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Author(s) :João A. N. Batista, Luciano de Bem Bianchetti, Roberto González-Tamayo, Xochitl M. C. Figueroa, and Phillip J. Cribb

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A SYNOPSIS OF NEW WORLD *HABENARIA* (ORCHIDACEAE) II

JOÃO A. N. BATISTA,¹ LUCIANO DE BEM BIANCHETTI,²
ROBERTO GONZÁLEZ-TAMAYO,³ XOCHITL M. C. FIGUEROA,³ AND PHILLIP J. CRIBB⁴

Abstract. A synopsis of the genus *Habenaria* is presented for the New World species in two parts. The second part of the synopsis lists species in the range M–Z.

Resumo. É apresentada uma sinopse para o gênero *Habenaria* no Novo Mundo em duas partes. A segunda parte da sinopse lista as espécies no intervalo M–Z.

Keywords: Taxonomy, Neotropics, lectotypification, new synonym, distribution.

Habenaria macilenta (Lindl.) Rehb.f., Flora 48: 180. 1865. TYPE: GUYANA. Pirara, May 1838, *R.H. Schomburgk 117S* (Holotype: K-L [363780], drawing W-R).

Basionym: *Bonatea macilenta* Lindl., London J. Bot. 2: 673. 1843.

Synonyms: *Habenaria muelleriana* Cogn., Fl. Bras. (Martius) 3(4): 72. 1893. TYPE: FRENCH GUIANA. *F.R. Leprieur s.n.* (Holotype: not indicated; Lectotype, designated here: G [169022], photo, drawing and fragment RENZ; Isotypes: BR, G [169020], P).

Habenaria staminodiata Schltr., Beih. Bot. Centralbl. 42(2): 74. 1925, *nom. illeg., non H. staminodiata* Schltr, 1911. TYPE: BRAZIL. Roraima, Rio Branco, January 1913, *J.G. Kuhlmann 781* (Holotype: B, destroyed; Lectotype, designated here: RB [3334]).

Habenaria staminodiifera Mansf., Repert. Spec. Nov. Regni Veg. 28: 93. 1930.

Distribution: Brazil (DF, GO, MG, MT, PA, RR, TO), French Guiana, Guyana, Suriname and Venezuela.

The original illustration of *H. staminodiata* was published by Mansfeld (1930, t. 6, fig. 24).

The only material recorded in the protologue of *H. muelleriana* was from Herb. Deless. There are two sheets of the type material of *H. muelleriana* at G. Since Cogniaux did not select the holotype, sheet 169022 is selected here as lectotype.

Habenaria macroceras Spreng. = ***H. macroceratitis*** Willd.

Habenaria macroceratitis Willd., Sp. Pl. 4: 44. 1805. TYPE: JAMAICA. (Holotype: not indicated; Lectotype designated by Cribb in Cafferty and Jarvis, 1999: LINN [1054.14]). Basionym: *Orchis habenaria* L., Syst. Nat., ed. 10, 2: 1242. 1759.

Synonyms: *Habenaria macroceras* Spreng., Syst. Veg. (ed. 16), 3: 692. 1826.

Habenaria habenaria (L.) Small, Fl. S.E. U.S.: 316. 1903, *nom. inval.*

Habenaria quinqueseta (Michx.) Eaton var. *macroceratitis* (Willd.) Luer, Native Orch. Florida: 158. 1972.

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¹ Universidade Federal de Minas Gerais, Instituto de Ciências Biológicas, Depto. Botânica, Av. Antônio Carlos 6627, Pampulha, C.P. 486, Belo Horizonte, MG, 31270-910, Brazil. Author for correspondence: janb@icb.ufmg.br

² Embrapa Recursos Genéticos e Biotecnologia, Parque Estação Biológica, Av. W5 Norte Final, CP 02372, Brasília-DF, 70770-901, Brazil; bianchet@cenargen.embrapa.br

³ Instituto de Botánica, CUCBA, Universidad de Guadalajara, apartado postal 139, 45110 Zapopan, Jalisco, México; rgonzale@cucba.udg.mx

⁴ The Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, U.K.; P.Cribb@rbgkew.org.uk

Nemuranthes habenaria (L.) Raf., Fl. Tellur. 2: 62. 1836 publ. 1837.

Distribution: Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Suriname, Guyana, U.S.A., Bahamas, Cuba, Jamaica, Haiti, and Dominican Republic.

This is the type species of the genus *Habenaria*. Based on the similarity to *H. quinqueseta*, but because of its distinctly longer spur, Luer

(1972) considered it a variety of that species as the description of *H. quinqueseta* predates that of *H. macroceratitis*. On the other hand, Correll (1950) and McVaugh (1985) stated that plants with unusually long or short spurs occur throughout the distribution range of the species and reduced the variety to a synonym of *H. quinqueseta*. Dressler (1999) considered *H. macroceratitis* distinct from *H. quinqueseta* and included the following key to separate the two species.

1. Ventral segment of petals more than twice length of dorsal segment; spur terete, scarcely thickened distally *H. macroceratitis*
 1. Ventral segment of petals less than twice length of dorsal segment; spur subclavate *H. quinqueseta*

The exact distribution of *H. macroceratitis* and *H. quinqueseta* is uncertain. We reproduce here the known distribution encompassing the two species, but a more detailed investigation is necessary to determine the exact geographical range of each. See also the notes under *H. quinqueseta* var. *macroceratitis*.

Habenaria macroceratitis Willd. var. *brevicalcarata* Ames = ***H. quinqueseta*** (Michx.) Eaton

Habenaria macrodactyla Kraenzl., Ark. Bot. 16(8): 5. 1921. TYPE: BRAZIL. Paraná, Jaguarahyva, P.K.H. *Dusen 10404* (Holotype: HBG [not seen]).

Distribution: Brazil (PR).

An obscure species, apparently known only from the type specimen. As far as we can evaluate from the species original description it is similar and probably conspecific with *H. dusenii*. The only extant material from the collection *Dusen 10404* is the one at HBG.

Habenaria macronectar (Vell.) Hoehne, Bot. Jahrb. Syst. 68: 128. 1937. TYPE: BRAZIL. Rio de Janeiro?, sine coll. (Holotype: unknown, presumably lost; Lectotype, designated by Batista et al., 2006: Fl. Flumin.9: t. 45).

Basionym: *Orchis macronectar* Vell., Fl. Flumin. 9: tab. 45. 1831; Arch. Mus. Nac. Rio de Janeiro 5: 368. 1881.

Synonyms: *Habenaria sartor* Lindl., London J. Bot. 2: 662. 1843. TYPE: BRAZIL. Rio de Janeiro, Organ Mountains, 1837, *G. Gardner 676* (Holotype: not indicated; Lectotype, designated here: K-L [79196]; Isotypes: AMES, BM, BR, G, K, NY, OXF, P, S, US, W; photo, drawing and fragment from NY and W at RENZ).

Habenaria helodes Rchb.f., Linnaea 22: 813. 1849. TYPE: BRAZIL. Rio de Janeiro, in Sümpfen um Neu-Freiburg, H.K. *Beyrich 70* (Holotype: not indicated; Isotypes: BR [fragment], W-R [drawing and fragment]; photo and drawing from W-R at RENZ).

Habenaria dolichosceras Barb.Rodr., Gen. Sp. Orchid. 1: 153. 1877. TYPE: BRAZIL. Minas Gerais, Caldas and la Serra da Mantiquera, J. *Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 6A: RB, copy K; reproduced in Sprunger, 1996: 1: 59A).

Habenaria sartoroides Schltr., Repert. Spec. Nov. Regni Veg. 16: 248. 1919. TYPE: BRAZIL. Paraná, Serra do Mar, Banhado, 860 m, 3 March 1914, P.K.H. *Dusen 14571* (Holotype: B, destroyed; Lectotype, designated by Batista et al., 2006: AMES [70231]; Isotypes: P, S).

Habenaria juergensii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 35: 20. 1925. SYNTYPES: BRAZIL. Rio Grande do Sul, near Jão Rodrigues, Município Rio Pardo, 50 m, February 1921, C. *Jürgens 23* (B, destroyed); Fazenda dos Prazeres, near San Leopoldo, 25 January 1904, J. *Dutra 673* (B, destroyed; Lectotype, designated by Batista et al., 2006: SP [35705]).

Kusibabella macronectar (Vell.) Szlach., Richardiana 4: 61. 2004.

Kusibabella sartor (Lindl.) Szlach., Richardiana 4: 61. 2004.

Distribution: Brazil (ES, MG, PR, RJ, RS, SC, SP) and Uruguay.

Though the species original description was published only in 1881, according to the International Code of Botanical Nomenclature (McNeill et al., 2006), illustrations published before 1908 are equivalent to a diagnosis and according to Carauta (1973) the effective date of publication of Vellozo's plate of *Orchis macronectar* was 1831, 12 years before Lindley's description of *H. sartor*. Distinct from other Brazilian species in section *Macroceratitae* by the shorter spur (5.5–8.5 cm) and deflexed lateral sepals (Batista et al., 2006).

The original illustration of *H. sartoroides* was published by Mansfeld (1930, t. 6, fig. 22).

Habenaria macrophylla Goldie, Edinburgh Philos. J. 6: 331. 1822. = **Platanthera orbiculata** (Pursh) Lindl. var. **macrophylla** (Goldie) Luer

Habenaria maculosa Lindl. = **H. monorrhiza** (Sw.) Rchb.f.

Habenaria macvaughiana R.González, Bol. Inst. Bot. Univ. Guadalajara 3(1–3): 64, Fig. 3. 1995 publ. 1997. TYPE: MEXICO. Michoacán, foot of Cerro Cacique, 2 km al SE de Zitácuaro, 2270 m, 16 September 1989, R. Torres and M. Ramírez 13028 (Holotype: IEB).

Distribution: Mexico.

Habenaria macvaughiana can be compared with *H. crassicornis*.

Habenaria madero Schltr. = **H. gollmeri** Schltr.

Habenaria magdalenensis Hoehne, Bot. Jahrb. Syst. 68: 132, t. 18. 1937. TYPE: BRAZIL. Rio de Janeiro, St. Magdalena, Pedra das Flores, 1200 m, 4 March 1934, S. Lima and A.C. Brade 13313 (Holotype: SP [31800]; Isotype: RB, photocopy HB).

Synonyms: *Habenella magdalenensis* (Hoehne) Szlach. & Kras-Lap., Richardiana 6: 37. 2006.

Platantheroides magdalenensis (Hoehne) Szlach., Richardiana 4: 107. 2004.

Distribution: Brazil (MG, RJ).

This species is markedly similar to *H. helegena* and a more detailed comparison is necessary to determine the exact identity of each.

Habenaria magniscutata Catling, Taxon 36(4): 760. 1987. TYPE: BRAZIL. Minas Gerais, Serra do Cipó, 4 March 1958, E.P. Heringer and A. Castellanos 6061 (Holotype: HB [4876]; Isotypes: HB, R).

Basionym: *Habenaria rostrata* Pabst, Anais 14th Congr. Soc. Bot. Brasil: 11, t. 1, fig. A. 1964, *nom. illeg., non Habenaria rostrata* Wall. ex Lindl., 1835.

Distribution: Brazil (GO, MG).

A very distinctive species, characterized among other features by its column structure.

Habenaria maranhensis Barb.Rodr. Junior ex Hoehne = **H. petalodes** Lindl.

Habenaria margaritacea Linden, Illustr. Hort. 29: 52. 1882, *nom. nud.*

From Colombia. Originally published only as a catalog name.

Habenaria mariae R.González & Cuv.-Fig., Bol. Inst. Bot. Univ. Guadalajara 12(2): 11, fig. 4. 2004 publ. 2006. TYPE: MEXICO. Jalisco, Zapopan, La Primavera, 25 August 1984, L. Ruíz s.n. (Holotype: IBUG).

Distribution: Mexico.

Habenaria mariae is related to *H. clypeata* but differs in being a slender plant with a raceme broader than the plant, and a slender spur scarcely exceeding the ovary and obtuse column.

Habenaria maritima Raf., Herb. Raf.: 74. 1833. = **Platanthera clavellata** (Michx.) Luer

Habenaria maritima Greene, Pittonia 2: 298. 1892. *nom. illeg., non H. maritima* Raf., 1833. = **Platanthera elegans** Lindl. subsp. **maritima** (Rydb.) R.M.Bateman

Habenaria marupaana Schltr. = **H. amambayensis** Schltr.

Habenaria mattogrossensis Kraenzl. = **H. spathulifera** Cogn.

Habenaria matudae Salazar, Anales Inst. Biol. Univ. Nac. Autón. México, Bot. 70(1): 6, fig. 2. 1999. TYPE: MEXICO. Chiapas, Nuevo Amatenango, 1300 m, 17–20 July 1941, E. Matuda 4728 (Holotype: MEXU).

Distribution: Mexico.

This species is closely related to *H. mitodes* and *H. horaliae*.

Habenaria maxillaris Lindl. = **H. repens**
Nutt. var. **maxillaris** (Lindl.) Garay

Habenaria mayersii Ruschi = **H. warmingii**
Rchb.f.

Habenaria media (Rydb.) G.G.Niles, Bog-
Trotting Orchids: 252. 1904. = **Platanthera** ×
media (Rydb.) Luer

Habenaria mediocris Dressler, Bol. Inst.
Bot. Univ. Guadalajara 7(1–3): 96, Fig. 2. 1999
publ. 2000. TYPE: PANAMA. Prov. Chiriquí,
Llanos del Volcán, 16 July 1979, *R.L. Dressler*
5845 (Holotype: MO [197285]).

Distribution: Panama.

Habenaria meeana Toscano, Kew Bull.
47(4): 733, fig. 2. 1992. TYPE: BRAZIL.
Bahia, Rio de Contas, lower NE slopes of Pico
das Almas, ca. 25 km WNW of Vila do Rio de
Contas, 17 February 1977, *R.M. Harley, S.J.
Mayo, R.M. Storr, T.S. Santos and R.S. Pinheiro*
19531 (Holotype: CEPEC [20740]; Isotypes:
HB, RENZ, HRB, K, MBM, MO, NY, P, RB,
SPF, U, US).

Distribution: Brazil (BA).

Habenaria megaceras Barb.Rodr. = **H.**
obtusa Lindl.

Habenaria megapotamensis Hoehne, Arq.
Bot. Estado São Paulo, n.s., f.m., 1(2): 41, t.
47. 1939. TYPE: BRAZIL. Rio Grande do Sul,
Taquara, Caracol, 13 January 1926, *J. Dutra*
873 (Holotype: SP [29635]).

Distribution: Brazil (PR, RS).

This species is similar and closely related to
H. exaltata, but distinct by the taller and more
robust plants, larger flowers and longer spur.

Habenaria melanopoda Hoehne & Schltr.,
Anexos Mem. Inst. Butantan, Secç. Bot. 1(2):
20, t. 2, fig. 1. 1921. TYPE: BRAZIL. São
Paulo, Alto da Serra, 19 December 1917, *F.C.
Hoehne s.n.* (Holotype: B, destroyed; Lectotype,
designated here: R [13818]; Isotypes: AMES,
NY, SP [1136]).

Synonyms: *Habenaria verecunda* Schltr.,
Repert. Spec. Nov. Regni Veg. 27: 300.
1930, *nom. illeg., non H. verecunda*
Schltr., 1923. TYPE: BRAZIL. Rio de
Janeiro, Alto Itatiaya, March 1921, *P.C.*

Porto 1003 (Holotype: B, destroyed;
Lectotype, designated here: RB [588];
Isotype: SP).

Habenaria trimeropetala Schltr. var.
itatingensis Hoehne, Fl. Bras. (Hoehne)
12(1): 114. 1940, *nom. nud.*, in part.
BASED UPON: BRAZIL. São Paulo,
Itatinga, 12 March 1903, *A. Loefgren in*
CGGSP 6169 (SP [29633]). (other part =
H. subviridis)

Distribution: Brazil (MG, PR, RJ, RS,
SC, SP).

Similar and closely related to *H. balansae*,
but apparently distinct by the leaves which
are usually more developed, the more congest
inflorescence, the shorter pedicel, which is
completely covered by the bracts, the acute
floral segments, the non-oblong, shorter anterior
segment of the petals, and the reflexed segments
of the labellum.

Habenaria mello-barretoii Brade & Pabst,
Orquidea (Rio de Janeiro) 29(5): 212, fig.
A. 1967 publ. 1972. TYPE: BRAZIL. Minas
Gerais, Serra do Cipó, km 134, 15 April 1935, *M.
Barreto 521 and A.C. Brade 14876* (Holotype:
RB [28514]; Isotype: HB [not seen]).

Distribution: Brazil (MG).

A poorly known species, known only from
the type material. Similar to and closely related
to *H. balansae*.

Habenaria mello-leitonii Ruschi = **H. parvi-**
flora Lindl.

Habenaria melvillei Ridl., J. Bot. 23: 170.
1885, as *H. melvillii*. TYPE: BRAZIL. Minas
Gerais, Entre Rios, 1883–1884, *H.C. Dent 40*
(Holotype: BM [32705]; Lectotype, designated
here: BM 32705 [two loose flowers, excluding
the vegetative part that is referable to an
unidentified Spiranthoideae species]).

Synonyms: *Habenaria fastor* Lindl. ex Warm.,
Vidensk. Meddel. Dansk Naturhist.
Foren. Kjobenhavn 46: 90, t. 8, f. 4.
1884 publ. 1886. *nom. nud.* BASED
UPON: BRAZIL. Minas Gerais, Lagoa
Santa, *J.E.B. Warming s.n.* (W-R [51188],
drawing and fragment).

Habenaria fastor Warm. ex Hoehne, Fl.
Bras. (Hoehne) 12(1): 71, t. 15. 1940, *nom.*
nud., in part. BASED UPON: BRAZIL.

São Paulo, Vale do Paranapanema, 3 December 1899, *A. Loeefgren in CGGSP s.n.* (SP [28977]). Minas Gerais, Mun. Santa Luzia, Lagoa Santa, 5 February 1935, *M. Barreto 4869* (BHMH, R, RB, SP). (other parts = *H. gourlieana* and *H. paulistana*)

Habenaria gourlieana Gill. ex Lindl. f. *magna* Hoehne, Relat. Commiss. Linhas Teleg. Estraté. Matto Grosso Amazonas 5(9): 25, t. 168, fig. 3. 1919. SYNTYPES: BRAZIL. Mato Grosso, Rio Arinos, November 1914, *J.G. Kuhlmann 124* (R), *J.G. Kuhlmann 125* (R).

Habenaria nabucoi Ruschi, Bol. Mus. Biol. Prof. Mello-Leitão Sér. Bot. 78: 1. 1973, *syn. nov.* TYPE: BRAZIL. Espírito Santo, Município da Serra, próximo de fundão, 20 m, January 1973, *E. Colnago s.n.* (Holotype: MBML 4444 [not seen], probably lost).

Kusibabella fastor (Lindl. ex Warm.) Szlach., Richardiana 4: 59. 2004.

Distribution: Brazil (AM, BA, DF, ES, MG, MT, PI, SP), Peru and Venezuela.

The holotype of *H. melvillei* consists of the vegetative part of a Spiranthoideae species (probably a *Cyclopogon*) and two loose flowers of a *Habenaria* species from section *Macroceratitae*. This *Habenaria* species is the same illustrated by Warming (1884), first identified as *H. fastor* (Reichenbach, 1881; Warming, 1884; Hoehne, 1940) an orthographic error for *H. sartor* Lindl. (Batista et al., 2006) and latter redescribed as *H. nabucoi*. *Habenaria melvillei* can be distinguished from other species in section *Macroceratitae* by the 2–8(11) flowered inflorescence, the predominantly white flowers, the non-reflexed lateral sepals, the clavate spur, which reaches up to 5 mm wide at the apex and column structure with the rostellum about 8–9 mm tall (Batista et al., 2006, as *H. nabucoi*).

The holotype of *H. nabucoi* was not located at MBML and is probably lost. A photograph at MBML (006) from a collection with the same data in the protologue, but without collector, is probably from the type material or a duplicate. A material at HB (*Colnago & Kautsky 395* – HB 59054) is from a different locality and probably not a duplicate of the type.

The material cited in the protologue of *H. fastor* Warm. ex Hoehne is a mixture of three species, *H. gourlieana*, *H. melvillei* and *H. paulistana*.

Examination of the syntypes of *H. gourlieana* f. *magna* showed that it is conspecific with *H. melvillei*.

Habenaria menziesii (Lindl.) Macoun, Cat. Canad. Pl., Endogens 4: 17. 1888. = ***Platanthera orbiculata*** (Pursh) Lindl var. ***orbiculata***

Habenaria mesodactyla Griseb., Fl. Brit. W.I. (Grisebach): 644. 1864. TYPE: TRINIDAD. Piarco, *H. Crueger s.n.* (Holotype: K [363869]; Isotype: BR).

Distribution: Trinidad.

The exact identity of this species is unclear. There is no known New World *Habenaria* which fits the species' protologue: anterior petal segments twice as long as the posterior segments, and labellum median segment twice as long as the lateral segments. In all other New World species long anterior petal segments are always proportional in length to the labellum lateral segments. This observation supports the suggestion made by Foldats (1969) that there is an error in the protologue. A number of collections from Belize, Nicaragua, Panama, and Venezuela have been assigned to *H. mesodactyla* by several authors (Dunsterville and Garay, 1961; Correll, 1965; Foldats, 1969; Hamer, 1983), but the exact identity of these collections needs further investigation. As far as we can evaluate, there are about four distinct taxa among them.

Grisebach herbarium and types are mainly in GOET, but it is known that several specimens used for "Flora of the British West Indian Islands" are in K. The collection *Crueger 66*, located in K, was named by Grisebach and most likely is the holotype of *H. mesodactyla*.

Habenaria mexicana Linden, Illustr. Hortic. 29: 52. 1882, *nom. nud.*

From Mexico. Originally published only as a catalog name.

Habenaria micheliana R. González & Cuv.-Fig., Bol. Inst. Bot. Univ. Guadalajara 12(2): 35, fig. 13. 2004 publ. 2006. TYPE: MEXICO. Jalisco, Mezquitic, between Mezquitic and

Monte Escobedo, 2350 m, 29 August 1989, *M. Aguilar, R. Ramírez and R. González s.n.* (Holotype: IBUG).

Distribution: Mexico.

Habenaria micheliana is allied to *H. lactiflora*, but differs by most of leaves being erect or suberect; sepals when young green, at maturity becoming reddish green; and labellum segments of same length.

Habenaria michaelii Greene, Bull. Calif. Acad. Sci. 1(4): 281. 1886. = **Platanthera elegans** Lindl. subsp. **elegans**

Habenaria michauxii Nutt. = **H. quinqueseta** (Michx.) Eaton

Habenaria microstyliana Rchb.f., Xenia Orchid. 3(1): 17. 1878. TYPE: BOLIVIA. Prov. Larecaja, near Sorata, 2650–2800 m., February–April 1860, *G. Mandon 1154* (Holotype: W; Isotypes: BM, G, P, S, W; photo and drawing from W at RENZ).

Distribution: Bolivia.

Habenaria microstyliana is similar and probably closely related to *H. hexaptera*.

Habenaria miguelii Schltr. = **H. polycarpa** Hoehne

Habenaria millei Schltr., Repert. Spec. Nov. Regni Veg. 14: 114. 1915. TYPE: ECUADOR. in valle interandino, *L. Mille 33* (Holotype: B, destroyed; Lectotype, designated here: BR [657190]).

Distribution: Ecuador.

The original illustration of the species was published by Mansfeld (1930, t. 4, fig. 16).

Habenaria minarum Hoehne & Schltr. = **H. rupicola** Barb.Rodr.

Habenaria minimiflora Kraenzl. = **H. paulensis** Porsch

Habenaria mitodes Garay & W.Kitttr. in McVaugh, Fl. Novo-Galiciana 16: 144, fig. 39. 1985. TYPE: MEXICO. Nayarit, 8 miles W of Tepic, road to Jalcocotán, 10 September 1960, *R. McVaugh 18882* (Holotype: MICH [1115240], drawing AMES).

Distribution: Mexico.

Habenaria mitomorpha Kraenzl. = **H. subfiliformis** Cogn.

Habenaria modestissima Rchb.f., Linnaea 22: 811. 1849 publ. 1850. TYPE: BRAZIL. Rio de Janeiro, Neufreiburg, January 1823, *H.K. Beyrich s.n.* (Holotype: not indicated; W-R [51172], drawing).

Distribution: Brazil (RJ).

An obscure species, possibly known only from the type material. Apparently similar and closely related to *H. repens* and *H. aranifera*.

Habenaria monadenioides Schltr. ex Mansf. = **H. williamsii** Schltr.

Habenaria monorrhiza (Sw.) Rchb.f., Ber. Deutsch. Bot. Ges. 3: 274. 1885. TYPE: JAMAICA. *O.P. Swartz s.n.* (Holotype: S [R-6645]; Isotypes: BM, NY, SBT, UPS, W-R).

Basionym: *Orchis monorrhiza* Sw., Prodr. (Swartz) 118. 1788.

Synonyms: *Habenaria brachyceratitis* Willd., Sp. Pl. 4: 44. 1805. *nom. illeg.*

Habenaria latifolia Kunth, Nov. Gen. Sp. 1: 331. 1816. TYPE: COLOMBIA. Near Santa Ana and Mariquita, *F.W.H.A. von Humboldt and A.J.A. Bonpland s.n.* (Holotype: P [307155]).

Habenaria brachyceras Spreng., Syst. Veg. (ed. 16), 3: 692. 1826. *nom. illeg.*

Habenaria maculosa Lindl., Gen. Sp. Orchid. Pl. 309. 1835. SYNTYPES: JAMAICA. *Macfadgen* (not located); ST. VINCENT. *L. Guilding s.n.* (Lectotype, designated by Garay and Sweet, 1974: K); TORTOLA, *R.H. Schomburgk s.n.* (K-L); BARBADOS, *Hb. Vahl.* (C? [not seen]); PERU, *Mathews* (presumably K [not seen]).

Habenaria speciosa Poepp. & Endl., Nov. Gen. Sp. Pl. (Poeppig & Endlicher) 1(7–10): 44, t. 76. 1836, *syn. nov.* TYPE: PERU. Bella Vista, Quebrada de Chinchao, January, *E.F. Poeppig s.n.* (Holotype: presumably W [not seen]).

Habenaria sodiroi Schltr., Repert. Spec. Nov. Regni Veg. 14: 115. 1915. TYPE: ECUADOR. Pallatanga, September 1891, *A. Sodiro 156* (Holotype: B, destroyed; no isotype located).

Orchis setacea Jacq., Enum. Syst. Pl. 28. 1760. TYPE: MARTINIQUE. sine loc., *N. Jacquin s.n.* (W [not seen]).

Platanthera monorrhiza (Sw.) W.J.Schrenk, Orchidee (Hamburg) 28: 69. 1977.

Distribution: Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Cuba, Jamaica, Puerto Rico, Hayti and Dominican Republic, Lesser Antilles, Trinidad and Tobago, Colombia, Venezuela, Ecuador, Galapagos, Peru, Bolivia.

The description by Swartz of a plant with simple petals precluded for some time the correct identification of this species which usually has bipartite petals. The exact relation of *H. monorrhiza* with other similar and closely related taxa such as *H. bangii* is not clear. The species is widespread through most of tropical America, but apparently does not occur in the Guianas or in Brazil.

We have examined some specimens labelled as *H. speciosa* at AMES that are very similar to *H. monorrhiza* but distinct by their bigger flowers. Dodson and Vasquez (1989a) accepted *H. speciosa* as a distinct species, based on the erose margin of the ovary wings and the longer length of the lower segments of the petals. Undoubtedly the specimens at AMES and the characters pointed by Dodson and Vasquez (1989a) differ from the general pattern of *H. monorrhiza*. However, due to the widespread distribution and variability of *H. monorrhiza*, and great similarity between the two taxa, further work is necessary to clarify if the characters pointed by Dodson and Vasquez (1989a) are significant and specific to *H. speciosa*, or can be found intermixed within populations of *H. monorrhiza*.

The original illustration of *H. sodiroi* was published by Mansfeld (1930, t. 6, fig. 23).

Habenaria montana Barb.Rodr., 1877. = **H. rupicola** Barb.Rodr.

Habenaria montevidensis Spreng., Syst. Veg. (ed. 16), 3: 692. 1826. TYPE: URUGUAY. Monte Video, *F. Sellow s.n.* (Holotype: presumably B, probably destroyed; Isotype: W-R 51316 [not seen]).

Synonyms: *Habenaria arechavaletae* Kraenzl., Bot. Jahrb. Syst. 16: 185. 1892. TYPE: URUGUAY. Sierra de Minas, *J.E. Gibert 1160* (Holotype: not located; Isotypes: BR [fragment] mounted on the same sheet with *E.H.G. Ule 1904*, MVM).

Habenaria arechavaletae Kraenzl. var. *elata* Cogn., Fl. Bras. (Martius) 3(4): 92. 1893. TYPE: BRAZIL. Santa Catarina, Capivare, Serra Geral, February 1891, *E.H.G. Ule 1904* (Holotype: BR [657428]; Isotype: P [408631]).

Habenaria obovatipetala Schltr., Repert. Spec. Nov. Regni Veg. Beih. 35: 21. 1925. TYPE: BRAZIL. Rio Grande do Sul, Caranna-Bom Jesus, 1000 m, January 1909, *J. Dutra 511* (Holotype: B, destroyed; Lectotype, designated here: ICN [14511]).

Habenaria arechavaletae Kraenzl. var. *obovatifetala* (Schltr.) Pabst, Rodriguésia 16–17(28–29): 130. 1954.

Distribution: Brazil (PR, RS, SC) and Uruguay.

A very distinct species, characterized by the white corolla, reflexed dorsal sepal and the prominent ovate and unguiculate petals, which form a hood over the gynostemium. For more information about the species see Garay (1976). Sellow herbarium and types were at B and were mostly destroyed. The material at W is most likely an isotype.

In the protologue of *H. arechavaletae* the type collection was attributed to J. Arechavaleta, but in the isotypes at BR and MVM the collection is from J.E. Gibert. The herbarium and types of Arechavaleta are at MVM, but it is possible that the material examined by Kränzlin was at B and was destroyed.

Habenaria montevidensis Lindl. = **H. uruguayensis** Garay

Habenaria montevidensis Lindl. var. *tucumanensis* Griseb. = **H. parviflora** Lindl.

Habenaria montevidensis Lindl. f. *parviflora* (Lindl.) Pabst = **H. parviflora** Lindl.

Habenaria montevidensis Lindl. f. *nana* (Schltr.) Pabst = **H. brachyphyton** Schltr.

Habenaria montevidensis Lindl. f. *reichenbachiana* (Barb.Rodr.) Pabst = **H. parviflora** Lindl.

Habenaria montis-wilhelminae Renz, Candollea 47(2): 500, fig. 2. 1992. TYPE: SURINAME. Wilhelmina Mts, 1040 m, 1 August 1926, G. Stahel 580 (Holotype: U [7135], photo RENZ).

Distribution: Brazil (DF, GO, MG, PR, RS), French Guiana and Suriname.

This species is similar to *H. galeandriiformis* and the separation between the two is not clear. Both species are similar and closely related to *H. crucifera* (Batista and Bianchetti, 2010). The plant identified as *H. obtusa* by Werkhoven (1986: 141), is most likely *H. montis-wilhelminae*.

Habenaria moritzii Ridl., in part = **H. armata** Rchb.f.

Habenaria moritzii Ridl., in part = **H. gollmeri** Schltr.

Habenaria muelleriana Cogn. = **H. macilenta** (Lindl.) Rchb.f.

Habenaria multiflora (Rydb.) Blank., Sci. Stud. Montana Coll. Agric., Bot. 1: 45. 1905. = **Platanthera elegans** Lindl. subsp. **elegans**

Habenaria muricata Barb.Rodr. = **H. rodriguesii** Cogn.

Habenaria mystacina Lindl., Gen. Sp. Orchid. Pl. 312. 1835. TYPE: BRAZIL. Minas Gerais, between Tejuco and Itambé; summit of Itambé, *C.F.P. Martius s.n.* (Holotype: M; drawing of type by Lindley at K-L).

Synonyms: *Habenaria lasioglossa* Cogn., Fl. Bras. (Martius) 3(6): 526, tab. 107, fig. 1. 1906. TYPE: BRAZIL. Minas Gerais, near Itacolomy, 5 May 1893, *C.A.W. Schwacke* 9328 (Holotype: BR [889848]).

Distribution: Brazil (BA, MG).

This is a very distinct species, characterized by the congest, short inflorescences and the small flowers with densely pubescent anterior petal segments and labellum lateral segments (Batista and Bianchetti, 2006).

Hoehne (1940) considered *H. lasioglossa* a synonym of *H. mystacina*. A comparison of the protologues and types of these species

confirmed that they are conspecific (Batista and Bianchetti, 2006).

Habenaria nabucoi Ruschi = **H. melvillei** Ridl.

Habenaria nana Schltr., 1919. = **H. brachyphyton** Schltr.

Habenaria nasuta Rchb.f. & Warm., Otia Bot. Hamburg. 2: 80. 1881. TYPE: BRAZIL. Minas Gerais, Lagoa Santa, *J.E.B. Warming s.n. (140)* (Holotype: W-R [30471], photo and fragment RENZ; Isotype: BR [642564]).

Synonym: *Bertauxia nasuta* (Rchb.f. & Warm.) Szlach. in Richardiana 4: 58 (2004), *syn. nov.*

Distribution: Brazil (DF, GO, MG).

Cogniaux (1893) considered this species a synonym of *H. nuda* and was followed by Hoehne (1940). However, *H. nasuta* is distinct from *H. nuda* in the taller plants and much larger flowers. *Habenaria nasuta* was misidentified as *H. urbaniana* by Batista et al. (2003). The original illustrations of the species were published by Warming (1884, tab. 8, fig. 10).

Habenaria nemorosa Barb.Rodr., Gen. Sp. Orchid. 1: 160. 1877. TYPE: BRAZIL. Minas Gerais, Poços de Caldas, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 16: RB, copy K; reproduced in Sprunger, 1996: 1: 69).

Distribution: Brazil (MG, PR, RJ).

This species is similar and closely related to *H. glaucophylla*, *H. umbraticola* and *H. piraquarensis*.

Habenaria neomexicana Tidestr., Fl. Ariz. New Mex. 731. 1941. = **Platanthera stricta** Lindl.

Habenaria nilssonii Foldats, Bol. Soc. Venez. Ci. Nat. 22: 256. 1961. TYPE: VENEZUELA. Between Luepa and Cerro Venamo, 1200 m, 126 Km from El Dorado towards Sta. Elena, Edo. Bolivar, *J.A. Steyermark and S. Nilsson 173* (Holotype: VEN [not seen]; Isotype: UPS [not seen]).

Distribution: Venezuela.

Habenaria nigripes Kraenzl. = **H. balansae** Cogn.

Habenaria nivea (Nutt.) Spreng., Syst. Veg. (ed. 16), 3: 689. 1826. = **Platanthera nivea** (Nutt.) Luer

Habenaria nogeirana R.González & Cuev.-Fig., Ibugana 14(1–2): 29. 2006 publ. 2007. TYPE: MEXICO. Jalisco, Valle De Guadalupe, 15 August 1989, S. González s.n. (Holotype: IBUG).

Distribution: Mexico.

Habenaria nogeirana is similar but distinct from *H. pseudofilifera* by the leaves which are straight, elliptic and obtuse or lanceolate and acuminate, the largest 3.4–5.1 cm long and 1.6–2.6 cm wide.

Habenaria novaesii Edwall & Hoehne, Bot. Jahrb. Syst. 68: 129, t. 13. 1937. TYPE: BRAZIL. São Paulo, Campinas, 26 January 1909, J.C. Novaes in CCGSP 5997 (Holotype: SP [28899]; Isotype: AMES).

Distribution: Brazil (SP).

Similar and closely related to *H. repens*, but apparently distinct by the larger flowers with the lateral segments of the petals and labellum proportionately shorter.

Habenaria novemfida Lindl., Pl. Hartw. 94. 1842. TYPE: GUATEMALA. Barrancas, K.T. Hartweg s.n. (Holotype: K-L [362768]; photo and drawing AMES).

Synonym: *Habenaria quinquefila* Schltr., Repert. Spec. Nov. Regni Veg. 15: 195. 1918. TYPE: GUATEMALA. between Copan and Gualán, August 1870, C.G. Bernoulli and R. Cario 557 (Holotype: B, destroyed; drawing at AMES [24321]. No isotype located).

Distribution: Mexico, Guatemala, Honduras, El Salvador, Nicaragua and Costa Rica.

Lindley's original illustration and description of *H. novemfida* depicts a plant with tripartite petals, but this character does not seem to be significant since tripartite petals are occasionally found in several species in the genus and are not constant. Accordingly, there is a note by Rolfe in the holotype sheet stating that he examined a flower and found the petals to be bifid. Several species have been treated at one time or another

as synonyms of *H. novemfida*. Although, the original descriptions and illustrations of some like *H. dipleura* and *H. quinquefila* represent flowers very similar to *H. novemfida*, others like *H. costaricensis*, now a synonym of *H. cryptophila*, are clearly distinct.

Ames (1934) considered *H. quinquefila* a synonym of *H. crassicornis*, but from which it is apparently distinct. Ames and Correll (1952–1953) and Williams (1956) considered it a synonym of *H. novemfida*. The original illustration of *H. quinquefila* was published by Mansfeld (1931, t. 2, fig. 6).

Habenaria nubigena (A.Rich. & Galeotti) Ames, Orchidaceae (Ames) 4: 101, t. 62, Fig. 3. 1910. = **Platanthera nubigena** A.Rich. & Galeotti

Habenaria nuda Lindl., Gen. Sp. Orchid. Pl. 312. 1835. TYPE: BRAZIL. Minas Gerais, C.F.P. Martius s.n. (Holotype: M; drawing of type by Lindley at K-L).

Distribution: Brazil (BA, DF, GO, MG, PR, SP).

The exact identity of this species and its relation with several similar taxa such as *H. nuda* var. *pygmaea*, *H. rolfeana*, *H. fluminensis* and *H. rodriguesii* is unclear and needs further investigation.

Habenaria nuda Lindl. var. **pygmaea** Hoehne, Relat. Commiss. Linhas Telegr. Estratég. Matto Grosso Amazonas 5(1): 25, t. 1. 1910. TYPE: BRAZIL. Mato Grosso, Ponte de Pedra, Chapada dos Parecis, June 1909, F.C. Hoehne 2146 (Holotype: R [2726]; Isotype: SP [fragment from R]).

Distribution: Brazil (DF, GO, MG, MT, SP).

Habenaria nuda var. *pygmaea* is a distinct taxon, but its circumscription as a variety of *H. nuda* is unclear and needs further investigation.

Habenaria nuttallii Small = **H. repens** Nutt.

Habenaria oblongifolia (Paine) G.G.Niles, Bog-Trotting Orchids 250. 1904. = **Platanthera hookeri** (Torr.) Lindl.

Habenaria obovatipetala Schltr. = **H. montevidensis** Spreng.

Habenaria obsoleta (Willd.) Spreng., Syst. Veg. (ed. 16), 3: 689. 1826 = **Coeloglossum viride** (L.) Hartm. var. **virescens** (Muhl. ex Willd.) Luer

Habenaria obtusa Lindl., Gen. Sp. Orchid. Pl. 315. 1835. TYPE: BRAZIL. Minas Gerais, in radice Montis Itacolumi ad Villa Rica, April, *C.F.P. Martius s.n.* (Holotype: M; drawing of type by Lindley at K-L).

Synonyms: *Habenaria lindeni* Lindl., Orchid. Linden. 25. 1846. TYPE: VENEZUELA. Caracas, between Las Coquisas and San Pedro, 3000 or 4000 feet, *J.J. Linden 1477* (Holotype: K-L).

Habenaria megaceras Barb.Rodr., Gen. Sp. Orchid. 1: 161. 1877. TYPE: BRAZIL. Minas Gerais, Caldas, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 28: RB, copy K; reproduced in Sprunger, 1996: 1: 81).

Habenaria ornithoides Barb.Rodr., Gen. Sp. Orchid. 1: 162. 1877, *syn. nov.* TYPE: BRAZIL. Minas Gerais, Uberaba, Formigas, January 1849, *A.F. Regnell ser. III 1185* (Holotype: not indicated; Lectotype, designated here: S [R-2724]; Isotypes: BR [fragment], P, SP, UPS [not seen]).

Habenaria liguliglossa Hoehne, Relat. Commiss. Linhas Telegr. Estraté. Matto Grosso Amazonas 5(5): 35, t. 87. 1915, *syn. nov.* TYPE: BRAZIL. Mato Grosso, at the confluence of the Conceição and Aricá rivers, near Cuyabá, March, *F.C. Hoehne 4093* (Holotype: R [s.n.]).

Habenella liguliglossa (Hoehne) Szlach. & Kras-Lap., Richardiana 6: 37. 2006.

Habenella obtusa (Lindl.) Szlach. & Kras-Lap., Richardiana 6: 37. 2006.

Habenella ornithoides (Barb.Rodr.) Szlach. & Kras-Lap., Richardiana 6: 38. 2006.

Platantheroides obtusa (Lindl.) Szlach., Richardiana 4: 107. 2004.

Platantheroides liguliglossa (Hoehne) Szlach., Richardiana 4: 107. 2004.

Platantheroides ornithoides (Barb.Rodr.) Szlach., Richardiana 4: 107. 2004.

Distribution: Brazil (BA, DF, GO, MA, MG, MS, MT, PA, PB, PE, PR, SE, SP, TO), Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname and Venezuela.

Habenaria obtusa is highly variable in its vegetative parts, but floral morphology and proportions between the parts are fairly constant. The maintenance of some very similar taxa such as *H. ornithoides* and *H. liguliglossa* as distinct species is untenable. However, *H. obtusa* can be easily separated from other closely related taxa by the size of the flowers, larger in *H. hamata* and *H. seticauda* and smaller in *H. curvilabria* and *H. floribunda*, and by the oblong-obovate petals of *H. petalodes*.

The collections *Regnell III-1185* at BR and P have no locality data while the material at SP (28901) is labeled São Paulo, Batatais, but all are and referable to *H. ornithoides*, and are probable isotypes. The material *Regnell III-1185* at US (209481) has the same data as the protologue of *H. ornithoides*, but is referable to *H. hamata*. See the notes for *H. hamata*. The original illustration of *H. ornithoides* is found in Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, reproduced in Sprunger (1996).

Habenaria obtusata (Banks ex Pursh) Richardson, Bot. App. (Richardson) 750. 1823. = **Platanthera obtusata** (Banks ex Pursh) Lindl.

Habenaria obtusata (Banks ex Pursh) Richardson var. *collectanea* Fernald, Rhodora 28: 175. 1926. = **Platanthera obtusata** (Banks ex Pursh) Lindl.

Habenaria odontopetala Rchb.f. = **H. floribunda** Lindl.

Habenaria odontopetala Rchb.f. f. *heatonii* P.M.Br. = **H. floribunda** Lindl.

Habenaria odorifera Hoehne = **H. glazioviana** Kraenzl. ex Cogn.

Habenaria oerstedii Rchb.f., Bonplandia 3: 213. 1855. TYPE: NICARAGUA. Segovia, *A.S. Oersted s.n.* (Holotype: presumably W [not seen]; Isotype: K-L, fragment and drawing).

Synonyms: *Habenella oerstedii* (Rchb.f.) Szlach. & Kras-Lap., Richardiana 6: 37. 2006.

Platantheroides oerstedii (Rchb.f.) Szlach., Richardiana 4: 107. 2004.

Distribution: Nicaragua.

Habenaria oligophylla Schltr. ex Hoehne = **H. edwallii** Cogn.

Habenaria orbiculata Goldie, Edinburgh Philos. J. 6: 331. 1822. = **Platanthera hookeri** (Torr.) Lindl.

Habenaria orbiculata (Pursh) Hook., Exot. Fl. 2: t. 145. 1825. = **Platanthera orbiculata** var. **orbiculata**

Habenaria orbiculata (Pursh) Torr., Comp. Fl. N. Middle States: 318. 1826. = **Platanthera orbiculata** var. **orbiculata**

Habenaria orbiculata (Pursh) Hook. var. *lehorsii* Fernald, Rhodora 52: 61. 1950. = **Platanthera orbiculata** var. **orbiculata**

Habenaria orbiculata (Pursh) Hook. var. *longifolia* Clute, Amer. Bot. (Binghamton) 7: 56. 1904. = **Platanthera orbiculata** var. **orbiculata**

Habenaria orbiculata (Pursh) Hook. f. *macrophylla* (Goldie) F.J.A. Morris & E.A. Eames, Our Wild Orchids 122. 1929. = **Platanthera orbiculata** var. **macrophylla** (Goldie) Luer

Habenaria orbiculata (Pursh) Hook. var. *macrophylla* (Goldie) B. Boivin, Naturaliste Canad. 94: 524. 1967. = **Platanthera orbiculata** var. **macrophylla** (Goldie) Luer

Habenaria orbiculata (Pursh) Hook. var. *menziesii* (Lindl.) Fernald, Rhodora 52: 63. 1950. = **Platanthera orbiculata** var. **orbiculata**

Habenaria orbiculata (Pursh) Hook. var. *trifolia* Mousley, Orchid Rev. 42: 112. 1934. = **Platanthera orbiculata** var. **orbiculata**

Habenaria orchioalcar Hoehne, Relat. Commiss. Linhas Telegr. Estratég. Matto Grosso Amazonas 5(5): 42, t. 85, fig. 1. 1915. TYPE: BRAZIL. Mato Grosso, Lambary, near Campos

Novos da Serra do Norte, November 1911, *F.C. Hoehne s.n.* (Holotype: lost; Lectotype, designated by Batista and Bianchetti, 2002: t. 85, fig. 1, loc. cit.).

Synonym: *Habenaria lancipetala* Pabst, Orquídea (Rio de Janeiro) 29(2): 62, t. 1. 1967. TYPE: BRAZIL. Distrito Federal, summit of Chapada da Contagem, near Brasília, 1100 m, 14 January 1966, *H.S. Irwin et al. 11682* (Holotype: HB [41646]; Isotype: UB).

Distribution: Brazil (DF, GO, MA, MS, MT, PA, TO).

Described upon a sketch made from a single specimen that was lost (Hoehne, 1915, 1940), this species was recollected in 1966 and redescribed as *H. lancipetala*. A recent account about the species was published by Batista and Bianchetti (2002).

Habenaria oreophila Greenm., Proc. Amer. Acad. Arts 39: 76. 1903. TYPE: MEXICO. State of Guerrero, near Iguala, 15 September 1900, *C.G. Pringle 9248* (Holotype: AMES [70088]).

Distribution: Mexico.

This species has been considered a synonym of *H. quinqueseta* by several authors. However, *H. oreophila* is distinct by the following features: leaves oblong-lanceolate, acute, apiculate, 3–3.5 cm wide; dorsal sepal ovate; posterior segment of petals lanceolate, arcuate; anterior segment bent downwards, linear-attenuate and somewhat coiled at the tip; lateral segments of labellum linear-attenuated, 2.5 cm long, more or less spirally coiled at the free ends; median segment ligulate, obtuse, 11–13 mm long; spur 4–4.5 cm long. See also the notes for *H. lucaecapensis*.

Habenaria orizabensis A. Rich. & Galeotti = **H. flexuosa** Lindl.

Habenaria ornithoides Barb. Rodr. = **H. obtusa** Lindl.

Habenaria ortiziana R. González, Bol. Inst. Bot. Univ. Guadalajara 3(1–3): 56, fig. 1. 1995 publ. 1997. TYPE: MEXICO. Estado de México, 2.3 km S of Luvianos, 1800–1900 m, 2 September 1965, *K. Roe, E. Roe, S. Mori 1603 and J. Rzedowski* (Holotype: MICH).

Distribution: Mexico.

Habenaria ortiziana resembles *H. rzedowskiana* and *H. adenantha* in the color of leaves and flowers.

Habenaria ottonis Schltr. = **H. cryptophila** Barb.Rodr.

Habenaria ouro-branquensis Hoehne = **H. guillemii** Rchb.f.

Habenaria pabstii J.A.N.Bat. & Bianch., Novon 13: 397. 2003. TYPE: BRAZIL. Distrito Federal, Brasília, Fazenda Água Limpa (UnB), 1070 m, Córrego da Onça, 2 February 1994, *L.B. Bianchetti, J.A.N. Batista and B.M.T. Walter 1489* (Holotype: CEN [39748]; Isotypes: CEN, HB, K, MO, NY, SP).

Distribution: Brazil (DF, GO, TO).

The affinities of this species are unclear. In general morphology of the flowers it resembles the species in section *Macroceratitae*, but the gynostemium is quite distinct (Batista et al., 2006).

Habenaria paivaana Rchb.f., Xenia Orchid. 3(1): 17. 1878. TYPE: BOLIVIA. Provinz. Larecaja, near Sorata, Condurpata, Loma de Tica, 2650–3200 m, January–March 1859, *G. Mandon 1156* (Holotype: W [not seen], drawings AMES; Isotypes: AMES, BM, BR, G, GOET, LE, NY, P, S; SI, photo, drawing and fragment from G and P at RENZ).

Synonym: *Habenaria chloroceras* Kraenzl., Repert. Spec. Nov. Regni Veg. 1: 89. 1905. TYPE: PERU. Dpto. Junin, Mts E of Palca, 3000–3100 m, *A. Werberbauer 2424* (Holotype: B, destroyed; F negative; Lectotype, designated here: HBG [fragment]).

Distribution: Bolivia and Peru.

The type material of *H. chloroceras* was destroyed in the Berlin herbarium during World War II, a photograph is known from the Berlin types negatives at F. Weberbauer herbarium and types where at B and were mostly destroyed. The material at HBG consists of a few loose flowers, probably from the holotype, and is selected here as lectotype.

Habenaria paludosa Barb.Rodr. = **H. caldensis** Kraenzl.

Habenaria palustris Acuña = **H. repens** Nutt.

Habenaria paranaensis Barb.Rodr., Gen. Sp. Orchid. 2: 249. 1882. TYPE: BRAZIL. Paraná, summit of Serra do Jaguarapira, 1200 m, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 32B: RB, copy K; reproduced in Sprunger, 1996: 1: 85B).

Synonyms: *Habenaria janeirensis* Kraenzl., Bot. Jahrb. Syst. 16: 127. 1892, *syn. nov.* TYPE: BRAZIL. Rio de Janeiro, 22 January 1873, *A.F.M. Glaziou 6729* (Holotype: LE; Isotypes: BR, HBG [fragment], K).

Habenaria campos-portoi Schltr., Repert. Spec. Nov. Regni Veg. 27: 296. 1930, *syn. nov.* TYPE: BRAZIL. Rio de Janeiro, alto Itatiaya, 1 March 1921, *P.C. Porto 1004* (Holotype: B, destroyed; Lectotype, designated here: RB [671]).

Distribution: Brazil (MG, PR, RJ, SC, SP).

This species is closely related to *H. secunda* and *H. gustavo-edwalli*, but distinct by the shorter lateral segments of the petals and labellum. It is found in the high altitude montane meadows along the “Mata Atlântica” of southeastern and southern Brazil. Cogniaux (1903, 1906) recorded the species for Paraguay. However, due to the known species distribution range and habitat preference, the report is probably a mistake.

An analysis of the original description, illustration and isotype of *H. campos-portoi* showed it is conspecific to *H. paranaensis*. The original illustration of *H. campos-portoi* was published by Mansfeld (1930, t. 1, fig. 4).

A duplicate of the collection *Glaziou 6729* at P is referable to a *Prescottia* species.

Habenaria paranaguensis Hoehne = **H. pleiophylla** Hoehne & Schltr.

Habenaria pariquerensis Hoehne = **H. parviflora** Lindl.

Habenaria parvicalcarata C.Schweinf., Bot. Mus. Leaf. 9(3): 49, fig. 1. 1941. TYPE: PERU. Cuzco, Paso de Tres Cruces, Cerro de Cusilluyoc, 3800–3900 m, 3 May 1925, *F.W. Pennell 13888* (Holotype: AMES [38279]).

Distribution: Peru.

Habenaria parvidens Lindl., Gen. Sp. Orchid. Pl. 317. 1835. TYPE: PERU. 1835, *M. Matthews 1885* (Holotype: K-L; Isotypes: BR, G, OXF, P; W [drawing]; photo, drawing and fragment from G at RENZ).

Synonyms: *Habenella parvidens* (Lindl.) Szlach. & Kras-Lap., *Richardiana* 6: 38. 2006.

Platantheroides parvidens (Lindl.) Szlach., *Richardiana* 4: 108. 2004.

Distribution: Ecuador and Peru.

Habenaria parviflora Lindl., Gen. Sp. Orchid. Pl. 314. 1835. SYNTYPES: BRAZIL. Bahia: 1834, *P. Salzman s.n.* (G, K [293350] mounted on the same sheet with *Gardner 5885*, K [293349], K-L [293883] mounted on the same sheet with *Gardner 680*, 5885 and *Regnell s.n.*, MPU, P, SI; photo, drawing and fragment from G at RENZ); Rio de Janeiro: Corcovado, *C.F.P. Martius s.n.* (G; presumably M [not seen]); *M.A.P. Wied-Neuwied s.n.* (not located).

Synonyms: *Habenaria demerarensis* Rchb.f. ex M.R.Schomb., *Reis. Br.-Guiana*: 1123. 1849, *nom. nud.* BASED UPON: GUYANA. April, *Schomburgk 1283* (W, drawing; photo and drawing from W at RENZ).

Habenaria montevidensis Lindl. var. *tucumanensis* Griseb., *Symb. Fl. Argent.* 340. 1879. TYPE: ARGENTINA. La Cienaga, Sierra de Tucuman, January 1874, *P.G. Lorentz and G.H.E.W. Hieronymus 618* (Holotype: not indicated; Isotypes: BR, CORD [not seen]).

Habenaria angulosa Barb.Rodr., Gen. Sp. Orchid. 2: 258. 1882, *syn. nov.* TYPE: BRAZIL. Rio de Janeiro, montagnes du Rodeio, August, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 17: RB, copy K; reproduced in Sprunger, 1996: 1: 70).

Habenaria caaguazuensis Cogn., Bull. Soc. Roy. Bot. Belgique 43: 277. 1906 publ. 1907. TYPE: PARAGUAY. Near Caaguazú, River Yhú, December 1905, *E. Hassler 9679* (Holotype: BR [889856]; Isotypes: AMES, BM, G, MPU, P).

Habenaria parviflora Lindl. f. *robusta* Hoehne, Bol. Mus. Nac. Rio de Janeiro 12(3-4): 74. 1936. *nom. nud.*

Habenaria pariquerensis Hoehne, Bot. Jahrb. Syst. 68: 134, t. 20. 1937. TYPE: BRAZIL. São Paulo, Pariquera-Mirim, Ribeira de Iguape, November 1910, A.C. *Brade s.n.* (Holotype: HB [8024]).

Habenaria mello-leitonii Ruschi, Orquid. Nov. Estad. Espírito Santo: 25. 1946. TYPE: BRAZIL: Espírito Santo, Sta. Teresa, Valsugana Velha, 730 m, 5 March 1937, A. *Ruschi 501* (MBML [not located], probably lost).

Habenaria montevidensis Lindl. f. *parviflora* (Lindl.) Pabst, Orquídea (Rio de Janeiro) 19: 84. 1957.

Habenaria montevidensis Lindl. f. *reichenbachiana* (Barb.Rodr.) Pabst, Orquídea (Rio de Janeiro) 19: 84. 1957.

Distribution: Argentina, Brazil (BA, DF, ES, GO, MG, PR, RJ, RR, RS, SC, SP), Colombia, Ecuador, Guyana, Paraguay, Uruguay and Venezuela.

This species is similar and closely related to *H. paulensis* and *H. brachyphyton*. Typical specimens of each species are promptly characterized, but extreme variants and intermediate forms between them are difficult to identify.

We have examined Barbosa Rodrigues' protologue and illustration of *H. angulosa* and found no specific character to separate it from *H. parviflora*. The floral morphology of both species is identical in all aspects, with Barbosa Rodrigues' illustration showing the characteristically convex labellum of *H. parviflora*. Even the more developed basal leaves, depicted in Barbosa Rodrigues' original drawing, are mirrored in the variability of *H. parviflora*.

Habenaria mello-leitonii, *H. carvalhoi* and *H. mayersii* were published in an offprint of *Publicações do Arquivo Público do Estado do Espírito Santo* with the title *Orchidaceas Novas do Estado do Espírito Santo*. Since no volume or series number was given, this publication is referred to here by its title.

Habenaria parviflora Lindl. f. *robusta* Hoehne = **H. parviflora** Lindl.

Habenaria patentiloba Ames = **H. avicula** Schltr.

Habenaria pauciflora (Lindl.) Rchb.f., 1854. = **H. trifida** Kunth

Habenaria pauciflora (Lindl.) Rchb.f. var. *pluriflora* Cogn. = **H. trifida** Kunth

Habenaria pauciflora Barb.Rodr., 1877. = **H. regnellii** Cogn.

Habenaria paucifolia Lindl. = **H. pumila** Poepp.

Habenaria paucifolia Lindl. var. *estolonifera* M.N.Correa = **H. repens** Nutt.

Habenaria paulensis Porsch, Oesterr. Bot. Z. 55: 150. 1905. TYPE: BRAZIL. São Paulo, Campo Grande to Santos, 750 m, 1902, *M. Wacket s.n.* (Holotype: W [12063]).

Synonyms: *Habenaria minimiflora* Kraenzl., Ark. Bot. 14(10): 2. 1915, *syn. nov.* SYNTYPES: BRAZIL. São Paulo, São Bernardo, December 1911, A.C. Brade 5084 (HB, HBG, R, S, SP); Villa Marianna, Uberabinho, November 1911, A.C. Brade 5079 (HB, HBG, K [fragment], S, SI).

Habenaria edentula Schltr., Repert. Spec. Nov. Regni Veg. 27: 297. 1930. TYPE: BRAZIL. Rio de Janeiro, Alto Itatiaia, 1 March 1921, P.C. Porto 1000 (Holotype: B, destroyed; Lectotype, designated here: RB [8562]; Isotype: SPF).

Distribution: Brazil (MG, PR, RJ, RS, SC, SP).

This species is similar to *H. parviflora*, but distinct by the less developed leaves, smaller flowers and less developed lateral segments of the petals and labellum. Hoehne assigned *H. minimiflora* to the synonymy of *H. inconspicua*, now a synonym of *H. edwallii*, but in this species the flowers are larger. As far as we can evaluate *H. minimiflora* is identical to *H. paulensis*. The original illustrations of *H. paulensis* were published by Porsch (1906, t. 11, figs. 12–15).

The isotype of *H. edentula* at RB is a mixture of two species, one with larger flowers, which corresponds to *H. parviflora*, and another with smaller flowers, which fits the protologue of *H. edentula* and is identical to *H. paulensis*. The

original illustration of the species was published by Mansfeld (1930, t. 2, fig. 8).

Habenaria paulistana J.A.N.Bat. & Bianch., Brittonia 58(1): 33. 2006. TYPE: BRAZIL. São Paulo, Mun. Cunha, estrada em direção a trilha do Rio Bonito, 23°15'20"S, 45°02'30"W, na beira do Rio Parafba, em brejo, flor amarelo-esverdeada, 14 December 1996, J.P. Souza, V.C. Souza, R.R. Rodrigues, J.Y. Tamashiro and N.M. Ivanauskas 875 (Holotype: CEN [35162]; Isotypes: ESA, SP, SPF, SPSF, UEC).

Synonym: *Habenaria fastor* Warm. ex Hoehne, Fl. Bras. (Hoehne) 12(1): 71, t. 15. 1940, *nom. nud.*, in part. BASED UPON: BRAZIL. São Paulo, Butantan: 8 November 1917, F.C. Hoehne *s.n.* (R 13807, SP 886); 8 November 1917, F.C. Hoehne *s.n.* (SP [10005]); Estação Biológica do Alto da Serra, 5 December 1923, D. Lemos *s.n.* (SP [17798], SPF [65129]); Serra da Cantareira, 17 November 1895, A. Loeffgren in CCGSP 3258 (BR, SP); Cidade Jardim, São Paulo, 1 December 1933, M. Kuhlmann *s.n.* (SP [31492]); Pirajussara, 4 December 1938, A. Gehrt *s.n.* (SP [39890], SPF [65053]). (other parts = *H. melvillei* and *H. gourlieana*)

Distribution: Brazil (SP).

This species is similar and closely related to *H. macronectar*, but distinct by the spur 11.5–13 cm long (versus 4.8–8.5 cm long in *H. macronectar*) (Batista et al., 2006).

Habenaria pedicellata S.Watson, Proc. Amer. Acad. Arts 12: 276. 1877. = **Platanthera dilatata** (Pursh) Lindl. var. **leucostachys** (Lindl.) Luer

Habenaria pentadactyla Lindl., Gen. Sp. Orchid. Pl. 307. 1835. TYPE: ARGENTINA. Maldonado, J. Tweedie *s.n.* (Holotype: K [396199], mounted on the same sheet with *Gibert 892*; Isotype: K-L).

Distribution: Argentina, Brazil (RS) and Uruguay.

This species is similar and closely related to *H. henscheniana*.

Habenaria peramoena A.Gray, Amer. J. Sci. Arts 38: 310. 1840. = **Platanthera peramoena** A.Gray

Habenaria petalodes Lindl., Gen. Sp. Orchid. Pl. 316. 1835. TYPE: BRAZIL. Minas Gerais, Serra do Itacolumi, 21–28 April 1818, *C.F.P. Martius s.n.* (Holotype: M; drawing of type by Lindley at K-L, copy at AMES).

Synonyms: *Habenaria maranhensis* Barb.Rodr. Junior ex Hoehne, Fl. Bras. (Hoehne) 12(1): 127. 1940, as synonym. BASED UPON: BRAZIL. Maranhão: São Luiz do Maranhão, 3 June 1907, *A. Ducke s.n.* (RB [18724]).

Habenella petalodes (Lindl.) Szlach. & Kras-Lap., Richardiana 6: 38. 2006.

Platantheroides petalodes (Barb.Rodr.) Szlach., Richardiana 4: 108. 2004.

Distribution: Brazil (BA, CE, DF, ES, GO, MA, MG, MS, PA, PB, PE, RJ, SE, SP) and Paraguay.

This is a very distinct species, distinguished from other similar and closely related species, such as *H. floribunda*, by the obovate petals.

Habenaria petalodes Lindl. var. *micrantha* Rchb.f. = **H. warszewiczii** Schltr.

Habenaria petrogeiton Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 33. 1922. TYPE: BOLIVIA. Santa Cruz, Tres Cruces, 1500 m, February 1911, *T.C.J. Herzog 1649a* (Holotype: B, destroyed; no isotype located).

Distribution: Bolivia.

The original illustration of the species was published by Mansfeld (1929, t. 133, fig. 520).

Habenaria physophora Kraenzl. = **H. edwallii** Cogn.

Habenaria pickelii Hoehne = **H. trifida** Kunth

Habenaria pilgeri Schltr. = **H. pungens** Cogn.

Habenaria pinzonii R.González & Cuev.-Fig., Bol. Inst. Bot. Univ. Guadalajara 12(2): 9, fig. 3. 2004 publ. 2006. TYPES: MEXICO. Jalisco, Talpa de Allende, unos 200 m al S de Cuale, 1450 m, 17 August 1979, *R. González s.n.* (Holotype: IBUG).

Distribution: Mexico.

Habenaria pinzonii is related to *H. clypeata* but distinct by the following features: plant very slender; leaves usually reduced to strict sheaths; raceme few-flowered; dorsal sepal rhombic-

spatulate, obtuse, not forming a galea over the column; and stigmatic processes provided with glands in the sides near to base. *Habenaria pinzonii* can also be confused with *H. schaffnerii*, but plants of the latter species are more robust, have the leaf blades short and broad, erect, an elliptic dorsal sepal and a 5-nerved labellum with a strongly arcuate, clavate spur, free from the floral bract.

Habenaria piraquarensis Hoehne, Arq. Bot. Estado São Paulo, n.s., f.m., 2(6): 122, t. 53, fig. 1. 1952. TYPE: BRAZIL. Paraná, Município de Piraquara, road to Graciosa, Alto da Serra, 22 April 1951, *G. Hatschbach 2246* (Holotype: SP [55382]; Isotypes: HB, MBM).

Distribution: Brazil (PR).

A rare species, known only from the type material. This species is similar to *H. umbraticola* and the exact separation between them is not clear.

Habenaria pittieri Schltr. ex Knuth = **H. cryptophila** Barb.Rodr.

Habenaria platanthera Rchb.f., Linnaea 41: 55. 1877, as *H. platantherae*. TYPE: URUGUAY. Maldonado, January 1869, *J.E. Gibert 888* (Holotype: K [463561], mixed with *H. parviflora*; Isotypes: MVM, SI [not seen]).

Distribution: Uruguay.

Pabst (1951) presented a flower sketch and photographs of the type and complemented the original description of the species reporting that the petals are bipartite and not simple as originally described. Anyhow, the exact identity of this species is still unclear and it is known only from the type material. All the material from Brazil we have examined identified as *H. platanthera* by Pabst, is referable to *H. gustavo-edwallii*. However, it is possible the two species are conspecific.

Habenaria platantheroides Schltr., Beih. Bot. Centralbl., Abt. 2., 36(2): 372. 1918. TYPE: COSTA RICA. La Palma, *C. Wercklé s.n.* (Holotype: B, destroyed; drawing at AMES [24318]). No isotype located).

Distribution: Costa Rica.

This species differs from *H. alata* by the reflexed lateral sepals, labellum linear linguiform and spur of same diameter along all its length. Probably it is an extreme form of *H. alata*.

In the drawing at AMES, from a specimen from Schlechter's herbarium, the collection data is Costa Rica, La Palma, 1913, *O. Jimenez s.n.* The original illustration of the species was published by Mansfeld (1931, t. 2, fig. 5).

Habenaria platydactyla Kraenzl. = **H. schwackei** Barb.Rodr.

Habenaria pleiophylla Hoehne & Schltr., Anexos Mem. Inst. Butantan, Secç. Bot. 1(2): 23, t. 4. 1921. TYPE: BRAZIL. São Paulo, Alto da Serra, 14 March 1919, *F.C. Hoehne s.n.* (Holotype: B, destroyed; Lectotype, designated here: SP [3071]; Isotypes: NY, R [13810]).

Synonym: *Habenaria paranaguensis* Hoehne, Arq. Bot. Estado São Paulo, n.s., f.m., 2(5): 105, Tab. 40. 1950. TYPE: BRAZIL. Paraná, Mun. Paranaguá, Matinhos, Praia de Leste, 3–5 m, May 1947, *A. Hatschbach Sobrinho 732* (Holotype: SP [54717]; Isotypes: HB, MBM).

Distribution: Brazil (PR, RS, SC, SP).

Similar and closely related to *H. leptoceras*, but distinct by the rectangular posterior segment of the petals, with an retuse apex, and the little developed anterior segment of the petals.

Habenaria poissoniana Cogn. = **H. regnellii** Cogn.

Habenaria polycarpa Hoehne, Relat. Commiss. Linhas Telegr. Estraté. Matto Grosso Amazonas 5(5): 34, t. 86. 1915. SYNTYPES: BRAZIL. Mato Grosso, near Maribondo, S. Lourenço river, April 1911, *F.C. Hoehne 4094* (R, SP [fragment]), *F.C. Hoehne 4095* (R).

Synonym: *Habenaria miguelii* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 32. 1922, *syn. nov.* TYPE: BOLIVIA. La Paz, *M. Bang 2910* (Holotype: B, destroyed; Lectotype, designated here: NY [8915]; Isotypes: AMES, BM, GH, K, MO, NY, US, W, photo and drawing from W at RENZ).

Distribution: Brazil (MS, MT) and Bolivia.

A rare species. In Brazil known only from the type and one more collection from Mato Grosso do Sul. Similar and related to *H. leptoceras*.

Examination of the protologue of *H. miguelii* and comparison with the type of *H. polycarpa* showed that the two species are conspecific.

The original illustration of *H. miguelii* was published by Mansfeld (1929, t. 132, fig. 519).

Habenaria polygonoides Schltr., Repert. Spec. Nov. Regni Veg. 16: 252. 1919. TYPE: BRAZIL. Paraná, Jacarehy, 8 September 1914, *P.K.H. Dusen 15506* (Holotype: B, destroyed; Lectotype, designated here: S [R-2728]; Isotypes: AMES, HB [fragment], MBM, MO, NY, P).

Distribution: Brazil (PR).

The exact identity of this species is unclear. It was first considered a synonym of *H. repens* by Hoehne (1936, 1940), which was followed by all subsequent authors. In fact, *H. polygonoides* is similar to *H. repens* in the aquatic or semi-aquatic habit, with numerous, fasciculate roots spread along the elongate base of the stem, but it is clearly distinct by the leaves, which are not imbricate, more spread, wider; the longer pedicelate ovary; and the larger flowers. A more detailed analysis is still necessary to determine its exact identity, geographical distribution and its relation with *H. repens* and other similar and closely related species as *H. polyrhiza* and *H. achnantha*. The original illustration of the species was published by Mansfeld (1930, t. 5, fig. 18). The material at HB consists of a few loose flowers from the material at AMES.

Habenaria polyrhiza Schltr., Anexos Mem. Inst. Butantan, Secç. Bot. 1(4): 14, t. 1, fig. 3. 1922. TYPE: BRAZIL. São Paulo, Mun. Iguape, Morro das Pedras, near Iguape, October 1915, *A.C. Brade 7626* (Holotype: B, destroyed; Lectotype, designated here: HB [8011]; Isotypes: AMES [fragment], US).

Distribution: Brazil (SP).

The exact identity of this species is unclear. It was first considered a synonym of *H. repens* by Hoehne (1936), which was followed by all subsequent authors. *Habenaria polyrhiza* is markedly similar to *H. polygonoides* and a more detailed analysis is still necessary to determine the exact identity of each.

Habenaria pontagrossensis Kraenzl. = **H. bractescens** Lindl.

Habenaria pratensis (Salzm. ex Lindl.) Rchb.f., Linnaea 22: 813. 1849 publ. 1850. SYNTYPES: BRAZIL. Bahia, *P. Salzmann s.n.* (BR, G, K, MO, MPU, P, R, W-R); Rio

Belmonte, *M.A.P. Wied-Neuwied s.n.* (BR); near Trancoso, *M.A.P. Wied-Neuwied s.n.* (BR).

Basionym: *Bonatea pratensis* Salzm. ex Lindl., Gen. Sp. Orchid. Pl. 328. 1835.

Orchis pratensis Salzm. ex Lindl., Gen. Spec. Orch. Pl. 328. 1835.

Distribution: Brazil (BA, MA, PB, PE, PI, RN, SE).

Similar and closely related with *H. glazioviana*.

Habenaria pratensis (Salzm. ex Lindl.) Rchb.f. var. *parviflora* Cogn. = **H. spathulifera** Cogn.

Habenaria pretermissa Schltr. ex Pabst = **H. rupicola** Barb.Rodr.

Habenaria pringlei B.L.Rob., Proc. Amer. Acad. Arts 27: 184. 1892. TYPE: MEXICO. State of San Luis Potosi, Las Canoas, 7 August 1891, *C.G. Pringle 3823* (Holotype: not indicated; Lectotype, designated here: AMES [34602]; Isotypes: AMES, BR, DS, ENCB, F, G, GOET, HBG, K, LE, MO, NY, P, PH, S, US, W; photo, drawing and fragment from G at RENZ).

Distribution: Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador and Venezuela.

Ames and Correll (1952–1953) considered this species a synonym of *H. bractescens* and were followed by most subsequent authors, however according to Toscano de Brito (1994) *H. pringlei* is a distinct species. *Habenaria pringlei* is distributed along Mexico, Central America and apparently also in Northern South America, while *H. bractescens* occurs in Central and Southern Brazil, and in Southern South America.

Habenaria psammophila J.A.N.Bat., Bianch. & B.M.Carvalho, Phytotaxa, 13: 28, figs. 1, 2C–D. 2010. TYPE: BRAZIL. Minas Gerais, São Roque de Minas, Parque Nacional da Serra da Canastra, entre a portaria principal a partir de São Roque de Minas e a nascente do Rio São Francisco, 20°15'40.7"S, 46°25'37.3"W, 1370 m, 8 January 2007, *J.A.N. Batista, R.C. Mota, M.W.F. Faria & K.S. Borges 1794* (Holotype: BHCB [119467]; Isotypes: AMES, CEN, MBM, RB, SP).

Distribution: Brazil (DF, GO, MG).

Habenaria psammophila is similar in habit to *H. cultellifolia*. Both species have linear, erect, straight, spread, somewhat papery, non-membranous, and conduplicated leaves. However, *H. psammophila* has shorter pedicel and ovary (7–11 mm long versus 14–19 mm long in *H. cultellifolia*) and shorter spur (3–4.5 mm long versus 10–15 mm long in *H. cultellifolia*) (Batista et al., 2010).

Habenaria pseudocaldensis Kraenzl. = **H. anisitsii** Kraenzl.

Habenaria pseudoculicina J.A.N.Bat. & B.M.Carvalho, Phytotaxa, 13: 32, figs. 2G, 4. 2010. TYPE: BRAZIL. Minas Gerais, Parque Nacional da Serra da Canastra, 6.9 km a partir da portaria principal de São Roque de Minas, em direção a Sacramento, cerca de 1.1–1.3 km após a nascente do Rio São Francisco, 20°13'54.5"S, 46°26'36.2"W, 1422 m, 9 January 2007, *J.A.N. Batista, R.C. Mota, M.W.F. Faria & K.S. Borges 1808* (Holotype: BHCB [119483]; Isotypes: AMES, CEN, MBM, RB, SP).

Distribution: Brazil (MG).

Habenaria pseudoculicina is similar to *H. culicina* and *H. canastrensis*, but distinct by the leaves spreading and longer pedicel (3–5 mm) versus leaves adpressed to the stem and pedicel 1–2 mm long in the two latter (Batista et al., 2010).

Habenaria pseudofilifera R.González & Cuv.-Fig., Ibugana 14(1–2): 33. 2006 publ. 2007. TYPE: MEXICO. Jalisco, Guadalajara, near Guadalajara, 4 September 1893, *C.G. Pringle 4509* (Holotype: IBUG).

Distribution: Mexico.

Habenaria pseudofilifera has been confused with *H. filifera* but differs by the following characteristics: plants 21–28 cm tall; leaves conduplicate, spreading below, erect upwards, the last vertical, most of them straight, the first two reduced to cucullate bract sheaths, followed by a short blade, the lower ones ovate to ovate-lanceolate, the largest lanceolate, acuminate, 4–5 cm long and 0.8–1.1 cm wide.

Habenaria pseudoglaucophylla J.A.N.Bat., R.C.Mota & N.Abreu, Novon 18: 409. 2008. TYPE: BRAZIL. Minas Gerais, Catas Altas,

Serra do Caraça, 1200 m, Gruta do Padre Caio, 20 March 2005, *R.C. Mota 2818* (Holotype: BHCN [92697]; Isotypes: CEN, SP).

Distribution: Brazil (MG).

The phylogenetic affinities of this species are uncertain due to its intriguing combination of characters. In habit it is similar to a group of species characterized by the basal leaves, such as *H. glaucophylla* and *H. umbraticola*, while in the morphology of the petals and gynostemium it is similar to *H. curvilabria*, *H. pleiophylla* and other species in the affinity of *H. floribunda*.

Habenaria pseudohamata Toscano, Kew Bull. 47(4): 731, fig.1. 1992. TYPE: BRAZIL. Bahia, Serra Geral do Caitité, 9.5 km S of Caitité, road to Brejinho das Ametistas, 13 April 1980, *R.M. Harley, G.L. Bromley, A.M. de Carvalho, J.L. Hage and H.S. Brito 21304* (Holotype: CEPEC [not seen]; Isotypes: ALCB, HB, RENZ, K, MO, RB, SPF).

Distribution: Brazil (BA, MG).

Habenaria pseudorepens Schltr. = **H. repens** Nutt.

Habenaria pseudostylites Rchb.f. & Warm. = **H. hamata** Barb.Rodr.

Habenaria psycodes (L.) Spreng., Syst. Veg. (ed. 16), 3: 693. 1826. "*psychodes*." = **Platanthera psycodes** (L.) Lindl.

Habenaria psycodes (L.) Spreng. var. *ecalcarata* M.M.Bryan, Ann. Missouri Bot. Gar. 4: 38, Pl. 5, Fig. C. 1917. = **Platanthera psycodes** (L.) Lindl.

Habenaria psycodes (L.) Spreng. var. *grandiflora* (Bigelow) A.Gray, Amer. J. Sci. Arts 38: 310. 1840. = **Platanthera grandiflora** (Bigelow) Lindl.

Habenaria psycodes (L.) Spreng. var. *varians* M.M.Bryan, Ann. Missouri Bot. Gar. 4: 37, Pl. 5, Fig. B. 1917. = **Platanthera psycodes** (L.) Lindl.

Habenaria pubidactyla J.A.N.Bat. & Bianch., Sitientibus Sér. Ci. Biol. 6(1): 16. 2006. TYPE: BRAZIL. Minas Gerais, Mun. of Santa Bárbara, Caraça, Campo de Fora, about 7 km

SW from the Sanctuary, 15 December 2003, *J.A.N. Batista and R.C. Mota 1462* (Holotype: CEN [64740]; Isotypes: AMES, K, RB, SP).

Distribution: Brazil (BA, MG).

This is one of the few New World species of the genus with hairy segments. In this aspect and general flower morphology it is similar to *H. mystacina*. However, *H. pubidactyla* has a less congested inflorescence, fewer and larger flowers, a labellum median segment that is usually less pubescent, and longer, non-uncinate stigmas (Batista and Bianchetti, 2006).

Habenaria pubidactyla J.A.N.Bat. & Bianch. subsp. **brasiliensis** J.A.N.Bat. & Bianch., Sitientibus Sér. Ci. Biol. 6(1): 19. 2006. TYPE: BRAZIL. Distrito Federal, Guará, Reserva Ecológica do Guará, 15 January 2004, *J.A.N. Batista 1469* (Holotype: CEN [64742]; Isotypes: AMES, K, MBM, RB, SP).

Distribution: Brazil (DF, GO).

This taxon is similar and closely related to *H. pubidactyla* but distinct by the smaller flowers, anterior segment of the petals only (1–1.2–1.4(–1.5) times longer than the posterior petal segment (versus 1.6–2.3 times longer), less pubescent lateral segments of the petals and lip, the glabrous labellum median segment, and geographical distribution restricted to the core region of the cerrado (versus restricted to the Espinhaço range in Minas Gerais and Bahia) (Batista and Bianchetti, 2006).

Habenaria pubidactyla J.A.N.Bat. & Bianch. subsp. **pubidactyla** var. **apiculatipetala** J.A.N.Bat. & Bianch., Sitientibus Sér. Ci. Biol. 6(1): 18. 2006. TYPE: BRAZIL. Minas Gerais, Mun. of Santo Antônio do Itambé, Pico do Itambé, 1 April 2003, *J.A.N. Batista 1415* (Holotype: CEN [51245]; Isotypes: AMES, SP).

Distribution: Brazil (MG).

This taxon is similar and closely related to *H. pubidactyla* but distinct by the apiculate posterior petal segment, the shorter lateral segments of the petals and labellum, and the labellum median segment which is completely glabrous, not geniculate, and projected forwards (Batista and Bianchetti, 2006).

Habenaria pumila Poepp., Fragm. Syn. Pl. 21. 1833. TYPE: CHILE. Antuco, February 1829, *E.F. Poeppig 883* (Holotype: BM [32747]; Isotypes: BR, G, MO, P).

Synonyms: *Habenaria paucifolia* Lindl., Gen. Sp. Orchid. Pl. 310. 1835, *syn. nov.* TYPE: CHILE: Ranco, provincia Valdivia, T.C. Bridges 610 (Holotype: K-L; Isotypes: BM, E).

Habenaria pumila Poepp. & Endl., Nov. Gen. Sp. Pl. (Poeppig & Endlicher) 1(7-10): 45, t. 77. 1836, *nom. superfl.*

Habenaria germainii Phil., Linnaea 29: 46. 1857-1958, *syn. nov.* TYPE: CHILE. near Quillota, R.A. Philippi *s.n.* (Holotype: not indicated, SGO ?; Isotypes: K [463564], mixed with *Germain s.n.*, RENZ [fragment from W], W [not seen]).

Habenaria uliginosa Phil., Linnaea 30: 201. 1859-1960, *nom. illeg.*, *non H. uliginosa* Rchb.f., 1849. TYPE: CHILE. Pudeto river, Llanquihue lake, R.A. Philippi *s.n.* (Holotype: not indicated, SGO ?; Isotype: K [463560]).

Habenaria brachyceros Phil., Anales Univ. Chile 1: 59. 1861; Linnaea 33: 239. 1864-1865, *syn. nov.* TYPE: CHILE. near Vallenar, H. Volekmann *s.n.* (Holotype: not indicated, SGO ?).

Distribution: Argentina and Chile.

According to Reiche (1910) and to more recent reports (Lehnebach 2003) *H. pumila* is the only *Habenaria* found in Chile. It was first validly published by Poeppig in 1833, and thus has priority over Lindley's *H. paucifolia*, published in 1835. Reiche (1910) in his treatment of the orchids from Chile, cited Poeppig's work of 1833, what states that he most probably examined it, but he used the name *H. pumila* Poepp. & Endl. and included it as a synonym of *H. paucifolia*.

Habenaria pumila Poepp. & Endl. = **H. pumila** Poepp.

Habenaria pumiloides C.Schweinf., Bot. Mus. Leaf. 9(3): 53, fig. 3. 1941. TYPE: PERU. Cuzco, Ollantaytambo, c. 3000 m, 13 May 1915, O.F. Cook and G.B. Gilbert 709 (Holotype: US [93291], drawing AMES).

Distribution: Peru and Bolivia.

Habenaria pungens Cogn. in Kuntze, Revis. Gen. Pl. 3(2): 299. 1898. TYPE: BOLIVIA.

Velasco, 200 m, in paludibus, flores aurantiaci, July 1892, C.E.O. Kuntze *s.n.* (Holotype: not located; Isotype: BR [657268] fragment).

Synonym: *Habenaria pilgeri* Schltr. in Pilger, Bot. Jahrb. Syst. 30: 149. 1902. TYPE: BRAZIL. Mato Grosso: Buriti, above Kulisehu, July 1899, R.K.F. Pilger 731 (Holotype: B [B 10 247543]).

Distribution: Bolivia and Brazil (DF, GO, MG, MT).

This is a very distinct species, characterized by the congested, umbel-like inflorescence and the nonresupinate, bright yellow flowers. In flower morphology *H. pungens* resembles the African genus *Platycoryne*. According to the list provided by Butzin (1978), the type of *H. pilgeri* is the only type material left at the Berlin-Dahlem Herbarium of Schlechter's New World *Habenaria*. An illustration of the species was published by Cogniaux (1906, t. 107, fig. 2).

Habenaria purdiei Fawc. & Rendle, J. Bot. 47: 263. 1909. TYPE: JAMAICA. Hollis's Savanna, Clarendon, W. Purdie *s.n.* (Holotype: K [463543]).

Distribution: Jamaica.

This species is allied to *H. floribunda*, and its exact identity and relationship with other similar species is still unclear and needs further investigation.

Habenaria pycnostachia Barb.Rodr., Gen. Sp. Orchid. 2: 250. 1882, as *H. picnostachia*. TYPE: BRAZIL. Minas Gerais or Rio de Janeiro, J. Barbosa Rodrigues *s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 20B: RB, copy K; reproduced in Sprunger, 1996: 1: 73B).

Distribution: Brazil (MG or RJ).

Barbosa Rodrigues' original illustration of this species is of special interest as it shows an unusual plant, distinct from any other New World *Habenaria*. If this taxon proves to be a true entity then it is very characteristic and rare, awaiting rediscovery, as it has never been collected since the type specimen. However, based on the species' original illustration we do not exclude the possibility that it may be an immature or, more likely, a deformed specimen of other better known species such as *H. parviflora*. To make things more uncertain

the species was described based upon a single specimen, which according to the author was grown in cultivation in a pot with a *Pleurothallis* from Minas Gerais and soil from Rodeio (Rio de Janeiro).

Habenaria pygmaea C.Schweinf. & R.E.Schult., Amer. Orchid Soc. Bull. 23(12): 822. 1954. TYPE: COLOMBIA. Comisaría del Amazonas-Vaupés, Rio Apaporis, Cachivera de Jirijirimo, 250 m, 13 June 1951, R.E. Schultes and I. Cabrera 12446 (Holotype: AMES [66926]; Isotypes: COL, HB, K, RENZ).

Synonym: *Habenaria guanchezii* Carnevali & I.Ramírez, Ernstia 33: 15. 1985. TYPE: VENEZUELA. T.F. Amazonas, Dpto. Atures, S. de Raudal "Moriche," Rio Guayapo, 100–120 m, 20 April 1984, F. Guánchez 3085 (Holotype: VEN [not seen]; Isotypes: TFAV [not seen], MY [not seen]).

Distribution: Colombia, Ecuador and Venezuela.

Habenaria pyramidalis Lindl. = **H. strictissima** Rchb.f.

Habenaria quadrata Lindl., Gen. Sp. Orchid. Pl. 316. 1835. TYPE: BRAZIL. Amazonas, Madeira river, provincia Rio Negro, C.F.P. *Martius s.n.* (Holotype: M, drawing of type by Lindley at K-L; fragment and drawing at W).

Synonyms: *Habenella quadrata* (Lindl.) Szlach., Richardiana 6: 38. 2006.

Platantheroides quadrata (Lindl.) Szlach., Richardiana 4: 108. 2004.

Distribution: Brazil (AM, MT) and Venezuela.

This is a poorly collected and poorly known species. It is similar but apparently distinct from *H. floribunda*. Schweinfurth (1967) and Foldats (1969) reported the species for Venezuela, but the exact identity and distribution of *H. quadrata* are unclear and these reports need confirmation.

Habenaria quinquefilia Schltr. = **H. novemfida** Lindl.

Habenaria quinqueseta (Michx.) Eaton, Man. Bot. (A. Eaton), ed. 5.: 235. 1829 [Sept.]. TYPE: U.S.A. Carolina, A. *Michaux s.n.* (Holotype: P [not seen]; Isotype: PH).

Basionym: *Orchis quinqueseta* Michx., Fl. Bor.-Amer. (Michaux) 2: 155. 1803.

Synonyms: *Habenaria michauxii* Nutt., Gen. N. Amer. Pl. 2: 189. 1818. *nom. illeg.*

Habenaria quinqueseta (Michx.) Sw., Adnot. Bot.: 46. 1829 [Oct.]. *nom. superfl.*

Habenaria simpsonii Small, FL. S. E. U.S.: 315. 1903. TYPE: U.S.A. Florida, near Manatee, in dry hammocks, 23 August 1890, J.H. Simpson 125 (Holotype: NY [8877], photo and drawing at AMES; Isotype: US).

Habenaria macroceratitis Willd. var. *brevicalcarata* Ames, Orchidaceae (Ames) 4: 224. 1910. TYPE: GUATEMALA. Dept. Sololá, San Lucas Tolimán, 1800 m, February 1894, E.T. Heyde and E. Lux 6383 (Holotype: AMES [1468]).

Mesicera quinqueseta (Michx.) Raf., Neogenyton 4. 1825.

Mesicera michauxii (Nutt.) Raf., Fl. Tellur. 2: 39. 1836 publ. 1837.

Orchis michauxii (Nutt.) Alph.Wood, Amer. Bot. Fl. 328. 1870.

Platanthera michauxii (Nutt.) Alph. Wood, Class-book Bot. 685. 1861.

Distribution: Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Suriname, Guyana, U.S.A., Bahamas, Cuba, Jamaica, Hayti and Dominican Republic.

This species is widespread throughout Central America, Antilles and northern South America, but is apparently less frequent in the Guianas and does not reach Brazil. Probably, as now understood, *H. quinqueseta* comprises more than one species, but at present we are unable to take a decision concerning this point. See also the note for *H. macroceratitis*.

Habenaria quinqueseta (Michx.) Sw. = **H. quinqueseta** (Michx.) Eaton

Habenaria quinqueseta (Michx.) Eaton var. *macroceratitis* (Willd.) Luer = **H. macroceratitis** Willd.

Habenaria racemosa Raf., Ann. Nat.: 15. 1820. = **Platanthera psychodes** (L.) Lindl.

Habenaria radicans Griseb. = **H. repens** Nutt.

Habenaria recta Schltr. = **H. ekmaniana** Kraenzl.

Habenaria regnellii Cogn., Fl. Bras. (Martius) 3(4): 60, t. 18, fig. 1.1893. TYPE: BRAZIL. Minas Gerais, near Caldas, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 23: RB, copy K; reproduced in Sprunger, 1996: 1: 76).

Basionym: *Habenaria pauciflora* Barb.Rodr., Gen. Sp. Orchid. 1: 157. 1877, *nom. illeg.*, non *H. pauciflora* (Lindl.) Rchb.f., 1854.

Synonyms: *Habenaria poissoniana* Cogn., Bull. Soc. Roy. Bot. Belgique 43: 279. 1906 publ. 1907, *syn. nov.* TYPE: BRAZIL. São Paulo, 1816–1821, *A.F.C.P. Saint-Hilaire* 1282 (Holotype: BR [657233]; Isotype: P [408998], photo, drawing and fragment RENZ).

Habenaria flaccida Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 10, t. 1, fig. 2. 1911. TYPE: BRAZIL. Paraná, Curityba, in paludosis, *P.K.H. Dusen* 9835A (Holotype: S [07-7262]; Isotypes: HBG, MBM).

Distribution: Brazil (DF, MG, MS, PR, RS, SC, SP) and Paraguay.

Examination of the type material of *H. poissoniana* in BR and P, and the images provided by Pabst (1960) showed this taxon is conspecific with *H. regnellii*. In the protologue of *H. flaccida* the type is identified as *Dusen* 9385A. Two other *Dusen* collections of *H. flaccida* at S (R-2705, R-7409) were identified by Kraenzlin in the exsiccatae label as types, but they do not match the type data in the protologue.

Habenaria reichenbachiana Barb.Rodr. = **H. parviflora** Lindl.

Habenaria renzii Sprunger = **H. balansae** Cogn.

Habenaria repens Nutt., Gen. N. Amer. Pl. 2: 190, f. 10. 1818. TYPE: U.S.A., Georgia, Savannah, *T. Nuttall s.n.* (Holotype: PH [13532], mounted on the same sheet with *A.P. Garber s.n.*).

Synonyms: *Habenaria sceptrodes* Rchb.f., Bonplandia 4: 210. 1856. TYPE: PERU. *J.A. Pavón s.n.* (Holotype: G [168742]).

Habenaria radicans Griseb., Cat. Pl. Cub.: 271. 1866, *as synonym.* BASED UPON: CUBA. Pinar del Rio, *C. Wright* 3309 (AMES, BM).

Habenaria nuttallii Small, Fl. S. E. U. S. 315. 1903. TYPE: U.S.A. South Florida, Sumter Co., August 188?, *A.H. Curtiss* 2772 (Holotype: NY [8876]; Isotype: US).

Habenaria pseudorepens Schltr., Repert. Spec. Nov. Regni Veg. 12: 481. 1913. TYPE: BOLIVIA. Near Samaipata, 2000 m, March 1911, *T.C.J. Herzog* 1775a (Holotype: B, destroyed; Lectotype, designated here: L).

Habenaria palustris Acuña, Bol. Estac. Exp. Agron. Santiago de las Vegas 60: 15. 1939. TYPE: CUBA. Near Sto. Tomás, Ciénaga de Zapata, Sta. Clara, 23 July 1920, *J.T. Roig y Mesa* and *M. Cremata* 2211 (Holotype: presumably HAC [not seen]; Isotype: AMES [89101]).

Habenaria repens Nutt. var. *gracilis* Luederw. & Hoehne, Fl. Bras. (Hoehne) 12(1): 112. 1940, *nom. nud.* BASED UPON: BRAZIL. São Paulo, Pirajussara, 21 October 1922, *A. Gehrt s.n.* (AMES, SP 8261); Atibaia, Pedra do Chapéu, October 1910, *C. Duarte* 154 (SP); São Bernardo, São Paulo, 26 October 1913, *A.C. Brade* 6848 (HB); St. Ana, Capital, São Paulo, October 1913, *A.C. Brade* 6849 (HB).

Habenaria paucifolia Lindl. var. *estolonifera* M.N. Correa, Notas Mus. La Plata, Bot. 15(78): 158, fig. 3. 1950. TYPE: ARGENTINA. Chaco, Colonia Benítez, 14 February 1942, *A.G. Schulz* 3196 (Holotype: LP).

Mesicera repens (Nutt.) Raf., Neogenyton: 4. 1825.

Orchis repens (Nutt.) Alph. Wood, Amer. Bot. Fl. 328. 1870.

Platanthera foliosa Brongn., Voy. Monde: 194. 1834.

Platanthera repens (Nutt.) Alph. Wood, Class-book Bot.: 685. 1861.

Distribution: Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, U.S.A., Cuba, Jamaica, Puerto Rico, Trinidad and Tobago, Venezuela, Guianas, Colombia, Ecuador, Peru, Bolivia, Brazil (BA, ES, MG, MS, PA, PB, PR, RJ, RS, SC, SP), Paraguay, Argentina and Uruguay.

Habenaria repens belongs to a species-complex with a wide distribution and many intermediate and intergrading forms, rendering the exact identity of the taxa in the complex a difficult task. At one time or another numerous species were included under the synonymy of *H. repens*. Although many are most likely synonyms, others are sufficiently distinct and represent independent species. A detailed morphological and ecological analysis throughout the species distribution range is necessary to ascertain its exact identity and relation with other closely related taxa.

Grisebach (1866) used the name *H. radicans*, for a plant from Wright's collections (3309), as a synonym of *H. tricuspis*. Though *H. tricuspis* is treated here as a synonym of *H. bicornis*, the collection Wright 3309 at AMES is apparently referable to *H. repens* and we keep *H. radicans* in the synonym of *H. repens*.

The original illustration of *H. pseudorepens* was published by Mansfeld (1930, t. 5, fig. 19).

Examination of an image of the holotype of *H. paucifolia* var. *estolonifera* revealed that this taxon is referable to *H. repens*. Accordingly, Correa herself, in 1984, identified the holotype sheet as *H. repens*.

Habenaria repens Nutt. var. *gracilis* Luederw. & Hoehne = **H. repens** Nutt.

Habenaria repens Nutt. var. **maxillaris** (Lindl.) Garay, Fl. Ecuador 9 (225:1): 38. 1978. TYPE: PERU. Lima, 1831, *H. Cuming 1050* (Holotype: not indicated; Lectotype, designated here: K-L, mounted on the same sheet with 1857; Isotypes: E, K [463565]).

Basionym: *Habenaria maxillaris* Lindl., J. Bot. (Hooker) 1: 5. 1834.

Distribution: Guatemala, Colombia, Ecuador, Peru and Bolivia.

Schweinfurth (1955, 1958) considered *Habenaria maxillaris* to be a synonym of *H. repens* and was followed by most subsequent authors. Garay (1978) considered it a variety

of *H. repens* and we follow this position here, but its exact identity and relation with *H. repens* probably needs more investigation.

Habenaria replicata A.Rich., Hist. Fis. Cuba, Bot. 11: 250, t. 86. 1850. TYPE: CUBA. *R. de La Sagra s.n.* (Holotype: presumably P [not seen]).

Distribution: Cuba.

An obscure species. In the protologue the holotype and collector were not indicated. Grisebach (1866) and Kraenzlin (1892), referred a Wright specimen, without number, to this species. However, *H. tricuspis* described by Richard on the same work is based on a collection from R. de La Sagra, and this is probably also the case for *H. replicata*.

Habenaria retusa Riddell, W. J. Med. Phys. Sci. 9(36): 583. 1836. = **Platanthera flava** (L.) Lindl. var. **herbiola** (R.Br.) Luer

Habenaria retusa Barb.Rodr., 1882. = **H. balansae** Cogn.

Habenaria richardii Ames, Orchidaceae (Ames) 4: 99, t. 62, fig. 1. 1910. = **Platanthera longifolia** A.Rich. & Galeotti

Habenaria riedelii Cogn. = **H. warmingii** Rchb.f.

Habenaria rodeiensis Barb.Rodr., Gen. Spec. Orchid. 2: 256. 1882. TYPE: BRAZIL. Rio de Janeiro, near Rodeio, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 7: RB, copy K; reproduced in Sprunger, 1996: 1: 60).

Synonyms: *Habenaria corcovadensis* Kraenzl., Bot. Jahrb. Syst. 16: 120. 1892. TYPE: BRAZIL. Rio de Janeiro, Monte Corcovado, sine coll. (Holotype: LE; Isotype: HBG [fragment]).

Habenaria carvalhoi Ruschi, Orquid. Nov. Estad. Espirito Santo: 31. 1946, *syn. nov.* SYNTYPES: BRAZIL. Espirito Santo, alto Sto. Antonio-Sta. Teresa, 790 m, 12 March 1937, *A. Ruschi 550* (MBML [not located], probably lost); Sta. Teresa, Valle do Canaan, 750 m, 29 March 1937,

A. Ruschi 211 (MBML [not located], probably lost); Sta. Teresa, Valsugana Velha, 730 m, 18 Mar 1940, *A. Ruschi* 470, 471 (MBML [not located], probably lost); Sta. Teresa, Chacara Annita, 715 m, 12 Mar 1943, *A. Ruschi and Angelli* 610, 611 (MBML [not located], probably lost).

Bertauxia rodeiensis (Barb.Rodr.) Szlach. in *Richardiana* 4: 58 (2004), *syn. nov.*

Distribution: Brazil (BA, DF, ES, GO, MG, MT, PR, RJ, SP), Paraguay and Peru.

The exact separation of *H. rodeiensis* from other similar and closely related species as *H. longipedicellata* and *H. tamanduensis* is unclear. The material reported from Venezuela identified as *H. rodeiensis* is referable to *H. ernestii* (Garay and Romero-González, 1998). Probably, the same is also true for the material reported from the Guianas (Renz 1992).

Examination of the protologue of *H. carvalhoi* showed it is conspecific with *H. rodeiensis*.

Habenaria rodriguesii Cogn., *Fl. Bras.* (Martius) 3(4): 43, t. 7, fig. 3. 1893. TYPE: BRAZIL. Minas Gerais, Capão Redondo, near S. João d' El Rey, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 10B: RB, copy K; reproduced in Sprunger, 1996: 1: 63B).

Basionym: *Habenaria muricata* Barb.Rodr., *Gen. Sp. Orchid.* 2: 255. 1882, *nom. illeg., non* (Schauer) Rchb.f., 1857.

Distribution: Brazil (MG).

This is as obscure taxon known only from Barbosa Rodrigues' original illustration of the species. It is similar and apparently closely related to other species in the *H. nuda* aggregate.

Habenaria rolfeana Schltr., *Repert. Spec. Nov. Regni Veg.* 27: 298. 1930. TYPE: BRAZIL. Rio de Janeiro, Alto Itatiaya, 1 March 1921, *P.C. Porto 1006* (Holotype: B, destroyed; Lectotype, designated here: RB [597]; Isotype: SP).

Synonym: *Habenaria alberti* Hoehne, *Bol. Mus. Nac. Rio de Janeiro* 12 (3–4): 79. 1936. *nomen*; *Bot. Jahrb. Syst.* 68: 131, t. 16. 1937, *syn. nov.* TYPE: BRAZIL. São Paulo, Campos da Invernada do

Pinhal, Serra da Bocaina, 1 April 1894, *A. Loeffgren in CGGSP 2334* (Holotype: SP [28896]; Isotypes: AMES, BR; photo at RB).

Distribution: Brazil (MG, PR, RJ, SP).

This species is remarkably similar to *H. setacea*, and the exact separation between them is unclear. The original illustration of the species was published by Mansfeld (1930, t. 5, fig. 20).

The holotype of *H. alberti* was identified as *H. rolfeana* by Pabst, but he never published a formal synonymy. In accordance with Pabst, we have compared the types of both species and found them to be conspecific.

Habenaria roraimensis Rolfe, *Trans. Linn. Soc. London, Bot.*, Ser. 2, 6(1): 65. 1901. TYPE: GUYANA. summit of Roraima, 8600 ft., 1808, *F.V. McConnell and J.J. Quelch 698* (Holotype: K [463574], photo RENZ; Isotype: BM).

Distribution: Brazil (AM, RR), Guyana and Venezuela.

This species is restricted to the high tepuis of the Guyana Highlands, extending from Roraima summit to the Venezuelan tepuis (Renz, 1992).

Habenaria rosilloana R.González, *Bol. Inst. Bot. Univ. Guadalajara* 3(1–3): 81, fig. 7. 1995 publ. 1997. TYPE: MEXICO. Michoacán, municipio de Quiroga, Mesa de los Pastores, 27 August 1986, *C. López 1099* (Holotype: IEB).

Distribution: Mexico.

Habenaria rosilloana is related to *H. guadalajarana*.

Habenaria rosulifolia Espejo & López-Ferr., *Acta Bot. Mex.* 50: 32, fig. 2. 2000. TYPE: MEXICO. Morelos, Huitzilac, Lake Tonatihuá, Lagunas Zempoala, 2800 m, 13 September 1997, *A.R. López-Ferrari, A. Espejo, J. García-Cruz and R. Jiménez M.* 2558 (Holotype: UAMIZ; Isotypes: AMES, AMO).

Distribution: Mexico.

Habenaria rostrata Pabst, 1964. = **H. magniscutata** Catling

Habenaria rotundifolia (Banks ex Pursh) Richardson, *Frankl. Narr.* 1st Journ. 750. 1823. = **Amerorchis rotundifolia** (Banks ex Pursh) Hultén

Habenaria rotundifolia Conz., Fl. Taxon. Mex. 2: 141. 1947, *nom. illeg., non H. rotundifolia* (Banks ex Pursh) Richardson, 1823. TYPE: MEXICO. Cerro San Felipe, Oaxaca, 3000 m, 15 August 1897, C. Conzatti and V. Gonzalez 370 (Holotype: presumably MEXU [not seen]).

This species is known only from the type material. Judging from the protologue probably it is allied to *H. flexuosa*. A son of C. Conzatti has kept his father's collection and at present they are conserved in MEXU, but so far we have not examined the types of Conzatti. If accepted this taxon will require a new name.

Habenaria rotundiloba Pabst, Anais 14th Congr. Soc. Bot. Brasil: 12, t. 2, fig. A. 1964. TYPE: BRAZIL. Paraíba, Alhandra, near Cupissura, 29 July 1958, D.A. Lima 58-3224 (Holotype: IPA 11887 [not seen]).

Distribution: Brazil (BA, PB, PE).

This is a rare species, restricted to the coastline of Northeastern Brazil. It is similar to *H. montis-wilhelminae*, but distinct by the rounded lateral segments of the labellum, a unique characteristic among the New World species of the genus.

Habenaria rudolfi-schlechteri Hoehne = **H. subfiliformis** Cogn.

Habenaria ruizii R.González, Bol. Inst. Bot. Univ. Guadalajara 1(4): 326, fig. 4. 1992. TYPE: MEXICO. Jalisco, Cerro de Tequila, Km 11 camino a la torre de microondas, 2200 m, 21 August 1988, L. Ruiz and R.G. Tamayo s.n. (Holotype: IBUG).

Distribution: Mexico.

Habenaria rupestris Poepp. & Endl., Nov. Gen. Sp. Pl. (Poeppig & Endlicher) 1(7-10): 45, t. 78. 1836. TYPE: PERU. Cassapi, E.F. Poeppig s.n. (Holotype: presumably W [not seen]; Isotypes: G, P).

Distribution: Peru.

Habenaria rupicola Barb.Rodr., Revista Engen. 3: 144. 1881 TYPE: BRAZIL. Minas Gerais, Pedra Branca, Caldas, J. Barbosa Rodrigues s.n. (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 25: RB, copy K; reproduced in Sprunger, 1996: 1: 78).

Basionym: *Habenaria montana* Barb.Rodr., Gen. Sp. Orchid. 1: 154. 1877, *nom. illeg., non H. montana* A.Rich., 1841.

Synonyms: *Habenaria minarum* Hoehne & Schltr., Anexos Mem. Inst. Butantan, Secç. Bot. 1(2): 23, t. 3, fig. 2. 1921, *syn. nov.* TYPE: BRAZIL. Minas Gerais, Pedra Branca, Caldas, 29 January 1919, F.C. Hoehne s.n. (Holotype: B, destroyed; Lectotype, designated here: R [13809]; Isotypes: AMES, NY, SP [2885]).

Habenaria pretermissa Schltr. ex Pabst, Orchidaceae Brasil. 1: 393. 1975, as synonym.

Distribution: Brazil (MG).

The exact identity of *H. rupicola* is unclear. Hoehne (1940) and Pabst and Dungs (1975) applied this name to the species currently known as *H. subviridis*. *Habenaria rupicola* is apparently closely related to *H. repens*, and the relation of *H. rupicola* with several other taxa assigned at one time or another to the synonym or affinity of *H. repens*, such as *H. sampaioana*, *H. polygonoides*, *H. polyrhiza*, and *H. aranifera* is unclear. *Habenaria rupicola* was recorded from southern Brazil (Hoehne, 1940; Pabst and Dungs, 1975) and Argentina (Correa, 1950), but since the species' identity is unclear the reports are doubtful.

As far as we can evaluate from a comparison of the isotypes of *H. minarum* with the protologue of *H. rupicola*, the two species are conspecific. Flowering date and type locality are the same for both species.

Habenaria rzedoswkiana R.González, Orquidea (Mexico City), 7(2): 132, fig. 136. 1978. TYPE: MEXICO. Luvianos, Edo. de Mexico, 1800 m, 2 September 1965, J. Rzedowski 20710 (Holotype: ENCB; Isotype: MICH).

Distribution: Mexico.

Habenaria rzedowskiana is one of the most distinctive Mexican species due to its large flowers and all of the plant drying black.

Habenaria rzedowskii R.González, Bol. Inst. Bot. Univ. Guadalajara 3(1-3): 76, fig. 6. 1995 publ. 1997. TYPE: MEXICO. Estado de Michoacán, 19 km E of Queréndaro, road to Maravatío, 2250 m, 13 October 1986, J. Rzedowski 40970 (Holotype: IEB).

Distribution: Mexico.

Habenaria rzedowskii is closely related to *H. adenantha*. With *H. crassicornis* it shares the smooth character of the plant but is distinguished well in other details.

Habenaria saccata Greene, Erythea 3: 49. 1895. = **Platanthera stricta** Lindl.

Habenaria sampaiiana Schltr., Repert. Spec. Nov. Regni Veg. 27: 299. 1930. TYPE: BRAZIL. Rio de Janeiro, Itatiaya, Macieiras, 26 February 1921, P.C. Porto 993 (Holotype: B, destroyed; Lectotype, designated here: RB [8597]).

Distribution: Brazil (RJ).

The exact identity of this species is unclear. It was considered a synonym of *H. repens* var. *gracilis* by Hoehne (1940) and *H. repens* by Dunsterville and Garay (1966). However, in *H. sampaiiana* the plants are terrestrial from forests (they do not grow in water or are not from water-logged places), bear a tuber, the roots are less numerous and restricted to the base of the stem, the leaves are less imbricate, patent and with the surface flat, the inflorescence is less congested and the flowers larger. *Habenaria sampaiiana* is apparently more similar and closely related to *H. rupicola*, and a more detailed analysis is necessary to determine the exact identity of each and the relation between them. The original illustration of the species was published by Mansfeld (1930, t. 6, fig. 21).

Habenaria sanbornii Ames = **H. eustachya** Rchb.f.

Habenaria santensis Barb.Rodr., Gen. Sp. Orchid. 2: 253. 1882. TYPE: BRAZIL. São Paulo, prés de Santos à S. Paulo, C.W.H. Mosén in *Herb. Regnell ser. III 1083* (Holotype: not located).

Distribution: Brazil (SP).

An obscure species, known only from Barbosa Rodrigues original illustration and description. In our opinion, it is markedly similar and may prove to be conspecific with *H. tamanduensis* or *H. rodeiensis*. The material identified by Cogniaux (1906) as *H. santensis* is referable to *H. dusenii*, which is a closely related but distinct species. The original illustration of *H. santensis* is found in Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, and reproduced in Sprunger (1996).

Habenaria santensis sensu Kraenzl. = **H. tamanduensis** Schltr.

Habenaria sartor Lindl. = **H. macronectar** (Vell.) Hoehne

Habenaria sartor Lindl. f. *minor* Cogn. = **H. bractescens** Lindl.

Habenaria sartoroides Schltr. = **H. macronectar** (Vell.) Hoehne

Habenaria savannensis Renz = **H. amambayensis** Schltr.

Habenaria sceptrodes Rchb.f. = **H. repens** Nutt.

Habenaria sceptrophora Garay, Fl. Ecuador 9 (225: 1): 38. 1978. TYPE: ECUADOR. Bolívar, Tamboloma, 2050 m, 15 August 1939, E. Asplund 8338 (Holotype: AMES [114217]).

Distribution: Ecuador.

Habenaria sceptrum Schltr. = **H. exaltata** Barb.Rodr.

Habenaria schaffneri S.Watson, Proc. Amer. Acad. Arts 23: 283. 1888. SYNTYPES: MEXICO. San Miguelito Mountains, 1876, J.G. Schaffner 5088 (GH); near San Luis Potosí, 1878, Parry and Palmer 860 (not located); State of Chihuahua, Sierra Madre, 16 September 1887, C.G. Pringle 1375a (CAS, F, G, K, NA, NY, PH, US; photo from G at RENZ).

Distribution: Mexico.

This species was considered a synonym of *H. clypeata* (Williams, 1951) or *H. entomantha sensu* Lindley (Dunsterville and Garay, 1961; Foldats, 1969; Hamer, 1974). The examination of a photograph of the syntype at GH (labelled as *Schaffner 508*) showed that it is a distinct species, characterized by the few flowers, lax raceme, the short, imbricated, erect leaves and the spur, which is strongly arcuate and fusiform in the upper middle. Among the syntypes the collection from Chihuahua, *Pringle 1375a*, belongs to another completely distinct, apparently undescribed species.

Habenaria schenckii Cogn., Fl. Bras. (Martius) 3(4): 61. 1893. TYPE: BRAZIL. Pernambuco, in Sertão, June, J.H.R. Schenck 4234 (Holotype: B, destroyed; no isotype located).

Synonym: *Habenaria lindmaniana* Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 5, t. 1, fig. 1. 1911, *syn. nov.* TYPE: BRAZIL. Mato Grosso, Espinheiros, 10 February 1894, *C.A.M. Lindman 2787* (Holotype: S [05-3470]; Isotypes: AMES, HBG, S).

Distribution: Argentina and Brazil (BA, GO, MT, PB, PE, RN, TO).

Hoehne (1940) considered *H. lindmaniana* a mixture of the flowering spike of a *Habenaria* with the vegetative part of a *Cyclopogon*. However, the examination of images of the type material showed it is a distinct *Habenaria*, with the habit similar to African species in section *Diphyllae*. The report of *H. lindmaniana* for Argentina, is from Correa (1950). *Habenaria schenckii* and *H. depressifolia* have a similar habit, characterized by the few, orbicular, prostrate leaves, that lie adpressed to ground, a character common among African species but rare in the New World species of the genus.

At first we had doubts in combining *H. lindmaniana* with *H. schenckii*, but a detailed analysis of the original descriptions of the two species and the illustration and type material of *H. lindmaniana*, along with the comparison of several collections from northeastern Brazil, which is within the distribution area of *H. schenckii*, but which are identical to *H. lindmaniana*, have convinced us that the two are conspecific.

Habenaria schiedmeyeri Schltr. ex Pabst = **H. dutraei** Schltr.

Habenaria schischmareffiana Cham., Linnaea 3: 29. 1828. = **Platanthera foetida** Geyer ex. Hook.f.

Habenaria schnittmeyeri Schltr. = **H. dutraei** Schltr.

Habenaria schomburgkii Lindl., London J. Bot. 2: 673. 1843. TYPE: BRAZIL. Roraima, Rio Branco, July 1839, *R.H. Schomburgk 814* (Holotype: not indicated; Lectotype, designated here: K-L [363781]; Isotypes: BM, DS, E, G, K, OXF, P, US, W-R; photos and drawings from G, P and W-R at RENZ).

Distribution: Brazil, Guyana, Suriname and Venezuela.

Habenaria schultzei Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 126. 1924. TYPE: COLOMBIA. Cundinamarca, Quebrada Resaca (Rio Negro), E Cordillera, 1220 m, March 1922, *A. Schultze 31* (Holotype: B, destroyed; no isotype located).

Distribution: Colombia.

Habenaria schwackei Barb.Rodr., Gen. Sp. Orchid. 2: 254. 1882, as *H. schwackii*. TYPE: BRAZIL. Paraná, Ponta Grossa, 13 January 1880, *C.A.W. Schwacke 191* (Holotype: R [32162]; Isotypes: BR [642686], R, RB [36995]).

Synonyms: *Habenaria platydactyla* Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 9, t. 2, fig. 5. 1911, TYPE: BRAZIL. Paraná, Capão Grande, Turma 23, near Guavirova river, 24 January 1910, *P.K.H. Dusen 9089* (Holotype: S [R-2727]; Isotypes: HB, HBG, K, MBM, MO, NY, P).

Habenaria amazonica Schltr., Beih. Bot. Centralbl. 42(2): 69. 1925. TYPE: BRAZIL. Roraima, Boa Vista, Rio Branco, January 1913, *J.G. Kuhlmann 787* (Holotype: B, destroyed; Lectotype, designated here: RB [3345]; Isotypes: AMES, SP).

Distribution: Brazil (BA, GO, MA, MG, MT, PA, PR, RR, SP, TO), Colombia, French Guiana, Guyana, Paraguay, Suriname and Venezuela.

The examination of the original descriptions and type material of *H. schwackei*, *H. platydactyla* and *H. amazonica* showed they are conspecific. Among the Schwacke collections found at R and RB, one, labelled *Schwacke 191*, and identified in handwriting by Barbosa Rodrigues, is most probably the holotype of *H. schwackei*, the others have a different collection number (*Schwacke 2508*), but are from the same place and date. The species' original illustration is found in Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, and reproduced in Sprunger (1996).

The original illustration of *H. amazonica* was published by Mansfeld (1930, t. 1, fig. 2).

Habenaria secunda Lindl., Gen. Sp. Orchid. Pl. 307. 1835. TYPE: BRAZIL. Rio de Janeiro, near Rio de Janeiro, sine coll. (Holotype: K-L

[fragment and drawing], mounted on the same sheet with *Gardner 678*).

Synonyms: *Habenaria estrellensis* Rchb.f., *Linnaea*. 22: 813. 1849. TYPE: BRAZIL. Rio de Janeiro, near Josepha Dias, Serra d' Estrella, February 1823, *H.K. Beyrich s.n.* (Holotype: not located; Isotype: P [408988]).

Habenaria secunda Lindl. var. *estrellensis* (Rchb.f.) Rchb.f., *Otia Bot. Hamburg.* 2: 81. 1881.

Distribution: Brazil (RJ).

This species is similar to *H. achalensis* and *H. gustavo-edwallii*, and the distinction between them is not completely clear. Typical individuals of *H. secunda*, as described and illustrated by Lindley, are so far apparently restricted to the state of Rio de Janeiro in southeastern Brazil. The reports of the species from São Paulo and southern Brazil (Cogniaux, 1893; Hoehne, 1940; Pabst and Dungs, 1975), Paraguay (Cogniaux, 1906) and Argentina (Correa, 1950) are referable to *H. achalensis* or *H. araneiflora*. *Habenaria secunda* is morphologically similar to *H. achalensis*, *H. araneiflora*, *H. gustavo-edwallii*, *H. paranaensis*, *H. paivaeana*, *H. vasquezii* and *H. plantanthera*, and these species apparently form a natural group.

Habenaria secunda Lindl. var. *estrellensis* (Rchb.f.) Rchb.f. = **H. secunda** Lindl.

Habenaria secunda Barb.Rodr., 1885. = **H. secundiflora** Barb.Rodr.

Habenaria secundiflora Barb.Rodr., *Gen. Sp. Orchid.* 2: 252. 1882. TYPE: BRAZIL. Minas Gerais, campos silicosos do alto da Serra do Lenheiro, São João d' El-Rey, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 10B: RB, copy K; reproduced in Sprunger, 1996: 1: 63A).

Basionym: *Habenaria secunda* Barb.Rodr., *Revista Engen.* 3(5): 74. 1881, *nom. illeg.*, non *H. secunda* Lindl., 1835.

Synonyms: *Habenaria spiranthes* Rchb.f. & Warm., *Otia Bot. Hamburg.* 2: 81. 1881, *nom. illeg.*, non *H. spiranthes* Rchb.f., 1865. TYPE: BRAZIL. Minas Gerais, Lagoa Santa, in campis, *J.E.B. Warming*

s.n. (Holotype: not indicated; Lectotype, designated here: P [386885]; Isotype: W-R [51181], drawing and fragment) *syn. nov.*

Habenaria lagunae-sanctae Kraenzl., *Bot. Jahrb. Syst.* 16: 119. 1892, *syn. nov.*

Habenaria confusa Cogn., *Fl. Bras. (Martius)* 3(4): 65. 1893, *syn. nov.*

Distribution: Brazil (DF, GO, MG, PA, PR, SP), Colombia, French Guiana, Guyana and Venezuela.

This species has been misidentified with *H. setacea* (Hoehne, 1940; Pabst and Dungs, 1975; Renz, 1992), and *H. mesodactyla* (Dunsterville and Garay, 1961). A distinct character of *H. secundiflora* are the petals which are entire for about 2 mm in the base and divide above. We have examined some collections at AMES from Central America (*Gentle 3636* from Belize and *Molina 15116* from Nicaragua) which are markedly similar to *H. secundiflora*, but differ in the smaller size of the flowers. Possibly these collections are referable to *H. mesodactyla*.

Examination of an isotype of *H. spiranthes* Rchb.f. & Warm. located at P revealed it is conspecific with *H. secundiflora*. The new names published for *H. spiranthes* Rchb.f. & Warm., *H. lagunae-sanctae* and *H. confusa*, are synonyms of *H. secundiflora*.

Habenaria secundiflora Barb.Rodr. f. **ecalcarata** (Renz) J.A.N.Bat. & Bianch., *comb. et stat. nov.* TYPE: VENEZUELA. Est. Tachira, Mesa Peres, Rio Negro valley, 1850 m, 3 August 1949, *O. Renz 5893* (Holotype: RENZ [5893]).

Basionym: *Habenaria setacea* Lindl. var. *ecalcarata* Renz., *Candollea* 47(2): 507. 1992.

Distribution: Brazil (GO, MG) and Venezuela.

Since Renz (1992) misidentified *H. secundiflora* with *H. setacea*, this new combination is required. We have found and examined material of this this taxon from the state of Minas Gerais, Brazil, were a few specimens grew among typical specimens of *H. secundiflora*. Thus, this variation seems better treated as a form rather than a variety.

Habenaria selerorum Schltr. = **H. floribunda** Lindl.

Habenaria septentrionalis Tidestr., Fl. Ariz. New Mex.: 731. 1941. = **Platanthera hyperborea** (L.) Lindl. var. **hyperborea**

Habenaria setacea Lindl., Gen. Sp. Orchid. Pl. 312. 1835. TYPE: BRAZIL. Minas Gerais, Mt. Itambé, *C.F.P. Martius s.n.* (Holotype: M; drawing of type by Lindley at K-L).

Distribution: Brazil (MG).

This species is restricted to the Espinhaço range in the state of Minas Gerais, Brazil. The material from the Guianas identified as *H. setacea* by Renz (1992) is referable to *H. secundiflora*. It is possible that other reports of *H. setacea* from northern South America (Cogniaux, 1893, 1906; Schlechter, 1919b, 1920) are also referable to *H. secundiflora*. See also the notes for *H. rolfeana*.

Habenaria setacea Lindl. var. *depauperata* Cogn. = **H. ayangannensis** Renz

Habenaria setacea Lindl. var. *ecalcarata* Renz = **H. secundiflora** Barb.Rodr. f. **ecalcarata** (Renz) J.A.N.Bat. & Bianch.

Habenaria seticauda Lindl., London J. Bot. 2: 673. 1843. TYPE: GUYANA. Pirara, 1839, *R.H. Schomburgk 219S* (Holotype: not indicated; Lectotype, designated here: K-L; Isotype: W-R [51318], photo and drawings RENZ).

Synonyms: *Habenella seticauda* (Lindl. ex Benth.) Szlach. & Kras-Lap., Richardiana 6: 38. 2006.

Platantheroides seticauda (Lindl.) Szlach., Richardiana 4: 108. 2004.

Distribution: Brazil (RR), Guyana and Venezuela.

Similar and closely related to *H. obtusa*, but distinct by the size of the spur (3–5 cm in *H. obtusa* vs. 8–9 cm in *H. seticauda*). The species is also similar to *H. hamata*, but in *H. seticauda* the spur is pendent and enclosed by the bracts, while in *H. hamata* it is free and hook-shaped or sinuous (Batista et al., 2008).

Habenaria setifera Lindl. = **H. trifida** Kunth

Habenaria simillima Rchb.f. = **H. distans** Griseb.

Habenaria similis Dressler, Bol. Inst. Bot. Univ. Guadalajara 7(1–3): 98, fig. 3. 1999 publ. 2000, *nom. illeg., non H. similis* Schltr., 1906.

TYPE: MEXICO. Chiapas, Tenejapa, in the Colonia Ach'lum, 9100 ft., heavily wooded slope with *Abies*, *Podocarpus* and *Quercus*, 23 August 1966, *D.E. Breedlove 15258* (Holotype: DS [575620]).

Distribution: Mexico and Guatemala.

If accepted, this taxon requires a new name.

Habenaria simpsonii Small = **H. quinqueseta** (Michx.) Eaton

Habenaria smithii Schltr. = **H. trifida** Kunth

Habenaria socialis Fawc. & Rendle, J. Bot. 47: 263. 1909. TYPE: JAMAICA. Near Mandeville, Manchester, in marshy soil, flowers green, November 1843, *W. Purdie s.n.* (Holotype: K [463541]).

Distribution: Jamaica.

This taxon belongs to the *H. floribunda* species-complex. Govaerts et al. (2010) included it under the synonym of *H. eustachya*.

Habenaria socorroae R.González & Cuv.-Fig., Bol. Inst. Bot. Univ. Guadalajara 12(2): 14, fig. 5. 2004 publ. 2006. TYPE: MEXICO. Jalisco, Autlán de Navarro, Los Mazos, 1450 m, 17 September 1989, *R. Ramírez, M. Aguilar and R. González s.n.* (Holotype: IBUG).

Distribution: Mexico.

Habenaria socorroae is closely related to *H. clypeata* but differs by most of the leaves mostly erect, distally arcuate; dorsal sepal ovate, obtuse, apiculate, posterior segment of petals wider at middle; lateral segments of labellum straight at base and rostellum arms and anther channels straight, at right angle with the main body of column, little ascendant.

Habenaria sodiroi Schltr. = **H. monorrhiza** (Sw.) Rchb.f.

Habenaria spanophytica J.A.N.Bat. & Bianch., Brittonia 62(1): 77, figs. 5–6. 2010. TYPE: BRAZIL. Distrito Federal, Samambaia, DF-280, em direção de Santo Antônio do Descoberto, dentro da área de Furnas, 7 March 1998, *J.A.N. Batista 783* (Holotype: CEN [30732]).

Distribution: Brazil (DF, GO, MG).

This species is similar to *H. cardiostigmatica* but distinct by the smaller flowers (dorsal sepal (2.5–)3×2.5–3 mm vs. 3.5–4(–4.5)×3(–4) mm in *H. cardiostigmatica*) and morphology of the

gynostemium; the rostellum side-lobes are broader (ca. 0.4 mm wide vs. 0.15–0.2 mm wide in *H. cardiostigmatica*) and apically converging (vs. parallel in *H. cardiostigmatica*, *H. crucifera* and other related species). Although the rostellum side-lobes apices do not converge completely, the viscidia are closer to each other in *H. spanophytica* (ca. 0.2 mm) than in the other species in the group (0.7–2.8 mm apart from one another) (Batista and Bianchetti, 2010).

Habenaria sparsiflora S.Watson, Proc. Amer. Acad. Arts 12: 276. 1877. = **Platanthera sparsiflora** (S.Watson) Schltr. var. **sparsiflora**

Habenaria sparsiflora S.Watson var. *brevifolia* (Greene) Correll, Leafl. W. Bot. 3: 244. 1943. = **Platanthera sparsiflora** (S.Watson) Schltr. var. **brevifolia** (Greene) Luer

Habenaria sparsiflora S.Watson var. *laxiflora* (Rydb.) Correll, Leafl. W. Bot. 3: 245. 1943. = **Platanthera hyperborea** (L.) Lindl. var. **gracilis** (Lindl.) Luer

Habenaria spathacea A.Rich. & Galeotti = **H. trifida** Kunth

Habenaria spathulifera Cogn., Fl. Bras. (Martius) 3(4): 86. 1893. TYPE: BRAZIL. *A.F.M. Glaziou 10092* (Holotype: BR [889624]; Isotype: P).

Synonyms: *Habenaria pratensis* (Salzm. ex Lindl.) Rchb.f. var. *parviflora* Cogn., Fl. Bras. (Martius) 3(4): 86. 1893. SYNTYPES: BRAZIL. Goiás, between Natividade and Conceição, February 1840, *G. Gardner 3994* (BM, G, GOET, K, K-L, NY, OXF, P, SP); Mato Grosso, near Cuyabá, *L. Riedel s.n.* (BR).

Habenaria mattogrossensis Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 14, t. 1, fig. 4. 1911. TYPE: BRAZIL. Mato Grosso, Espinheiros, 10 February 1894, *C.A.M. Lindman 2785* (Holotype: S [05-3473]; Isotype: S [R-2716]).

Habenaria georgii Schltr., Beih. Bot. Centralbl. 42(2): 86. 1925. TYPE: BRAZIL. Amazonas, Cacáo-Pireira, *G. Hübner 85* (Holotype: B, destroyed; no isotype located).

Habenaria spathuliglossa Kraenzl. ex Hoehne, Fl. Bras. (Hoehne) 12(1), t. 113, fig. 1. 1940, *nom. nud.*

Distribution: Brazil (AM, AP, GO, MA, MT, PA, PI, RR, TO), French Guiana, Suriname and Venezuela.

Habenaria spathulifera is distinct from *H. pratensis* and *H. glazioviana* by the shorter ovary and pedicel (16–24 mm long vs. 28–48 mm long), and the bright yellow flowers (vs. pale yellow). Analysis of the literature revealed that *H. spathulifera* is the earliest available name for the taxon formerly known as *H. pratensis* var. *parviflora* (Batista et al., 2008).

Examination of images of the type material and the original description of *H. mattogrossensis*, showed that it is conspecific with *H. spathulifera*.

Habenaria spathuliglossa Kraenzl. ex Hoehne = **H. spathulifera** Cogn.

Habenaria speciosa Poepp. & Endl. = **H. monorrhiza** (Sw.) Rchb.f.

Habenaria spectabilis (L.) Spreng., Syst. Veg. (ed. 16), 3: 689. 1826. = **Galearis spectabilis** (L.) Raf.

Habenaria spegazziniana Kraenzl. = **H. gourlieana** Gill. ex Lindl.

Habenaria spiranthes Rchb.f. & Warm., 1881. = **H. secundiflora** Barb.Rodr.

Habenaria spithamaea Schltr., Repert. Spec. Nov. Regni Veg. 15: 195. 1918. TYPE: GUATEMALA. Between Casillas and Laguna de Ayarres, July 1870, *C.G. Bernoulli and R. Cario 551* (Holotype: B, destroyed; drawing at AMES [24322]; Lectotype, designated here: RENZ [50080]; Isotypes: GOET, K, RENZ [2853]).

Distribution: Guatemala.

The identity of this species is unclear. It was assigned to the synonym of *H. clypeata* (Ames, 1934; Ames and Correll, 1952–1953; Williams, 1956), *H. lactiflora* (Hamer, 1974) or *H. entomantha* sensu Lindley (Dunsterville and Garay, 1961; Foldats, 1969). However, *H. spithamaea* is possibly a distinct species. In *H. lactiflora* the lateral segments of the labellum are of same length as the median segment; the

stigmatic processes are spread and they form an angle of almost 180 degrees to main body of column, while the anther canals and rostellum arms are straight and antrorse. The original illustration of the species was published by Mansfeld (1931, t. 2).

Habenaria sprucei Cogn., Fl. Bras. (Martius) 3(4): 40. 1893. TYPE: BRAZIL. Amazonas, campo de Januári, on the S. side of the Rio Negro, opposite the Barra, in moist clayey soil, fl. pale yellowish white, *R. Spruce 1221* (Holotype: not indicated; Lectotype, designated here: K [463538]; Isotypes: BR [fragment], G, K-L [363788], P, W; photo, drawing and fragment from G and W at RENZ). Synonym: *Habenaria leaoana* Schltr., Beih. Bot. Centralbl. 42(2): 72. 1925. TYPE: BRAZIL. Roraima, Boa Vista, Rio Branco, August 1913, *J.G. Kuhlmann 778* (Holotype: B, destroyed; Lectotype, designated here: RB [3348]; Isotypes: AMES, NY, SP; photo, drawing and fragment from NY at RENZ).

Distribution: Brazil (AM, AP, BA, MA, PA, PI, RR), French Guiana, Guyana, Suriname and Venezuela.

Cogniaux did not indicate the holotype of *H. sprucei* and the collection at K is selected here as Lectotype. The collection at BR consists of only two loose flowers and most likely was removed from one of the specimens at K. The collections at G, P and W do not have collector number 1221, but the specimens at G (169007) and P (408984) were annotated by Cogniaux in the exsiccatae label and are probable isotypes.

According to Renz (1992), *H. leaoana* is a synonym of *H. sprucei*. Examination of the isotypes of *H. leaoana* and comparison with the original description and images of the type material of *H. sprucei*, confirmed this conclusion. The original illustration of *H. leaoana* was published by Mansfeld (1930, t. 4, fig. 14). See notes for *H. egeriana*.

Habenaria staminodiata Schltr., 1925. = **H. macilenta** (Lindl.) Rchb.f.

Habenaria staminodiifera Mansf. = **H. macilenta** Lindl.

Habenaria sancti-simonensis Hoehne, Relat. Commiss. Linhas Telegr. Estratég. Matto Grosso Amazonas 5(5): 37, t. 88. 1915, as *H. st. simonensis*. SYNTYPES: BRAZIL. Mato Grosso, Juruena river, São Simão near S. Manoel, February 1911, *F.C. Hoehne 5356* (R), *F.C. Hoehne 5357* (R), *F.C. Hoehne 5358* (R), *F.C. Hoehne 5359* (SP).

Distribution: Brazil (MT).

This is an obscure species, apparently not collected since the type specimen. Hoehne (1940) considered this species a synonym of *H. culicina*. However, some details of the morphology of the flowers, flowering date and habitat do not match *H. culicina* and the examination of more material and a more detailed analysis is needed to clarify its exact identity.

Habenaria straminea Fernald, Rhodora 28: 174. 1926. = **Platanthera albida** (L.) Lindl. var. **straminea** (Fernald) Luer

Habenaria stricta A.Rich. & Galeotti, 1845. = **H. alata** Hook.

Habenaria stricta (Lindl.) Rydb., Bull. Torrey Bot. Club 24: 189. 1897, *nom. illeg., non H. stricta* A.Rich. & Galeotti, 1845. = **Platanthera stricta** Lindl.

Habenaria strictissima Rchb.f., Linnaea 18: 407. 1844 publ. 1845. TYPE: MEXICO. *F.E. Leibold s.n.* (Holotype: W-R [51343], photo and drawing RENZ).

Synonyms: *Habenaria pyramidalis* Lindl., Ann. Mag. Nat. Hist. 15: 386. 1845. TYPE: MEXICO. *K.T. Hartweg s.n.* (Holotype: K-L).

Habenaria latipetala Schltr., Repert. Spec. Nov. Regni Veg. 15: 194. 1918. TYPE: GUATEMALA. Depart. Petén, Sacluc, September 1877, *C.G. Bernoulli and R. Cario 611* (Holotype: B, destroyed, drawing at AMES [24315]; no isotype located).

Habenaria amesiana Schltr., Beih. Bot. Centralbl., Abt. 2., 36(2): 371. 1918, *nom. illeg., non H. amesiana* (Schltr.) Ames, 1915. TYPE: MEXICO. *C. Gomez s.n.* (Holotype: B, destroyed; drawing at AMES [24303]; no isotype located).

Habenaria amblyantha Kraenzl., Vidensk. Meddel. Dansk Naturhist. Foren. Kjobenhavn 71: 179. 1920. TYPE: MEXICO. *F.M. Liebmann s.n.* (Holotype: presumably C or B [not seen]; no isotype located).

Habenella strictissima (Rchb.f.) Szlach. & Kras-Lap., Richardiana 6: 39. 2006.

Platantheroides strictissima (Rchb.f.) Szlach., Richardiana 4: 108. 2004.

Distribution: Mexico, Guatemala, Honduras, El Salvador and Nicaragua.

The original illustrations of *H. amesiana* and *H. latipetala* were published by Mansfeld (1931, t. 1, fig. 1 and fig. 4, respectively).

Habenaria strictissima Rchb.f. var. *odontopetala* (Rchb.f.) L.O. Williams = **H. floribunda** Lindl.

Habenaria subandina Schltr., Repert. Spec. Nov. Regni Veg. 27: 29. 1929. TYPE: BOLIVIA. La Paz, Milliguaya, N Yungas, 1800 m, December 1917, *O. Buchtien 4433* (Holotype: B, destroyed; Lectotype, designated by Christenson, 1996: US [1156772]; Isotype: AMES).

Distribution: Bolivia.

Habenaria subauriculata B.L. Rob. & Greenm., Proc. Amer. Acad. Arts 32: 34. 1896. TYPE: MEXICO. State of Oaxaca, Las Sedas, 6000 feet, August 1894, *C.G. Pringle 4830* (Holotype: presumably GH [not seen], photo and drawing at AMES; Isotypes: AMES, BR, ENCB, F, G, GOET, HBG, MO, NY, P, PH, S, US).

Synonym: *Habenaria entomantha* (Lex.) Lindl. var. *subauriculata* (B.L. Rob. & Greenm.) Ames & L.O. Williams, Bot. Mus. Leaflet 10(3): 60. 1941.

Distribution: Mexico.

The species was considered a synonym (Foldvik, 1969) or a variety of *H. entomantha* sensu Lindley (Ames and Williams, 1941; Williams, 1951). However, the entire subauriculate petals of *H. subauriculata* are very characteristic among the Mexican species of *Habenaria* and there are not intermediates between it and the many species assigned to *H. entomantha* by several authors, so it is considered here a distinct species. Up to now *H. subauriculata* is known

only from the type collection and has not been recollected since 1894.

Habenaria subcalcarata Barb. Rodr. = **H. guillemirii** Rchb.f.

Habenaria subfiliformis Cogn., Bull. Soc. Roy. Bot. Belgique 43: 272. 1906 publ. 1907. TYPE: PARAGUAY. San-Joaquin near Caaguazú, December 1905, *E. Hassler 9681a* (Holotype: not indicated; Lectotype designated here: BR [889576]; Isotype: G [86392/1]).

Synonyms: *Habenaria mitomorpha* Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 11, t. 2, fig. 4. 1911. TYPE: BRAZIL. Mato Grosso: Serra do Tapirapuan, *C.A.M. Lindman 2931* (Holotype: S R-2720 [not seen]).

Habenaria rudolfi-schlechteri Hoehne, Bot. Jahrb. Syst. 68: 126, t. 9. 1937. TYPE: BRAZIL. São Paulo, São Bernardo, December 1911, *A.C. Brade 5085* (Holotype: HB [8047]; Isotype: SP [fragment]).

Distribution: Brazil (DF, GO, MG, MT, PA, PR, RR, SP, TO), Paraguay, Suriname and Venezuela.

An analysis of the type material and the original descriptions and illustrations of *H. mitomorpha* and *H. rudolfi-schlechteri* revealed they are conspecific with *H. subfiliformis*.

Habenaria subviridis Hoehne & Schltr., Arq. Bot. Estado São Paulo 1(3): 176, t. 1, fig. 1. 1926. TYPE: BRAZIL. São Paulo, 5 January 1921, *G. Gehrt s.n.* (Holotype: B, destroyed; Lectotype, designated here: SP [5299]).

Synonym: *Habenaria trimeropetala* Schltr. var. *itatingensis* Hoehne, Fl. Bras. (Hoehne) 12(1): 114. 1940, *nom. nud.*, in part. BASED UPON: BRAZIL. São Paulo, Campos do Jordão, 1750 m, 6 February 1935, *M. Kuhlmann s.n.* (SP [32524]). (other part = *H. melanopoda*)

Distribution: Brazil (BA, GO, MG, SP, RJ, PR, SC).

This species was considered conspecific with *H. trimeropetala* by Hoehne (1940) and was followed by Pabst and Dungs (1975). However, it is a distinct species, similar and closely related to *H. coxipoensis*, but distinct by the less developed leaves and which are restricted

to the lower part of the stem, for growing in *campos rupestres* (rocky fields) or high mountain fields, and for details in the structure of the gynostemium. The tripartite petals and the “glandular trichomes” at the sepal margins, mentioned by Schlechter and Hoehne (1926) and Hoehne (1940), are not distinctive, as these characters occur to a greater or lesser extent in both species.

Habenaria sylvicultrix Lindl. ex Kraenzl., Bot. Jahrb. Syst. 16: 101. 1892. TYPE: BRAZIL. Amazonas, Barra de Rio Negro, *R. Spruce 1262* (Holotype: not indicated; Lectotype, designated here: K-L; Isotypes: BM [not seen], K [363835]).

Distribution: Brazil (AM).

Habenaria sylvicultrix is similar and closely related to *H. longipedicellata*, *H. rodeiensis* and *H. tamanduensis* but distinct by the slender habit, the leaves, which are less developed and completely appressed to the stem, and the length of the lateral segments of the petals, which are distinctly longer than the petal posterior segments. See also the notes for *H. dusenii*.

Habenaria szlachetkoana R.González & Cuev.-Fig., Ibugana 14(1–2): 31. 2006 publ. 2007. TYPE: MEXICO. Jalisco, Zapopan, Tesistán, 4 km on road from San Cristobal de la Barranca, 1700 m, October 1985, *R. Soltero 416* (Holotype: IBUG).

Distribution: Mexico.

Habenaria szlachetkoana is related to *H. filifera* which differs by the following features: raceme dense and narrow; floral bracts in the first flowers as long as ovary; posterior segment of petals oblong, acute-rounded, 6 mm long, and of same length as anterior segment; lateral segments of labellum strongly divaricate, arcuate, distally incurved, 7 mm long, of same length as median segment; median segment rounded, little broader at base and spur linear-cylindric, 11 mm long.

Habenaria talaensis R.González & Cuev.-Fig., Ibugana 14(1–2): 43. 2006 publ. 2007. TYPE: MEXICO. Jalisco, Tala, Arroyo de Chicamilpa, *L. Ruíz s.n.* (Holotype: IBUG)

Distribution: Mexico.

Habenaria talaensis is related to *H. filifera*, but distinct by the erect flowers, almost straight

ovaries, a dense and slender raceme, the floral bract equalling the ovary in length in the lowermost flowers, the oblong, acute-rounded posterior segment of petals, of same length as the anterior segment, the strongly divaricate, arcuate, distally incurved, 7 mm long lateral segments of labellum, of same length as the median segment, the linear, rounded median segment, a little broader at base; the linear-cylindric, 11 mm long spur, and the descending, very short anther canals and rostellar arms.

Habenaria tamanduensis Schltr., Repert. Spec. Nov. Regni Veg. 16: 251. 1919. TYPE: BRAZIL. Paraná, Tamanduá, 1 February 1909, *P.K.H. Dusen 7649* (Holotype: not indicated; Lectotype, designated here: MBM [253418]; Isotype: HB [fragment]).

Basionym: *Habenaria santensis* Barb.Rodr. ex Kraenzl., Kongl. Svenska Vetensk. Acad. Handl. 46(10): 7. 1911.

Distribution: Brazil (DF, GO, MG, MS, PR, TO).

Kränzlin misidentified this taxon as *H. santensis* Barb.Rodr. and based on the gathering *Dusen 7649* redescribed the species to complement Barbosa Rodrigues’s original description which lacked the habit. Schlechter recognized this taxon as distinct and named it *H. tamanduensis*. Pabst (1954) considered *H. tamanduensis* a synonym of *H. rodeiensis*. Examination of an isotype located at MBM and live material from central Brazil suggests that *H. tamanduensis* and *H. rodeiensis* are similar but distinct species. *Habenaria tamanduensis* is also similar to *H. longipedicellata*, from northern Brazil, and a detailed comparison with additional and preferably live material is necessary to determine the exact identities of these three species.

Habenaria taubertiana Cogn., Fl. Bras. (Martius) 3(4): 69. 1893. TYPE: BRAZIL. Santa Catarina, Capivare, near Serra Geral, February 1891, *E.H.G. Ule 1903* (Holotype: BR [657236]; Isotypes: CORD, HBG, P, R, SP).

Distribution: Brazil (SC).

Pabst and Dungs (1975) considered this species conspecific with *H. repens*. In our opinion it is similar and probably conspecific with *H. aranifera*. However, the exact separation of these three species is unclear.

Habenaria tequilana R.González & Cuev.-Fig., *Ibugana* 14(1–2): 35. 2006 publ. 2007. TYPE: MEXICO. Jalisco, Tequila, Cerro de Tequila, 1800 m, 10 September 1992, R. González and R. Soltero *s.n.* (Holotype: IBUG).

Distribution: Mexico.

Habenaria tequilana is related to *H. atrata* but differs in the leaves, the first three to four are reduced to sheaths or have a very short blade, while the upper ones are similar to floral bracts, 3.2–3.5 cm long and 1–1.1 cm wide.

Habenaria tetranema Schltr., *Beih. Bot. Centralbl.*, Abt. 2., 36(2): 373. 1918. TYPE: GUATEMALA. Camino de Sapote, July 1866, C.G. Bernoulli 325 (Holotype: B, destroyed, drawing at AMES [24312]; Lectotype, designated here: NY [8904]).

Distribution: Guatemala.

Ames and Correll (1952–1953) considered this species conspecific with *H. entomantha* and were followed by subsequent authors (Williams, 1956; Foldats, 1969). Now that the name *H. entomantha* is applied to a species different from the concept of these authors, the exact identity of *H. tetranema* is unclear. The original illustration of the species was published by Mansfeld (1931, t. 2)

Habenaria tetradon Kraenzl. = **H. floribunda** Lindl.

Habenaria theodorii Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 10: 33. 1922. TYPE: BOLIVIA. Santa Cruz, Tres Cruces, c. 1500 m, February 1911, T.C.J. Herzog 1649 (Holotype: B, destroyed; no isotype located).

Distribution: Bolivia.

The original illustration of the species was published by Mansfeld (1929, t. 133, fig. 521).

Habenaria thurberi A.Gray, *Proc. Amer. Acad. Arts* 7: 389. 1868. = **Platanthera limosa** Lindl.

Habenaria thurberi A.Gray var. *grayi* S.Watson, *Proc. Amer. Acad. Arts* 7: 389. 1868. = **Platanthera sparsiflora** (S.Watson) Schltr. var. *sparsiflora*

Habenaria trapezoidea Hoehne & Schltr. = **H. curvilabris** Barb.Rodr.

Habenaria trichoceras Barb.Rodr., *Gen. Sp. Orchid.* 2: 256. 1882. TYPE: BRAZIL. Rio de Janeiro, Barra de S. João, J. Barbosa Rodrigues *s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 18B: RB, copy K; reproduced in Sprunger, 1996: 1: 71B).

Distribution: Brazil (RJ).

This is an obscure species known only from Barbosa Rodrigues's original illustration. Cogniaux (1893) considered it a synonym of *H. nuda* and was followed by all subsequent authors. However, the exact identity of *H. trichoceras* needs more investigation, since *H. nuda* is typically from high altitude mountain fields with mild temperatures, while *H. trichoceras* is reported from low altitude grasslands.

Habenaria tricuspis A.Rich. = **H. bicornis** Lindl.

Habenaria tridentata (Muhl.) Hook., *Exot. Fl.* 6: t. 81. 1824. = **Platanthera clavellata** (Michx.) Luer

Habenaria trifida Kunth, *Nov. Gen. Sp.* 1: 330. 1816. TYPE: COLOMBIA. Cuaca, Municipio de Almaguer, between San Miguel and Guachicon, near Almaguer, F.W.H.A. von Humboldt and A.J.A. Bonpland 2051 (Holotype: P [307154]).

Synonyms: *Bonatea flexuosa* Lindl., *Gen. Sp. Orchid. Pl.* 328. 1835, *non Habenaria flexuosa* Lindl., 1835. TYPE: BRAZIL. Minas Gerais, C.F.P. Martius *s.n.* (Holotype: M [not seen]).

Bonatea pauciflora Lindl., *Gen. Sp. Orchid. Pl.* 329. 1835. TYPE: BRAZIL. Bahia, P. Salzmann *s.n.* (Holotype: K-L [293882]; Isotypes: G, K, P).

Habenaria angustifolia Kunth, *Nov. Gen. Sp.* 1: 330. 1816. TYPE: VENEZUELA. uliginosis Guayanae inter El Trapiche de Fereras et urbem Santo Thomas de Angostura, F.W.H.A. von Humboldt and A.J.A. Bonpland *s.n.* (Holotype: P [307153]).

Habenaria setifera Lindl., Ann. Mag. Nat. Hist. 4: 381. 1840. TYPE: MEXICO. Choapa, June, *K.T. Hartweg s.n.* (Holotype: K-L [362794], mounted on the same sheet with *Purdie s.n.* and *Spruce 4953*).

Habenaria spathacea A.Rich. & Galeotti, Ann. Sci. Nat., Bot. ser. 3(3): 29. 1845. TYPE: MEXICO. Vera Cruz, Zacuapan, in savanna, July 1838, *J.J. Linden 20* (Holotype: P[408978], photo and drawing at AMES [17446, 70106]; Isotype: K [363887] mounted on the same sheet with *Harris s.n.* and *Cumana s.n.*).

Habenaria pauciflora (Lindl.) Rchb.f., Bonplandia 2(2): 10. 1854.

Habenaria flexuosa (Lindl.) Rchb.f., Flora 48: 180. 1865.

Habenaria biflora Barb.Rodr., Gen. Sp. Orchid. 1: 151. 1877, *syn. nov.* TYPE: BRAZIL. Minas Gerais, sommet de la Serra de Caldas, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 8: RB, copy K; reproduced in Sprunger, 1996: 1: 61).

Habenaria allemanii Barb.Rodr., Gen. Sp. Orchid. 2: 254. 1882, *syn. nov.* TYPE: BRAZIL. Ceará, à Tauapé, 1856, *F. Allemão 1500* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 9C: RB, copy K; reproduced in Sprunger, 1996: 1: 62C).

Habenaria flexa Rchb.f. ex Kraenzl., Bot. Jahrb. Syst. 16: 97. 1892. TYPE: Based on same type as *Bonatea flexuosa* Lindl.

Habenaria flexa Rchb.f. ex Kraenzl. var. *rodriguesii* Cogn., Fl. Bras. (Martius) 3(4): 38, t. 3, fig. 2. 1893. TYPE: Based on *H. biflora* Barb.Rodr.

Habenaria pauciflora (Lindl.) Rchb.f. var. *pluriflora* Cogn., Bull. Soc. Roy. Bot. Belgique 43: 270. 1906 publ. 1907, *syn. nov.* TYPE: PARAGUAY. S. Joaquin, near Caaguazú, in campis, petala alba, December 1905, *E. Hassler 9683* (Holotype: G [9328]).

Habenaria caracasana Schltr., Repert. Spec. Nov. Regni Veg. Beih. 6: 26. 1919. TYPE: VENEZUELA: Federal District, Caracas, 1896, *A. Ernst s.n.* (Holotype: B, destroyed; drawing at AMES [23186]. No isotype located).

Habenaria caucana Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 37. 1920. TYPE: COLOMBIA. Cauca, Las Arboles, 1400–1600 m, *F.C. Lehmann 7108* (Holotype: B, destroyed; Lectotype, designated here: K [363810]).

Habenaria smithii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 38. 1920. TYPE: COLOMBIA. Santa Marta, 1898–1901, *H.H. Smith 2358* (Holotype: B, destroyed; Lectotype, designated here: AMES [70182]; Isotypes: BR, BM, E, F, MICH, MPU, NY, P, PH, S, US).

Habenaria gehrtii Hoehne & Schltr., Anexos Mem. Inst. Butantan, Secc. Bot. 1(2): 18, t. 1, fig. 2. 1921. TYPE: BRAZIL. Minas Gerais, Belo Horizonte to Corrego do Leitão, February 1919, *A. Gehrt s.n.* (Holotype: B, destroyed; Lectotype, designated here: SP [3138]).

Habenaria endresiana Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 272. 1923. TYPE: COSTA RICA. A. *Tonduz s.n.* (Holotype: B, destroyed; drawing at AMES [31631]. No isotype located).

Habenaria duckeana Schltr., Beih. Bot. Centralbl. 42(2): 71. 1925. TYPE: BRAZIL. Roraima, Rio Branco, July 1913, *J.G. Kuhlmann 782* (Holotype: B, destroyed; Lectotype, designated here: RB [3341]; Isotypes: AMES, SP).

Habenaria kuhlmanni Schltr., Beih. Bot. Centralbl. 42(2): 72. 1925. TYPE: BRAZIL. Roraima, Boa Vista, Rio Branco, January 1913, *J.G. Kuhlmann 783* (Holotype: B, destroyed; Lectotype, designated here: RB [3344]; Isotypes: AMES, HB, SP).

Habenaria pickelii Hoehne, Bot. Jahrb. Syst. 68: 129, t. 14. 1937. TYPE: BRAZIL. Pernambuco, 21 June 1930, *B. Pickel s.n.* (Holotype: SP [30579]).

Habenaria dentirostris Pabst, Arq. Bot. Estado São Paulo, n.s., f.m., 3(3): 118, t.

29 and 36, fig. A. 1955. TYPE: BRAZIL. Pará, Alto Tapajós, Vila Nova, near Chacorão, 17 January 1952, *J.M. Pires 3944* (Holotype: IAN [71561]).

Orchis longicornu Salzm. ex Lindl., Gen. Sp. Orchid. Pl. 329. 1835, as synonym.

Distribution: Mexico, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, Guianas, Ecuador, Peru, Bolivia, Brazil, Paraguay and Argentina.

Habenaria trifida is widespread through the American tropics and the species was described many times under different names. As far as we can evaluate by the analysis of live and dried material, the species is highly variable and the maintenance of most of the described species as distinct entities is not justifiable. However, it is possible that a more detailed analysis may show that some of these taxa are distinct and may deserve separation. *Habenaria jaguariahyaevae* is similar and closely related but distinct by the broader, rhombic to asymmetrically trullate posterior segment of the petals.

As stated by the author, the only significant difference between *H. angustifolia* and *H. trifida* is the tripartite petals of *H. trifida*. We have seen specimens of *H. trifida* within a same population with tripartite (rare), bipartite (common) and entire petals (occasional). Since tripartite petals are not a fixed character, being more or less developed, neither are they exclusive, appearing occasionally in many other species in the genus, such as *H. odorifera* (Hoehne, 1915), *H. trimeropetala* and *H. kleyi* (Hoehne, 1940), *H. bractescens* (Hauman, 1920) and *H. jaliscana* (Hamer, 1988), the separation of *H. angustifolia* from *H. trifida* based on this character alone is unsustainable. We agree here with Foldats (1990), who considered *H. angustifolia* a synonym of *H. trifida*. See also the notes for *H. curti-bradei*, *H. pauciflora* var. *pluriflora* and *H. subviridis*.

According to Barbosa Rodrigues the type of *H. allemanii* was located at "Musée de Rio de Janeiro," which most likely represents R or RB, but we did not find it in these herbaria. Barbosa Rodrigues's protologue and drawing represents a plant similar to *H. trifida* and there is no reason for keeping it as a distinct species.

The original illustrations of *H. caracasana*, *H. caucana* and *H. smithii*, published by

Mansfeld (1929, t 1, fig. 1; t. 9, fig. 31; and t. 9, fig. 33 respectively) agree well with *H. trifida*.

Examination of the isotypes of *H. duckeana* confirmed it is conspecific with *H. trifida*. The original illustration of this taxon was published by Mansfeld (1930, t. 2, fig. 6).

Hoehne (1940) and Pabst and Dungs (1975) considered *H. biflora* conspecific with *H. hoehnei* (a synonym of *H. jaguariahyaevae*). However, the original description and illustration of *H. biflora* by Barbosa Rodrigues does not show the broad posterior petal segment, which characterizes *H. hoehnei*. *Habenaria biflora* is identical in all details with *H. trifida* and is considered here a synonym of this species.

The original illustration of *H. kuhlmanni* was published by Mansfeld (1930, t. 4, fig. 13).

The description of *H. pauciflora* var. *pluriflora* based on the number of flowers is not tenable, as the number of flowers in *H. trifida* commonly ranges from one to seven, upon plants in a same population. Variations are much more remarkable in the size of the floral segments, particularly on the development of the lateral segments of the petals and the size of the spur. However, even those variations do not seem to be taxonomic significant since intermediate forms of all kinds can be found, many times in the same population.

The record of the type of *H. spathacea* is from Ames (1910), but there are other collections of *H. trifida* at P from Galeotti (5043 and 5165) and Ghiesbreght (21).

Habenaria trimeropetala Schltr. = **H. coxiopensis** Hoehne

Habenaria trimeropetala Schltr. var. *itatingensis* Hoehne, in part = **H. melanopoda** Hoehne & Schltr.

Habenaria trimeropetala Schltr. var. *itatingensis* Hoehne, in part = **H. subviridis** Hoehne & Schltr.

Habenaria triptera Rchb.f. = **H. alata** Hook.

Habenaria triptera Rchb.f. var. *heteroglossa* Rchb.f. = **H. alata** Hook.

Habenaria troyana Fawc. & Rendle = **H. eustachya** Rchb.f.

Habenaria tuerkheimii Schltr. = **H. distans** Griseb.

Habenaria turmerensis Kraenzl. = **H. armata** Rchb.f.

Habenaria ulei Cogn., Fl. Bras. (Martius) 3(4): 74. 1893, as *H. ulaei*. TYPE: BRAZIL. Santa Catarina, Campo de Capivare, Serra Geral, February 1891, *E.H.G. Ule 1902* (Holotype: BR [889635]; Isotype: P).

Distribution: Brazil (SC).

This species is similar and possibly conspecific with *H. parviflora*.

Habenaria uliginosa Rchb.f., Linnaea 22: 812. 1849 publ. 1850. TYPE: BRAZIL. Minas Gerais, Caldas, *A.F. Regnell ser. II 261* (Holotype: W-R [51227], mounted on the same sheet with *Warming 166*; Isotype: P [408976]).

Distribution: Brazil (MG).

A obscure species, known only from the type material. Apparently this taxon is similar and related to *H. repens*.

Habenaria uliginosa Phil. = **H. pumila** Poepp.

Habenaria umbraticola Barb.Rodr., Gen. Sp. Orchid. 1: 156. 1877. TYPE: BRAZIL. Minas Gerais, Matta dos Alhos, Serra de Caldas, *J. Barbosa Rodrigues s.n.* (Holotype: unknown, presumably lost; Lectotype, designated here: Barbosa Rodrigues's *Iconographie des Orchidées du Brésil*, vol. 1, t. 15A: RB, copy K; reproduced in Sprunger, 1996: 1: 68A).

Distribution: Brazil (MG, PR, RJ, SC, SP).

This species is similar to *H. nemorosa*, but apparently distinct by the less developed leaves and smaller flowers. The exact separation between *H. umbraticola* and *H. piraquarensis* is unclear.

Habenaria umbratilis Ames & L.O.Williams = **H. diffusa** A.Rich. & Galeotti

Habenaria unalascensis (Spreng.) S.Watson, Proc. Amer. Acad. Arts 12: 277. 1877. = **Platanthera foetida** Geyer ex. Hook.f.

Habenaria unalascensis (Spreng.) S.Watson var. *elata* (Jeps.) Correll, Leaf. W. Bot. 3: 246. 1943. = **Platanthera elongata** (Rydb.) R.M.Bateman

Habenaria unalascensis (Spreng.) S.Watson var. *maritima* (Rydb.) Correll, Leaf. W. Bot. 3: 247. 1943. = **Platanthera elegans** Lindl. subsp. **maritima** (Rydb.) R.M.Bateman

Habenaria uncata R.Jiménez, L.Sánchez & García-Cruz, Acta Bot. Mex. 61: 30. 2002. TYPE: MEXICO. Morelos, Cuernavaca, lomas de Atzingo, August 1956, *E. Lyonnet 560800010* (Holotype: MEXU [663454]; Isotype: MEXU [663455]).

Distribution: Mexico.

Habenaria uncatiloba C.Schweinf., Revista Acad. Colomb. Ci. Exact. 5(19): 348. 1943. TYPE: PERU. Cuzco, Prov. Urubamba, between Turcapata and Puyupata, 2900–3600 m, 29 March 1942, *J.C. Vargas-Calderón 2705* (Holotype: AMES [61872]).

Distribution: Peru.

Habenaria unellezii Foldats, BioLlania 7: 27. fig. 1. 1990. TYPE: VENEZUELA. Edo. Portuguesa, Dtto. Guanare, Unellez, 200 m, 8 September 1988, *G. Aymard and N. Cuello 7026* (Holotype: PORT).

Synonyms: *Habenella unellezii* (Foldats) Szlach. & Kras-Lap., Richardiana 6: 39. 2006.

Platantheroides unellezii (Foldats) Szlach., Richardiana 4: 108. 2004.

Distribution: Venezuela.

Habenaria urbaniana Cogn., Fl. Bras. (Martius) 3(4): 45. 1893. TYPE: BRAZIL. Minas Gerais, Caraça, *F.R. Mendonça 965* (Holotype: B, destroyed; Lectotype, designated here: BR [889602] fragment).

Distribution: Brazil (MG).

The holotype was located at B (herb. Berol.), where the collections of Francisco R. de Mendonça were deposited, and was destroyed. We select as lectotype a fragment located at BR, which consists of a single loose flower, probably removed from the holotype.

Habenaria uruguayensis Garay, Bradea 2(19): 118. 1976. SYNTYPES: URUGUAY. Montevideo, September 1767, *P. Commerson* (P); Montevideo, *J. Tweedie s.n.* (Lectotype: K, designated by Garay, 1976 [drawing of type by Lindley at K-L]; SI).

Basionym: *Habenaria montevidensis* Lindl., Gen. Sp. Orchid. Pl. 314. 1835, *nom. illeg., non H. montevidensis* Spreng., 1826.

Distribution: Uruguay.

Habenaria usterii Schltr. ex Hoehne = **H. araneiflora** Barb.Rodr.

Habenaria vasquezii Dodson, Icon. Pl. Trop., ser. 2, 3: t. 237. 1989. TYPE: BOLIVIA. La Paz, Larecaja, between Sorata and Tacacoma, 2990 m, 20 January 1981, R. Vásquez, C.A. Luer and Besse 504 (Holotype: MO).

Distribution: Bolivia.

As far as we can evaluate by the original description and illustration, this species is very similar and closely related to *H. achalensis*, but apparently distinct by the larger flowers.

Habenaria vaupellii Rchb.f. & Warm. = **H. johannensis** Barb.Rodr.

Habenaria verecunda Schltr., 1923. = **H. wercklei** Schltr.

Habenaria verecunda Schltr., 1930. = **H. melanopoda** Hoehne & Schltr.

Habenaria venezuelana Schltr. ex Mansf. = **H. cryptophila** Barb.Rodr.

Habenaria virens A.Rich. & Galeotti, Ann. Sci. Nat., Bot. ser. 3(3): 29. 1845. TYPE: MEXICO. Oaxaca, 1842, A.B. Ghiesbreght s.n. (Holotype: P [408972], drawing AMES [70112]; Isotypes: P [408973, 408974], photo and drawing at AMES [17511]).

Distribution: Mexico.

Habenaria virescens (Muhl. ex Willd.) Spreng., Syst. Veg. (ed. 16), 3: 688. 1826. = **Coeloglossum viride** (L.) Hartm. var. **virescens** (Muhl. ex Willd.) Luer

Habenaria viridiaurea Lindl. ex Kraenzl. = **H. heptadactyla** Rchb.f.

Habenaria viridis (L.) R.Br. in W.T.Aiton, Hortus Kew., ed. 2, 5: 192. 1813. = **Coeloglossum viride** (L.) Hartm. var. **viride**

Habenaria viridis (L.) R.Br. var. *bracteata* (Muhl. ex Willd.) A.Gray, Manual (Gray), ed. 5: 500. 1867. = **Coeloglossum viride** (L.) Hartm. var. **virescens** (Muhl. ex Willd.) Luer

Habenaria viridis (L.) R.Br. var. *interjecta* Fernald, Rhodora 28: 173. 1926. = **Coeloglossum viride** (L.) Hartm. var. **viride**

Habenaria volcanica (Lindl.) S.Watson, Proc. Amer. Acad. Arts 18: 159. 1883. = **Platanthera limosa** Lindl.

Habenaria vulcanica (Lindl.) Hemsl., Biol. Cent.-Amer., Bot.3: 306. 1884. = **Platanthera limosa** Lindl.

The only difference upon *H. volcanica* and *H. vulcanica* is Hemsley's misspelling.

Habenaria wacketii Porsch = **H. josephensis** Barb.Rodr.

Habenaria warmingii Rchb.f., Otia Bot. Hamburg. 2: 80. 1881. TYPE: BRAZIL. Minas Gerais, Lagoa Santa, J.E.B. Warming s.n. (148) (Holotype: not located; drawing of type by Warming at W-R [54003] mounted on the same sheet with Warming's original drawing of *H. nasuta*, photo at RENZ).

Synonyms: *Habenaria riedelii* Cogn., Fl. Bras. (Martius) 3(4): 80. 1893. SYNTYPES: BRAZIL. Rio de Janeiro, Serra d' Estrella, L. Riedel 79 (Lectotype, designated here: LE); Novo-Friburgo, F.R. Mendonça 963 (B, destroyed).

Habenaria mayersii Ruschi, Orquid. Nov. Estad. Espirito Santo: 41. 1946. SYNTYPES: BRAZIL. Espirito Santo, Santa Teresa, Valão, S. Pedro, 700 m, 15 February 1937, A. Ruschi 500 (MBML [not located], probably lost); Valsugana Velha, 750 m, 4 March 1937, A. Ruschi 320 (MBML [not located], probably lost); Santa Leopoldina, Serra do Allemão, 340 m, 4 March 1937, A. Ruschi 321 (MBML [not located], probably lost); Sta. Teresa, Alto Sto. Antonio, 780 m, 28 February 1941, A. Ruschi 206 and 207 (MBML [not located], probably lost); Sta. Teresa, Valão São Pedro, 710 m, 29 February 1943, A. Ruschi and Angelli 70 and 71 (MBML [not located], probably lost).

Distribution: Brazil (BA, ES, MG, RJ, SP).

The examination of Warming's original illustrations of *H. warmingii*, located at W, revealed that *H. riedelii* is conspecific. The well-developed and spreading leaves of *H. riedelii*, which have been used to separate the two species, are clearly depicted in the original illustration of *H. warmingii*. The species original illustration was published by Warming (1884, t. 8, fig. 3).

Habenaria warszewiczii Schltr., Anexos Mem. Inst. Butantan, Secç. Bot. 1(2): 25. 1921. TYPE: PANAMA. *J.R.R. Warszewicz s.n.* (Holotype: presumably W [not seen]).

Basionym: *Habenaria petalodes* Lindl. var. *micrantha* Rchb.f., Beitr. Orchid.-K. C. Amer.: 5. 1866.

Distribution: Panama.

Schlechter (Schlechter and Hoehne, 1921) raised var. *micrantha* to specific rank, but Williams (1946) considered it a synonym of *H. petalodes* and was followed by most subsequent authors. In our opinion the taxon is distinct from *H. petalodes*, but more examination is necessary to determine the exact relationship between the two species and their distribution ranges. It is distinct from other Central American species in the *H. floribunda* group by the obovate petals and from *H. petalodes* by the smaller flowers. The original illustration of the species was published by Mansfeld (1931, t. 3, fig. 9).

The only material we have seen from of *H. warszewiczii* are three sheets at AMES from C.W. Powell (number 212), one of them a drawing with analyses from a specimen from B. The identification was made by Schlechter.

Habenaria wercklei Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 7. 1923. TYPE: COSTA RICA. *C. Wercklé 141* (Holotype: B, destroyed; drawing at AMES [31629]. No isotype located).

Synonyms: *Habenaria verecunda* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 6. 1923. TYPE: COSTA RICA. Ohne nähere Standortsangabe, *C. Wercklé 144* (Holotype: B, destroyed; drawing at AMES [31627]. No isotype located).

Habenaria gymnadenioides Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 271. 1923. TYPE: COSTA RICA. *A. Tonduz s.n.* (Holotype: B, destroyed; drawing at AMES [31632]. No isotype located).

Habenaria hondurensis Ames, Bot. Mus. Leaf. 3(2): 26. 1934. TYPE: HONDURAS. Department of Comayagua, near Siguatepeque (El Achote), 3,900 feet, 27 September 1932, *J.B. Edwards 267* (Holotype: AMES [not seen], drawing of type at AMES [50660]).

Distribution: Guatemala, El Salvador, Honduras, Nicaragua, Panama, Costa Rica.

Dressler (1999) accepted the name *H. wercklei* for the taxa described as *H. hondurensis*, *H. verecunda* Schltr., 1923, and *H. gymnadenioides*.

Habenaria williamsii Schltr., Repert. Spec. Nov. Regni Veg. 10: 445. 1912. TYPE: BOLIVIA. near Apolo, 5300 feet, 20 February 1902, *R.S. Williams 309* (Holotype: B, destroyed; Lectotype, designated here: NY [8920]; Isotypes: BM, NY [8921]).

Synonym: *Habenaria monadenioides* Schltr. ex Mansf., Repert. Spec. Nov. Regni Veg. Beih. 58, taf. 5, Fig. 17. 1930, *nom. illeg.*, *non H. monadenioides* Schltr., 1916.

Distribution: Bolivia.

The original illustration of the species was published by Mansfeld (1930, t. 7, fig. 27).

Habenaria xochitliae R.González, Bol. Inst. Bot. Univ. Guadalajara 12(2): 26, fig. 10. 2004 publ. 2006. TYPE: MEXICO. Jalisco, Mazamitla, 6 km al W de la población, road to Tamazula, 1940 m, 1 September 1991, *R. González, R. Ramírez and R. Soltero s.n.* (Holotype: IBUG).

Distribution: Mexico.

Habenaria xochitliae is closely related to *H. lactiflora* but differs by the mostly erect or straight, opaque leaves, the longest above middle, the subdense raceme; the scarcely arcuate spur, as long as or longer than ovary.

Habenaria yungasensis Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10: 34. 1922. TYPE: BOLIVIA. La Paz, Yungas, 6000 ft., 1885, *H.H. Rusby 2786* (Holotype: B, destroyed; Lectotype, designated here: AMES [70239]; Isotypes: BM, G, MO, NY, P, US, W; photo, drawing and fragment from W at RENZ).

Distribution: Bolivia.

The original illustration of the species was published by Mansfeld (1929, t. 133, fig. 522).

Habenaria zamudioana R.González, Bol. Inst. Bot. Univ. Guadalajara 3(1-3): 71, Fig. 5-5a-b. 1995 publ. 1997. TYPE: MEXICO. Estado de Michoacán, La Piedad, Cerro de Cujarato (Cerro Grande), 2500 m, 30 August 1994, S. Zamudio, R. González and E. Perez 9353 (Holotype: IEB; Isotypes: CAS, MICH, TEX).

Distribution: Mexico.

Habenaria zamudioana resembles *H. diffusa* and *H. filifera*.

Habenaria zothecina L.C.Higgins & S.L.Welsh, Great Basin Naturalist 46: 259. 1986. = **Platanthera zothecina** (L.C.Higgins & S.L.Welsh) Kartesz & Gandhi

Habenella alata (Hook.) Szlach. & Kras-Lap. = **H. alata** Hook.

Habenella brevilabiata (A.Rich. & Galeotti) Szlach. & Kras-Lap. = **H. brevilabiata** A.Rich. & Galeotti

Habenella curvilabra (Barb.Rodr.) Szlach. & Kras-Lap. = **H. curvilabra** Barb.Rodr.

Habenella dentifera (C.Schweinf.) Szlach. & Kras-Lap. = **H. dentifera** C.Schweinf.

Habenella eustachya (Rchb.f.) Szlach. & Kras-Lap. = **H. eustachya** Rchb.f.

Habenella floribunda (Lindl.) Szlach. & Kras-Lap. = **H. floribunda** Lindl.

Habenella garberi (Porter) Small = **H. floribunda** Lindl.

Habenella hamata (Barb.Rodr.) Szlach. & Kras-Lap. = **H. hamata** Barb.Rodr.

Habenella heleogena (Schltr.) Szlach. & Kras-Lap. = **H. heleogena** Schltr.

Habenella herzogii (Schltr.) Szlach. & Kras-Lap. = **H. floribunda** Lindl.

Habenella ligulata (C.Schweinf.) Szlach. & Kras-Lap. = **H. ligulata** C.Schweinf.

Habenella liguliglossa (Hoehne) Szlach. & Kras-Lap. = **H. obtusa** Lindl.

Habenella magdalenensis (Hoehne) Szlach. & Kras-Lap. = **H. magdalenensis** Hoehne

Habenella obtusa (Lindl.) Szlach. & Kras-Lap. = **H. obtusa** Lindl.

Habenella odontopetala (Rchb.f.) Small = **H. floribunda** Lindl.

Habenella oerstedii (Rchb.f.) Szlach. & Kras-Lap. = **H. oerstedii** Rchb.f.

Habenella ornithoides (Barb.Rodr.) Szlach. & Kras-Lap. = **H. obtusa** Lindl.

Habenella parvidens (Lindl.) Szlach. & Kras-Lap. = **H. parvidens** Lindl.

Habenella petalodes (Lindl.) Szlach. & Kras-Lap. = **H. petalodes** Lindl.

Habenella quadrata (Lindl.) Szlach. = **H. quadrata** Lindl.

Habenella seticauda (Lindl. ex Benth.) Szlach. & Kras-Lap. = **H. seticauda** Lindl.

Habenella strictissima (Rchb.f.) Szlach. & Kras-Lap. = **H. strictissima** Rchb.f.

Habenella unellezii (Foldats) Szlach. & Kras-Lap. = **H. unellezii** Foldats

Itaculumia habenarioides Hoehne = **H. habenarioides** (Hoehne) R.E.Nogueira & R.J.V.Alves

Itaculumia ulaei Hoehne = **H. itacolumia** Garay

Itaculumia jordanensis Leite = **H. jordanensis** (Leite) Garay

Kusibabella bractescens (Lindl.) Szlach. = **H. bractescens** Lindl.

Kusibabella burkartiana (Hoehne) Szlach. = **H. gourlieana** Gill. ex Lindl.

Kusibabella cryptophila (Barb.Rodr.) Szlach. = **H. cryptophila** Barb.Rodr.

Kusibabella fastor (Lindl. ex Warm.) Szlach. = **H. melvillei** Ridl.

Kusibabella gourlieana (Gill. ex Lindl.)
Szlach. = **H. gourlieana** Gill. ex Lindl.

Kusibabella longicauda (Hook.) Szlach. =
H. longicauda Hook.

Kusibabella macronectar (Vell.) Szlach. =
H. macronectar (Vell.) Hoehne

Kusibabella sartor (Lindl.) Szlach. =
H. macronectar (Vell.) Hoehne

Macrocentrum mendocinum Phil. =
H. gourlieana Gill. ex Lindl.

Mesicera michauxii (Nutt.) Raf. =
H. quinqueseta (Michx.) Eaton

Mesicera quinqueseta (Michx.) Raf. =
H. quinqueseta (Michx.) Eaton

Mesicera repens (Nutt.) Raf. = **H. repens**
Nutt.

Nemuranthes longicauda (Hook.) Raf. =
H. longicauda Hook.

Nemuranthes habenaria (L.) Raf. =
H. macroceratitis Willd.

Orchis entomantha Lex. = **H. entomantha**
(Lex.) Lindl.

Orchis habenaria L. = **H. macroceratitis**
Willd.

Orchis longicornu Salzm. ex Lindl. =
H. trifida Kunth

Orchis macronectar Vell. = **H. macronectar**
(Vell.) Hoehne

Orchis michauxii (Nutt.) Alph.Wood =
H. quinqueseta (Michx.) Eaton

Orchis monorrhiza Sw. = **H. monorrhiza**
(Sw.) Rchb.f.

Orchis pratensis Salzm. ex Lindl. =
H. pratensis (Salzm. ex Lindl.) Rchb.f.

Orchis quinqueseta Michx. = **H. quinqueseta**
(Michx.) Eaton

Orchis repens (Nutt.) Alph.Wood =
H. repens Nutt.

Orchis setacea Jacq. = **H. monorrhiza** (Sw.)
Rchb.f.

Platanthera foliosa Brongn. = **H. repens**
Nutt.

Platanthera garberi (Porter) Chapm. =
H. floribunda Lindl.

Platanthera michauxii (Nutt.) Alph.Wood =
H. quinqueseta (Michx.) Eaton

Platanthera monorrhiza (Sw.) W.J.Schrenk
= **H. monorrhiza** (Sw.) Rchb.f.

Platanthera repens (Nutt.) Alph.Wood =
H. repens Nutt.

Platantheroides alata (Hook.) Szlach. =
H. alata Hook.

Platantheroides brevilabiata (A.Rich. &
Galeotti) Szlach. = **H. brevilabiata** A.Rich. &
Galeotti

Platantheroides curvilabra (Barb.Rodr.)
Szlach. = **H. curvilabria** Barb.Rodr.

Platantheroides dentifera (C.Schweinf.)
Szlach. = **H. dentifera** C.Schweinf.

Platantheroides eustachya (Rchb.f.) Szlach.
= **H. eustachya** Rchb.f.

Platantheroides floribunda (Lindl.) Szlach.
= **H. floribunda** Lindl.

Platantheroides hamata (Barb.Rodr.)
Szlach. = **H. hamata** Barb.Rodr.

Platantheroides heleogena (Schltr.) Szlach.
= **H. heleogena** Schltr.

Platantheroides herzogii (Schltr.) Szlach. =
H. floribunda Lindl.

Platantheroides ligulata (C.Schweinf.)
Szlach. = **H. ligulata** C.Schweinf.

Platantheroides liguliglossa (Hoehne)
Szlach. = **H. obtusa** Lindl.

Platantheroides linifolia (C.Presl.) Szlach.
= **Platanthera dilatata** (Pursh) Lindl. var.
dilatata

Platantheroides magdalenensis (Hoehne)
Szlach. = **H. magdalenensis** Hoehne

Platantheroides obtusa (Lindl.) Szlach. =
H. obtusa Lindl.

Platantheroides odontopetala (Rchb.f.)
Szlach. = **H. floribunda** Lindl.

Platantheroides oerstedii (Rchb.f.) Szlach. =
H. oerstedii Rchb.f.

Platantheroides ornithoides (Barb.Rodr.)
Szlach. = **H. obtusa** Lindl.

Platantheroides parvidens (Lindl.) Szlach. =
H. parvidens Lindl.

Platantheroides petalodes (Barb.Rodr.)
Szlach. = **H. petalodes** Lindl.

Platantheroides quadrata (Lindl.) Szlach. =
H. quadrata Lindl.

Platantheroides seticauda (Lindl.) Szlach. =
H. seticauda Lindl.

Platantheroides strictissima (Rchb.f.)
Szlach. = **H. strictissima** Rchb.f.

Platantheroides unellezii (Foldats) Szlach. =
H. unellezii Foldats

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