

Synopsis of Orchidaceae from Serra do Urubu: an area of montane forest, Pernambuco State, Brazil

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ABSTRACT - (Synopsis of Orchidaceae from Serra do Urubu: an area of montane forest, Pernambuco State, Brazil). This study provides a survey of Orchidaceae species in an area of montane Atlantic Forest in the State of Pernambuco, Brazil. The study area comprises two conservation units (RPPN Frei Caneca and RPPN Pedra D'Anta), forming together the Serra do Urubu, which is located in the border of the Borborema plateau. Orchidaceae is represented in this study area by 81 species and 50 genera. *Epidendrum* L. (10 spp.) and *Habenaria* Willd. (four spp.) are the most representative genera. The subtribes Laeliinae (22 spp.) and Pleurothallidinae (14 spp.) together represent about half of the number of species. The high number of orchid species distinguishes Serra do Urubu as one of the richest areas for the family in the Atlantic Forest in northeastern Brazil. Our study also provides 18 new records of species to Pernambuco as well as reporting on about 40% of the species and 60% of the genera cited to the State. *Campylocentrum pernambucense*, *Cattleya labiata*, *Cattleya granulosa*, *Phragmipedium sargentianum* and *Zygostates bradei* are cited as endangered, 14 species are endemic to the Atlantic Forest, and other seven have distributions restricted to northeastern Brazil. All these facts reinforce the importance of this area as well as management strategies for the conservation of Orchidaceae.

Keywords: hotspot, monocots, northeastern Brazil, orchids

RESUMO - (Sinopse de Orchidaceae na Serra do Urubu: uma área de floresta montana do Estado de Pernambuco, Brasil). Esse estudo apresenta um inventário taxonômico das espécies da família Orchidaceae em uma área de Floresta Atlântica no Estado de Pernambuco, Brasil. A área de estudo compreende duas unidades de conservação (RPPN Frei Caneca e RPPN Pedra D'Anta) que formam juntas a Serra do Urubu, localizada no limite oriental do planalto da Borborema. Orchidaceae está representada na área por 81 espécies e 50 gêneros, sendo *Epidendrum* L. (10 spp.) e *Habenaria* Willd. (quatro spp.) os mais ricos. As subtribos Laeliinae (22 spp.) e Pleurothallidinae (14 spp.) juntas correspondem a cerca da metade do número de espécies. O alto número de orquídeas evidencia a Serra do Urubu como a área mais rica em espécies da família para Floresta Atlântica do Nordeste do Brasil. Esse estudo apresenta 18 novos registros para o Estado de Pernambuco, e inclui cerca de 40% das espécies e 60% dos gêneros citados para o Estado. *Campylocentrum pernambucense*, *Cattleya labiata*, *Cattleya granulosa*, *Phragmipedium sargentianum* e *Zygostates bradei* são citados como ameaçados de extinção, 14 espécies são endêmicas da Floresta Atlântica, e sete tem distribuição restrita a região Nordeste do Brasil, isso reforça a importância da área para conservação da família Orchidaceae.

Palavras-chave: hotspot, monocotiledôneas, Nordeste do Brasil, orquídeas

Introduction

The Atlantic Forest biome is the second largest forested formation in South America, but due to the high level of deforestation, and the high number of endemic species, it is considered one of the world's hotspots in biodiversity (Mittermeyer *et al.* 2004).

More than 20,000 species of Angiosperms have been recorded for the Atlantic Forest, and ca. 8,000 (40%) are considered endemic to this formation (Myers *et al.* 2000).

Historical factors point out the northern portion of such ecosystem as the most endangered mainly because it is composed of small and isolated fragments

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in a matrix of sugarcane (Ranta *et al.* 1998). The Atlantic Forest north of Rio São Francisco [also known as Pernambuco Endemism Center (Prance 1982)] has been far less studied than the southern portion. Furthermore, due to the several new taxa which have been recently described (Alves-Araújo & Alves 2011, 2012a, 2012b, Amorim & Alves 2012, Melo & Alves 2012, Araújo & Alves 2013, Amorim *et al.* 2013, Costa-Lima & Alves 2013, Lourenço *et al.* 2013, Terra *et al.* 2013, Costa-Lima *et al.* 2014, Pessoa & Alves 2014, Pessoa *et al.* 2014a, 2014b), the Pernambuco Endemism Center is potentially much more diverse than it is currently known.

In the State of Pernambuco only 4.6% of the original Atlantic Forest remains (Secretaria de Ciência, Tecnologia e Meio Ambiente 1994), and the only two surveys of the family in these forest fragments were carried out by Siqueira-Filho & Felix (2006) and Pessoa & Alves (2012). According to Stehmann *et al.* (2009), Orchidaceae is very well represented in the Atlantic Forest, with ca. 1400 species (Barros *et al.* 2014). They also stressed that from the 180 species cited for the State of Pernambuco, 90% of them occur in the forest fragments of this ecosystem.

The aim of this study was to provide a survey of the Orchidaceae species in a montane area of Atlantic Forest in Pernambuco State, northeastern Brazil. Our survey includes an identification key, pictures or illustrations, and comments on geographical distribution, ecology as well as main characters of the species.

Material and methods

The study area comprises two conservation units: Reserva Particular do Patrimônio Natural (RPPN) Frei Caneca and Reserva Particular do Patrimônio Natural (RPPN) Pedra D'Anta. Both areas are located in the Serra do Urubu (8°42'S and 35°50'W), within the municipalities of Lagoa dos Gatos, São Benedito do Sul and Jaqueira, in the eastern border of the Borborema plateau (Pernambuco State, northeastern Brazil).

The climate is considered tropical wet and dry (*Aw sensu* Köppen), with an annual average precipitation of 1200 mm, and mean temperatures between 18-30 °C (LAMEPE/ITEP). The site comprises Montane Dense Ombrophilous Forest based on the types of vegetation proposed by Veloso (1992).

The Serra do Urubu is mainly covered by forest with some exposed rocky outcrops and has an

altitude of 600-750 m ASL. The lower elevation areas (300-400 m) are occupied by sugarcane crops.

The fieldwork was carried out from December 2010 to May 2013, covering eleven months of each year with the exception of February. The samples were submitted to the usual taxonomic procedures (Mori *et al.* 1985) and then deposited at the UFP herbarium, with duplicates sent to NY and RB, among other herbaria.

Samples previously collected from the study area were located and studied at the herbaria visited (ALCB, CEPEC, EAC, EAN, HST, HUEFS, IPA, JPB, MAC, PEUFR, RB and UFP; acronyms according to Thiers 2014).

Taxonomic identification was based upon the most important references [Dunsterville & Garay (1959, 1961, 1965, 1966, 1972, 1976), Pabst & Dungs (1975, 1977), Carnevali *et al.* (2003) and Toscano-de-Brito & Crib (2005)] and analysis of herbarium collections.

The morphological terminology follows Harris & Harris (2001) and Gonçalves & Lorenzi (2007). The data on geographical distribution of the species follows Barros *et al.* (2014) and Govaerts *et al.* (2014). Basionyms, whenever necessary, are provided after the accepted name as well as new synonyms.

Results and Discussion

Orchidaceae is represented in Serra do Urubu by 81 species and 50 genera. *Epidendrum* L. (10 spp.) and *Habenaria* Willd. (four spp.) are the most species-rich genera. The subtribes Laeliinae (22 spp.) and Pleurothallidinae (14 spp.) represent together almost half of the total number of species found in the area. The diversity of orchid species in Serra do Urubu ranks the area as one of the richest for the family in the Atlantic Forest in northeastern Brazil (Pessoa & Alves 2011, Pessoa & Alves 2012, Marinho & Azevedo 2013, Coelho & Amorim 2014).

This study provides 18 new records of species to the State of Pernambuco. The results also encompass about 40% of the species and 60% of the genera cited to the State by Barros *et al.* (2014). The forested portion of Serra do Urubu is more species-rich (65 spp.) than the rock outcrops (17 spp.), and only five species share both habitats. According to Barros *et al.* (2014), among the species found in the area, 14 are considered endemic to the Atlantic Forest, and seven are known only in northeastern

18. Apical leaf sessile; sepals < 1.8 cm long, elliptic 8. *Camaridium carinatum*
 18. Apical leaf pseudo-petiolate; sepals > 3.5 cm long, lanceolate
 48. *Maxillaria ochroleuca*
11. Inflorescence 2- to many-flowered
19. Flowers with spur
20. Terrestrial herbs; spur apically 2-lobed 55. *Oeceoclades maculata*
 20. Epiphyte herbs; spur apically acute or rounded
21. Leaves green; inflorescence racemose 78. *Trichocentrum fuscum*
 21. Leaves dark purple; inflorescence paniculate 15. *Comporettia barkeri*
19. Flowers without spur
22. Lateral sepals completely free
23. Pseudobulbs > 1.5 cm long; inflorescence congest; apex of the sepals acute,
 margin entire 9. *Camaridium micranthum*
 23. Pseudobulbs < 0.8 cm long; inflorescence lax. apex of the sepals rounded,
 margin serrate 81. *Zygostates bradei*
22. Lateral sepals completely to partially connate
24. Lip clawed; callus or lamellae absent 53. *Notylia inversa*
 24. Lip without claw; callus or lamellae present
25. Flowers whitish; lateral sepals completely connate 68. *Rodriguezia bahiensis*
 25. Flowers yellowish and brownish; lateral sepals connate only up to the middle
26. Mid-lobe of the lip < lateral lobes; lip margin ciliate 32. *Gomesa barbata*
 26. Mid-lobe of the lip > lateral lobes; lip margin entire 33. *Gomesa hookeri*
3. Inflorescence terminal
27. Pseudobulb present
28. Pseudobulb homoblastic
29. Epiphytic or rupicolous herbs; leaves conduplicate 60. *Polystachya estrellensis*
 29. Terrestrial herbs; leaves plicate
30. Inflorescence umbellate; apex of the lip acute 45. *Malaxis excavata*
 30. Inflorescence racemose; apex of the lip 2-lobed 44. *Liparis nervosa*
28. Pseudobulb heteroblastic
31. Pseudobulbs superposed; column with a foot
32. Pseudobulb 1-leaved; inflorescence pedunculate 70. *Scaphyglottis fusiformis*
 32. Pseudobulb 2-leaved; inflorescence sessile
33. Sepals elliptic; lip not clawed, slightly 3-lobed 71. *Scaphyglottis modesta*
 33. Sepals linear-oblongate; lip sub-clawed, entire 72. *Scaphyglottis sickii*
31. Pseudobulbs not superposed; column without a foot
34. Flowers resupinate
35. Pseudobulbs 1-leaved, fusiform; sepals pinkish 14. *Cattleya labiata*
 35. Pseudobulbs 2-leaved, cylindrical; sepals greenish to yellowish with brown spots
 13. *Cattleya granulosa*
34. Flowers not resupinate
36. Plants creeping with a branched rhizome; lip 3-lobed 64. *Prosthechea pygmaea*
 36. Plants caespitose or shortly creeping; lip entire
37. Lip convex, ≤ 0.7 cm long 65. *Prosthechea vespa*
 37. Lip concave, > 0.9 cm long 63. *Prosthechea alagoensis*
27. Pseudobulb absent
38. Leaves disposed in basal rosettes
39. Epiphytic herbs; inflorescence pendulous 31. *Eurystyles cotyledon*
 39. Terrestrial or rupicolous herbs; inflorescence erect

40. Flowers resupinate; sepals > 0.5 cm long
41. Flowers without a spur or mentum; lip calceolate; column with a conspicuous shield-like staminode 57. *Phragmipedium sargentianum*
41. Flowers with spur or mentum; lip not calceolate; column without staminode
42. Leaves present at flowering; flowers yellowish-white 49. *Mesadenella cuspidata*
42. Leaves absent at flowering; flowers pinkish to magenta 69. *Sacoila lanceolata*
40. Flowers not resupinate; sepals ≤ 0.3 cm long
43. Small rosettes, leaves ovate to wide elliptic, ≤ 4.5 cm long; flowers whitish 61. *Prescottia oligantha*
43. Large rosettes, leaves lanceolate to elliptic, > 5.0 cm long; flowers greenish 62. *Prescottia plantaginifolia*
38. Leaves only apical or distributed along the stem
44. Leaf 1, apical
45. Stem enveloped by lepanthiform sheaths 43. *Lepanthopsis floripectren*
45. Stem naked or enveloped by sheaths that are not lepanthiform
46. Leaves cylindrical
47. Inflorescence lax; sepals > 3.7 cm long 7. *Brassavola tuberculata*
47. Inflorescence congested; sepals < 1.0 cm long 54. *Octomeria alexandrii*
46. Leaves plane
48. Dorsal sepal partially connate to the lateral sepals
49. Sepals connate at base forming a tube 76. *Stelis deregularis*
49. Sepals connate at base but not forming a tube
50. Leaves narrowly elliptic; lip with acuminate apex 75. *Stelis aprica*
50. Leaves wide elliptical to oblanceolate; lip with rounded apex 77. *Stelis loefgrenii*
48. Dorsal sepal free
51. Inflorescence peduncle < 1.0 cm long
52. Plants < 4.0 cm tall; inflorescence 1-flowered 56. *Pabstiella lingua*
52. Plants > 10.0 cm tall; inflorescence multi-flowered
53. Lateral sepals completely connate 59. *Pleurothallis ruscifolia*
53. Lateral sepals connate only at base 51. *Myoxanthus exasperatus*
51. Inflorescence peduncle ≥ 1.0 cm long
54. Lateral sepals connate only at base to the middle
55. Plants > 8.0 cm tall; sepals > 1.0 cm long 4. *Anathallis sclerophylla*
55. Plants < 5.0 cm tall; sepals < 0.4 cm long 74. *Specklinia integripetala*
54. Lateral sepals completely connate
56. Flowers arising successively from the same point at the apex of the inflorescence 3. *Anathallis barbulata*
56. Flowers distributed along the inflorescence
57. Sepals ≤ 0.3 cm long; petals linear 58. *Pleurothallis pruinosa*
57. Sepals > 0.3 cm long; petals obovate to elliptic
58. Peduncle of the inflorescence longer than the subtended leaf 1. *Acianthera glumacea*
58. Peduncle of the inflorescence shorter than the subtended leaf 2. *Acianthera hygrophyla*
44. Leaves 2 or more, distributed along the stem
59. Flowers with a developed spur
60. Petals entire
61. Apex of the petals truncate-sinuous; lip straight 35. *Habenaria petalodes*
61. Apex of the petals acute; lip with a lateral-constriction
62. Leaves ≤ 5.0 cm long; pedicellate ovary ≤ 0.5 cm long 5. *Aspidogyne argentea*
62. Leaves > 6.0 cm long; pedicellate ovary > 1.0 cm long 6. *Aspidogyne foliosa*

60. Petals 2-lobed
63. Lateral sepals ovate; anterior lobe of the petals longer than the posterior lobe 36. *Habenaria cryptophila*
63. Lateral sepals lanceolate; anterior lobe of the petals as long as, or shorter than the posterior lobe
64. Posterior lobe of the petals elliptical; mid-lobe of the lip rhomboid; spur ≤ 3.0 cm long 37. *Habenaria pratensis*
64. Posterior lobe of the petals oblong to linear; mid-lobe of the lip linear-oblong; spur > 3.0 cm long 38. *Habenaria trifida*
59. Flowers without a developed spur, sometimes with an inconspicuous mentum
65. Leaves cylindrical
66. Inflorescence sessile; flowers purple 41. *Jacquiniella globosa*
66. Inflorescence long-pedunculate; flowers yellowish to orange 42. *Jacquiniella teretifolia*
65. Leaves plane or plicate
67. Leaves plicate; sepals > 6.0 cm long 73. *Sobralia liliastrum*
67. Leaves conduplicate; sepals < 3.5 cm long
68. Column free or adnate only at base with the lip
69. Leaves ovate 66. *Psilochilus modestus*
69. Leaves linear, linear-oblong to linear elliptic
70. Floral bracts almost entirely covering the flower; flowers whitish 20. *Elleanthus linifolius*
70. Floral bracts covering only the base of the pedicellate ovary; flowers pinkish
71. Sepals free; base of the lip adnate to the column 19. *Dimerandra emarginata*
71. Sepals connate at base; lip free 40. *Isochilus linearis*
68. Column completely adnate to the lip
72. Peduncle two times longer than the rachis; flowers reddish
73. Terrestrial or rupicolous herbs; lateral lobes of the lip completely fringed 24. *Epidendrum cinnabarinum*
73. Epiphytic herbs; lateral lobes of the lip apically serrate 25. *Epidendrum macrocarpum*
72. Peduncle as long as, or shorter than the rachis; flowers greenish, whitish or yellowish
74. Floral bract completely or partially covering the pedicellate ovary
75. Stem not branched; lip sub-orbicular 28. *Epidendrum rigidum*
75. Stem branched; lip deltoid to ovate
76. Leaves linear-oblong; petals linear 27. *Epidendrum ramosum*
76. Leaves lanceolate to elliptic; petals oblanceolate 28. *Epidendrum strobiliferum*
74. Floral bract short and not covering the pedicellate ovary
77. Stem branched 26. *Epidendrum proligerum*
77. Stem not branched
78. Inflorescence curved, paniculate 30. *Epidendrum tridactylum*
78. Inflorescence erect, simple (racemose or sub-corymbose)
79. Mid-lobe of the lip linear 23. *Epidendrum carpophorum*
79. Mid-lobe of the lip 2-lobed or orbicular
80. Sepals > 3.0 cm long; mid-lobe of lip entire 21. *Epidendrum anatifidum*
80. Sepals < 1.5 cm long; mid-lobe of lip 2-lobed 22. *Epidendrum campaccii*

1. *Acianthera glumacea* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16: 243. 2001 \equiv *Pleurothallis glumacea* Lindl., *Bot. Mag.* 2: 355. 1837.

Figure 1a

This epiphyte differs from *Acianthera hygrophila* by the peduncle of the inflorescence longer than the subtending leaf. It occurs in forested areas and it is endemic to the Atlantic Forest of Brazil (States of Pernambuco, Alagoas, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 11-III-2011, fl., *E. Pessoa et al.* 520 (NY, RB, UFP).

2. *Acianthera hygrophila* (Barb. Rodr.) Pridgeon & M.W. Chase, *Lindleyana* 16: 244. 2001 \equiv *Pleurothallis hygrophila* Barb. Rodr., *Gen. Sp. Orchid.* 1: 7. 1877.

Figure 1b

This epiphyte differs from *Acianthera glumacea* by the peduncle of the inflorescence shorter than the subtending leaf. It occurs in forested areas and it is endemic to the Atlantic Forest of Argentina and Brazil (States of Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al.* 954 (NY, RB, UFP).

3. *Anathallis barbulata* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16: 247. 2001 \equiv *Pleurothallis barbulata* Lindl., *Fol. Orchid.* 9: 40. 1859.

Figure 2a

This epiphyte is easily recognized among the Pleurothallidinae in the area by the long peduncle (> 1.0 cm long), from where the purplish flowers arise successively from the same point. It occurs in forested areas, and it is widely distributed in the Neotropics, including Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa* 942 (UFP, RB); 29-I-2013, fl., *E. Pessoa et al.* 1052 (UFP); 11-III-2011, fl., *E. Pessoa et al.* 521 (UFP).

4. *Anathallis sclerophylla* (Lindl.) Pridgeon & M.W.Chase, *Lindleyana* 16: 250. 2001 \equiv *Pleurothallis sclerophylla* Lindl., *Edwards's Bot. Reg.* 21: t. 1797. 1835.

Figure 1c

This epiphyte differs from *Specklinia integripetala* by the size of the plant (> 8.0 cm tall) and the longer sepals (> 1.0 cm long). It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it is found in the Amazon and Atlantic Forests (States of Roraima, Ceará, Pernambuco, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-V-2012, fl., *E. Pessoa et al.* 959 (NY, RB, UFP).

5. *Aspidogyne argentea* (Vell.) Garay, *Bradea* 2: 203. 1977 \equiv *Ophrys argentea* Vell., *Fl. Flumin.* 9: t. 61. 1831.

Figure 1d

This terrestrial herb differs from *Aspidogyne foliosa* by its smaller leaves (\leq 5.0 cm long) and shorter-pedicellate ovary (\leq 0.5 cm long). It occurs in forested areas and it is known from Paraguay and Brazil (States of Distrito Federal, Ceará, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 18-XII-2004, fl., *J.A. Siqueira-Filho* 1451 (UFP); 27-XI-2001, fl., *J.A. Siqueira-Filho* 1200 (UFP); 13-XI-2003, fl., *J.A. Siqueira-Filho* 1419 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al.* 427 (UFP).

6. *Aspidogyne foliosa* (Poepp. & Endl.) Garay, *Bradea* 2: 201. 1977 \equiv *Pelexia foliosa* Poepp. & Endl., *Nov. Gen. Sp. Pl.* 2: 17. 1837.

Figure 2b

This terrestrial herb differs from *Aspidogyne argentea* by its longer leaves (> 6.0 cm long) and longer-pedicellate ovary (>1.0 cm long). It occurs in forested areas, and it is known from South America - French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru, Bolivia, Paraguay and Brazil, where it is widely distributed (Barros *et al.* 2014, Govaerts *et al.* 2014).

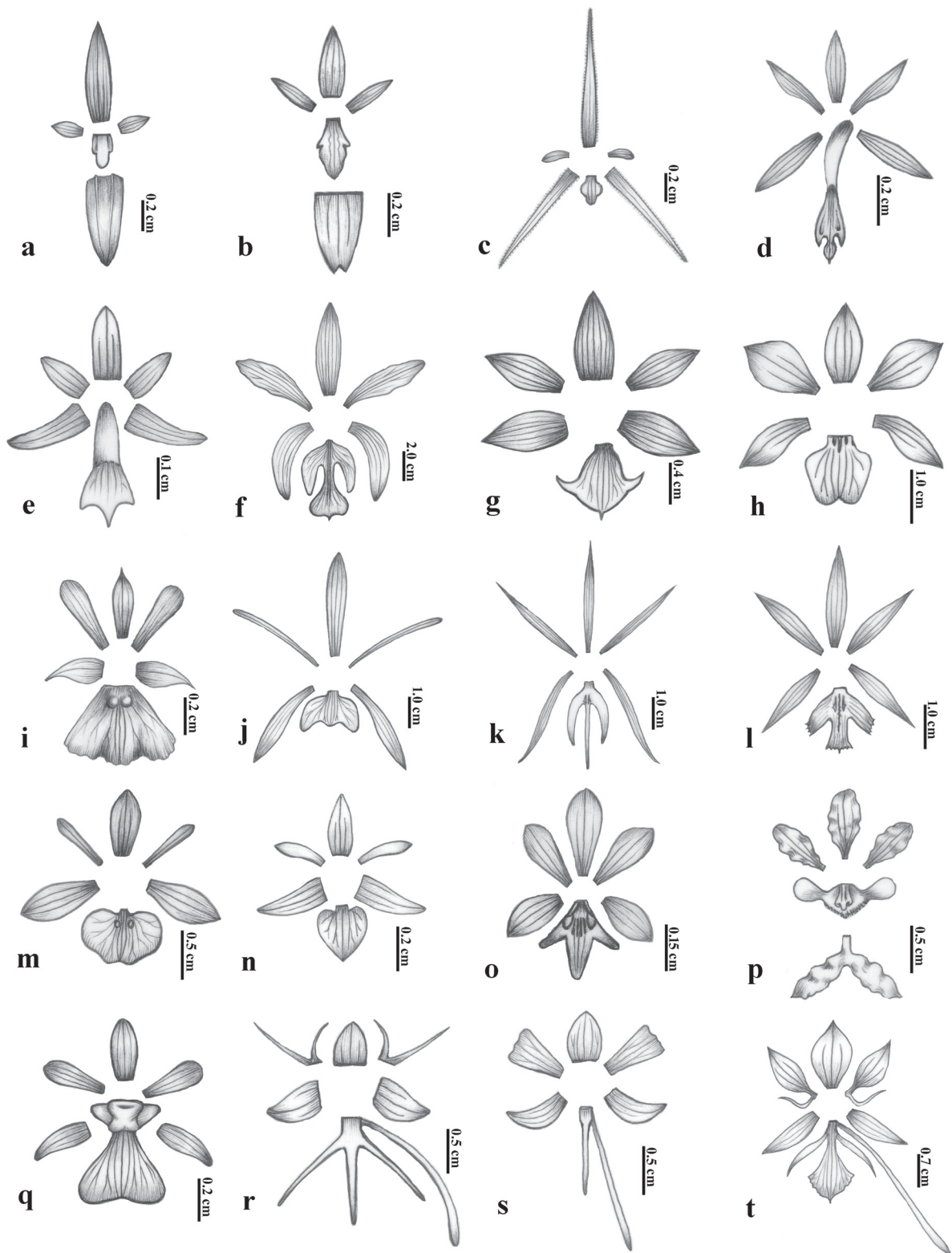


Figure 1. a. *Acianthera glumacea*. b. *Acianthera hygrophyla*. c. *Anathallis sclerophylla*. d. *Aspidogyne argentea*. e. *Campylocentrum pernambucense*. f. *Cattleya granulosa*. g. *Dichaea pendula*. h. *Dimerandra emarginata*. i. *Elleanthus linifolius*. j. *Epidendrum anatipedium*. k. *Epidendrum carpophorum*. l. *Epidendrum macrocarpum*. m. *Epidendrum proligerum*. n. *Epidendrum strobiliferum*. o. *Epidendrum tridactylum*. p. *Gomesa barbata*. q. *Gomesa hookeri*. r. *Habenaria cryptophila*. s. *Habenaria petalodes*. t. *Habenaria pratensis*.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-I-2013, fl., *D. Araújo 2367* (RB, UFP); 11-III-2011, fl., *E. Pessoa et al. 514* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al. 416* (NY, RB, UFP).

7. *Brassavola tuberculata* Hook., Bot. Mag. 56: t. 2878. 1829.

Figure 2c

This epiphyte or rupicolous herb can be confused vegetatively in the area with *Octomeria alexandrii*, but it is easily distinguished by the lax inflorescence and longer sepals (> 3.7 cm long). It occurs on rock outcrops and it is endemic to Brazil (States of Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Tocantins, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 9-VII-1999, fl., *J.A. Siqueira-Filho & J.A. Vicente 985* (UFP).

8. *Camaridium carinatum* (Barb. Rodr.) Hoehne, Arq. Bot. Estado São Paulo 2: 72. 1947 \equiv *Maxillaria carinata* Barb. Rodr., Gen. Sp. Orchid. 2: 206. 1882.

Figure 2d

This epiphyte differs from *Maxillaria ochroleuca* by its sessile apical leaf, yellow flowers and shorter sepals (< 1.8 cm long). It occurs in forested areas, and it is known from Guyana, Venezuela, Colombia, Ecuador, Peru and Brazil (States of Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Brazil. Pernambuco: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl. e fr., *E. Pessoa et al. 931* (RB, UFP).

9. *Camaridium micranthum* M.A. Blanco, *Lankesteriana* 7: 520. 2007 \equiv *Scaphyglottis parviflora* Poepp. & Endl., Nov. Gen. Sp. Pl. 1: 58. 1836.

Figure 2e

This epiphyte is easily recognized among the Maxillariinae in the area by the shorter (< 2.0 cm long) and congested many-flowered inflorescences.

It occurs in forested areas, and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it occurs in the Amazon and Atlantic Forests (States of Amazonas, Roraima, Amapá, Mato Grosso, Distrito Federal, Ceará, Minas Gerais, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl., *E. Pessoa et al. 928* (RB, UFP).

10. *Campylocentrum crassirhizum* Hoehne, Arq. Bot. Estado São Paulo 1: 44. 1939.

Figure 2f

This epiphyte differs from *Campylocentrum micranthum* by its coriaceous, oblong leaves, flowers with a slightly curved spur and unribbed fruit. It occurs in forested areas and it is endemic to Brazil (States of Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Mato Grosso do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 11-III-2011, fl., *E. Pessoa et al. 519* (RB, UFP); 28-I-2013, fr., *E. Pessoa et al. 1044* (RB, UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 18-XII-2010, fr., *E. Pessoa et al. 470* (RB, UFP).

11. *Campylocentrum micranthum* (Lindl.) Rolfe, *Orchid Rev.* 9: 136. 1903 \equiv *Angraecum micranthum* Lindl., Edwards's Bot. Reg. 21: t. 1772. 1835.

Figure 2g

This epiphyte differs from *Campylocentrum crassirhizum* by its sub-coriaceous, oblong-elliptical leaves, flowers with a strongly curved spur and 6-ribbed fruit. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it occurs in the Amazon and Atlantic Forests (States of Acre, Amazonas, Roraima, Pará, Amapá, Rondônia, Tocantins, Maranhão, Ceará, Pernambuco, Alagoas, Sergipe, Bahia, Mato Grosso and Goiás) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al. 952* (RB, UFP); 31-I-2013, fr., *E. Pessoa et al. 1062* (RB, UFP).

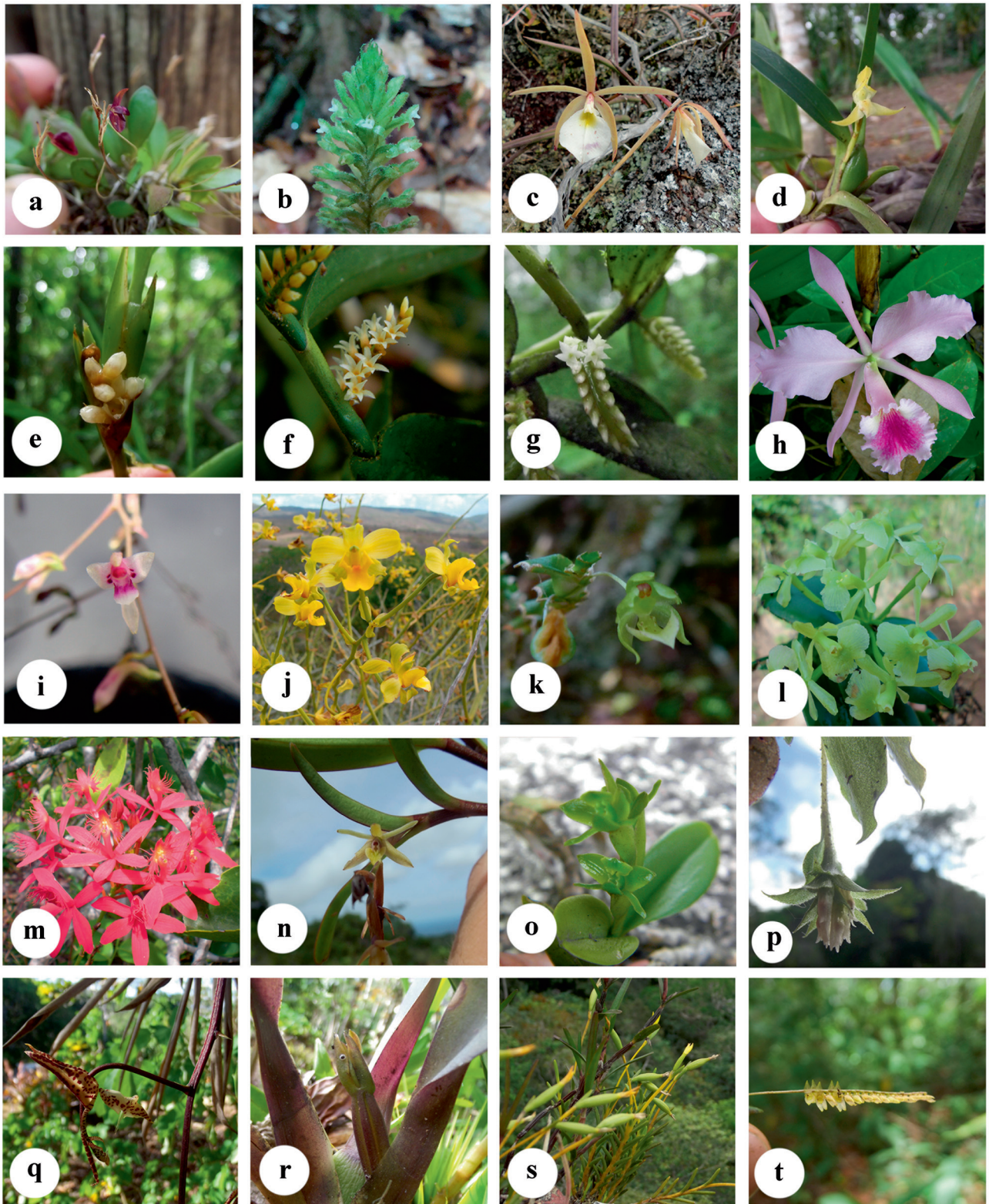


Figure 2: a. *Anathallis barbulata*. b. *Aspidogyne foliosa*. c. *Brassavola tuberculata*. d. *Camaridium carinatum*. e. *Camaridium micranthum*. f. *Campylocentrum crassirhizum*. g. *Campylocentrum micranthum*. h. *Cattleya labiata*. i. *Comparettia barkeri*. j. *Cyrtopodium flavum*. k. *Dichaea panamensis*. l. *Epidendrum campaccii*. m. *Epidendrum cinnabarinum*. n. *Epidendrum ramosum*. o. *Epidendrum rigidum*. p. *Eurystyles cotyledon*. q. *Gongora vitorinoana*. r. *Heterotaxis discolor*. s. *Jacquiiniella teretifolia*. t. *Lepanthopsis floripectren*.

12. *Campylocentrum pernambucense* Hoehne, Arq. Bot. Estado São Paulo 1: 22. 1938.

Figure 1e

This epiphyte is easily recognized among the species of the genus in the area by its cylindrical leaves and shorter inflorescence (< 0.8 cm long). It occurs in forested areas and it is endemic to the Atlantic Forest of northeastern Brazil (States of Paraíba, Pernambuco, Alagoas and Sergipe) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is cited as endangered by the Ministério do Meio Ambiente (2008) and Martinelli & Moraes (2013). There are large populations of this species in the Serra do Urubu.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-V-2012, fl. e fr., *E. Pessoa et al.* 960 (RB, UFP); 29-I-2013, fr., *E. Pessoa et al.* 1050 (RB, UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl. e fr., *E. Pessoa et al.* 429 (RB, UFP).

13. *Cattleya granulosa* Lindl., Edwards's Bot. Reg. 28: t. 1. 1842.

Figure 1f

This epiphyte differs from *Cattleya labiata* by the 2-leaved, cylindrical pseudobulbs and sepals greenish to yellowish with brown spots. It occurs in forested areas and it is endemic to the Brazilian Atlantic Forest (States of Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Bahia and Espírito Santo) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is cited as endangered by the Ministério do Biodiversitas (2008), Meio Ambiente (2008) and Martinelli & Moraes (2013). It is rarely found in the Serra do Urubu.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al.* 941 (UFP).

14. *Cattleya labiata* Lindl., Coll. Bot. t. 33. 1824.

Figure 2h

This epiphyte differs from *Cattleya granulosa* by its 1-leaf, fusiform pseudobulbs and flowers with pinkish sepals. It occurs in forested areas and it is endemic to the Brazilian Atlantic Forest (States of Ceará, Paraíba, Pernambuco, Alagoas, Sergipe, Espírito Santo and Rio de Janeiro) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is cited as endangered by the Ministério do Biodiversitas (2008), Meio Ambiente (2008) and Martinelli & Moraes (2013). There are small populations of this species in the Serra do Urubu.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 10-III-2011, fl., *E. Pessoa et al.* 500 (UFP).

15. *Comparettia barkeri* (Lindl.) M.W.Chase & N.H.Williams, Lindleyana 21(3): 27. 2008 ≡ *Chaenantho barkeri* Lindl., Edwards's Bot. Reg. 24: 38. 1838.

Figure 2i

This epiphyte is easily recognized in the area by its dark purple leaves, paniculate inflorescence and flowers with spur. It occurs in forested areas, and it is known from Venezuela to Peru and Brazil, where it has an Atlantic-Amazon disjunction, and it is cited to the States of Pará and Pernambuco (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-I-2013, fl., *E. Pessoa et al.* 1066 (UFP); 17-XII-2010, fl., *E. Pessoa et al.* 450 (UFP).

16. *Cyrtopodium flavum* (Nees) Link & Otto ex Rchb., Iconogr. Bot. Exot. 3: 7. 1830 ≡ *Tylochilus flavus* Nees, Verh. Vereins Beförd. Gartenbaues Königl. Preuss. Staaten 8: 195. 1832.

Figure 2j

This terrestrial or rupicolous herb is easily recognized by the leaves distributed in homoblastic pseudobulbs, and paniculate inflorescence with yellow flowers. It occurs on rock outcrops and it is endemic to Brazil (States of Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 10-III-2010, fr., *E. Pessoa et al.* 458 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al.* 434 (UFP).

17. *Dichaea panamensis* Lindl., Gen. Sp. Orchid. Pl. 209. 1833.

Figure 2k

This epiphyte differs from *Dichaea pendula* by its articulated linear-oblong leaves, and non-geniculated peduncle of the inflorescence. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests

(States of Amazonas, Pará, Amapá, Rondônia, Mato Grosso, Paraíba, Pernambuco, Alagoas and Sergipe) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 11-III-2011, fl., *E. Pessoa et al.* 516 (UFP); Lagoa dos Gatos, 17-XII-2010, fl., *E. Pessoa et al.* 419 (NY, RB, UFP).

18. *Dichaea pendula* (Aubl.) Cogn., Symb. Antill. 4: 182. 1903 \equiv *Limodorum pendulum* Aubl., Hist. Pl. Guiane 2: 819 1775.

Figure 1g

This epiphyte differs from *Dichaea panamensis* by its lack of articulated, elliptical leaves, and geniculate peduncle of the inflorescence. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests (States of Amazonas, Roraima, Ceará, Paraíba, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-V-2012, fr., *E. Pessoa et al.* 958 (UFP); 30-I-2013, fl., *E. Pessoa et al.* 1055 (NY, RB, UFP); 2-XI-2001, fr. e fl., *J.A. Siqueira-Filho* 1178 (UFP).

19. *Dimerandra emarginata* (G.Mey.) Hoehne, Bol. Agric. (São Paulo) 34: 618. 1933 \equiv *Oncidium emarginatum* G.Mey., Prim. Fl. Esseq.: 259. 1818.

Figure 1h

This epiphyte resembles an *Epidendrum*, but differs from the species of that genus in the area by its pinkish flowers with the column basally adnate with the lip. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests (States of Amazonas, Amapá, Pará, Maranhão, Ceará, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia and Espírito Santo) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 18-XII-2010, fl., *E. Pessoa et al.* 460 (RB, UFP).

20. *Elleanthus linifolius* C.Presl., Reliq. Haenk. 1: 97. 1827.

Figure 1i

This epiphyte can be confused vegetatively in the area with *Isochilus linearis* but it differs by its floral

bracts covering almost entirely the white flowers. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests (States of Amazonas, Amapá, Roraima, Pernambuco, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo and Paraná) (Barros *et al.* 2014).

Examined material: Brazil. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-I-2000, fl. e fr., *J.A. Siqueira-Filho* 1015 (UFP).

21. *Epidendrum anatipedium* L.M.Sánchez & Hágsater, *Orquídea (Mexico City)* 13: 291. 1993.

Figure 1j

This epiphyte differs from *Epidendrum campaccii* by its longer sepals (> 3.0 cm long) and entire mid-lobe of the lip. It occurs in forested areas and it is endemic to the Atlantic Forest of northeastern Brazil (Ceará State) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl., *E. Pessoa et al.* 935 (UFP).

22. *Epidendrum campaccii* Hágsater & L.Sánchez, Icon. Orchid. 2: t. 117. 1993.

Figure 2l

This epiphyte differs from *E. anatipedium* by its shorter sepals (< 1.5 cm long) and 2-lobed mid-lobe of the lip. It occurs in forested areas and it is endemic to Brazil (States of Ceará, Paraíba, Pernambuco, Alagoas, Bahia, Espírito Santo, Rio de Janeiro, São Paulo and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al.* 937 (RB, UFP); 10-III-2011, fl., *E. Pessoa et al.* 503 (UFP).

23. *Epidendrum carpophorum* Barb.Rodr., Gen. Sp. Orchid. 2: 148. 1882.

Figure 1k

This epiphyte differs from the other *Epidendrum* species in the area by its linear mid-lobe of the lip. It occurs in forested areas and rock outcrops, and it is known from Guyana, Suriname, Venezuela and Brazil where it has a disjunct distribution between the Amazon and Atlantic Forests (States of Amazonas,

Amapá, Pará, Roraima, Ceará, Pernambuco, Alagoas, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro and São Paulo) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-I-2013, fl. e fr., *E. Pessoa et al.* 1048 (RB, UFP); Lagoa dos Gatos, 17-XII-2010, fr., *E. Pessoa et al.* 424 (UFP).

24. *Epidendrum cinnabarinum* Salzm. ex Lindl., Gen. Sp. Orchid. Pl. 106. 1831.

Figure 2m

It differs from *E. macrocarpum* by its rupicolous or terrestrial habit and completely fringed lateral lobes of the lip. It occurs on rock outcrops and it is endemic to northeastern Brazil (States of Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe and Bahia) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 28-I-2013, fl., *D. Araújo 2444* (UFP); 10-III-2011, fl., *E. Pessoa et al.* 505 (NY, RB, UFP); 17-XII-2010, fl., *E. Pessoa et al.* 436 (RB, UFP).

25. *Epidendrum macrocarpum* Rich., Actes Soc. Hist. Nat. Paris 1: 112. 1792.

Figure 1l

This species differs from *E. cinnabarinum* by its epiphytic habit and apically serrate lateral lobes of the lip. It occurs in forested areas, and it is known from Trinidad and Tobago, French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru and Brazil (States of Amazonas, Amapá, Pará, Roraima, Maranhão, Paraíba, Pernambuco, Alagoas, Bahia) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 13-X-2010, fl., *A. Melo 588* (UFP).

26. *Epidendrum proligerum* Barb.Rodr., Gen. Sp. Orchid. 1: 61. 1877.

Figure 1m

The flowers of this epiphyte can be confused in the area with *E. campaccii*, but it differs vegetatively by its branched stem. It occurs in forested areas and it is endemic to the Atlantic Forest of Brazil (States of Pernambuco, Alagoas, Bahia, Espírito Santo, Rio de Janeiro, Minas Gerais, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 1-VII-1986, fl., *J.G. Gomes s.n.* (UFP).

27. *Epidendrum ramosum* Jacq., Enum. Syst. Pl. 29. 1760.

Figure 2n

This epiphyte differs from *E. strobiliferum* by its linear-oblong leaves and linear petals. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests (States of Amazonas, Amapá, Roraima, Ceará, Pernambuco, Bahia, Rio de Janeiro, Minas Gerais, Espírito Santo, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 21-IX-2011, fr., *B.S. Amorim 1128* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 16-XII-2010, fl., *E. Pessoa et al.* 414 (RB, UFP).

28. *Epidendrum rigidum* Jacq., Enum. Syst. Pl.: 29. 1760.

Figure 2o

This epiphyte or rupicolous herb differs from such species as *E. ramosum*, *E. strobiliferum* which also have floral bracts completely or partially covering the pedicellate ovary, by its non-branched stems and greenish flowers. It occurs in forested areas and on rock outcrops and it is widely distributed in the Neotropics, including Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 21-IX-2011, fl., *B.S. Amorim 1127* (UFP); 19-IX-2011, fl., *B.S. Amorim 1063* (UFP); 10-III-2011, fl. e fr., *E. Pessoa et al.* 506 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fr., *E. Pessoa et al.* 417 (RB, UFP).

29. *Epidendrum strobiliferum* Rchb.f., Ned. Kruidk. Arch. 4: 333. 1859.

Figure 1n

This epiphyte differs from *E. ramosum* by its lanceolate to elliptical leaves and oblanceolate petals. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014). In Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests (States of Acre, Amazonas, Amapá, Pará, Roraima, Rondônia, Mato Grosso, Goiás,

Maranhão, Pernambuco, Alagoas, Minas Gerais, São Paulo and Paraná) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al.* 420 (NY, RB, UFP).

30. *Epidendrum tridactylum* Lindl., Edwards's Bot. Reg. 24: 46. 1838.

Figure 1o

This epiphyte differs from the other *Epidendrum* species in the area by its paniculate inflorescence. It occurs in forested areas, and it is known from Ecuador, Peru, Bolivia and Brazil (States of Paraíba, Pernambuco, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al.* 951 (UFP); 17-VII-2002, fl., *J.A.Siqueira-Filho* 1246 (UFP).

31. *Eurystyles cotyledon* Wawra, Oesterr. Bot. Z. 13: 223. 1863.

Figure 2p

It is easily recognized among the species with leaves disposed in basal rosettes by its epiphytic habit and pendulous inflorescence. It occurs in forested areas, and it is known from Costa Rica, El Salvador, Venezuela, Colombia, Ecuador, Peru, Bolivia and Brazil (States of Pernambuco, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl. *E. Pessoa et al.* 955 (NY, RB, UFP); 8-X-2000, fl., *J.A.Siqueira-Filho* 1094 (UFP).

32. *Gomesa barbata* (Lindl.) M.W.Chase & N.H.Williams, Ann. Bot. (Oxford) 104: 395. 2009 ≡ *Oncidium barbatum* Lindl. Coll. Bot. t. 27. 1821

Figure 1p

This epiphyte differs from *G. hookeri* by its mid-lobe of the lip shorter than the lateral lobes, and ciliate lip margin. It occurs in forested areas, and it is known from Bolivia and the Atlantic Forest of Brazil (States of Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia and Minas Gerais) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al.* 415 (UFP).

33. *Gomesa hookeri* (Rolfe) M.W.Chase & N.H.Williams, Ann. Bot. (Oxford) 104: 397. 2009 ≡ *Oncidium hookeri* Rolfe, Gard. Chron. Ser. 3: 520. 1887.

Figure 1q

This epiphyte differs from *G. barbata* by its mid-lobe of the lip longer than the lateral lobes, and entire lip margin. It occurs in forested areas and it is endemic to the Brazilian Atlantic Forest (States of Pernambuco, Bahia, Minas Gerais, Rio de Janeiro, São Paulo, Paraná, Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 2-XI-2001, fl., *J.A.Siqueira-Filho* 1180 (UFP).

34. *Gongora vitorinoana* Chiron & L.C.Menezes, Richardiana 8: 38. 2008.

Figure 2q

This epiphyte is easily recognized from other species by its longitudinally multi-sulcate pseudobulbs, and plicate leaves. It occurs in forested areas and it is endemic to the Atlantic Forest of the State of Pernambuco (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 28-I-2013, fl., *E. Pessoa et al.* 1040 (UFP); 22-V-2000, fl., *J.A.Siqueira-Filho* 1086 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 16-XII-2010, fl., *E. Pessoa et al.* 413 (UFP).

35. *Habenaria cryptophila* Barb. Rodr., Gen. Sp. Orchid. 1: 154. 1877.

Figure 1r

This terrestrial herb differs from species such as *H. pratensis* and *H. trifida*, which also have 2-lobed petals and a 3-lobed lip, by its ovate sepals and anterior lobe of the lip longer than the posterior one. It occurs on rock outcrops and it is endemic to Brazil (States of Paraíba, Pernambuco Bahia, Distrito Federal, Goiás, Minas Gerais, and São Paulo) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 3-IX-2013, fl., *A. Melo* 1197 (UFP).

36. *Habenaria petalodes* Lindl., Gen. Sp. Orchid Pl. 316. 1835.

Figure 1s

This terrestrial herb differs from the other *Habenaria* species found in the area by its entire petals and lip. It occurs on rock outcrops and it is known from Argentina, Paraguay and Brazil, where it is widely distributed (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 17-VIII-2010, fl., *M.A. Chagas 19* (UFP).

37. *Habenaria pratensis* (Lindl.) Rchb.f., Linnaea 22: 813. 1850 ≡ *Bonatea pratensis* Lindl., Gen. Sp. Orchid. Pl. 328. 1835.

Figure 1t

This terrestrial herb differs from *H. trifida* by its posterior lobe of the petals elliptical, mid-lobe of the lip rhomboid, and shorter spur (≤ 3.0 cm long). It occurs on rock outcrops and it is endemic to Brazil (States of Maranhão, Rio Grande do Norte, Paraíba, Pernambuco, Sergipe, Alagoas, Bahia, Mato Grosso, Goiás and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 17-VIII-2010, fl., *M.A. Chagas 20* (UFP).

38. *Habenaria trifida* Kunth, Nov. Gen. Sp. 1: 330. 1816.

Figure 3a

This terrestrial herb differs from *H. pratensis* by its posterior lobe of the petals oblong to linear, mid-lobe of the lip linear-oblong, and longer spur (> 3.0 cm long). It occurs on rock outcrops and it is widely distributed in the Neotropics and also in Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 7-VI-2011, fl., *J.L. Viana 295* (JPB).

39. *Heterotaxis discolor* (Lodd. ex Lindl.) Ojeda & Carnevali, Novon 15: 580. 2005 ≡ *Dicrypta discolor* Lodd. ex Lindl., Edwards's Bot. Reg. 25(Misc.): 91. 1839

Figure 2r

This epiphyte differs from *Nitidobulbon nasutum* by its discolorous leaves and shorter acute sepals (< 2.0 cm long). It occurs in forested areas, and it

is known from Belize, Nicaragua, French Guyana, Guyana, Suriname, Venezuela, Ecuador, Peru, Bolivia and Brazil (States of Amazonas, Amapá, Pará, Roraima and Bahia) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco and another case of disjunction between the Amazon and Atlantic Forests.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl. e fr., *E. Pessoa et al. 926* (NY, RB, UFP); 27-VI-1999, *J.A. Siqueira-Filho & J.A. Vicente 955* (UFP).

40. *Isochilus linearis* (Jacq.) R.Br., Hortus Kew. 5: 209. 1813 ≡ *Epidendrum lineare* Jacq., Enum. Syst. Pl.: 29. 1760.

Figure 3b

This epiphyte can be confused vegetatively in the area with *E. linifolius*, but it differs by its floral bracts covering only the base of the pedicellate ovary, and pinkish flowers. It occurs in forested areas, and it is widely distributed in the Neotropics (Govaerts *et al.* 2014), including Brazil (States of Ceará, Pernambuco, Bahia, Distrito Federal, Mato Grosso do Sul, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30 -V- 2012, fl., *E. Pessoa et al. 949* (NY, RB, UFP); 9-VII-1999, fr., *J.A. Siqueira-Filho & J.A. Vicente 981* (UFP); 11-III-2011, fr., *E. Pessoa et al. 538* (NY, RB, UFP).

41. *Jacquinella globosa* (Jacq.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 124. 1920 ≡ *Epidendrum globosum* Jacq., Enum. Syst. Pl.: 29. 1760.

Figure 3c

This epiphyte differs from *J. teretifolia* by its sessile inflorescence and purple flowers. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014); in Brazil, it is found in the Amazon and Atlantic Forests (States of Amazonas, Pará, Roraima, Ceará, Pernambuco, Alagoas, Sergipe, Bahia, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-I-2013, fl., *D. Araújo 2385* (UFP); 10-III-2011, fr., *E. Pessoa et al. 507* (RB, UFP); 17-VIII-2010, fl., *A. Melo 447* (UFP);

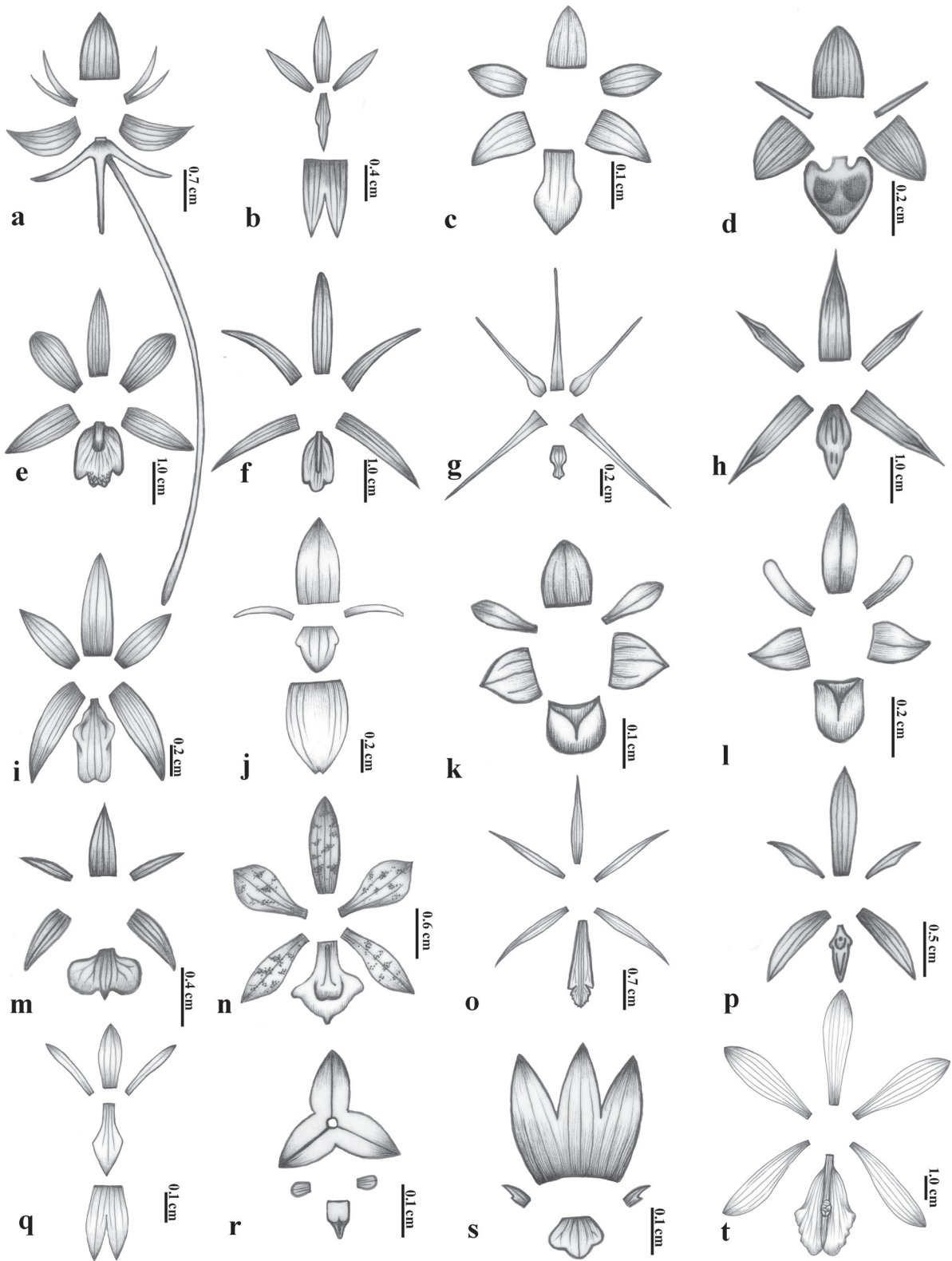


Figure 3: a. *Habenaria trifida*. b. *Isochillus linearis*. c. *Jacquiniella globosa*. d. *Malaxis excavata*. e. *Mappinguari desvauxianus*. f. *Maxillaria leucaimata*. g. *Myoxanthus exasperatus*. h. *Nitidobulbon nasutum*. i. *Octomeria alexandrii*. j. *Pleurothallis pruinosa*. k. *Prescottia oligantha*. l. *Prescottia plantaginifolia*. m. *Prosthechea pygmaea*. n. *Prosthechea vespa*. o. *Psilochilus modestus*. p. *Rhetinantha notylioglossa*. q. *Scaphyglottis sickii*. r. *Stelis aprica*. s. *Stelis deregularis*. t. *Vanilla cf. pompona*.

21-IX-2011, fl., *B.S. Amorim 1129* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al. 423* (NY, RB, UFP).

42. *Jacquinella teretifolia* (Sw.) Britton & P. Wilson, *Sci. Surv. Porto Rico & Virgin Islands* 6: 340. 1926 ≡ *Epidendrum teretifolium* Sw., *Prodr. Veg. Ind. Occ.*: 122. 1788.

Figure 2s

This epiphyte differs from *J. globosa* by its long-pedunculate inflorescence and yellowish to orangish flowers. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014); in Brazil, it is found in the Amazon and Atlantic Forests (States of Amazonas, Roraima, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro and São Paulo) (Barros *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fr., *E. Pessoa 950* (RB, UFP); 29-I-2013, fl. e fr., *E. Pessoa et al. 1053* (UFP).

43. *Lepanthopsis floripecten* (Rchb.f.) Ames, *Bot. Mus. Leaflet* 1: 11. 1933 ≡ *Pleurothallis floripecten* Rchb.f., *Bonplandia (Hannover)* 2: 25. 1854.

Figure 2t

This epiphyte is easily distinguished from the other Pleurothallidinae in the area by its lepanthiform sheaths. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014); in Brazil, it grows in the Amazon and Atlantic Forests (States of Pernambuco, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl. e fr., *E. Pessoa et al. 940* (UFP); 29-I-2013, fl., *E. Pessoa et al. 1049* (UFP).

44. *Liparis nervosa* (Thunb.) Lindl., *Gen. Sp. Orchid Pl.*: 26. 1830 ≡ *Ophrys nervosa* Thunb., *Syst. Veg.*, ed. 14: 814. 1784.

Figure 4a

This terrestrial herb can be confused vegetatively in the area with *Malaxis excavata*, but can be easily recognized by its racemose inflorescence and 2-lobed lip. It occurs in forested areas and it is pantropical and widely distributed in Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 21-V-2000, fl., *J.A. Siqueira-Filho 1085* (UFP).

45. *Malaxis excavata* (Lindl.) Kuntze, *Revis. Gen. Pl.* 2: 673. 1891 ≡ *Microstylis excavata* Lindl., *Edwards's Bot. Reg.* 24: 51. 1838.

Figure 3d

This terrestrial herb can be confused vegetatively in the area with *Liparis nervosa*, but it can be easily recognized by its umbellate inflorescence and acute lip. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014), including Brazil (States of Bahia, Distrito Federal, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 7-VI-2011, fl., *J.L. Viana 307* (JPB); 22-XI-2011, fl., *J.L. Viana 365* (JPB).

46. *Mapinguari desvauxianus* (Rchb.f.) Carnevali & R.B. Singer, *Lankesteriana* 7: 525. 2007 ≡ *Maxillaria desvauxiana* Rchb.f., *Bonplandia (Hannover)* 3: 67. 1854.

Figure 3e

This epiphyte differs from *Mormolyca rufescens* by its pseudo-petiolate leaves and papillose mid-lobe of the lip. It occurs in forested areas and it is known from French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru and Brazil (States of Amazonas, Pará, Bahia, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl., *E. Pessoa et al. 930* (UFP); 9-VII-1999, fl., *J.A. Siqueira-Filho & J.A. Vicente 979* (UFP).

47. *Maxillaria leucaimata* Barb. Rodr., *Gen. Sp. Orchid.* 2: 198. 1882.

Figure 3f

This epiphyte can be confused in the area with *Mormolyca rufescens* and *Mapinguari desvauxianus*, but it differs by its inflorescences twice as long as the length of the pseudobulb. It occurs in forested areas, and it is known from French Guyana and Brazil (States of Amazonas, Pará, Ceará, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-I-2013, fl. e fr., *E. Pessoa et al. 1054* (RB, UFP); 21-IX-2011, fl., *B.S. Amorim 1125* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 19-XII-2010, fr., *E. Pessoa et al. 479* (UFP).

48. *Maxillaria ochroleuca* Lodd. ex Lindl., Gen. Sp. Orchid. Pl. 143. 1832.

Figure 4b

This epiphyte differs from *Camaridium carinatum* by its pseudo-petiolate apical leaf, withish flowers and longer sepals (> 3.5 cm long). It occurs in forested areas and it is known from Venezuela, Colombia, Ecuador, Peru and Brazil (States of Roraima, Pernambuco, Bahia, Espírito Santo, Rio de Janeiro, Minas Gerais, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl. e fr., *E. Pessoa et al. 927* (UFP); 27-VI-1999, fl., *J.A.Siqueira-Filho 957* (UFP); 19-VII-2012, fl., *J.L. Costa-Lima 754* (UFP).

49. *Mesadenella cuspidata* (Lindl.) Garay, Fl. Ecuador 9: 238. 1978 ≡ *Spiranthes cuspidata* Lindl., Gen. Sp. Orchid. Pl.: 471. 1840.

Figure 4c

This terrestrial herb differs from *Sacoila lanceolata* by having leaves when in bloom and by the yellowish-white flowers. It occurs in forested areas and it is known from Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru, Bolivia, Paraguay, Argentina and Brazil (States of Mato Grosso, Goiás, Distrito Federal, Espírito Santo, Rio de Janeiro, Minas Gerais, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al. 957* (RB, UFP); 30-VI-2011, fl., *D.S. Corrêa 105* (UFP).

50. *Mormolyca rufescens* (Lindl.) M.A. Blanco, Lankesteriana 7: 531. 2007 ≡ *Maxillaria rufescens* Lindl., Edwards's Bot. Reg. 22: t. 1848. 1836.

Figure 4d

This epiphyte differs from *Mapinguari desvauxianus* by its sub-sessile leaves and smooth, not papillose mid-lobe of the lip. It occurs in forested areas, and it is known from Belize, Guatemala, Honduras, Trinidad and Tobago, French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador,

Peru and Brazil, where it is widely distributed (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl., *E. Pessoa et al. 929* (NY, RB, UFP); 11-III-2011, fl., *E. Pessoa et al. 547* (UFP).

51. *Myoxanthus exasperatus* (Lindl.) Luer, *Selbyana* 7: 36. 1982 ≡ *Pleurothallis exasperata* Lindl., Fol. Orchid. 9: 15. 1859.

Figure 3g

This epiphyte differs from *Pleurothallis ruscifolia* by its lateral sepals connate only at base. It occurs in forested areas, and it is known from Costa Rica, El Salvador, Honduras, Panama, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru and Brazil (States of Pernambuco, Bahia, Espírito Santo, Rio de Janeiro, Minas Gerais, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 28-I-2013, fl., *E. Pessoa et al. 1042* (UFP); 9-VII-1999, fl., *J.A.Siqueira-Filho & J.A. Vicente 983* (UFP).

52. *Nitidobulbon nasutum* (Rchb.f.) I.Ojeda & Carnevali, *Novon* 19: 99. 2009 ≡ *Maxillaria nasuta* Rchb.f., Beitr. Orchid.-K. C. Amer.: 104. 1866.

Figure 3h

This epiphyte differs from *Heterotaxis discolor* by its concolorous leaves and longer acuminate sepals (≥ 2.5 cm long). It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014); in Brazil, it is found in the Amazon and Atlantic Forests (States of Amazonas, Roraima, Mato Grosso, Bahia and Espírito Santo) (Barros *et al.* 2014). It is a new record for the State of Pernambuco. However it was not recollected during this survey.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 9-VII-1999, fl., *J.A. Siqueira-Filho & J.A. Vicente 984* (UFP).

53. *Notylia inversa* Barb. Rodr., Gen. Sp. Orchid. 2: 223. 1882.

Figure 4e

This epiphyte is easily distinguished from the orchids in the area by its pendulous inflorescence and flowers with a clawed lip. It occurs in forested areas and it is endemic to Brazil (States of Ceará and Minas Gerais) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

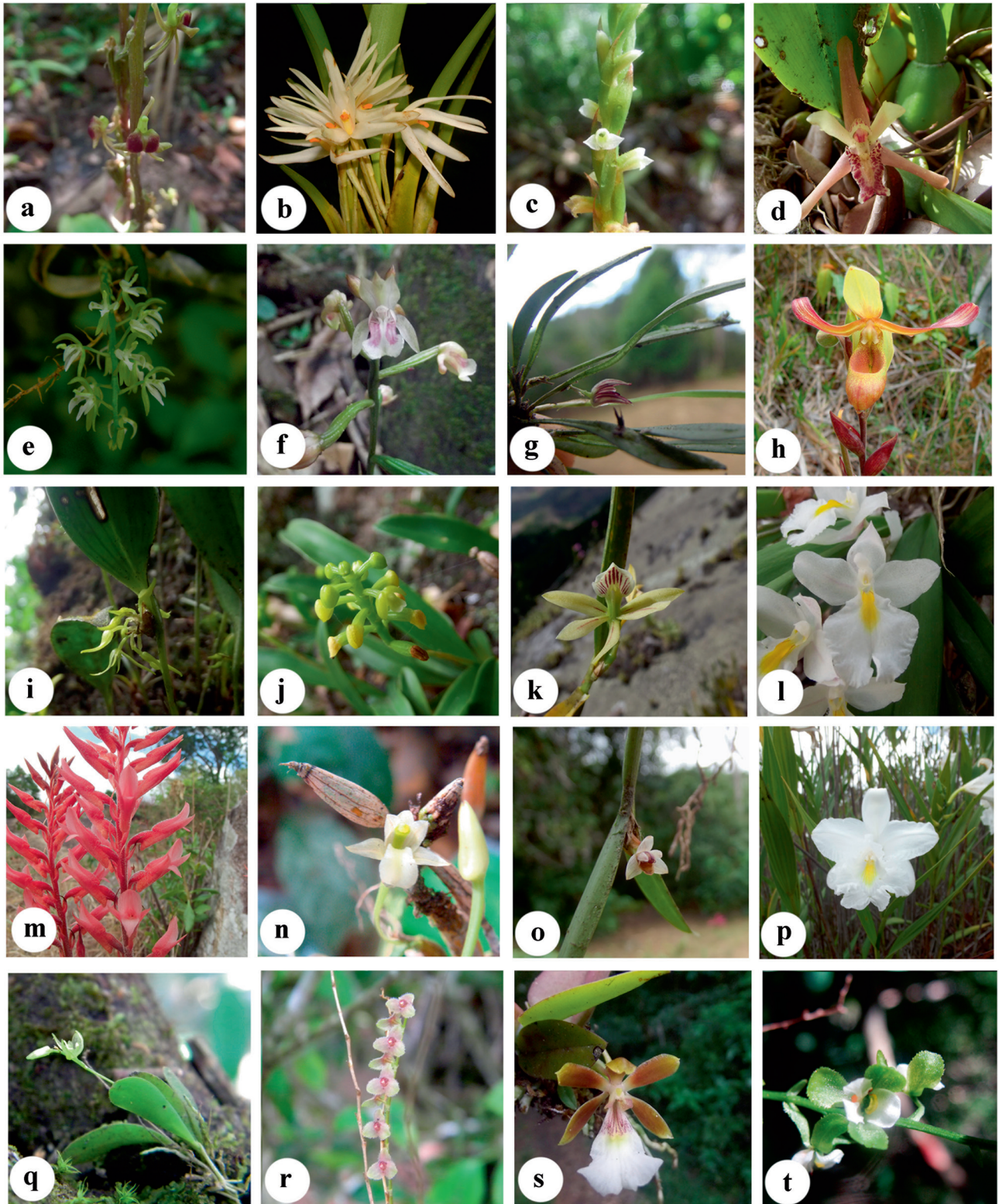


Figure 4: a. *Liparis nervosa*. b. *Maxillaria ochroleuca*. c. *Mesadenella cuspidata*. d. *Mormolyca rufescens*. e. *Notylia inversa*. f. *Oeceoclades maculata*. g. *Pabstiella lingua*. h. *Phragmipedium sargentianum*. i. *Pleurothallis ruscifolia*. j. *Polystachya estrellensis*. k. *Prosthechea alagoensis*. l. *Rodriguezia bahiensis*. m. *Sacoila lanceolata*. n. *Scaphyglottis fusiformis*. o. *Scaphyglottis modesta*. p. *Sobralia liliastrum*. q. *Specklinia integripetala*. r. *Stelis loefgrenii*. s. *Trichocentrum fuscum*. t. *Zygostates bradei*.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 28-I-2013, fl., *E. Pessoa et al. 1042* (UFP); 31-I-2013, fl., *E. Pessoa et al. 1067* (UFP); 10-III-2011, fl., *E. Pessoa et al. 501* (RB, UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 19-XII-2010, fl., *E. Pessoa et al. 480* (UFP).

54. *Octomeria alexandri* Schltr., Anexos Mem. Inst. Butantan, Secc. Bot. 1: 53. 1922.

Figure 3i

This rupicolous herb can be confused vegetatively in the area with *Brassavola tuberculata*, but it is easily distinguished by its congested fascicle and shorter sepals (< 1.0 cm long). It occurs on rock outcrops and it is endemic of Brazil (States of Bahia, Rio de Janeiro, São Paulo and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco. It is cited as endangered by Martinelli & Moraes (2013).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-I-2013, fl., *E. Pessoa et al. 1065* (UFP); 10-III-2011, st., *E. Pessoa et al. 502* (UFP).

55. *Oeceoclades maculata* (Lindl.) Lindl., Gen. Sp. Orchid. Pl.: 237. 1833 ≡ *Angraecum maculatum* Lindl. Coll. Bot.: t. 15. 1821.

Figure 4f

This terrestrial herb is easily distinguished from other species in the area by its variegated leaves and the apically 2-lobed spur. It occurs in forested areas and it is pantropical and widely distributed in Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 12-X-2010, fl. e fr., *G.A. Gomes-Costa 1094* (UFP).

56. *Pabstiella lingua* (Lindl.) Luer, Monogr. Syst. Bot. Missouri Bot. Gard. 112: 120. 2007 ≡ *Pleurothallis lingua* Lindl., Edwards's Bot. Reg. 28: 80. 1842.

Figure 4g

This epiphyte differs from the other *Pleurothallidinae* in the area by its 1-flowered inflorescence. It occurs in forested areas and it is endemic to the Brazilian Atlantic Forest (States of Pernambuco, Minas Gerais, Espírito Santo and Rio de Janeiro) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al.*

943 (NY, RB, UFP); 11-III-2011, fl., *E. Pessoa et al. 522* (RB, UFP).

57. *Phragmipedium sargentianum* (Rolfe) Rolfe, Orchid Rev. 4: 332. 1896 ≡ *Selenipedium sargentianum* Rolfe, Orchid Rev. 1: 239. 1893.

Figure 4h

This terrestrial herb is easily recognized among the species in the area by its undulated petals, calceolate lip, and a conspicuous shield-like staminode. It occurs on rock outcrops and it is endemic to the Atlantic Forest of northeastern Brazil (States of Pernambuco, Alagoas and Bahia) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is cited as endangered by the Ministério do Meio Ambiente (2008) and Biodiversitas (2008). It is rarely found in the Serra do Urubu.

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 17-X-2010, fl., *E. Pessoa et al. 435* (UFP).

58. *Pleurothallis pruinosa* Lindl., Edwards's Bot. Reg. 28(Misc.): 75. 1842.

Figure 3j

This epiphyte differs from *Acianthera hygrophyla* by its shorter sepals (≤ 0.3 cm long) and linear petals. It occurs in forested areas and it is known from Costa Rica, Honduras, Panama, Cuba, Dominican Republic, Jamaica, Puerto Rico, Trinidad and Tobago, French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru and Brazil (States of Amazonas, Amapá, Pará, Maranhão and Pernambuco) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl., *E. Pessoa et al. 932* (NY, RB, UFP); 11-III-2011, fl., *E. Pessoa et al. 546* (UFP).

59. *Pleurothallis ruscifolia* (Jacq.) R.Br., Hortus Kew. 5: 211. 1813 ≡ *Epidendrum ruscifolium* Jacq., Enum. Syst. Pl.: 29. 1760.

Figure 4i

This epiphyte differs from *Myoxanthus exasperatus* by its lateral sepals by being completely connate. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014); in Brazil, it has a disjunct distribution between the Amazon and Atlantic Forests (States of Pará, Roraima and Ceará) (Barros *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-I-2013, fl., *E. Pessoa et al. 1057* (UFP).

60. *Polystachya estrellensis* Rchb.f., *Linnaea* 25: 231. 1852.
Figure 4j

This epiphyte or rupicolous herb is easily recognized among the species in the area by its homoblastic pseudobulbs with conduplicate leaves, and terminal inflorescence. It occurs in forested areas and on rock outcrops and it is endemic and widely distributed in Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al. 939* (UFP, RB); 11-III-2011, fr., *E. Pessoa et al. 515* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fr., *E. Pessoa et al. 418* (RB, UFP).

61. *Prescottia oligantha* (Sw.) Lindl., *Gen. Sp. Orchid. Pl.*: 454. 1840 \equiv *Cranichis oligantha* Sw., *Prodr. Veg. Ind. Occ.*: 120. 1788.
Figure 3k

This terrestrial herb differs from *P. plantaginifolia* by its shorter (≤ 4.5 cm long), ovate to widely elliptical leaves, and whitish flowers. It occurs in forested areas and on rock outcrops and it is widely distributed in the Neotropics (Govaerts *et al.* 2014), including Brazil (States of Roraima, Pernambuco, Alagoas, Bahia, Goiás, Distrito Federal, Mato Grosso do Sul, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl. e fr., *E. Pessoa et al. 433* (UFP).

62. *Prescottia plantaginifolia* Lindl. *ex Hook.*, *Exot. Fl.*: t. 115. 1824.
Figure 3l

This terrestrial herb differs from *P. oligantha* by its longer (> 5.0 cm long), lanceolate to elliptical leaves, and greenish flowers. It occurs on rock outcrops and it is endemic to Brazil (States of Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Goiás, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 17-X-2001, fl., *J.A. Siqueira-Filho 1176* (UFP).

63. *Prosthechea alagoensis* (Pabst) W.E.Higgins, *Phytologia* 82: 376. 1997 \equiv *Epidendrum alagoense* Pabst, *Anais Congr. Soc. Bot. Brasil* 14: 18. 1964.
Figure 4k

This epiphyte or rupicolous herb differs from *P. vespa* by its longer (> 0.9 cm long) and concave lip. It occurs in forested areas and on rock outcrops and it is endemic to the Atlantic Forest of northeastern Brazil (States of Pernambuco and Alagoas) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-I-2013, fl., *E. Pessoa et al. 1061* (RB, UFP); 10-III-2011, fl. e fr., *E. Pessoa et al. 504* (RB, UFP); 17-XII-2010, fl. e fr., *E. Pessoa et al. 426* (UFP).

64. *Prosthechea pygmaea* (Hook.) W.E.Higgins, *Phytologia* 82: 380. 1997 \equiv *Epidendrum pygmaeum* Hook., *Bot. Mag.* 60: t. 3233. 1833.
Figure 3m

This epiphyte differs from other *Prosthechea* species in the area by its long, branched rhizome and 3-lobed lip. It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014), including Brazil (States of Amazonas, Pernambuco, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al. 953* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fr., *E. Pessoa et al. 425* (NY, RB, UFP).

65. *Prosthechea vespa* (Vell.) W.E.Higgins, *Phytologia* 82: 381. 1997 \equiv *Epidendrum vespa* Vell., *Fl. Flumin.* 9: t. 27. 1831.
Figure 3n

This epiphyte differs from *P. alagoensis* by its shorter (≤ 0.7 cm long) and convex lip. It occurs in forested areas, and it is known from Costa Rica, French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru, Bolivia and Brazil (States of Acre, Rondônia, Amazonas, Roraima, Pará, Ceará, Pernambuco, Bahia, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Espírito Santo, Rio

de Janeiro, São Paulo, Paraná and Santa Catarina) (Carnevali *et al.* 2003, Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 20-IX-2011, fl., *B.S. Amorim 1087* (UFP).

66. *Psilochilus modestus* Barb. Rodr., Gen. Sp. Orchid. 2: 273. 1882.

Figure 3o

This terrestrial herb is easily recognized among the species in the area by its ovate, conduplicate leaves distributed along the stem, flowers without a spur, and column free. It occurs in forested areas, and it is known from Venezuela and Brazil (States of Amazonas, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: Brazil. PERNAMBUCO: Lagoa dos Gatos, RPPN Pedra D'Anta, 9-IX-2010, fl., *J.L. Viana 121* (UFP).

67. *Rhetinantha notylioglossa* (Rchb.f.) M.A. Blanco, Lankesteriana 7: 535. 2007 \equiv *Maxillaria notylioglossa* Rchb.f., Bonplandia (Hannover) 2: 16. 1854.

Figure 3p

This epiphyte is easily recognized among the species in the area by its 2-leaf pseudobulbs and 1-flowered inflorescence. It occurs in forested areas and it is known from Venezuela, Colombia, Ecuador, Peru, Bolivia and Brazil (States of Roraima, Maranhão, Bahia, Espírito Santo, Rio de Janeiro, Minas Gerais, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is a new record for the State of Pernambuco.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 11-III-2011, fl. e fr., *E. Pessoa et al.* 525 (RB, UFP).

68. *Rodriguezia bahiensis* Rchb.f., Bonplandia (Hannover) 2: 90. 1854.

Figure 4l

This epiphyte is easily distinguished from other species in the area by its lateral inflorescence and white flowers with completely connate lateral sepals. It occurs in forested areas and it is endemic to Brazil (States of Ceará, Paraíba, Pernambuco, Alagoas, Bahia and Minas Gerais) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 10-III-2011, fl., *E. Pessoa et al.* 508 (RB, UFP).

69. *Sacoila lanceolata* (Aubl.) Garay, Bot. Mus. Leaf. 28: 352. 1980 \equiv *Limodorum lanceolatum* Aubl., Hist. Pl. Guiane 2: 821. 1775.

Figure 4m

This terrestrial herb differs from *Mesadenella cuspidata* by its leafless condition when blooming and the pinkish to magenta flowers. It occurs on rock outcrops and it is widely distributed in the Neotropics, including Brazil (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 28-I-2013, fl., *E. Pessoa et al.* 1041 (UFP).

70. *Scaphyglottis fusiformis* (Griseb.) R.E. Schult., Bot. Mus. Leaf. 17: 205. 1957 \equiv *Hexadesmia fusiformis* Griseb., Fl. Brit. W. I.: 623. 1864.

Figure 4n

This epiphyte or rupicolous herb differs from the other *Scaphyglottis* species in the area by its 1-leaf pseudobulb and pedunculate inflorescence. It occurs in forested areas and it is known from Costa Rica, Panama, Trinidad and Tobago, French Guyana, Guyana, Suriname, Venezuela, Colombia, Peru and Brazil (States of Acre, Amazonas, Roraima, Ceará, Pernambuco, Alagoas and Sergipe) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-I-2013, fl., *D. Araújo 2409* (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al.* 422 (RB, UFP); 16-XII-2010, fl., *E. Pessoa et al.* 412 (UFP).

71. *Scaphyglottis modesta* (Rchb.f.) Schltr., Repert. Spec. Nov. Regni Veg. 23: 46. 1926 \equiv *Tetragamestus modestus* Rchb.f., Bonplandia (Hannover) 2: 21. 1854.

Figure 4o

This epiphyte differs from *Scaphyglottis sickii* by its elliptical sepals, and not-clawed, slightly 3-lobed lip. It occurs in forested areas and it is known from Costa Rica, Panama, Dominican Republic, Puerto Rico, Cuba, Trinidad and Tobago, French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador and Brazil, where it is widely distributed (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30 -V- 2012, fl., *E. Pessoa et al.* 963 (UFP); 29-I-2013, fl., *E. Pessoa et al.* 1045 (UFP); 9-VII-1999, fl. e fr., *J.A.Siqueira-Filho & J.A. Vicente* 982 (UFP); 17-VIII-2010, fr., *A. Melo* 446 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 19-XII-2010, fr., *E. Pessoa et al.* 481 (RB, UFP).

72. *Scaphyglottis sickii* Pabst, Orquídea (Rio de Janeiro) 18: 7. 1956.

Figure 3q

This epiphyte differs from *Scaphyglottis modesta* by its linear-oblongate sepals, and sub-clawed, entire lip. It occurs in forested areas and it is known from Trinidad and Tobago, French Guyana, Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru and Brazil (States of Amazonas, Roraima, Amapá, Pará, Maranhão, Pernambuco, Alagoas, Sergipe and Mato Grosso) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 11-III-2011, fl., *E. Pessoa et al.* 517 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 22-XI-2011, fr., *D. Araújo* 1893 (UFP); 17-XII-2010, fl., *E. Pessoa* 421 (RB, UFP).

73. *Sobralia liliastrum* Lindl., Gen. Sp. Orchid. Pl.: 177. 1833.

Figure 4p

This terrestrial or rupicolous herb is easily recognized among the species in the area by its plicate leaves and big white flowers (sepals > 6.0 cm long). It occurs on rock outcrops and it is known from French Guyana, Guyana, Suriname, Venezuela, Colombia, Peru, Bolivia and Brazil (States of Amazonas, Roraima, Amapá, Pará, Mato Grosso, Pernambuco, Sergipe, Bahia and Espírito Santo) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 17-VIII-2010, fl., *A. Melo* 459 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl., *E. Pessoa et al.* 432 (RB, UFP).

74. *Specklinia integripetala* E.Pessoa & F.Barros, Nordic J. Bot. 32(2): 129. 2014.

Figure 4q

This epiphyte differs from *Anathallis sclerophylla* by being smaller plants (< 5.0 cm tall) with shorter sepals (< 0.4 cm long). It occurs in forested areas and it is endemic to the Atlantic Forest of Pernambuco (Pessoa *et al.* 2014a).

Examined material: BRAZIL. Pernambuco: Jaqueira, RPPN Frei Caneca, 17-XII-2010, fl. e fr., *E. Pessoa et al.* & *A. Melo* 428 (NY, RB, SP, UFP); 30-V-2012, fl. e fr., *E. Pessoa et al.* 944 (UFP).

75. *Stelis aprica* Lindl., Bot. Mag. 2: 353. 1837.

Figure 3r

This epiphyte differs from *Stelis loefgrenii* by its narrow, elliptical leaves and lip with acuminate apex. It occurs in forested areas and it is known from Guyana, Suriname, Venezuela, Colombia, Peru, Bolivia and Brazil (States of Pernambuco, Bahia, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 11-III-2011, fl., *E. Pessoa et al.* 545 (UFP).

76. *Stelis deregularis* Barb. Rodr., Gen. Sp. Orchid. 2: 94. 1881.

Figure 3s

This epiphyte differs from the other *Stelis* species in the area by its sepals connate at base forming a tube. It occurs in forested areas and it is known from Belize, Costa Rica, Honduras, Panama, Ecuador, Peru and Brazil (States of Pernambuco, Alagoas, Bahia, Espírito Santo, Rio de Janeiro, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 21-IX-2011, fl. e fr., *B.S. Amorim* 1126 (UFP); 4-IX-2013, fl., *A. Melo* 1211 (UFP).

77. *Stelis loefgrenii* Cogn. in Mart, Fl. Bras. 3: 558. 1906.

Figure 4r

This epiphyte differs from *Stelis aprica* by its widely elliptical to oblongate leaves and lip with rounded apex. It occurs in forested areas and it is endemic to Brazil (States of Pernambuco and São Paulo) (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-V-2012, fl., *E. Pessoa* 933 (NY, RB, UFP); 30-V-2012, fl., *E. Pessoa et al.* 938 (NY, RB, UFP); 11-III-2011, fl., *E. Pessoa et al.* 548 (UFP).

78. *Trichocentrum fuscum* Lindl., Edwards's Bot. Reg. 23: t. 1951. 1837.

Figure 4s

This epiphyte differs from *Comparettia barkeri* by its green leaves and racemose inflorescence. It occurs

in forested areas and it is known from French Guyana, Suriname, Venezuela, Ecuador and Brazil, where it is widely distributed (Barros *et al.* 2014, Govaerts *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 30-V-2012, fl., *E. Pessoa et al.* 956 (UFP).

79. *Vanilla* aff. *mexicana* Mill., Gard. Dict. ed. 8: 1. 1768.

This hemi-epiphyte differs from *V.* aff. *pompona* by the texture (membranaceous) and shape (elliptic) of the leaf blades and the length of the internodes (<7.0 cm long). The identity of the collected specimen is still obscure due to the lack of flowers, but based on vegetative and fruit characters, it appears to belong to the *V. mexicana* group. It is found in forested areas.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 31-I-2013, fr., *E. Pessoa et al.* 1060 (UFP).

80. *Vanilla* cf. *pompona* Schiede, Linnaea 4: 573. 1829.

Figure 3t

This hemi-epiphyte differs from *V.* aff. *mexicana* by its coriaceous, oblong leaves, and longer internodes (> 9.0 cm long). It occurs in forested areas and it is widely distributed in the Neotropics (Govaerts *et al.* 2014); in Brazil, it is cited to the Amazon and Atlantic Forests (States of Amazonas, Amapá, Tocantins, Rondônia, Paraíba, Pernambuco, Mato Grosso and Minas Gerais) (Barros *et al.* 2014).

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 10-III-2011, fr., *E. Pessoa et al.* 499 (UFP).

Additional material: BRAZIL. PERNAMBUCO: São Lourenço da Mata, Estação Ecológica de Tapacurá, 17-XI-2010, fl., *E. Pessoa et al.* 403 (UFP, RB)

81. *Zygostates bradei* (Schltr.) Garay, Bot. Mus. Leaflet 21: 263. 1967 ≡ *Dipteranthus bradei* Schltr., Anexos Mem. Inst. Butantan, Secç. Bot. 1(4): 65 1922.

Figure 4t

This epiphyte is easily recognized among the species in the area by its flowers with serrate sepals. It occurs in forested areas and it is endemic to the Brazilian Atlantic Forest (States of Pernambuco, Alagoas, São Paulo, Paraná and Santa Catarina) (Barros *et al.* 2014, Govaerts *et al.* 2014). It is cited as endangered by Biodiversitas (2008). There are large populations of this species in the Serra do Urubu.

Examined material: BRAZIL. PERNAMBUCO: Jaqueira, RPPN Frei Caneca, 29-I-2013, fl., *E. Pessoa et al.* 1047 (UFP); Lagoa dos Gatos, RPPN Pedra D'Anta, 17-XII-2010, fl. e fr., *E. Pessoa et al.* 431 (NY, RB, UFP).

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