPN Caraça. Em área próxima ao asfalto na entrada da trilha da sempre viva., 11/III/2014, *T.B. Cavalcanti 3808* (CEN); Nativo em matas e campos da Serra do Caraça, 13/XII/1978, *H.F. Leitão Filho 9708* (UEC); Santa Bárbara, Serra da Caraça, 23/I/1971, *H.S. Irwin 28956* (UB); Caraça, caminho para gruta do Padre Caio, 14/III/1990, *W. Marcondes-Ferreira 213* (UEC); Santana do Pirapama., Serra do Cipó (Serra da Lapa). Distrito de São José da Cachoeira. Beira da estrada Santana do Riacho - Santana do Pirapama., 02/XIX/2007, *V.C. Souza 32874* (ESA); Santana do Riacho, RPPN Brumas do Espinhaço e Ermo dos Gerais., 15/V/2012, *I.R. Andrade 363* (HUEFS); Santana do Riacho, 01/XI/2006, *A.P. Savassi-Coutinho 950* (ESA, UEC); Santana do Riacho, RPPN Brumas do Espinhaço e Ermo dos Gerais., 27/XI/2012, *M.G.C. Fernandes 1694* (HUEFS); Santana do Riacho, RPPN Brumas do Espinhaço e Ermo dos Gerais., 30/I/2013, *J. Ordones 2161* (HUEFS); Santana do Riacho, 05/I/1993, *Souza, V.C. 3329* (ESA); Santana do Riacho, Rodovia Belo Horizonte-Conceição do Mato Dentro, km 117 atual (antigo 124) Serra do Cipó., 06/III/2002, *J.R. Pirani 5032* (HUEFS); Santana do Riacho, 03/X/1995, *V.C. Souza, 8238* (ESA); Tijucal, Trinta Reis, 5km N, 13/III/1982, *G. Hatschbach 44684* (MBM); *A. de Saint-Hilaire 358* (MNHN);

35. *Stylosanthes scabra* Vogel

COLOMBIA. Cochabamba: 1891, *A.M. Bang 936* (NY); **La Paz:** Sud Yungas, 4.5 km by road W of Huancane, 28/IX/1985, *M. Nee 31989* (NY); **Santa Cruz:** Andrés Ibáñez, 1.5 km NW of center of Cotoca, 1/I/1994, *M. Nee 44287* (NY); Andrés Ibáñez, 4 km S of Rio Grande Planta de

Gas, 23/I/1994, *M. Nee 44621* (NY); Andrés Ibáñez, Canton Ciudad. Av. Kennedy final, 12/VI/1989, *G. Coimbra 548* (NY); Andrés Ibáñez, On Road from Santa Cruz to Camiri, 17/XII/1992, *M. Nee 43103* (NY); Florida, 2.5 km on dirt road off and north from the Samaipata to Mairana highway, the turnoff just below the highest point and on the Mairana side, 7 km (by air) SE of Mairana, 1/I/1998, *M. Nee 47697* (NY); Germán Busch, Serranía del Mutún, cima de la montaña, III/2008, *D. Villaroel 1903* (UB); Gutierrez, Orilla del río Piray, 8km E de Portachuelo, 20/IV/1977, *A. Kaprovickas 31561* (NY); Nuflo de Chavez, Ruta de San Ramon a Ascención de Guarayos, 32 km NW de San Ramon, 21/I/2004, *J.G. Seijo 2962* (NY); Velasco, Borde del camino viejo para Suspiros, salida de San Ignacio, 28/I/1986, *R. Seildel 72* (NY); **Tarija:** Cercado, Cerca Tolomosa Chico, propiedad Paz, 2/I/1986, *E. Bastián 398* (NY); Mendez, 31/I/1987, *R. Ehrich 290* (NY); *G. Mandon 698* (NY);

BRAZIL. Alagoas: Marimbondo, 17/IX/1981, *R.P. Orlandi 547* (NY); Olho d'água do Casado, Faz. Morro Grande, 11/VIII/2000, *R.A. Silva 1663* (RB); **Paripueira**, RPPN Placas, 1/IX/2016, *M. Figueira 488* (RB); Quebrangulo, Reserva Biológica da Pedra Talhada. localité de Quebrangulo, 3/XI/2014, *L. Nusbaumer 4285* (NY); **Rio** Largo, APA do Pratagy. 18/VIII/2016, *R.P. Lyra-Lemos 14072* (RB); **Amazonas:** Manaus, Distrito Agropecuário da Suframa, Rodovia BR-174, km 64, then 23 km east on ZF-3, Fazenda Esteio, Reserva nº 1104, 29/I/1992, *M. Nee 42397* (NY); **Bahia:** Caculé, Ca. 4.7 km E da sede municipal, estrada que leva à torre de televisão, 30/III/2001, *J.G. Jardim 3203* (NY); Caetité, BR -030-Caetité- Brumado, 16,2 km marcados da praça perto do posto Vencedor, 20/V/2004, *G. Silva-Pereira 9089* (BOTU, CEN); Cansanção, Lagoa da Eugenia, southern end near Camaleão, 20/II/1974, *R.M. Harley 16248* (NY, RB); Conde, Rodovia BA-099 (Linha Verde), km 127, a esquerda (sentido norte). Mata do BU, trilha do bebedouro, 14/VI/2000, *M. Alves 2013* (NY); Ilhéus, Centro de Pesquisas do Cacau, 29/III/1965, *R.P. Belém 592* (UB); Ilhéus, Centro de Pesquisas do Cacau CEPEC, 13/IX/1965, *R.P. Belém 1778* (NY); Ilhéus, Margem do Rio Cachoeira, 08/VII/1965, *R.P. Belém 1335* (UB); Ilhéus, Rodovia Itabuna, 5/IV/1965, *R.P. Belém 684* (NY, UB); Ipiaú, Saída para Jequié, 9/III/1967, *R.P. Belém 3400* (NY); Itaberaba, BR-242, Brasília-Fortaleza, beira de estrada, 3/X/1978, *L. Coradin 1228* (BOTU, CEN); Jacobina, Rodovia Jacobina-Senhor so Bonfim, km 3, 22/VI/1987, *L. Coradin 7706* (BOTU, CEN); Jacobina, Rodovia Jacobina-Senhor so Bonfim, km 3, 22/VI/1987, *L. Coradin 7718* (BOTU, CEN); Juazeiro BR-407, Petrolina-Salvador, km 98, 10/IV/1979, *L. Coradin 1425* (BOTU, CEN); Lençóis, Entroncamento da entreda pa Lençóis Entroncamento da entrada para Wagner, km 3, BR-242, 21/VI/1987, *L. Coradin 7684* (BOTU, CEN); Maracás, Rod. Maracás/Contendas do Sincorá (BA 026), km 2, 14/II/1979, *L.A. Mattos Silva 216* (NY); Morro do Chapéu, Rodovia Morro do Chapéu - Várzea Nova, km 1, 21/VI/1987, *L. Coradin 7688* (BOTU, CEN); Mucuri, Distrito Nova Brasília, 26/VII/1984, *J.C.A. Lima 118* (NY); Mucuri, Vale do Rio Mucurí, ao lado da Rodovia BR-101, 16/VII/1968, *R.P. Belém 3886* (NY); Nova Ibiá, Fazenda Dois Irmãos, 13/VIII/2014, *G.S. Silva 433* (NY); Pindaí, Estrada entre Pindaí e Guanambi, ca. 10 km de Pindaí. Caatinga com lagoa temporária, 14/VII/2001, *V.C. Souza 25927* (ESA); Poções, Acesso a Fazenda Boa Esperança com entrada ao S de Morinhos, 8/X/2004, *A.M. Amorim 4299* (RB); Porto Seguro, Parque Nacional Monte Pascoal. Along park road 1-2 km. east of path to peak and visitor center, 17/VII/1997, *W.W. Thomas 11567* (NY); Salvador, Itapoã, 14/VII/1983, *H. P. Bautista 792* (NY); Santa Cruz Cabrália, Area de Estaçao Ecológica do Pau-Brazil (ESPAB), 13/VII/1985, *F. Souza Santos 497* (NY); Santa Inês, Ca. 55 km na direçao Milagres/Jequie na Rodovia BR-116, 15/IV/1990, *A.M.V. de Carvalho 3109* (NY); BR-28, km 27, S. Salvador, 28/IX/1963, *R.S. Santos 28070* (NY); Chapadão Ocidental. Islets and banks of the Rio Corrente by Correntina, 23/IV/1980, *R.M. Harley 21622* (NY); Cruz de Casma, VIII/1835, *Fischer 218* (NY); **Ceará:** Fortaleza, Rodovia Fortaleza - Sobral (BR-222), km 47, 29/VI/1987, *L. Coradin 7849* (BOTU, CEN); Novo Oriente, Estrada Nova Oriente-São Miguel do Tapuio, km 41, beira da estrada, 18/VI/1979, *L. Coradin 2067* (BOTU, CEN); Quixadá, Estrada Quixadá - Banabuiú, km 16 saída do asfalto, fazenda Palestina, Dr. Melo, 15/VI/1979, *L. Coradin 1984-A* (BOTU, CEN); Tianguá, Rodovia Tianguá- Teresina (BR-22), km 28, 1/VII/1987, *L. Coradin 7899, 7900* (BOTU, CEN); **Distrito Federal:** Brasília, Bacia do Rio São Bartolomeu, 19/III/1981, *E.P. Heringer 6489* (NY); BR 40 Brasília/Belo Horizonte, km 30, 12/III/1984, *R.C. Mendonça 322* (RB); Margin of Lagôa Paranoá, Brasília. Chapada da Contagem, 2/II/1968, *H.S. Irwin 19464* (NY); Norte do Lago de Brasília, 29/III/1965, *E.P. Heringer 10312* (NY); Reserva Ecológica do IBGE, picada R-1, 28/VII/1978, *E.P. Heringer 557*

(NY); Rio São Bartolomeu, I/1980, *E.P. Heringer 3106* (UB); Brazlândia, Córrego Vandinha, 1982, *J.H. Kirkbride Junior 4756* (UB); 1,5 km W da Escola Fazendária, 13/IV/1983, *M.C. Garcia Kirkbride 1624* (NY); **Espirito Santo:** Guarapari, Rodovia do Sol, km 20, estrada Vitória-Guarapari (ES-060), estrada da cidade de Guarapari, 30/VIII/1987, *L. Coradin 8355* (BOTU, CEN); Vila Velha, Estrada Vitória-Guarapari (Rodovia do Sol -ES-060), início Conjuntos Habitacionais, 29/VIII/1987, *L. Coradin 8341* (BOTU, CEN); Vila Velha, Rodovia do Sol, km 20, estrada Vitória-Guarapari (ES-060), 29/VIII/1987, *L. Coradin 8343* (BOTU, CEN); **Goiás:** 30 Km ao N de Cristalina-60BR-040, 20/XI/1976, *A.C. Allem 505* (UB); Caiapônia, Ca. 37 km. S. of Caiapônia on road to Jataí. Serra do Caiapó, 22/X/1964, *H.S. Irwin 7178* (NY); Caldas Novas, Alternativa 4 régua de leitura de vazão da hidrometria, mara ciliar antropizada próximo ao leito do rio, 27/II/1996, *G. Silva-Pereira 3380* (BOTU, CEN); Caldas Novas, Fazenda Geraldinho; proximo alternativa 9.1; cerca de 12.7 km do asfalto a 6.3 km de C. Novas direçao Corumba, 22/III/1993, *T.A.B. Dias 468* (NY); Campo Alegre de Goiás, Contraforte Central, ca. 58 km N.E. of Catalão, 26/I/1970, *H.S. Irwin 25424* (NY); Catalão, Contraforte Central, ca. 25 km N.E. of Catalão, 21/I/1970, *H.S. Irwin 25065* (NY); Cavalcante, 13 km a leste do rio Tocantins, em direção a Cavalcante, 22/II/2002, *G. Silva-Pereira 5882* (BOTU, CEN); Cavalcante, Canteiro de obras, próximo à estaçao de tratamento de água, 22/V/2001, *G. Silva-Pereira 5067* (BOTU, CEN); Cristalina, 15/IV/1965, *E.P. Heringer 10137* (NY); Formosa, 1 Km S da fonte da Água Mineral Indaiá. Margem da estrada, 23/IV/1983, *M.C.G. Kirkbride 1637* (UB); Formosa, Margem esquerda do rio Bezerra, fazenda Moreira, proprietário Paulo Takada, 5/III/2002, *G. Silva-Pereira 6033* (BOTU, CEN); Ipamerí, in aerodromo, 16/I/1940, *B. Rambo* (PACA-AGP); Jaraguá, Rdovia Ceres-Anápolis (BR-153), 117, 7/VII/1987, *L. Coradin 8065* (BOTU, CEN); Luziana, Rodovia Brasília-Cristalina (BR-040), 48, 20/VIII/1987, *L. Coradin 8081, 8088* (BOTU, CEN); Luziânia, BR-7, 30/III/1963, *E. Pereira 7463* (NY); Monte Alegre de Goiás, Serra da Atalaia, ca. 2 km by road W of Monte Alegre de Goiás, 13/III/1973, *W.R. Anderson 6971* (NY); Rio Verde, c. 8 km S.W. of town, 13/I/1968, *D. Philcox 3977* (NY); Teresina de Goiás, Chapada dos Veadeiros, 9 km by road S of Terezina, 19/III/1973, *W.R. Anderson 7482* (NY); **Maranhão:** Açailandia, Rodovia Açailandia-Imperatriz(BR-010), km 30, 4/VII/1987, *L. Coradin 7981* (BOTU, CEN); Imperatriz, BR-010, Belém-Brasília, km 656, Imperatriz-Porto Franco, 18/IX/1979, *L. Coradin 2162* (BOTU, CEN); Imperatriz, BR-010, km 695 Belé-Brasília, 17/IX/1979, *L. Coradin 2169* (BOTU, CEN); Loreto, "Ilha de Balsas" region, between the Rios Balsas and Parnaíba. About 25 km south of Lorêto. In front of main house of Fazenda Santa Rita, 7/IV/1962, *G. Eiten 4119* (NY); Lorêto, "Ilha de Balsas" region, between the Rios Balsas & Parnaíba. About 35 km south of Lorêto. A little north of house at "Veados". About 11 km. W of main house of Faz. Morros, 5/IV/1962, *G. Eiten 4014* (NY); Lorêto, "Ilhas de Balsas" region, between the Balsas & Parnaíba Rivers. Several km east of main house of Fazenda "Morros", ca. 35 km south of Loréto. Trail from Morros" to "Sambaíba". Ca. 1 km west of house at "Sambaíba", 18/V/1962, *G. Eiten 4621* (NY); Porto Franco, Rodovia Imperatriz-Porto Franco (BR-010), km 75, 4/VII/1987, *L. Coradin 7995* (BOTU, CEN); Santa Inês, Rodovia Santa Inês (BR316), km 94, 3/VII/1987, *L. Coradin 7975* (BOTU, CEN); São Luís, "Ilha de Sao Luis", (city of Sao Luis), 19/X/1982, *W.E. Kerr 191082 Nr. 2* (NY); **Mato Grosso:** Comodoro, Fazenda Estrela do Guaporé, 13,6 km da porteira de entrada e junto de um córrego, 27/V/1985, *J.F.M. Valls 8884* (BOTU, CEN); **Mato Grosso do Sul:** Coxim, Cerca de 34 km ao Norte da ponte sobre o rio Taquarí, em Coxim, ao longo da BR-163, 20/X/1985, *J.F.M. Valls 9269* (BOTU, CEN); **Minas Gerais:** in Serra da Moeda, 1840, *F. Sellow s.n.* (K); Acuruí, Acuruí-Amarantina, 16/V/2017, *T.C. Monteiro 30* (BOTU); Baependi, Toca dos Urubus, 29/XII/2004, *F.M.Ferreira 792* (RB); Barbaçena, Barbacena, 28/III/1964, *Z.A. Trinta 611* (NY); Belo Horizonte, Estação Ecológica UFMG, 16/V/1990, *E.M. Santos et al. 44* (BHCB); Belo Horizonte, Estação Ecológica UFMG, 25/XI/1989, *P.H.L. Vieira et al. s.n.* (BHCB); Belo Horizonte, Represa da Pampulha, 23/XII/1982, *T.S.M. Grandi & C. Lopes 169* (BHCB); Belo Horizonte, Serra da Taquaril, ca. 10 km NE of Belo Horizonte, 6/I/1959, *H.S. Irwin 2380* (NY); Carmópolis de minas, Estação Ecológica da Mata do Cedro, 17/V/2004, *L. Echternacht & T. Dornas 408* (BHCB); Cataguases, Entroncamento da BR-116- Cataguases(MG-129) km17, 31/VIII/1987, *L. Coradin 8377* (BOTU, CEN); Coronel Xavier Chaves, São Caetano, 31/III/2016, *M. Sobral 15842* (RB); Diamantina, Serra do Espinhaço, ca. 7 km N. of São João da Chapada, road to Inhaí, 30/III/1970, *H.S. Irwin 28637* (NY); Formiga, Comunidade de Morro Cavado. Cerrado, 2/VII/1996, *V.C. Souza 11535*

(ESA); Gouveia, Rib. do Tigre, 13/XI/1971, *G. Hatschbach 27845* (NY); Itabirito, Pico do Itabirito, 13/IV/1995, *W.A. Teixeira s.n.* (BHCB); Lavras, E.S.A.L, 5/II/1939, *E.P. Heringer 187* (NY); Moeda, Serra da Moeda, 5/X/1985, *C. Carmo & T.S.M. Grandi 2020* (BHCB); Moeda, Serra da Moeda, 12/IV/2010, *D.S. Ferreira 48* (BHCB); Moeda, Serra da Moeda, 27/III/2010, *E.D.P. Castro et al. 72* (BHCB); Monte Sião, Rodovia Ouro Fino-Monte Sião (MG-179), km 28, 23/VIII/1987, *L. Coradin 8207* (BOTU, CEN); Montezuma, Sítio 17, ponto 2, em quebra de relevo de chapada, 21/III/2017, *A.C. Sevilha 6773* (BOTU, CEN); Ouro Preto, Estr. p/ Belo Horizonte, km 82, próximo a Cachoeira do Campo, 26/I/1986, *H. C. de Lima 2653* (NY); Paraopeba, Horto Florestal, 3/IV/1965, *J.E. de Paula 3* (NY); Pedra Azul, Pedra Azul, Pedra da Conceiçao, 20/IV/1964, *Z.A. Trinta 779* (NY); Pouso Alegre, Rodovia Pouso Alegre-borda da mata (MG -179), km 12, a partir do trevo, 23/VIII/1987, *L. Coradin 8201* (BOTU, CEN); Rio Acima, Região do Rio do Peixe. Próximo a RPPN Capitão do Mato, 10/IV/2015, *S.G. Rezende & A.G. Justo 5691* (BHCB); Santa Bárbara, Serra do Garandela, 8/III/2012, *C.V. Vidal & R.L. Paula 1198* (BHCB); Santana do Riacho, Serra do Cipó. Alto da Boa Vista, 27/IV/2010, *N.F.O. Mota et al. 1527* (BHCB); São Gonçalo do Rio Abaixo, Estação Ambiental de Peti - CEMIG, 28/II/2011, *F.F. Carmo 5448* (BHCB); São Gonçalo do Rio Abaixo, Estação Ambiental de Peti - CEMIG, 23/IV/2002, *J.A. Lombardi et al. 4735* (BHCB); Tiradentes, Serra de São José, 1997, *A.E. Brina s.n.* (BHCB); Uberlândia, Rodovia Uberlândia -Uberaba (BR-50) Km 6 (a partir do Entroncamento da BR-050/BR-365/BR452, 21/VIII/1987, *L. Coradin 8116* (BOTU, CEN); Viçosa, State Agricultural School, Viçosa, 23/XI/1958, *H.S. Irwin 2133* (NY); Serra de São José mountain range (Tiradentes/Prados). Valley south of mangue falls, 24/IV/1992, *R.J.V. Alves 4041* (RB); *Martius 1124* (NY); **Pará:** Itaituba, Estrada Santarém-Cuiabá, BR 163, km 1115, 14/IV/1983, *M.N.F. da Silva 4* (NY); Itaituba, Estrada Santarém-Cuiabá, BR 163, Km 974, 12/V/1983, *I.L. do Amaral 1238* (NY); Paragominas, BR-010 km 314, Belém-Brasília, 18/IX/1979, *L. Coradin 2133* (BOTU, CEN); **Paraíba:** Areia, Escola de Agronomia do Nordeste, 13/IX/1953, *J.C. de Moraes Vasconcelos 887* (NY); São José de Piranhas, Serra do Vital, calçamento, 13/V/2014, *A.P. Fontana 8032* (RB); **Pernambuco:** Alagoinha, Rock outcrop ca. 700m southwest of the fazenda Morros, 22/IX/1999, *L. Krause 153* (RB); Goiana, RPPN Fazenda Tabatinga. Borda do fragmento, 22/VIII/2010, *D.M. Cavalcanti Ferreira 241* (NY); Gravatá, Serra das Russas. Estrada Pombos – Gravatá, ca. 16Km de Gravatá. Próximo ao Restaurante Colina, 20/VII/2002, *V.C. Souza 28907* (ESA); Petrolina, BR-428, Petrolina-Salgueiro, beira de estrada, 3/IV/1979, *L. Coradin 1250, 1267* (BOTU, CEN); Petrolina, Rodovia Lagoa Grande - Santa Maria da Boa Vista (BR-428), km 24, 23/VI/1987, *L. Coradin 7757* (BOTU, CEN); Serra Talhada, PE-418, Divisa PE-PB, Serra Pintada, 8/IV/2015, *M. Oliveira 475* (RB); Tapera, 15/IX/1934, *B.J. Pickel 2556* (NY); 1938, *G. Gardner 973* (NY); 1/III/1837, *G. Gardner 973* (NY); **Rio de Janeiro:** Campos dos Goytacazes, Rodovia Campos-divisa Rio de Janeiro/Espirito Santo, km 46 (20 km sul da divisa), 29/VIII/1987, *L. Coradin 8323* (BOTU, CEN); Casimiro de Abreu, Estrada Luniar-Casimiro de Abreu, km 15, 28/VIII/1987, *L. Coradin 8297* (BOTU, CEN); Conceição de Macabu, Rdovia de Abreu-Campos (BR-1010, km 94, 28/VIII/1987, *L. Coradin 8317* (BOTU, CEN); Iguaba Grande, 28/IV/1963, *A. Castellanos 23927* (NY); Nova Friburgo, Nova Friburgo-Lumiar, 2 k oeste de Lumiar, 27/VIII/1987, *L. Coradin 8294* (BOTU, CEN); Petropólis, Estrada Itaipava-Pedro do Rio, km 8, 27/VIII/1987, *L. Coradin 8281* (BOTU, CEN); Petropólis, Estrada Posse-Pedro do Rio km 2, 27/VIII/1987, *L. Coradin 8287* (BOTU, CEN); Tahipu [?], 18/VI/1867, *A. Glaziou 1371* (NY); **Rio Grande do Norte:** Venha Ver, Serra na localidade dos Cocos, 24/VI/2014, *J.L. Costa-Lima 1340* (RB); **Roraima:** Amajari, Serra do Tepequém, Cachoeira do Paiva, 27/V/2008, *A.S. Flores 1912* (RB); **São Paulo:** Botucatu, 08/III/1999, *A.O. Araújo 11* (BOTU); Botucatu, 08/IV/1986, *L.R.H. Bicudo 933* (BOTU); Botucatu, 1973, *A.C. Cataneo 53* (BOTU); Botucatu, 02/XI/1974, *M.A. Manetti 14* (BOTU); Botucatu, À margem da rodovia João Melão, que liga São Manuel à Avaré, no Km 296, 08/IV/1986, *L.R.H. Bicudo 933* (BOTU); Botucatu, Distrito de Rubião Junior, a aproximadamente 2km a leste do campus de Botucatu - UNESP, 06/I/1982, *Y. Yanagizawa 29* (BOTU); Botucatu, Distrito de Rubião Júnior, morro da Igreja de Santo Antônio, 18/X/2017, *T.C. Monteiro 76* (BOTU); Botucatu, Distrito de Rubião Júnior. Em frente ao Haras Apache WO, 29/IX/2018, *D.S. Gissi 405* (BOTU); Botucatu, Proximidades do Parque das Cascata, indústria CAIO e linha férrea, 04/XI/2014, *J. Alcântara 2* (BOTU); Botucatu, UNESP - IBB. Canteiro ao lado da Biblioteca, 8/IV/2019, *D.S. Gissi 437* (BOTU); Buri, Sítio Três Irmãos. Margem da

estrada em direção à casa, 29/IV/2018, *D.S. Gissi 380* (BOTU); Buri, Sítio Três Irmãos. Margem da estrada em direção à casa, 29/IV/2018, *D.S. Gissi 381* (BOTU); Buri, Sítio Três Irmãos. Margem da estrada em direção à casa, 29/IV/2018, *D.S. Gissi 382* (BOTU); Campinas, Rodovia D. Pedro 1 km junto ao trevo para Moji-Mirim, 20/II/1976, *H. de F. Leitão Filho 1787* (NY); Matão, IRI Experimental Garden, 1966, *IRI Experimental Garden 1951, 2082, 2084, 2085, 2423, 2424, 2427* (NY); Moji-Guaçu, "Campos das Sete Lagôas". Fazenda Campininha, just north of Rio Moji-Guaçu. 3.6 km NNW of Padua Sales. (About 27 km of city of Moji-Mirim.) 200 m north of main house, 20/IV/1961, *G. Eiten 2695* (NY); Moji-Guaçu, "Campos das Sete Lagôas". Fazenda Campininha, just north of Rio Moji-Guaçu. 3.7 km NNW of Padua Sales. (About 27 km of city of Moji-Mirim.), 21/IV/1961, *G. Eiten 2742* (NY); Moji-Guaçu, Faz. Campininha, 9-11 km NNW de PADUA SALES, 22/IX/1960, *J.R. Mattos 8314* (NY); Moji-Guaçu, Fazenda Campininha, just north of Rio Moji-Guaçu, 20/IV/1961, *G. Eiten 2686* (NY); Pardinho, Fazenda Águas de Janeiro, 26/XI/2014, *A.C.D. Castello 53* (BOTU); Paulo de Faria, X/1994, *C.D. Sanches 113* (ESA); Pedregulho, Estreito. Usina de Estreito ("Acampmento de Estreito"), 22/III/2004, *D. Sasaki 987* (NY); Pirassununga, Entroncamento da rodovia Washinton Luiz - Pirassununga (BR-225), km 2, 22/VIII/1987, *L. Coradin 8170* (BOTU, CEN); Ribeirão Preto, Via Anhanguera 11 km norte de Ribeirão Preto, 21/VIII/1987, *L. Coradin 8148* (BOTU, CEN); Ribeirão Preto, Via Anhanguera 11 km norte de Ribeirão Preto, 21/VIII/1987, *L. Coradin 8151* (BOTU, CEN); Santa Lucia, Rodovia Ribeirão Preto - Araraquara(SP- 255), 53, 22/VIII/1987, *L. Coradin 8155* (BOTU, CEN); São Carlos, Ponte Represa do Broa, 12/IV/1994, *K.D. Barreto 2258* (ESA); São Roque, A wine-producing area on the way to Sorocaba, 40 km W of Aizen-Do, 3/III/1981, *K. Mizoguchi 1513* (NY); São Roque, A wine-producing area on the way to Sorocaba, 40 km W of Aizen-Do, 3/III/1981, *K. Mizoguchi 1514* (NY); Ubatuba, Rodovia Ubatuba-Paraty(BR-101), km 17, 25/VIII/1987, *L. Coradin 8241* (BOTU, CEN); **Sergipe:** Propriá, 30/I/1971, *I.D. Gemtchújnicov s.n.* (BOTU); **Tocantins:** Ananas, Acampamento de ENGEVIX, próximo ao aeroporto, 15/IV/2004, *G. Silva-Pereira 8638* (BOTU, CEN); Guaraí, Rodovia Guaraí-paraíso do Tocantins (BR-153), km 7, 5/VII/1987, *L. Coradin 8026* (BOTU, CEN); Paranã, Estrada de acesso ao vilarejo Rozario, + ou - 3 km após a entrada principal da obra, 24/III/2007, *G. Silva-Pereira 11474* (BOTU, CEN); Paranã, Estrada de acesso ao contorno de obras da AHE São salvvador, 5/VI/2006, *G. Silva-Pereira 10343* (BOTU, CEN); Ad Sao Joao Bapt, *Pohl 567* (NY); *Martius 1124* (NY); *Tamberlik s.n.* (NY);

COLOMBIA. El Valle: Cali, En el cerro de Tres Cruces, 1/XII/1947, *L.A. Bermudez 17C869* (NY); **C**isneros, 21/IX/1922, *E.P. Killip 11431* (NY); **Huila:** Río Saldaña to Natagaima, 23/VII/1917, *H.H. Rusby 247* (NY); **Valle del Cauca:** La Pailla, 22/IV/1853, *I.F. Holton 958* (NY);

ECUADOR. Loja: Catacocha, Dirt road to Montana Tarapo, NE of Catacocha, 25/IV/1996, *B.B. Klitgaard 139* (NY);

PERU. Cajamarca: Celendín, Río Chamaya, "el pistolero" on the Olmos. Marañón, 27/V/1964, *P.C. Hutchison 5394* (NY); Celendín, Río Marañón opposite Balsas, 29/V/1964, *P.C. Hutchison 5437* (NY); Jaen, Río Chamaya, " el pistolero" on the Olmos. Marañón, 19/III/1964, *P.C. Hutchison 4446* (NY); **Tumbes:** La Cruz, 28/V/1992, *A. Sagastegui 14615* (NY);

PUERTO RICO. Cabo Rojo: Bo. Boquerón, along ravine on N side of Punta Melones, 5/II/1995, *F. S. Axelrod 8734* (NY);

VENEZUELA. Federal District: Caracas, 14/VIII/1921, *H. Pittier 9679* (NY); Caracas, In Savannas, San Lazaro, 4/IX/1921, *H. Pittier 9754* (NY); **Mérida:** Ejido, La Enfadosa, 9/VII/1968, *S. López-Palacios 2135* (NY); **Portuguesa:** Guanare, Terrenos de la UNELLEZ, 4/III/2005, *K.M. Redden 3780* (NY); **Sucre:** El Cerro, 16/XII/1973, *G. Davidse 5042* (NY);

36. *Stylosanthes seabrana* B.L. Maass & 't Mannetje

BahiaState Rd. BA 052, from Irecê 80 km to Xique-Xique, 29/VI/1983, *L. Coradin et al. 6261* (CEN, K, M); Barreiras, BR-242-km 702, Brasília-Fortaleza, beira de estrada, 28/IX/1978, *L. Coradin 1172* (BOTU, CEN); Correntina, Estrada de terra que sai da BR 135 para São Manoel do Norte e Jaborandi, ca. 16 km a partir de Correntina., 08/IV/2005, *E.B. Miranda 697* (HUEFS); Ibipeba, 52 Km da cidade de Ibipeba., 02/III/2006, *A.C. Melo 19* (HUEFS); Ibipeba, 52 Km da

cidade de Ibipeba., 30/III/2006, *A.C. Melo 26* (HUEFS); Itaberaba, BR-242, Brasília-Fortaleza, beira de estrada, 3/X/1978, *L. Coradin 1234* (BOTU, CEN); Mundo Novo, , 15/III/1995, *L.P. de Queiroz 4313* (HUEFS); Palmeiras, Ca km 250 na Rodovia BR-242., 19/III/1990, *A.M.V. de Carvalho 2962* (NY); Poções, Acesso a Faz. Boa Esperança com entrada ao S de Morinhos, 6,1 km E de Poções na rodovia a Ilhéus. Fragmento no limite Sul da área, 8/X/2004, *A.M. Amorim 4299* (NY); Santo Amaro, Canyon do Sargi, 14/XII/2007, *C. van den Berg 1063* (HUEFS); Vitória da Conquista, Rodovia BR-4, 29 km S de Vitória da Conquista, 29/I/1965, *R.P. Belém 343* (NY); Xique Xique, Rodovia Irecê - Xique Xique (BA - 052) km 80., 29/VI/1983, *L. Coradin 6261* (CEN);

37. *Stylosanthes sericeiceps* S. F. Blake

VENEZUELA. Mérida: 36 Km SW of Mérida along road to San Cristóbal, 30/VII/1964, *F.J. Breteler 4070* (NY); Cardonales, arriba de afluente de Río Chama, 31/VIII/1966, *J.A. Steyermark 97026* (NY); Lagunillas, 6/X/1921, *A. Jahn 678* (G, GH, NY, SI, US); Between Estanques and Pte Real, 2/II/1928, *H. Pittier 12842* (NY);

38. *Stylosanthes sympodialis* Taub.

ECUADOR. Chanduy: *Spruce 6373* (B, EAO, F, G, K, P); **El Oro:** Arenillas, 14/III/1955, *E. Asplund 15734* (NY); Arenillas, 15/III/1955, *E. Asplund 15753* (NY, US); **Galapagos:** Charles island, 2/III/1905, *A. Stewart 1697* (NY, US); **Guayas:** Chanduy, Low mountain NE of Chanduy, 19/III/1973, *L. Holm-Nielsen 2193* (NY); Isla Puná, Path from Puná Nueva to Zapote, mainly at Loma de Corallito, 21/IV/1987, *J.E. Madsen 63176* (NY); Isla Puná, Path from Puná Nueva to Zapote, mainly at Loma de Corallito, 21/IV/1987, *J.E. Madsen 63214* (NY); Isla Puná, Vicinity of Bellavista, 9/VI/1987, *J.E. Madsen 63662* (NY); Isla Puná, Path Campo Alegre to midway Puná Vieja, 7/VII/1987, *J.E. Madsen 63801* (NY); Punta Carnera, 7/III/1941, *H.K. Svenson 11301* (NY); Salinas, La Puntilla, 6/IV/1939, *E. Asplund 5610* (NY); Salinas, gravelly ground, 9/IV/1939, *E. Asplund 5650* (F, P, US); Sucre, 3 km E of Buenos Aires (km 86 from Guayaquil), 28/III/1973, *L. Holm-Nielsen 2573* (MBM, NY); **Manabi:** Manta, 6/IV/1955, *E. Asplund 15976* (NY, P);
PERU. Cajamarca: Celendín, Balsas, 29/V/1964, *P.C. Hutchinson 5437* (F); Celendín, Cantange (Sucre - Oxamarca), 19/V/1976, *A. Sagástegui 8467* (F); Chamaya, Acros Rio Marañón on wire bridge a few km upstream from Chamayo, 14/III/1998, *R.T. Pennington 809* (NY); Jaen, Pucará, on Rio Huancabamba, N of town, 12/I/1964, *P.C. Hutchinson 3554* (NY); Jaen, Río Chamaya, at El Pistolero, between Pacará and Jaen, 19/III/1964, *P.C. Hutchinson 4446* (F); **Piura:** between Piura and Nhómala, III/1912, *A. Weberbauer 5936* (G, GH); Pariñas Valley, 1927, *O. Haught 134* (NY, US); **Piura:** Negritos, 1928, *O. Haught F44* (NY); **Tumbes:** Zarumilla, Rijsten halbwuste und Troeken wald region Nordpeus RegenR. Papayal sudestl. Zarumilla beweidetes Regen grimes wald, 18/V/1957, *H. Ellenberg 1460* (U).

39. *Stylosanthes tomentosa* M.B. Ferreira & Sousa Costa

Minas Gerais: Datas, Datas – Serro km 20, 1100 msm, 19/I/1977, *N. M. de Sousa Costa 794* (PAMG, RB); Diamantina, Rodovia Diamantina- Mendanha, km 11, 4/IX/1987, *L. Coradin 8445* (BOTU, CEN); Presidente Kubistschek, Ca. 20 km de Datas em direção a Serro, Km 444, 13/III/1995, *V.C. Souza 8458* (ESA, HUEFS); Santo Antônio do Itambé, Pico do Itambé, 7/IV/1998, *V.C. Souza 21146* (ESA); Itacambira, Estrada Itacambira - Juramento, ca. 9 km de Itacambira. Campo rupestre. 1200 m.s.m, 22/II/2002, *V.C. Souza 28149* (ESA); Diamantina, Parque Estadual do Rio Preto, 19/III/2016, *G. Martinelli 19111* (BOTU, RB); São Gonçalo do Rio Preto, Parque estadual do Rio Preto, 28/III/2008, *P.L Viana 3484* (BHCB); Diamantina, Ca. 30km S.W. of Diamantina on road to Gouveia, 13/I/1969, *H.S Irwin 21860* (UB); Diamantina, Ca. 10km SW of Diamantina, 3/II/1972, *W.R. Anderson 35215* (NY); Santa Bárbara, Caraça, caminho para gruta do Padre Caio, 14/III/1990, *W. Marcondes-Ferreira 213* (RB); Pedro Lessa, 4 Km de Serro em direção a Pedro Lessa. Cerrado, 5/VII/1996, *V.C. Souza 11790* (ESA, RB);

40. *Stylosanthes vallsii* Sousa Costa & Van den Berg

BRAZIL. Paraná: Guarapuava, 4 Km do Trevo para Pato Branco; na BR-227; Diração Guarapuava - Laranjeiras. Na beira da estrada; a direita, 03/XI/1989, *G. Pedralli 3040* (CEN, HUEFS); Guarapuava, Alto de Cavernoso, 6/XI/1963, *E. Pereira 7710* (NY); Guarapuava, 35,5km a oeste do acesso ao aeroporto de Guarapuava, na rodovia para Cascavel (BR-277), 29/XI/1987, *J.F.M. Valls 11380* (CEN, HUEFS, K, MBM, RB, US); Candoí, 35,5 km a oeste do acesso ao aeroporto de Guarapuava, na rodovia para cascavel (BR-277), mesma população da coleta *Valls 11380,* 21/II/2002, *J.F.M. Valls 14831* (BOTU, CEN).

41. *Stylosanthes venezuelensis* Calles & Schultze-Kr.

Venezuela. **Distrito Capital:** colinas detrás del Jardín Botánico de Caracas, 10/II/2006, *T. Calles et al. 1001* (K, M, MO, NY).

42. *Stylosanthes viscosa* (L.) Sw.

ARGENTINA. Misiones: San Ignacio, Campos de Teyucuaré, 13/XI/1996, *R. Vanni 3866* (NY); **BOLIVIA. Irupana:** 25/VIII/1921, *G.E. White 942* (NY); **Santa Cruz:** Germán Busch, Serranía del Mutún, cima de la montaña, III/2008, *D. Villaroel 1970* (UB); **Santa Cruz:** Ñuflo de Chavez, Concepción, 8km de Concepción sobre la carretera a San Ignacio y 2 km camino a Santa Rita, 07/IV/2008, *J.R.I Wood 24253* (UB); **Cochabamba:** Ayopaya, Sailapata, XII/1935, *Cárdenas 3186* (F);
BRAZIL. Alagoas: Feliz deserto, Várzea da Marituba, 7/VIII/2010, *R.P. Lyra-Lemos 13078* (RB); Maceió, 01/II/1976, *I.D. Gemtchújnicov s.n.* (BOTU); Mata Grande, Afloramentos quartizíticos na base da Serra do Parafuso, 8/XI/2016, *A.P. Fontana 9837* (HUEFS); **Amazonas:** Manaus, Distrito Agropecuário, ZF3, Distrito Agropecuário da Suframa, Rodovia BR-174, km 64, then 23 km east on ZF-3, Fazenda Esteio. Reserva nº 1104, 29/I/1992, *M. Nee 42397* (INPA); Una - Reserva Biol. do Mico Leão (IBAMA), enrada no km 46 da Rod. BA-001 Ilhéus/Una, 16/VII/1997, *A.M. Amorim 2082* (RB); **Bahia:** 71 km south of Juazeiro on highway to Feira da Santana. (1.2 km S of village of Barrinha.), 8/III/1970, *G. Eiten 10878* (NY); C. 4 km along estrada de terra from Livramento do Brumado to Rio de Contas, 28/III/1991, *G.P. Lewis 1912* (NY); Ilha de Itaparica, 15/VII/1951, *J.M. Pires 3421* (NY); 5 km al S de Ichu, camino a Tanquinho, 15/I/1997, *M.M. Arbo 7263* (NY); About 3 km N of the town of Rio de Contas, 21/I/1974, *R.M. Harley 15364* (NY); Lagoa Encantada, 19km. N.E. of Ibicoara near Brejão, 1/II/1974, *R.M. Harley 15775* (NY); Rio Cumbuca ca. 3 km S of Mucugê, near site of small dam on road to Cascavel, 4/II/1974, *R.M. Harley 15926* (NY); 11km S of Santa Cruz de Cabrália, 17/III/1974, *R.M. Harley 17097* (NY); 5 km South of Andaraí on road to Mucugé, by bridge over the Rio Paraguaçú, 12/II/1977, *R.M. Harley 18569* (NY); 2-3 km approximately SW of Mucugé on the road to Cascavel, 17/II/1977, *R.M. Harley 18807* (NY); 19.5km SE of the town of Morro do Chapeu on the BA052 road to Mundo Novo, by the Rio Ferro Doido, 4/III/1977, *R.M. Harley 19374* (NY); Serra Geral de Caitité, 1.5 km S of Brejinhos das Ametistas, 11/IV/1980, *R.M. Harley 21227* (NY); Entre Itiruçu e Maracas, 22/I/1965, *R. P. Belém 228* (NY); Santa Cruz Cabralia, Km 15 Estrada Sta Cruz Cabralia, 5/XI/1983, *R. Callejas 1684* (RB); Alcobaça, 12/VIII/1981, *G.P. Lewis 810* (NY); Alcobaça, Rod. BA 001, a 5 km ao Sul de Alcobaça, 17/III/1978, *S.A. Mori 9625* (NY); Barreiras, BR-242-km 989, Brasília-Fortaleza, beira de estrada, 29/IX/1978, *L. Coradin 1179* (BOTU, CEN); Belmonte, 7/VII/1966, *R.P. Belém 2518* (NY); Brotas de Macaubas, Proximidades da cidade de Lençóis, margem do rio São José, 10/IX/1992, *L. Coradin 8535* (BOTU, CEN); Cabaceiras do Paraguaçú, Serra do Aporá, 24/IX/2019, *L.O. Cerqueira 97* (BOTU); Cafarnaum, Ca. 20 km NW de Segredo na BR 122, em direçao a Cafarnaum, 24/VII/1993, *L.P. de Queiroz 3426* (NY); Caravelas, in aerodromo, 12/I/1940, *B. Rambo s.n.* (PACA-AGP); Ilhéus, Estrada Olivença/Vila Brazil-Maruim Km 4-5, 27/VII/1979, *L. Mautone 987* (RB); Ilhéus, Na beira da BR 101, sentido Itacaré, 07/XI/2019, *D. Nunes 166* (BOTU); Itacaré, Atrás da Praia do Farol. Acesso pela Pousada dos Piratas,

15/VII/1995, *A.M.V. de Carvalho 6034* (NY); Itacaré, 15/VII/1995, *A.M.V. de Carvalho 6034* (RB); Itacaré, 11/V/1966, *R.P. Belém 2166* (NY); Jacobina, Rodovia Jacobina-Senhor so Bonfim, km 3, 22/VI/1987, *L. Coradin 7704* (BOTU, CEN); Jacobina, Rodovia Jacobina-Senhor so Bonfim, km 7, margem do rio Itapicurú, 22/VI/1987, *L. Coradin 7726* (BOTU, CEN); Jacobina, Proximidades do Hotel Serra do Ouro, 27/VI/1983, *L. Coradin 6147, 6149, 6163* (NY); Jacobina, Serra de Jacobina, ca. 5 km E de Jacobina no caminho para Bananeira, 20/VIII/1993, *L.P. de Queiroz 3494* (NY); Jaguarari, Rodovia Juazeiro-Senhor do Bonfim (BR-407) Km 83, 25/VI/1983, *L. Coradin 5993* (NY); Jequié, Ramal que leva a torre de transmissão ca. 3.4 km a partir do acesso que liga a cidade a BR 116, 8/IV/1999, *A.M. Amorim 2723* (NY); Juazeiro BR-407, Petrolina-Salvador, km 17, 10/IV/1979, *L. Coradin 1408* (BOTU, CEN); Juazeiro BR-407, Petrolina-Salvador, km 62, 10/IV/1970, *L. Coradin 1420* (BOTU, CEN); Lençóis, Entroncamento da entreda pa Lençóis Entroncamento da entrada para Wagner, km 3, BR-242, 21/VI/1987, *L. Coradin 7685* (BOTU, CEN); Mangue Seco, Beira de trilha de areia branca para a praia, 13/IX/2019, *T.C. Monteiro 170* (BOTU); Maracás, Rod. BA-026, a 6 km a SW de Maracás, 17/XI/1978, *S.A. Mori 11095* (NY); Maraú, Peninsula de Maraú. Area de Preservaçao Ambiental (APA). Faz. Virgem del Mar, 14/VIII/1999, *J.G. Jardim 2169* (NY); Maraú, Rodovia para Barra Grande. Beira da estrada de terra, 25/XI/2009, *V.F. Mansano 658* (NY, RB); Marcionílio Souza, Vicinity of Machado Portello, 19/VI/1915, *J.N. Rose 19956* (NY); Morro Do Chapéu, Rodovia Morro do Chapéu - Várzea Nova, km 14, 21/VI/1987, *L. Coradin 7696, 7698* (BOTU, CEN); Morro Do Chapéu, Rio Ferro Doido. 22 km L de Morro do Chapéu, 1/V/1999, *F. França 2787* (NY); Morro Do Chapéu, Rodovia Morro do Chapéu-Irece (BA-052) km 21, 29/VI/1983, *L. Coradin 6238* (NY); Mucuri, A 7 km a NW de Mucuri, 14/IX/1978, *S.A. Mori 10494, 10495* (NY); Nova Viçosa, Km 6 da Rodovia BA 001, trecho Nova Viçosa/Mucuri. Ramal à esquerda para o sitio Canto do Sabiá, em direçao à praia, 5/X/2000, *L.A. Mattos Silva 4172* (NY); Porto Seguro, Estrada de Arraial d¬¥Ajuda para Trancoso, 20/IV/1982, *A.M.V. de Carvalho 1278* (RB); Porto Seguro, Parque Nacional Monte Pascoal. North of Barra Velha, 18/VII/1997, *W.W. Thomas 11611* (NY); Prado, Estrada entre Barra do Caí e Cumuruxatiba, 19/VI/2014, *L.F.A. de Paula 780* (RB); Rio de Contas, Ca. 1 km antes do distrito de Mato Grosso, 29/XII/1997, *A.M.V. de Carvalho 6422* (NY); Salvador, Ca. 30 km a N do centro da cidade. Dunas nos arredores da lagoa de Abaeté, 22/V/1981, *A.M.V. de Carvalho 698* (NY); Salvador, Itapuã, 25/VII/1964, *E.A.A. dos Santos 1917* (NY); Salvador, 3 km de la ciudad de Salvador, al oeste del aeropuerto, 12/XI/1983, *R. Callejas Posada 1731* (NY); Salvador, Feira de Santana Rodovia BR-28, km 11, 5/X/1963, *R. S. Santos 28015* (NY); Salvador, Lagoa de Abaeté, NE edge of the city of Salvador, 22/V/1981, *S.A. Mori 14064* (NY); Santa Cruz CabráLia, Estação Ecológica do Pau-Brazil, cerca de 16 km a W de Porto Seguro, 29/VIII/1983, *F.S. Santos 63* (RB); Santa Cruz Cabrália, Km 15 da estrada Sta Cruz Cabrália-Porto Seguro, 5/XI/1983, *R. Callejas Posada 1684* (NY); Santa Cruz Cabrália, Estrada velha de Sta. de Cabrália, 2-4 km a W de Sta. Cruz de Cabrália, 28/VII/1978, *S.A. Mori 10358* (NY); Santa Cruz de Cabrália, 01/VIII/1988, *M. Sobral 6002* (HVAT); Tucano, Distrito de Caldas do Jorro. Estrada que liga a sede do Distrito à estrada Araci/Tucano, 2/III/1992, *A.M.V. de Carvalho 3878* (NY); Una, Reserva Biológica do Mico-leão (IBAMA). Entrada no km 46 da Rod. BA-001 Ilhéus/Una, 16/VII/1997, *A.M. Amorim 2082* (NY); Una, Comandatuba ± 10 km SE de Una, 3/XII/1981, *G.P. Lewis 743* (NY); Una, Estrada Una-Comandatuba, ±3 km SE de Una, 3/XII/1981, *G.P. Lewis 748* (NY, RB); Una, Ramal a esquerda no KM-14 da Rod. Una-Canavieiras. BA-001. Comandatuba, 3/VI/1981, *J.L. Hage 846* (RB); Una, Along the Rio Maruim between the Reserva Biologica de Una and the Ecoparque de Una, 18/IX/2004, *W.W. Thomas 14135* (NY); Uruçuca, Distrito de Serra Grande. Estrada que leva à Prainha, 9/VII/1998, *J. G. Jardim 1797* (NY); Uruçuca, 7.3 km north of Serra Grande on road to Itacaré, Fazenda Lagoa do Conjunto Fazenda Santa Cruz. Transect study site, 11/V/1993, *W.W. Thomas 9864* (NY); Valença, Camino a Guaibim, a 3 km de la rodovia Valença-Nazaré, 13/I/1997, *M.M. Arbo 7153* (NY); **Ceará:** São Gonçalo Do Amarante, BR-222, km 48, Fortaleza - Sobral, beira da estrada, 16/VI/1979, *L. Coradin 1890* (BOTU, CEN); Tianguá, Rodovia Tianguá-Teresina (BR-222), km 4, chapada da serre de Ibiapaba, 1/VII/1987, *L. Coradin 7887* (BOTU, CEN); Tianguá, Rodovia Tianguá- Teresina (BR-22), km 30, 1/VII/1987, *L. Coradin 7903* (BOTU, CEN); **Espirito Santo:** Linhares, Reserva Florestal de Linhares, Cia Vale do Rio Doce - Floresta S/A. estrada 211, 14/V/1985, *G. Martinelli 11006* (RB); Guarapari, Rodovia do Sol, km 20, estrada Vitória-Guarapari (ES-060), 30/VIII/1987, *L. Coradin 8357* (BOTU, CEN); Linhares, Reserva Florestal

da CVRD - estrada Paraju, nativo da 211, 5/IX/1990, *H.C. Lima 3859* (RB); Regência, Est. Municipal, lado direito, 26/VI/1989, *G.L. Farias 290* (RB); Santa Teresa, São João de Petropólis (Barra de Santo Hilário). Paulo Zanette, 10/V/2000, *V. Demuner 998* (RB); Viana, São Paulo de Viana. Estrada próximo ao Pesque e pague do Nenem. Floresta Ombrófila Densa Montana, 12/IV/2009, *A.P. Fontana 5876* (RB); Vila Velha, Estrada Vitória-Guarapari (Rodovia do Sol - ES-060), 29/VIII/1987, *L. Coradin 8337* (BOTU, CEN); Vila Velha, Rodovia do Sol, km 20, estrada Vitória-Guarapari (ES-060), 29/VIII/1987, *L. Coradin 8342* (BOTU, CEN); Vitória, Morro do Guajura - Praia do Canto, 19/IV/1984, *M. S. Costa 25* (RB); **Espírito Santo:** De Colatina para Vitória, 5/XII/1971, *A.P. Duarte 13984* (NY); Santa Teresa, Alto Rio Perdido, 4/IX/2012, *L. Kollmann 12439* (BOTU); Vitória, BR 5 pr. Vitória, 9/XII/1964, *Z. A. Trinta 1066* (NY); **Goiás:** Alvorada Do Norte, Entrada da caverna, próximo a sede da Fazenda do Felipe, 26/VIII/2003, *A.C. Sevilha 3166* (CEN); Alvorada Do Norte, Ponto 7, lagoa, 04/XII/2003, *G. Pereira-Silva 8165* (CEN); Jaraguá, Pico do Jaraguá, 24/VIII/1987, *L. Coradin 8217* (BOTU, CEN); Niquelândia Mun, Estrada de Terra Vicinal/GO-237 (Niquelandia-Colinas). Entrada a 600 m da ponte sobre o Bagagem; a 2.5km desta, 13/IV/1992, *B.M.T. Walter 1208* (NY); Posse, Rodovia Brasília - Fortaleza BR - 020, 18/VIII/1981, *L. Coradin 4293* (CEN); São Domingos, Às margens do Rio São Domingos na BR-020, km 8, GO 362, 19/VIII/2007, *A.P. Fortuna-Perez 247* (BOTU); São João D'Aliança Mun, 27/I/1991, *R.A. Wasum 7515* (NY); **Maranhão:** Barreirinhas, Povoado da Ponta do Mangue, atras da casa da dona Maria do Celso, 17/V/2015, *N.F.O. Mota 3133* (RB); Cachucha [Alto Alegre Do Ma?], Cachucha- MA - BR-316 135 - Codó - Bacabal Km 223, 28/V/1980, *L. Coradin 2662* (CEN); **Mato Grosso:** Cuiabá, Rodovia Rondonópolis - Cuiabá (BR-364) km 113 (Rio das Mortes), 22/VIII/1984, *L. Coradin 6804* (CEN); **D**enise, Rodovia Denise - Arenápolis (MT-343), km 6, 27/VIII/1984, *L. Coradin 7009* (CEN); Jaciara, Rodovia Rondonópolis-Cuiabá (BR-364) 1 Km leste de Jaciara, 22/VIII/1984, *L. Coradin 6798* (CEN); **Mato Grosso do Sul:** Amambai, BR Caarapó - Amambaí a 15 desta, 27/IV/1999, *N.M.S. Costa 3083* (CEN); Bonito, arredores de Bonito, 01/II/1998, *L.B.S. Pereira 2371* (ALCB); Campo Grande, 07/XXIII/2005, *L.C. Costa 367* (ESA); Campo Grande, Saída de Campo Grande para 3 Lagoas km 1, 30/IV/1999, *N.M.S. Costa 3096* (CEN); Dourados, Estrada Dourados/Rio Brilhante, 20/VII/1977, *P. Gibbs 5331* (CEN); Porto Murtinho, Rodovia Bonito - Campo dos Índios, Fazenda Água Doce, 10/XI/2002, *G.G. Hatschbach 74005* (MBM); **Minas Gerais:** Berizal, Topo da Serra do Anastácio, 6/III/2018, *A.C. Sevilha 7254* (BOTU, CEN); Bocaiúva, Estrada Bocaiúva - Diamantina, entrada da fazenda da Mannesman, 02/III/1999, *N.M.S. Costa 3012, 3013* (CEN); Cariacica, Condomínio Rural Cantinho do Céu, Boqueirão, Pau Amarelo, 11/II/1999, *C.N. de Fraga 410* (RB); Ipanema, Área da Mineradora Mineração Níquel Santa Maria, 13/III/2019, *Z. Miranda 153* (CEN); Monte Sião, Rodovia Ouro Fino-Monte Sião (MG-179), km 28, 23/VIII/1987, *L. Coradin 8206* (BOTU, CEN); Montes Claros, Rod. BR-365, próximo ao km 21, 09/III/1998, *G.G. Hatschbach 67541* (MBM); Montezuma, Sítio 16, ponto 1, 21/III/2017, *Sevilha, A.C. 6750* (BOTU, CEN); Serra Do Cipó, Estrada Serra do Cipó-MG-010, 18/I/2020, *D. Cardoso 4742* (HUEFS); Uberaba, Rodovia Uberlândia - Uberaba (BR-050) km 90, 21/VIII/1987, *L. Coradin 8132* (BOTU, CEN); Uberlândia, Estação Ecológica do Panga, 20/III/1987, *G.M. Araújo s.n.* (HUFU); Monte Alegre, Bordo da estrada para a mata, saindo de Airí, 06/V/1953, *D. Andrade-Lima 1379* (IAN); **Pará:** Monte Alegre, Campo das Chapadas, 08/IX/1953, *R.L. Fróes 30539* (IAN); Paragominas, BR-010 km 314, logo após a Paragominas, 18/IX/1979, *L. Coradin 2130* (BOTU, CEN); Santarem, Rodovia Redenção - Campo Alegre (PA - 150), km 102, 13/IX/1984, *L. Coradin 7222* (CEN); **Paraíba:** Bahía da Traiçao, 18/X/1959, *J.C. de Moraes Vasconcelos 2284* (NY); Conde, BR-101 - 18 km norte da divida Pernambuco/Paraíba, 20/VII/1980, *L. Coradin 3157* (CEN); João Pessoa, Jardim Botânico, 16/IX/2003, *P.C. Gadelha Neto 967* (HUEFS); Mamanguape, Reserva biológica Guaribas. Área I - Capim Azul, 19/VIII/2002, *A.C. Sevilha 2238* (CEN); Mamanguape, BR-101 Mamanguape - Div. Paraiba/R. G. do Norte, km 2, 21/VII/1980, *L. Coradin 3171* (CEN); Patos, Sítio Pia. Na margem do açude, 16/V/2011, *C.R.M. Torres 80* (EAC); São José Dos Cordeiros, RPPN- Fazenda Almas. Área I, trilha para casa de Comadre Florzinha. No 1º Lajedo (Laje Queimada), 15/II/2003, *M.R. Barbosa 2665* (HUEFS); São José Dos Cordeiros, RPPN Fazenda Almas, 21/V/2014, *J.E. Nascimento Jr 1486, 1487* (HUEFS); **Paraná:** Matinhos, Praia das Gaivotas, 28/VIII/1972, *G.G. Hatschbach 30269* (MBM); Matinhos, 35km ao sul de Paranaguá, Caiobá, 01/XI/1947, *G. Tessmann 2577* (MBM); Matinhos, Praia das Gaviotas, 28/VIII/1972, *G.G. Hatschbach 30269*

(NY); Matinhos, Balneário Praia Grande, 24/XI/1996, *C. Kozera 382* (NY); Paranaguá, Ilha do Mel, 26/IX/2014, *B.V. Dal Prá 13* (MBM); Paranaguá, Matinhos, 2/XI/1949, *G.G. Hatschbach 1589* (MBM); Paranaguá, Ilha do Mel, Praia do Farol, 6/II/1989, *O.S Ribas 48* (MBM); Paranaguá, Ilha do Mel, 10/XI/1985, *S.M. Silva 157* (MBM); Paranaguá, Ilha do Mel, 27/XI/1970, *G.G. Hatschbach 25656* (NY); Paranaguá, Matinhos, 02/XI/1949, *G.G. Hatschbach 1589* (PACA-AGP); Praia de Guaratuba, 08/I/2007, *S. Miotto 2434* (ICN); **Pernambuco:** Prazeres, 7/IX/1931, *B.J. Pickel 980* (NY); Praia do Guaibu, 35 km S from Recife, 15/X/1987, *K. Deguchi B-1718* (NY); Buíque, Catimbau, Serra do Catimbau, 18/X/1994, *E. Menezes 24* (NY); Petrolina, Rodovia Petrolina-Santa Maria da Boa Vista, km 66, 5/IV/1979, *L. Coradin 1288* (BOTU, CEN); Petrolina, Rodovia Petrolina-Santa Maria da Boa Vista, km 87, 5/IV/1979, *L. Coradin 1295* (BOTU, CEN); Petrolina, Rodovia Lagoa Grande - Santa Maria da Boa Vista (BR-428), km 24, 23/VI/1987, *L. Coradin 7753* (BOTU, CEN); Recife, Bairro da Guabiraba, Santuário dos Três Reinos, 5/VIII/2014, *L.A. Silva 94* (RB); **Piauí:** Amarante, BR-343 Floriano - Teresina, Km 40, 25/V/1980, *L. Coradin 2600* (CEN); Caracol, Estrada para Serra Grande. Entrada em Guarita. Fora do Parque, 18/VII/2011, *E. Melo 10175* (HUEFS); Castelo Do Piauí, Grotão da Caraúba, 16/V/2004, *J.M. Costa 205* (HUEFS); **Rio de Janeiro:** Guanabara, Restinga de Itapeba, próximo à Estaçao Climatológica, 13/XII/1962, *A. Castellanos 23581* (NY); XII/1892, *C.E.O. Kuntze s.n.* (NY); Guanabara, Resting de Jacarepaguá, pr. antigo Aerodromo Latecoere, 5/VI/1964, *E. Pereira 8117* (NY); Mauá: along road 4.2 km north of Mauá Beach, 20/XI/1966, *G. Eiten 7869* (NY); *G. Gardner 27* (NY); Ipanema, 17/VII/1927, *J.W.C. Harshberger 809* (NY); 1852, *L. Riedel 34* (NY); Restinga de Carapebus, Fazenda Carrapato, proximo a Lagoa do Paulista, 18/X/1995, *M.G. Santos 540* (RB); XI/1910, *P. von Luetzelburg 35* (NY); I/1818, *Pohl 336* (NY); Guanabara, Barra da Tijuca, 27/III/1964, *W. Hoehne 5654* (NY); Estrada Rio-Santos, km 5, 24/X/1964, *W. Hoehne 5866* (NY); Macaé, Parque Nacional da Restinga de Jurubatiba, entre as lagoas Comprida e Carapebus, 14/VII/2012, *A.J. Castelo 175* (NY); Macaé, Restinga de Carapebus, 9/VI/1980, *D.S.D. de Araújo 3796* (NY); Mambucaba, Rodovia Paraty-Angar dos Reis (BR- 101), km 54, 25/VIII/1987, *L. Coradin 8253* (BOTU, CEN); Mambucaba, Rodovia Paraty-Angar dos Reis (BR- 101), km 54, 25/VIII/1987, *L. Coradin 8261* (BOTU, CEN); Paratí, 1/II/1980, *A. Krapovickas 35511* (NY); Rio de Janeiro, Copacabana, 8/VI/1872, *A.F.M. Glaziou 5817* (NY); Rio de Janeiro, Àrea de Proteção ambiental de Marapendi, Praia da Reserva, 17/VI/2012, *A.J. Castelo 112* (NY); Rio de Janeiro, Avenida das Américas, esquina com a Av Gláucio Gil(entrada do bairro Recreio dos Bandeirantes, 26/VIII/1987, *L. Coradin 8271* (BOTU, CEN); Rio de Janeiro, Restinga de Sernambetiba, pr. BR-101, 7/I/1973, *G.F.J. Pabst 9449* (NY); Rio de Janeiro, APA Marapendí, Barra da Tijuca, PAL, 10/IX/1996, *H.C. Lima s.n.* (RB); Rio de Janeiro, Parque Natural Municipal da Prainha Morro dos Cabritos, 17/VII/2015, *L.P. Mauad 436* (BOTU); Rio de Janeiro, Prox. Recreio dos Bandeirantes, 28/III/1964, *W. Hoehne 5694* (NY); São João Da Barra, Reserva Particular do Patrimônio Natural Caruara, próximo a Lagoa de Iquipari, 22/VII/2012, *A.J. Castelo 216* (NY); Saquarema, Reserva Ecol. Estadual de Jacarepia - Arredores da reserva, 50m da ADEJA, junto a estrada de barro, 26/X/1993, *J Fontella 3147* (RB); Saquarema, 14/VI/2015, *M.S. Wângler 1664* (RB); **Rio Grande do Norte:** Natal, Dunas de Mãe Luiza, 18/VII/1955, *S. Tavares 418* (NY); Natal, Ponta Negra, 27/VIII/1987, *S. Tsugaru B-1215* (NY); Riachuelo, Near Riachuelo, 60 km W from Natal, along the Rt. BR-304, 28/VIII/1987, *S. Tsugaru B1237* (NY); Santana Do Matos, Conglomerado RN 075-03-02-3C, 12/IX/2014, *A.F. Silva 121* (RB); **Rio Grande do Sul:** Torres, Av. Beira Mar, 9/XI/2019, *D.S. Gissi 519* (BOTU); **Roraima:** Igarapé Água Boa, campo da Fazenda Bom Intento, 31/VIII/1951, *G.A. Black 13151* (IAN); Boa Vista, Fazenda Iara, próximo a Normandia, 27/XI/1981, *L. Coradin 5035* (CEN); Território Do Rio Branco Boa Vista; campo em redor da cidade, 15/VIII/1951, *G.A. Black 51-12509* (IAN, NY); **Santa Catarina:** Florianópolis, Ilha de Santa Catarina, *D.R. Hunt 6368* (NY); Imbituba, P. Vila Nova, 03/XI/1973, *A. Sehnem 13861* (PACA-AGP); Itajaí, Praia Braba, 08/I/1953, *R. Reitz 5135* (PACA-AGP); Laguna, prope litus, 19/IX/1951, *R. Reitz 52* (PACA-AGP); Laguna, prope litus, 10/XI/1951, *R. Reitz 121* (PACA-AGP); Palhoça, Massiambu prope litus, 14/V/1953, *R. Reitz 653* (PACA-AGP); **São Paulo:** Sant'Anna, 4/V/1913, *A.C. Brade 6138* (NY); Butantan, 11/III/1930, *A. Gehrt 25239* (NY); Rodovia Ubatuba-Paraty(BR-101), km 51, 25/VIII/1987, *L. Coradin 8247* (BOTU, CEN); Estrada de Morais km 4, 12/III/1977, *G. Shepherd 4536* (RB); Butantan, 16/III/1948, *W. Hartley SH199* (NY); Bertioga, A 3km da colonia de férias do SESC, 24/IV/1983, *M.I.T.M. Guimarães 69* (BOTU); Boituva, Cultivada a partir de uma coleta

realizada em Buri - SP. Sítio Três Irmãos, 1/V/2018, *D.S. Gissi 394* (BOTU); Botucatu, 15/I/1986, *L. Bicudo 326* (BOTU); Botucatu, 08/VI/1972, *C.J. Campos 22* (BOTU); Botucatu, 06/I/1982, *Y. Yanagizawa 28* (BOTU); Buri, Sítio Três Irmãos. Margem da estrada em direção à casa, 29/IV/2018, *D.S. Gissi 383* (BOTU); Cananéia, South end of the island, Ilha Comprida, 16/II/1965, *G. Eiten 6152* (UB); Cananéia, Borda de Restinga, 30/IX/2009, *T.M. Moura 734* (ESA); Caraguatatuba, Rodovia Caraguatatuba - Ubatuba (BR-101), km 21, 25/VIII/1987, *L. Coradin 8228* (BOTU, CEN); Iguape, Ilha Comprida, 8/VIII/1985, *E.L.M. Catharino 348* (ESA, RB); Itatinga, 26 km de Itatinga, em direção a Angatuba, 27/IV/1996, *J. Paula-Souza 614* (ESA); Itipirina, Entroncamento da rodovia Washinton Luiz - Pirassununga (BR-225), km 2, 22/VIII/1987, *L. Coradin 8169* (BOTU, CEN); Itirapina, Campo Alegre, 21/I/1951, *G.A. Black 51-11039* (NY); Mongaguá, 21/IV/1985, *A. Amaral Jr. 17* (BOTU); Peruíbe, 03/XI/1979, *L.A. Marques 8* (BOTU); Piracicaba, ESALQ. Campo da Atlética, na esquina da Av. Independência com a R. Barão de Piracicamirim, 22/I/2018, *D.S. Gissi 369* (BOTU); Sâo José Dos Campos Rodovia São Jsé dos Campos-Caraguatatuba (SP-99), km 13, a partir dea rodovia Dutra, 24/VIII/1987, *L. Coradin 8219* (BOTU, CEN); São Paulo, Parque do Estado, grounds of the Instituto de Botanica, 04/V/1960, *G. Eiten 2002, 2003* (UB); São Paulo, Parque do Estado, grounds of the Instituto de Botânica, 7/IV/1960, *G. Eiten 1828* (NY); São Sebastiao, 10/XI/1976, *P. E. Gibbs 3508* (NY); Ubatuba, Rodovia Ubatuba-Paraty(BR-101), km 17, 25/VIII/1987, *L. Coradin 8240* (BOTU, CEN); Ubatuba, Praia do Perequerê, 19/IV/1961, *J. Mattos 8915* (NY); **Sergipe:** Barra Dos Coqueiros, 13/X/1994, *M. Landim 185* (ASE); Barra Dos Coqueiros, Área próxima ao Terminal Portuário de Sergipe, 13/X/1994, *M. Landim 185* (HUEFS); Brejo Grande, Foz do rio São Francisco, entre as Cruzes e Barra das Araras. Acesso a área de mangue antropizado, 02/IX/2015, *J.A. Siqueira Filho 3475* (HVASF); Canindé Do São Francisco, Fazenda Brejo, 24/II/2000, *M.F. Sales 1008* (HUEFS); Itabaiana, E. E. Serra de Itabaiana, 19/IX/1996, *M. Landim 1062* (HUEFS); Pirambu, Povoado Alagamar Assentamento São Sebastião, 13/VIII/2013, *T. Carregosa 454* (UEC); Pirambu, Povoado Alagamar, Assentamento São Sebastião, 13/VIII/2013, *T. Carregosa 454* (ASE); Pirambu, Rebio Santa Isabel, *M.S. Ramos 8* (ASE); Pirambu, Rebio Santa Isabel, *M.S. Ramos 8* (ALCB); Santo Amaro Das Brotas, 25/III/2011, *J.E. Nascimento Jr 790* (ASE, UEC);

COLOMBIA. Antioquia: Santa Fé de Antioquia, Via Uramita-Santa Fé de Antioquia, 7/VIII/1987, *R. Callejas 5139* (NY); **Cundinamarca:** Melgar, 4/XII/1917, *F.W. Pennel 2898* (NY); **Huila:** Neiva, Cordillera oriental, 1/VIII/1917, *H.H. Rusby 1042, 1083* (NY); **Magdalena:** Rioacha, 11/XI/1944, *O. Haught 4434* (NY); **Tolima:** 23/XI/1938, *O. Haught 2444* (NY); Chicoral, 7/III/1949, *O. Haught 6339* (NY); Honda, 3/I/1918, *F.W. Pennel 3608* (NY); Piedras, Piedras inter Ibagué [Between Piedras and Ibagué], 3/III/1876, *E. André 1983* (NY);

COSTA RICA: Puntarenas, I/2002, *L. González 1417* (MBM);

FRENCH GUIANA. Cayenne: Kourou, 14/V/1985, *D.Y. Alexandre 417B* (NY); Savanne de Corossony, Région litorale, 23/II/1978, *A. Raynal-Roques 20094* (NY); Savanne en contre bas de la route entre PK 20 et 21 à l'est d'Iracoubo, 23/III/1979, *G. Cremers 5503* (NY); Kourou, 14/V/1985, *D.Y. Alexandre 417* (P); Paricabo, capoeira, 21/X/1954, *G.A. Black 17071* (IAN); Cayenne, *F.M.R. Leprieur s.n.* (P); Kourou, 1854, *P.A. Sagot 130* (P); Pariacabo, 14/VIII/1961, *R.A.A. Schnell 11124* (U);

GUYANA: Corentyne River, IX/1879, *E.F. Im Thurn v* (P); III/1837, *R.H. Schomburgk 178* (NY, P, US); **Demerara-Mahaica:** Timehri to Linden road, 1.3 km SE of junc. with airport road, 13/VIII/1995, *S.R. Hill 27133* (NY, US); **E. Berbice-Corentyne:** Baranka Landing, Piruru Savanna, 1/IV/1995, *P. Mutchnick 1176* (NY); **Ireng:** Paramakatoi savanna, V/1926, *R.A. Altson 526* (NY); **Potaro-Siparuni:** Kato and vicinity, 17/III/1989, *W. Hahn 5751* (NY, US); **Rupununi:** Manari, 3/VIII/1995, *M.J. Jasen-Jacobs 4736* (NY); **U. Demerara-Berbice:** Berbice River, Zion, Dubulee Ranch, 7/V/1995, *P. Mutchnick 1366* (NY); **Upper Demerara - Berbice:** 24 km from Ituni, 19/I/1990, *L. J. Gillespie 3064* (NY); Ituni-Waruni, 8/IV/1919, *A.A. Abraham 89* (NY); N. Rupununi, IV/1968, *D.H. Davis 804* (NY); *H.C. Rothery 95* (NY); Berbice river, 7/VI/1958, *S. G. Harrison 1044* (NY);

MEXICO. Tehuantepec: Magdalena, Tequisistilán. 8 km al SW de La Pajima, 29/VIII/1994, *G. Flores-Franco 3624* (MBM);

PARAGUAY. La Cordillera: Piribebuy, 3/XI/1986, *T.M. Pedersen 14799* (NY); Cordillera Central, /1900, *E. Hassler 6351* (NY); *E. Hassler 8057* (NY); *E. Hassler 10719* (NY);

SURINAME. Zanderij I, 4/VI/1944, *B. Maguire 23733* (NY); *F.W. Hostmann 822* (NY); 31/V/1916, *J.A. Samuels 260* (NY); Kwakoegron, 1/III/1951, *J. Florschutz 1665* (NY); Suhoza, Suriname river, 14/IV/1949, *J. Florschutz 3367* (NY); Joden savanna behind cemetery, 12/IV/1949, *J. Lanjouw 2998* (NY); V/1845, *Regel 870* (NY);
VENEZUELA. Bolivar: Frequent on crystalline knob at km. 111 on Pto. Ordaz-Cerro Bolivar railroad, 26/X/1953, *B. Maguire 36014* (US); 31 km NO de Tumeremo, en la vía a El Callao, 14/X/1979, *N. Xena 487* (NY); Bolivar, 22/X/1993, *A. Groger 1185* (NY); Cierro Pichacho, N. of Las Nieves, 31/I/1961, *J.A. Steyermark 88902* (NY); El Pao de La Fortuna, 29/VII/1978, *R. Liesner 5790* (NY); Piar, Bajo Caroni,V/1994, *A. Valera 514* (NY); Roscio, via Casa Blanca - Isla Anacoco, 20/VIII/1990, *N. Cuello 861* (NY); **Margarita:** El Valle,/1901, *O. O. Miller 268* (NY); **Monagas:** Aguasay, Cabeceras del río Arenal, afluente del río Oritupano. 2km al S del caserío El Arenal, 11/VI/2003, *A. Fernández 19421* (ESA, NY); Jusepin, 27/VI/1967, *R.A. Pursel 9436* (NY); Libertador, El Merey, 9/VIII/1996, *W.A. Diaz 2958* (NY); **Sucre:** Cumaná, Playa Cachimena, Oeste del Hotel Cumanagoto y Suroeste de Cumana: espinares y cardonales, 8/IX/1973, *J.A. Steyermark 108149* (NY); Peninsula de Manare, 11/IX/1973, *J.A. Steyermark 10830* (NY); **Trujillo:** Valera, 18/XI/1922, *H. Pittier 10721* (NY);
Jamaica. *H. Sloane s.n.* (BM).

43. *Stylosanthes* sp.

BRAZIL. Goiás, Monte Alegre de Goiás, ca. 25km by road SW of Monte Alegre de Goiás. 12/III/1973. *W.R. Anderson 6933* (NY, UB). **Tocantins**, Arraias. Estrada Vicinal no trevo de Arraias para Campos Belos (TO-050). 8/III/2015, *P.H. Labiak 5989* (BOTU, CEPEC, RB).

Considerações Finais

O estudo apresentou novidades anatômicas e taxonômicas para o gênero *Stylosanthes*, a fim de se resolver uma classificação complexa.

Análises anatômicas e histoquímicas se mostraram como ferramentas úteis para a distinção de espécies do gênero.

Conseguiu-se identificar e descrever corretamente as estruturas secretoras presentes.

A partir do conhecimento acumulado do gênero, propõe-se duas novas espécies para *Stylosanthes*.

Enfatizando-se as diferenças morfológicas, após extensiva análise de material herborizado e coletas em campo, propõe-se um novo tratamento taxonômico para a América do Sul, contabilizando 43 espécies.

Futuros estudos, incluindo moleculares, podem contribuir ainda mais para a elucidação e distinção de espécies ainda conflitantes