

**Malaxidinae index nominum –**  
***Microstylis* (NUTT.) EATON emend. SZLACH. & MARG.**  
**(Orchidaceae)**

H. B. Margońska\*

**Zusammenfassung**

Für *Microstylis* (NUTT.) EATON emend. SZLACH. & MARG. (Orchidaceae) wird eine Liste der publizierten Namen und ihrer Synonyme präsentiert. Diese gibt auch die aktuelle Position der Taxa. Weiters werden ein comb. & stat.n., fünf comb.n. und vier syn.n. publiziert.

**Abstract**

For *Microstylis* (NUTT.) EATON emend. SZLACH. & MARG. (Orchidaceae) a list of published names, synonyms and corresponding types is presented. Additionally, one comb. & stat.n., five comb.n. and four syn.n. are proposed.

**Key words:** *Achroanthes*, *Crepidium*, *Dienia*, Malaxidinae, *Malaxis*, *Microstylis*, *Ophrys*, nomenclature, Orchidaceae, taxonomy

**Introduction**

Representatives of the genus *Microstylis* (NUTT.) EATON emend. SZLACH. & MARG. occur in Europe, America and Asia. There is a complicated taxonomic history as result of incorrect interpretations of the genus. The results gathered during taxonomic revision of the subtribe Malaxidinae allowed to complete a taxonomic checklist for the genus.

**Results and Discussion**

*Malaxis* was described by SOLANDER in SWARTZ'S paper in 1788, and originally contained only 2 species from Jamaica – *Malaxis spicata* and *M. umbelliflora*. Later BRITTON & BROWN (1913) have chosen *Malaxis spicata* as type species for the genus.

*Microstylis* was described by NUTTALL (1818) as section within genus *Malaxis*. NUTTALL included in section *Malaxis* the sole, circumpolar species *Malaxis paludosa* (L.) SW., and in section *Microstylis* all other species.

EATON (1822) gave generic rank to *Microstylis*, choosing *Microstylis ophioglossoides* (WILLD.) EATON as the type of the genus. Today this species is treated as a synonym of *Microstylis unifolia*.

---

Hanna B. Margońska, Department of Plant Taxonomy and Nature Conservation, Gdansk University, Al. Legionów 9, PL-80-441 Gdansk, Poland – dokhbm@univ.gda.pl

RIDLEY (1888) accepted EATON's concept of two genera. Consequently, after KUNTZE (1891) proposition of a new genus *Hammarbya* for *Malaxis paludosa*, *Microstylis* was for long time widely accepted as a synonym of the earlier genus *Malaxis*. However, already SEIDENFADEN (1978) and HILL & BLAXELL (1985) clearly suggested the polymorphic character of this genus.

Based on the studies of the generative structures of Epidendroideae (SZLACHETKO 1995, SZLACHETKO & MARGOŃSKA 2002) several genera were separated from *Malaxis*, e.g. *Crepidium* BL. *emend* SZLACH., *Glossochilopsis* SZLACH., *Kornasia* SZLACH., *Lisowskia* SZLACH., *Oberonioides* SZLACH., *Siedenfia* SZLACH., *Tamayorkis* SZLACH. (SZLACHETKO 1995); *Pseudoliparis* FINET *emend* SZLACH. & MARG. (SZLACHETKO & MARGOŃSKA 1999); *Saurolophorkis* MARG. & SZLACH. (MARGOŃSKA & SZLACHETKO 2001); *Seidenforchis* MARG. (MARGOŃSKA 2006).

The comparison of the type species of the genera *Malaxis* and *Microstylis*, particularly their gynostemium structure gave the reason to recognise them as separate taxa (SZLACHETKO & MARGOŃSKA 2002, SZLACHETKO & MARGOŃSKA 2006). For *Microstylis* an older name would be available: *Achroanthes* RAFIN. (1808 sine descr., 1819), but *Microstylis* is nomen conservandum against *Achroanthes* (SZLACHETKO & MARGOŃSKA 2006).

Representatives of *Microstylis* are characterised by the following characters: one to two-leaved plants, inflorescence elongate, cylindrical, sometimes abbreviated and nearly umbellate. Gynostemium rather short to elongate, slender, erect with column nearly as long as the anther or longer. Anther base below the stigma base erect, hardly motile, dorsoventrally flattened, subquadrate to elliptic-ovate, 2-chambered, chambers opening ventrally, parallel. Filament incorporated into the dorsal clinandrium, whereas connective covering both locules, rather thick. Pollinia 4, in two pairs, joined together apically, unequal in size, more or less clavate, elliptic to slightly laterally compressed in cross-section, formed from tightly packed pollen grains. Caudiculae absent. Dorsal clinandrium narrow, sometimes with free wing-like projections. Stigma ventral, oblong to elliptic, basally deeply concave. Rostellum erect, triangular to ligulate, acute to subblunt, usually exceeding the anther apex, built of few cell layers. The apex of the rostellum which is covered by a cuticula forms a single, minute, semifluid viscidium. (SZLACHETKO & MARGOŃSKA 2006).

At present 12 species belong to *Microstylis*. Representatives of the genus are occurring in Europe (Alps, and N & E of them), Asia (circumpolar and temperate to subtropical, N & E part), North (circumpolar and temperate), Central to South Americas (to subtropics).

The names in the index are given as:

***bold Italic*** – current name,

*Italic* – published name;

≡ homotypic taxon (based on the same type-specimens),

= heterotypic taxon (based on different type-collections); following "-" the citation is given, where the taxon was put into this synonymy first time.

Illegitimate and misunderstood names ("sensu") are given in normal letters. Herbaria are given with their abbreviations in Index Herbariorum.

***Microstylis* index nominalis**

***Microstylis*** (NUTT.) EATON, Man. Bot., ed. 3: 353 (1822), nom. & orth. cons., emend. SZLACH. & MARG., Acta Soc. Bot. Pol. 75(3): 229-231 (2006)

≡ *Malaxis* sect. *Microstylis* NUTT., Gen. Am. 2: 196 (1818). – nomen invalidum.

≡ *Achroanthes* RAF., Med. Repos. N. York. 5: 352 (1808), sine descr., J. Phys. 89: 261 (1819) (*Acroanthes* orth. var. of *Achroanthes*).

Type species: *Microstylis ophioglossoides* (MUHL. ex WILLD.) RAF (= *Microstylis unifolia* (MICHX.) BRITTON).

***Microstylis cylindrostachya*** (LINDL.) RCHB.F., in WALPERS, Ann. Bot. Syst. 6: 207 (1861)

≡ *Dienia cylindrostachya* LINDL., Wall. Cat., Numer. List: 53, n. 1934 (1829), nom. nud., LINDL., Gen. et Sp. Orchid. Pl.: 22 (1830)

≡ *Malaxis cylindrostachya* (LINDL.) KUNTZE, Rev. Gen. Pl. 2: 673 (1891).

Type: Nepal, sine prec. loc., 1832, Wallich 1934 (holotype: K-L! ex Museum Anglo-Indico, iso: G!, W-Rchb.Orch. 40919! icone).

***Microstylis macrostachya*** (LEX.) LINDL., Gen. et Sp. Orchid. 21 (1830)

≡ *Ophrys macrostachya* LEX., in LA LAVE & LEXARZA, Nov. Veg. Desc. Fasc. 2 (Orch. Opusc.) 9 (1825).

≡ *Malaxis macrostachya* (LEX.) KUNTZE, Rev. Gen. Pl. 2: 673 (1891).

Type: Mexico, Jesus del Monto, juxta Vallisoletum, florens Augusto, Llave s.n. (holotype: P!).

= *Malaxis densiflora* A.RICH. & GALEOTTI ex RIDL., J. Linn. Soc., Bot. 24: 331 (1888). – RIDLEY 1888: 331.

Type: Mexico, Oaxaca State, San Felipe, 8000', 08.1840., H. Galeottii 50531 (holotype: K-L! ex Museum Anglo-Indico, iso: K-L!).

Note: non *Malaxis densiflora* (A. RICH.) KUNTZE, Rev. Gen. 2: 673 (1891) ≡ *Seidenfia densiflora* (A. RICH.) SZLACH., Fragm. Flor. Geobot., Suppl. 3: 122 (1995).

= *Microstylis montana* ENGELM. & ROTH., Rept. Bot. Wheeler, Surv. 6: 264 (1878) – AMES & SCHWEINFURTH 1935: 120-121.

≡ *Achroanthes montana* (ENGELM. & ROTH.) GREENE, Pittonia. 2: 183 (1891)

≡ *Malaxis montana* (ENGELM. & ROTH.) KUNTZE, Rev. Gen. Pl. 2: 673 (1891).

Note: non *Malaxis montana* BL., Bijdr. 388 (1825) ≡ *Liparis montana* (BL.) LINDL., Gen. et Sp. Orch. 29 (1830).

≡ *Malaxis soulei* L.O.WILLIAMS., Ann. Mo. Bot. Gard. 21: 343 (1934), nom.n.

Type: USA, Arizona, Mt. Graham, 9500', 09.1874., Rothrock 734 (holotype: AMES-101717!).

***Microstylis monophyllos*** (L.) LINDL., Gen. et Sp. Orchid. Pl.: 19 (1830)

≡ *Ophrys monophyllos* L., Sp. Pl. ed. 1, 2: 947 (1753)

≡ *Epipactis monophylla* (L) F.W. SCHMIDT, in MAYER, Phys.-Ökon. Aufs. 1: 245 (1791)

≡ *Malaxis monophyllos* (L.) Sw., Vet. Akad. Nya Handl. Stockh. 21: 234 (1800).

≡ *Achroanthes monophylla* (L) GREENE, Pittonia 2 183 (1891).

≡ *Achroanthes cilifolia* RAF., New Fl. Am. 1: 59 (1836), nom.n.

Type: Europa, "Borussia, Medalpidiae, paludibus sylvaticis", leg. Linné 10 (LINN-1056.17!)

= *Pseudorchis monophylla* CLUS, Hist. 269 (1601). – LINNÉ 1753: 947.

= *Monorchis ophioglossoides* MENTZ., Pug. T. 5. s. 1: 2. – LINNÉ 1753: 947.

Note: not *Monorchis ophioglossoides* (SCHLTR.) O. SCHWARZ, Mitt. Thuring. Bot. Ges. 1: 95 (1949) ≡ *Herminium ophioglossoides* SCHLTR., Notes Bot. Edin. 5: 96 (1912).

***Microstylis monophyllos* (L.) LINDL. var. *monophyllos***

- = *Dienia gmelinii* LINDL., Gen. Sp. Orchid. Pl.: 23 (1830). - RIDLEY 1888: 318.  
Type: Sibiria, "Ophrys lilifolia", Gmelin s.n. (holotype: K-L! ex Museum Anglo-Indico, iso: LE).
- = *Liparis inconspicua* MAKINO, Bot. Mag. (Tokyo) 6: 48 (1892), nom. nud.  
Original specimen: Japan, Suruga, Mt. Fuzi, S. Matsuda s.n. (not located)
- = *Malaxis taiwaniana* S.S. YING, Quart. J. Chinese For. 8 (4): 143 (1975). – LIN TSAN-PIAO 1977: 262.  
Type: Taiwan, Kuan-Kao, 2700 m, 26.07.1974., S.S. Ying 2920 (holotype: TNS, drawing!).

***Microstylis monophyllos* (L.) LINDL. var. *diphyllos* (CHAMISSO) NAKAI, Bull. Natl. Sci. Mus. Tokyo 31: 151 (1952).**

- ≡ *Malaxis diphyllos* CHAMISSO, in CHAMISSO & SCHLECHTENDAL, Linnaea 3: 34 (1828).
  - ≡ *Achroanthes monophylla* (L.) GREENE f. *diphyllos* (CHAMISSO) KOIDZ. ex MATSUM, Icon Koishikawa 3:27 (1916)
  - ≡ *Microstylis diphyllos* (CHAMISSO) LINDL., Gen. et Sp. Orchid. Pl.: 19 (1830).
  - ≡ *Malaxis monophyllos* (L.) SW. var. *diphyllos* (CHAMISSO) LUER, Native Orchids U.S. & Canada excluding Florida: 306 (1975).
- Type: Canada, "in turfosis convalium infimorum Unalaskae solitaria proveniens et rara", Aleutian Islands, A. von Chamisso s.n. (holotype: LE, HAL).

***Microstylis monophyllos* (L.) LINDL. subsp. *brachypoda* (A. GRAY.) SZLACH. & MARG., Acta Soc. Bot. Pol. 75(3): 229-231 (2006).**

- ≡ *Microstylis brachypoda* A. GRAY, Ann. Lyceum Nat. Hist. N. York 3: 228 (1835).
  - ≡ *Malaxis brachypoda* (A. GRAY.) FERNALD, Rhodora 28: 176 (1926).
  - ≡ *Malaxis monophyllos* (L.) SW. var. *brachypoda* (A. GRAY.) MORRIS & EAMES, Our Wild Orchids 358 (1929).
  - ≡ *Malaxis monophyllos* subsp. *brachypoda* (A. GRAY.) Á. LÖVE & D. LÖVE, Taxon 18 312 (1969).
  - ≡ *Achroanthes acuminata* RAF., New Fl. Am. 1: 59 (1836), nom.n.
- Type: USA, New York, shady sphagnous swamps of Oneida and Herkimer, A. Gray s.n. (holotype: AMES-101606, drawing! at mixed herbarium sheet, iso: K-L! one down, left and two upper right specimens only, K-L! two upper and middle specimens, G!).

***Microstylis monophyllos* (L.) LINDL. subsp. *brachypoda* (A. GRAY.) SZLACH. & MARG. var. *bifolia* (MOUSLEY) MARG., **comb. & stat.n.****

- ≡ *Malaxis monophyllos* (L.) SW. f. *bifolia* MOUSLEY, Orchid Rev. 35: 356 (1927).
  - ≡ *Malaxis brachypoda* (A. GRAY.) FERNALD f. *bifolia* (MOUSLEY) FERNALD, Rhodora 52: 71 (1950).
- Type: Canada, Quebec, 20 miles to N of Montreal, near Terrebonne, damp wood, 27.06.1927., H. Mousley s.n. (holotype: MT).

***Microstylis monophyllos* (L.) LINDL. var. *obtusata* (TSUKAYA & H.OHBA) MARG., **comb.n.****

- ≡ *Malaxis monophyllos* (L.) LINDL. var. *obtusata* TSUKAYA & H.OHBA, J. Jap. Bot. 75 (5): 314 (2000).

Type: Nepal, Sagarmatha Zone: Solukhumbu Distr., Thasing Dingma to Saure Kharka through Sanu Khola, 3350m, 4.08.1995., F. Miyamoto, M. Amano, H. Ikeda, C.M. Joshi, K. Arai, T. Komatsu 9584106 (holotype: TI, isotype: KTM, drawing!).

***Microstylis muscifera*** (LINDL.) RIDL., J. Linn. Soc., Bot. 24: 333 (1888).

≡ *Dienia muscifera* LINDL., Wall. Cat., Numer. List: 53, n. 1935 (1828), nom. nud., LINDL., Gen. et Sp. Orchid. Pl.: 23 (1830).

≡ *Malaxis muscifera* (LINDL.) KUNTZE, Rev. Gen. Pl. 2: 673 (1891).

≡ *Malaxis muscifera* (LINDL.) GRUBOV., Rast. Tsent. Azii, Mater. Bot. Inst. Komarova, 7 105 (1977).

Type: Nepal, sine prec. loc., 1821., Wallich 1935 (holotype: K-L! ex Museum Anglo-Indico, isotypes: BM-000082801!, G!, G!, L-0063824!)

***Microstylis muscifera*** (Lindl.) RIDL. var. ***stelostachya*** (TANG. & WANG) MARG., **comb.n.**

≡ *Malaxis muscifera* (LINDL.) KUNTZE var. *stelostachya* TANG. & WANG, Acta Phytotax. Sin. 1: 36, 73 (1951).

Type: China, NW Yunnan, sine prec. loc., 08.1917., G. Forrest 15867 (holotype: K! isotypes: BM-000082756! only 2 plants right down, E!, P!, W-Rchb. 13505!).

Note: The specimen Forrest 15867 (E) was erroneously named *Microstylis yunnanensis* in Notes. Roy. Bot. Gard. Edinb. 17: 163 (1930). – TANG & WANG 1951:73; HU 1974: 295.

***Microstylis pandurata*** SCHLTR., Fedde Rep. Nov. Spec. Regni Veg. Beih. 3: 77 (1906)

≡ *Malaxis pandurata* (SCHLTR.) AMES, Proc. Biol. Soc. Wash. 35: 84 (1922).

Type: Costa Rica, in den Waldern bei La Palma, 1450 m, 31. 08.1898., A. Tonduz 12508 (holotype: B+, AMES-101732! icone)

= *Microstylis türckheimii* SCHLTR., Beih. Bot. Centr. 36, 2: 382 (1918). – AMES & SCHWEINFURTH 1935: 123.

≡ *Malaxis türckheimii* (SCHLTR.) AMES, Proc. Biol. Soc. Wash. 35: 85 (1922).

Type: Guatemala, Alta Verapaz Dept., in woods near Pansamala, 08.1886., H. von Turckheim 1017 (holotype: B+, AMES-101768! icone)

= *Malaxis harlingii* DODSON, Orquideologia 19 (3): 55 (1994), syn.n.

Type: Ecuador, Pichincha, Santo Domingo to Quito, Tandapi, 1500 m, 21.03.1985., G. Harling & L. Andersson 23213 (holotype: GB-0007397!).

Note: Type-collection and protologues of *Microstylis pandurata* SCHLTR. and *Malaxis harlingii* DODSON have been checked and not any sensibly distinguishing features have been found. The taxa must be treated as conspecific.

***Microstylis pringlei*** S. WATSON, Proc. Amer. Acad. Arts 23: 282 (1888)

≡ *Achroanthes pringlei* (S. WATSON) GREENE, Pittonia 2. 184 (1891).

≡ *Malaxis pringlei* (S. WATSON) AMES, Proc. Biol. Soc. Wash. 35: 84 (1922).

Types: Mexico, Chihuahua State, Sierra Madre, cool porphyryite gravel, 10.1887., C.G. Pringle 1675 (syntypes: GH, BM-000077396!, BR!, W-Rchb.Orch. 1953!, WU!); C.G. Pringle 1369 (syntypes AMES-101743!, AMES-101742!, F-104737, G!, K!, K!, WU!).

= *Malaxis stricta*. O. WILLIAMS, Ceiba 1: 187.1950, **syn.n.**

Type: Mexico, Morales, Tepoztlán, 27.07.1936., E. Oestlund & O. Nagel 6012 (holotype: AMES-3410!).

Note: There are not enough significant characters for keeping this taxon as separate species.

***Microstylis steyermarkii*** (CORREL) MARG., **comb.n.**

≡ *Malaxis steyermarkii* CORREL, Lloydia 10: 210 (1947).

Type: Guatemala, Huehuetenango Dept., Cerro Negro, 2 miles E of Las Palmas, Sierra de los Cuchumatanes, Liquidambar-forested slopes along moist ravine, 1600-2000', 31.08.1942., J.A. Steyermark 51672 (holotype: F-1126516, drawings!)

Note: Without any doubt this species belongs to *Microstylis*, therefore transferring it from *Malaxis* is necessary.

***Microstylis streptopetala*** B.L.ROB. & GREENM., Proc. Amer. Acad. Arts 32: 36 (1896).

≡ *Malaxis streptopetala* (B.L.ROB. & GREENM.) AMES, Proc. Biol. Soc. Wash. 35: 84 (1922).

Type: Mexico, Oaxaca, Sierra de san Felipe, dry pine ridges, 9-10000', 30.07.1894., C.G. Pringle 4808 (holotype: AMES-101756!, isotypes: AMES-101757!, AMES-101758!, BM-000077409!, BP-26741!, BR!, F-39520, G!, HBG!, K!, P! with Finet's icone, W-Rchb.Orch. 2445! WU!).

***Microstylis tamayoana*** (GARAY & KITTR.) SZLACH. & MARG., Acta Soc. Bot. Pol. 75(3): 229-231 (2006).

≡ *Malaxis tamayoana* GARAY & KITTR., McVaugh, Fl. Novo-Galiciana 16: 200 -202; figs. 57-58 (1985).

Type: Mexico. Sierra de la Campana, NW of Los Volcanes, 1900-2000 m, scattered and local among pines, 23-25.10.1952., R. McVaugh 13778 (holotype: AMES-101170!; isotype: MICH).

Paratype: Mexico, Sierra deManantlan, between Durazno and Aserradero S. Miguel Uno, R. McVaugh 13982 (AMES, MICH).

***Microstylis tepicana*** (AMES) SZLACH. & MARG., Acta Soc. Bot. Pol. 75(3): 229-231 (2006).

≡ *Malaxis tepicana* AMES, Proc. Biol. Soc. Wash. 35: 83 (1922).

Type: Mexico, between Santa Gertrudis and Santa Teresa, 8.08.1897., J.N. Rose 2097 (holotype: US-300931!, isotypes: AMES-101174!, AMES-101173!).

Paratype: Mexico, between Dolores and Santa Gertrudis, J.N. Rose 2034 (US).

***Microstylis unifolia*** (MICHX.) BRITTON, STERN. & POGG., Prelim. Cat. Anthoph. & Pterid. N. York 51 (1888).

≡ *Malaxis unifolia* MICHX., Fl. Bor. Am. 2: 157 (1803).

≡ *Achroanthes unifolia* (MICHX.) RAF., Med. Repos. 2: 352 (1808).

Type: USA, South Carolina, swamps de la Balle, Michaux s.n. (lectotype: P, Herbar de l'Amérique Setentrionale d'André Michaux, right plant; isotype: K! icone) - lectotypification CATLING 1991: 8.

≡ *Malaxis ophioglossoides* MUHL. ex WILLD., Spec. Plant. Ed. 4 90 (1805). – LINDLEY 1829: 1290.

≡ *Achroanthes ophioglossoides* (MUHL. ex WILLD.) RAF., Med. Repos. 2: 352 (1808).

≡ *Microstylis ophioglossoides* (MUHL. ex WILD.) NUTT. ex EATON, Genera Amer. Pl. 2: 196 (1818).

Note: not *Microstylis ophioglossoides* LINDL., in Edward's Bot. Reg. 15: t. 1290 (1829) in part, except as to enlarged analysis (= *Malaxis fastigiata* (RCHB.f.) KUNTZE, Rev. Gen. 2: 673 (1891)).

≡ *Prescottia ophioglossoides* (MUHL. ex WILLD.) SPRENG., Syst. Veg. 3: 706 (1826).

Type: "USA, in silvis umbrosis, Pennsylvaniae, Carolinae, Floridae" USA, sine prec. loc., Muhlenber 173 (lectotype: PH, Herbarium Muhlenber, right plant; DAO photo); lectotypification CATLING 1991: 8.

≡ *Microstylis ophioglossoides* (MUHL. ex WILD.) NUTT. var. *mexicana* LINDL., Edward's Bot. Reg. 15 t.1290 (1829). – AMES & SCHWEINFURTH 1935: 126.

Type: Mexico, sine prec. loc., Dr H.H.J. s.n. (lectotype: K-L! ex Museum Anglo-Indico, right plant with name written below by Lindley, DAO photo); lectotypification CATLING 1991: 8.

≡ *Achroanthes laxiflora* RAF., New Fl. Am. 1: 58 (1836). nom.n.

= *Achroanthes obtusifolia* RAF., New Fl. Am. 1: 58-59 (1836).

Type: USA, Alabama, Georgia, Elliot s.n. (not found).

= *Malaxis thlaspiiformis* A.RICH & GALEOTTI, Ann. Sci. Nat. Ser. 3, 3: 18. 1845 (1846). – AMES & SCHWEINFURTH 1935: 126.

Type: Mexico, Oaxaca State, Huatusco, 07.1842., M. Ghiesbreght s.n. (lectotype (CATLING 1991: 8) P!, DAO photo, K-L! ex Museum Anglo-Indico, flowers drawing).

= *Microstylis grisebachiana* FAWC. & RENDLE, J. Bot. 67: 7 (1909). – AMES & SCHWEINFURTH 1935: 126.

≡ *Malaxis grisebachiana* (FOWCETT & RENDLE) FOWCETT & RENDLE in Fl. Jamaica 1: 43 (1910).

Type: Jamaica, damp shady banks near Morse's Gap, 4800', 21.10.1899., W. Harris 7743 (lectotype (CATLING 1991: 8): BM-000077384!, iso: UCW!, DAO photo).

= *Malaxis bayardii* FERNALD, Rhodora 38: 402, tab. 446, fig. 1, 2 (1936). – CORREL 1950: 268.

Type: USA, Virginia State, SE part, Nansemond Country, Kilby, dry sandy woods and adjacent clearings, 11.09.1935., M.L. Fernalde, Bayard Long & J.M. Fogg Jr. 4851 (holotype: AMES-101103!, isotypes: PH, DAO photo).

= *Malaxis unifolia* MICHX. f. *variegata* MOUSLEY, Orchid Rev. 35: 164 (1927).

Type: Canada, Quebec, Hartley, the corner of an upland knolly pasture, bordering a large wood, 23.08.1926., H. Mousley s.n. (holotype: MT).

= *Malaxis amplexicolumna* E. W. GREENWOOD & R. GONZALEZ T., Orquidea (Mexico), 8 (1): 123-126 (1981), **syn.n.**

Type: Mexico, Chiapas, W of Teopisca, near km 108,4, Tuxtla Gutierrez-Comitan, 2050 m, 23.08.1978., M. & E.W. Greenwood G-743, Cult. in Oaxaca, dried 30.08.1980. (holotype: AMO, K! photo, K! icone, drawings!).

Note: After detailed comparison of the type specimens and original diagnoses of *Microstylis unifolia* (MICHX.) BRITTON and *Malaxis amplexicolumna* E. W. GREENWOOD & R. GONZALEZ T., there is no doubt that the taxa must be treated as conspecific.

= *Malaxis salazarii* CATLING, Orquidea (Mexico) 12 (1): 98 (1990), **syn.n.**

≡ *Microstylis salazarii* (CATLING) SZLACH. & MARG., Acta Soc. Bot. Pol. 75(3): 229-231 (2006).

Type: Mexico. Jalisco: Municipio de Talpa, entre Cuale y Cumbre, bosque pino y encino. 30.08.1973., R. González Tamayo RGT 923 (holotype: AMO; isotypes: AMES-101167!, ENCB).

Note: Detailed studies of the type specimens and original diagnoses of *Microstylis unifolia* (MICHX.)

BRITTON and *Microstylis salazarii* (CATLING) SZLACH. & MARG. without any doubt show that the taxa must be treated as conspecific, too.

***Microstylis unifolia*** (MICHX.) var. ***bifolia*** (MOUSLEY) MARG., **comb.n.**

≡ *Malaxis unifolia* MICHX. f. *bifolia* MOUSLEY, Orchid Rev. 35: 163 (1927).

Type: Canada, Quebec, Hartley, the corner of an upland knolly pasture, bordering a large wood, 23.08.1926., H. Mousley s.n. (holotype: MT).

***Microstylis yunnanensis*** SCHLTR., Notes Bot. Gard. Edin. 5: 109., pl. 83 (1912).

≡ *Malaxis yunnanensis* (SCHLTR.) TANG. & WANG, Acta Phytotax. Sin. 1: 75 (1951).

Type: China, Yunnan, mountain meadows on the E flank of the Likiang Range, Lat. 27° 15' N, 11-12000', 07.1906, G. Forrest 2627 (holotype: E!, BM! photo, IBSC).

= *Malaxis arisanensis* (HAYATA) S.Y.HU, Quart. J. Taiwan Mus. 27 (3-4) 432 (1974).

≡ *Microstylis arisanensis* HAYATA, Ic. Pl. Formos. 6: 68 (1916).

Type: Formosa, U.J. Faurie 924 (holotype: P ex Plantes du Japon achetes 1895-96, drawings!).

***Microstylis yunnanensis*** SCHLTR. var. ***nematophylla*** (TANG. & WANG) MARG., **comb.n.**

≡ *Malaxis yunnanensis* (SCHLTR.) TANG. & WANG var. *nematophylla* TANG. & WANG, Acta Phytotax. Sin. 1: 76 (1951).

Type: China, Szechuan, Omei Hsien, Mt. Omei, 3000', 22.07.1931., F.T. Wang 23411 (holotype: PE).

### Index of referable names:

*Achroanthes* ≡ ***Microstylis***

*Achroanthes acuminata* ≡ ***Microstylis monophyllos*** subsp. ***brachypoda***

*Achroanthes cilifolia* ≡ ***Microstylis monophyllos***

*Achroanthes laxiflora* RAF. = ***Microstylis unifolia*** (MICHX.) BRITTON

*Achroanthes monophylla* ≡ ***Microstylis monophyllos***

*Achroanthes monophylla* f. *diphyllus* (CHAMISSO) KOIDZ. ex MATSUM ≡ ***Microstylis monophyllos*** var. ***diphyllus*** (CHAMISSO) NAKAI

*Achroanthes montana* = ***Microstylis macrostachya***

*Achroanthes obtusifolia* RAF. = ***Microstylis unifolia*** (MICHX.) BRITTON

*Achroanthes ophioglossoides* (MUHL. ex WILLD.) = ***Microstylis unifolia*** (MICHX.) BRITTON

*Achroanthes pringlei* ≡ ***Microstylis pringlei***

*Achroanthes unifolia* MICHX ≡ ***Microstylis unifolia*** (MICHX.) BRITTON

*Dienia cylindrostachya* ≡ ***Microstylis cylindrostachya***

*Dienia gmelinii* = ***Microstylis monophyllos*** var. ***monophyllos***

*Dienia muscifera* ≡ ***Microstylis muscifera***

*Epipactis monophylla* ≡ ***Microstylis monophyllos***

*Liparis inconspicua* = ***Microstylis monophyllos*** var. ***monophyllos***

*Malaxis amplexicolumna* = ***Microstylis unifolia*** (MICHX.) BRITTON

*Malaxis arisanensis* (HAYATA) = ***Microstylis yunnanensis*** SCHLTR.

*Malaxis bayardii* = ***Microstylis unifolia*** (MICHX.) BRITTON

*Malaxis brachypoda* ≡ ***Microstylis monophyllos*** subsp. ***brachypoda***

*Malaxis brachypoda* f. *bifolia* ≡ ***Microstylis monophyllos*** subsp. ***brachypoda*** var. ***bifolia***

*Malaxis cylindrostachya* ≡ ***Microstylis cylindrostachya***

*Malaxis densiflora* A.RICH. & GALEOTTI ex RIDL. = ***Microstylis macrostachya***

*Malaxis densiflora* (A.RICH.) ≡ ***Seidenfia densiflora*** (A.RICH.) SZLACH.

*Malaxis diphyllus* ≡ ***Microstylis monophyllos*** var. ***diphyllus*** (CHAMISSO) NAKAI

*Malaxis grisebachiana* = ***Microstylis unifolia*** (MICHX.) BRITTON  
*Malaxis harlingii* = ***Microstylis pandurata***  
*Malaxis macrostachya* ≡ ***Microstylis macrostachya***  
*Malaxis monatana* (ENGELM. & ROTH.) = ***Microstylis macrostachya***  
*Malaxis monatana* BL. ≡ ***Liparis montana*** (BL.) LINDL.  
*Malaxis monophyllos* ≡ ***Microstylis monophyllos***  
*Malaxis monophyllos* f. *bifolia* ≡ ***Microstylis monophyllos*** subsp. *brachypoda* var. *bifolia*  
*Malaxis monophyllos* var. *brachypoda* ≡ ***Microstylis monophyllos*** subsp. *brachypoda*  
*Malaxis monophyllos* subsp. *brachypoda* ≡ ***Microstylis monophyllos*** subsp. *brachypoda*  
*Malaxis monophyllos* var. *diphyllos* ≡ ***Microstylis monophyllos*** var. *diphyllos* (CHAMISSO)

NAKAI

*Malaxis monophyllos* var. *obtusa* ≡ ***Microstylis monophyllos*** var. *obtusa*  
*Malaxis muscifera* (LINDL.) KUNTZE ≡ ***Microstylis muscifera***  
*Malaxis muscifera* (LINDL.) GRUBOV ≡ ***Microstylis muscifera***  
*Malaxis muscifera* var. *stelostachya* ≡ ***Microstylis muscifera*** var. *stelostachya*  
*Malaxis ophioglossoides* MUHL. ex WILLD. = ***Microstylis unifolia*** (MICHX.) BRITTON  
*Malaxis pandurata* ≡ ***Microstylis pandurata***  
*Malaxis pringlei* ≡ ***Microstylis pringlei***  
*Malaxis salazarii* = ***Microstylis unifolia*** (MICHX.) BRITTON  
*Malaxis soulei* = ***Microstylis macrostachya***  
*Malaxis stricta* = ***Microstylis pringlei***  
*Malaxis steyermarkii* ≡ ***Microstylis steyermarkii***  
*Malaxis streptopetala* ≡ ***Microstylis streptopetala***  
*Malaxis taiwaniana* = ***Microstylis monophyllos*** var. *monophyllos*  
*Malaxis tamayoana* ≡ ***Microstylis tamayoana***  
*Malaxis tepicana* ≡ ***Microstylis tepicana***  
*Malaxis thlaspiiformis* = ***Microstylis unifolia*** (MICHX.) BRITTON  
*Malaxis türckheimii* = ***Microstylis pandurata***  
*Malaxis unifolia* MICHX. ≡ ***Microstylis unifolia*** (MICHX.) BRITTON  
*Malaxis unifolia* MICHX. f. *bifolia* ≡ ***Microstylis unifolia*** (MICHX.) var. *bifolia*  
*Malaxis unifolia* MICHX. f. *variegata* = ***Microstylis unifolia*** (MICHX.) Britton  
*Malaxis yunnanensis* (SCHLTR.) ≡ ***Microstylis yunnanensis*** SCHLTR.  
*Malaxis yunnanensis* (SCHLTR.) var. *nematophylla* ≡ ***Microstylis yunnanensis*** SCHLTR. var.

***nematophylla***

***Microstylis***

*Microstylis* subgenera ≡ ***Microstylis***

*Microstylis arisanensis* HAYATA = ***Microstylis yunnanensis*** SCHLTR.

*Microstylis brachypoda* ≡ ***Microstylis monophyllos*** subsp. *brachypoda*

***Microstylis cylindrostachya***

*Microstylis diphyllos* ≡ ***Microstylis monophyllos*** var. *diphyllos* (CHAMISSO) NAKAI

*Microstylis grisebachiana* = ***Microstylis unifolia*** (MICHX.) BRITTON

***Microstylis macrostachya***

***Microstylis monophyllos***

***Microstylis monophyllos*** subsp. *brachypoda*

***Microstylis monophyllos*** subsp. *brachypoda* var. *bifolia*

***Microstylis monophyllos*** var. *diphyllos* (CHAMISSO) NAKAI,

***Microstylis monophyllos*** var. *monophyllos*

***Microstylis monophyllos*** var. *obtusa*

***Microstylis monophyllos*** var. *obtusa*

***Microstylis muscifera***

***Microstylis muscifera*** var. *stelostachya*

*Microstylis ophioglossoides* (MUHL. ex WILLD.) NUTT. ex EATON = ***Microstylis unifolia*** (MICHX.) BRITTON

*Microstylis ophioglossoides* LINDL. = ***Malaxis fastigiata*** (RCHB.F.) KUNTZE

*Microstylis ophioglossoides* (MUHL. ex WILLD.) NUTT. var. *mexicana* LINDL = ***Microstylis unifolia*** (MICHX.) BRITTON

***Microstylis pandurata***

***Microstylis pringlei***

*Microstylis salazarii* = ***Microstylis unifolia*** (MICHX.) BRITTON

***Microstylis steyermarkii***

***Microstylis streptopetala***

***Microstylis tamayoana***

***Microstylis tepicana***

***Microstylis unifolia*** (MICHX.) BRITTON

***Microstylis unifolia*** (MICHX.) var. *bifolia*

*Microstylis türckheimii* = ***Microstylis pandurata***

*Microstylis yunnanensis* non SCHLTR = ***Microstylis muscifera*** var. *stelostachya*

***Microstylis yunnanensis*** SCHLTR.

***Microstylis yunnanensis*** SCHLTR. var. *nematophylla*

*Monorchis ophioglossoides* MENTZ. = ***Microstylis monophyllos***

*Monorchis ophioglossoides* (SCHLTR.) ≡ ***Herminium ophioglossoides*** SCHLTR.

*Ophrys macrostachya* ≡ ***Microstylis macrostachya***

*Ophrys monophyllos* ≡ ***Microstylis monophyllos***

*Pseudorchis monophylla* = ***Microstylis monophyllos***

*Prescottia ophioglossoides* (MUHL. ex WILLD.) SPRENG = ***Microstylis unifolia*** (MICHX.) BRITTON

### Acknowledgements

I am especially grateful to Clare Drinkell from (K), also the Curators of A, AMES, B, BM, BP, BR, C, E, FI, G, GB, GH, HBG, K, L, LINN, P, US, W, WU and Z for the loan of herbarium specimens and/or their hospitality during my personal visits. I am obliged to keeper of all visited scientific library, as well. Special thanks for Mrs. M. G. Kortylewska-Margońska and Mr. M. Margoński for help during my researches. The studies were conducted also with using digital database - Archivum Orchidaliium. This article was prepared thanks to Polish Ministry of Science and Higher Education grant No. N304 029 32/1584.

### References

- AMES O. & SCHWEINFURTH C., 1935: Nomenclatorial studies in *Malaxis* and *Spiranthes*. – Bot. Mus. Leafl. Harvard Univ. 3 (8). 113-133.
- BRITTON N. & BROWN A., 1913: Illustrated Flora of the Northern United States, Canada and the British possessions. 2 ed. – New York.
- CATLING P.M., 1991: Systematics of *Malaxis bayardii* and *M. unifolia*. – Sci. J. Am. Orch. Soc. 6(1): 3-23.
- CORRELL D.S., 1950: Native orchids of North America North of Mexico. – Waltham, Mass.
- EATON A., 1822: Manual of botany for the northern States. 353., 3. ed. – Albany.
- HILL H.D. & BLAXELL D.F., 1985: Notes on the genus *Malaxis* SOL. ex Sw., including a new record for Australia. – Orchadian 8 (4) 80-82
- HU S.Y. 1974: The Orchidaceae of China (8). – Quart. J. Taiw. Mus. 27 (3&4) 1-468.

- KUNTZE O., 1891: *Revisio Generum Plantarum* 2: 665-674.
- LINNÉ C., 1753: *Species Plantarum*. ed. 1, 2: 1-1231.
- LINN TSAN-PIAO, 1977: *Native Orchids of Taiwan* 2: 1-355.
- LINDLEY J., 1829: *Ornamental Flower-Garden and Shrubbery*. – *Edward's Botanical Register, New Series* (15) 11: 1290. – London.
- LUER C.A., 1975: *The native orchids of the United States and Canada (excluding Florida)* 2: 1-355. – New York Botanical Garden, Bronx, New York.
- MARGOŃSKA H.B., 2006: *Seidenforchis* a new genus of Malaxidinae (Orchidaceae), from Thailand. – *Acta Soc. Bot. Pol.* 75(4): 301-307.
- MARGOŃSKA H.B. & SZLACHETKO D.L., 2001: *Saurolophorkis* MARG. & SZLACH., gen. nov. (Orchidaceae, Malaxidinae), a new orchid genus from New Guinea. – *Pol. Bot. Journ.* 46 (1): 7-9.
- NUTTAL T., 1818: *The genera of North American plants*. 2. 254 pp. – Philadelphia.
- RAFINESQUE C.S., 1808: *Medical Repository*. – N. York. Hex. 2, 5: 352.
- RAFINESQUE C.S., 1819: *Prodrome des nouveaux genres de plantes observes en 1817 et 1818 dans l'interieur des Etats-Unis d'Amerique*. – *J. Phys. Chem. d'Hist. Nat.* 89: 261.
- RIDLEY H.N., 1888: A revision of the genera *Microstylis* and *Malaxis*. – *J. Linn. Soc.* 24: 308-351.
- SEIDENFADEN G., 1978: *Orchid Genera in Thailand*. 7., *Oberonia* LINDL. & *Malaxis* SOL. ex Sw. – *Dansk Bot. Arkiv* 31 (1): 1-94.
- SWARTZ O., 1788: *Nova Genera et Species Plantarum seu Prodromus*. Orchidaceae 118-126. – Upsala & Abo.
- SZLACHETKO D.L., 1995: *Systema Orchidaliium*. – *Fragm. Flor. Geobot., Suppl.* 3: 1-152.
- SZLACHETKO D.L. & MARGOŃSKA H.B., 1999: *Redefinition of the genus Pseudoliparis* FINET, with descriptions of new species. – *Adansonia, Ser.* 3., 21: 275-282.
- SZLACHETKO D.L. & MARGOŃSKA H.B., 2002: *Gynostemia Orchidaliium*. 2. – *Acta Bot. Fenn.* 173: 78-81.
- SZLACHETKO D.L. & MARGOŃSKA H.B., 2006: *Redefinition of the genera Malaxis* SOL. ex Sw. and *Microstylis* (NUTT.) EATON (Orchidaceae, Epidendroideae). – *Acta Soc. Bot. Pol.* 75(3): 229-231.
- TANG T. & WANG F.T., 1951: *Contribution to the knowledge of Eastern Asiatic Orchidaceae*. 2. – *Acta Phytotax. Sin.* 1: 24-102.