

Flora of Singapore precursors, 46: Studies in *Oberonia* 12 (Orchidaceae: Malaxideae)

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ABSTRACT. A few taxonomic and nomenclatural aspects of the genus *Oberonia* Lindl. relating to the *Flora of Singapore* are resolved. First, no subgeneric names are recognised in the genus *Oberonia*. *Oberonia* subg./sect. *Apothemnophyllum* Schltr. and *Oberonia* subg./sect. *Menophyllum* are synonyms of *Oberonia* s.s. The autonymous subgenus is a non-mandatory rank, hence, can be omitted. Second, *Oberonia hamadryas* Ridl. is the correct name for *O. scortechinii* Hook.f., and the lectotype of *Hippeophyllum* is here corrected to *Hippeophyllum micranthum* Schltr. Third, additional species-level synonyms are established for *O. equitans* (G.Forst.) Mutel (*O. hispidula* Ames, syn. nov.), *O. lunata* (Blume) Lindl. (*O. wenzelii* Ames, syn. nov.), and *O. jenkinsiana* (*O. austro-yunnanensis* S.C.Chen & Z.H.Ji, *O. clarkei* Hook.f., *O. elbertii* Ridl., *O. flabellifera* Holttum, *O. multidentata* Aver., *O. polyschista* Schltr., *O. quadridentata* Aver., *O. rhizophoreti* Schltr., *O. stenophylla* Ridl., *O. sumatrana* Schltr., *O. sumatrana* var. *endertii* Ridl., syn. nov.). Fourth, the specimen K000943003 is here designated as second-step lectotype of *Oberonia biaurita* Hook.f., and simultaneously also as epitype of *O. lunata*.

Keywords. Nomenclature, synonyms, taxonomy

Introduction

Oberonia Lindl. is a (sub-)tropical genus of orchids with some 470 names. It has been estimated that 200–300 species are correct (e.g., Pridgeon et al., 2005). That number has been reduced in recent years by demonstrating a large number of synonymies (Geiger, 2016, 2019, 2020, 2021, 2023; Bunpha et al., 2019; Geiger et al., 2020, 2021), including the synonymisation of the genus *Hippeophyllum* Schltr. under *Oberonia*. Here some further nomenclatural and taxonomic adjustments are carried out in preparation of the *Flora of Singapore*. Additional adjustments will be presented in a forthcoming global monograph of the genus.

Materials and methods

This study was based primarily on dried herbarium materials, including databases, deposited in several herbaria: AMES, B, BM, E, F, K, L, LE, P, SING and US. Herbarium acronyms follow Thiers (continuously updated).

Systematics

Oberonia Lindl., Gen. Sp. Orchid. Pl.: 15 (1830), nom. cons. – TYPE: *Oberonia iridifolia* Lindl., nom. superfl., typ. cons. (see Green, 1929) (= *Oberonia ensiformis* (Sm.) Lindl.).

Oberonia* subg. *Oberonia

Oberonia subg. *Apotemnophyllum* (Schltr.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 1: 143 (1911). – *Oberonia* sect. *Apotemnophyllum* Schltr., Beibl. Bot. Jahrb. Syst. 104: 13 (1911). – TYPE: *Oberonia costeriana* J.J.Sm., here designated as lectotype.

Oberonia subg. *Menophyllum* (Schltr.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 1: 143–144 (1911), **syn. nov.** – *Oberonia* sect. *Menophyllum* Schltr., Beibl. Bot. Jahrb. Syst. 104: 13 (1911). – TYPE: *Oberonia spathipetala* J.J.Sm., designated by van Royen (1979: 706).

Notes. Schlechter (1911a) noted that the infrageneric taxa used at that time, *Acaules* Lindl. and *Caulescentes* Lindl., had issues and he divided the genus *Oberonia* into two new groups based on the presence (*Apotemnophyllum*) or absence (*Menophyllum*) of leaf articulations. It was a division of the entire genus into two groups, not a segregation of select species into smaller entities. However, he did not use the required autonym *Oberonia* introduced automatically by Lindley (1859) when naming sections *Acaules* and *Caulescentes* (Turland et al., 2018: Art. 22.3). Schlechter (1911a: 14) assigned two species for his new *Oberonia* sect. *Apotemnophyllum*: *O. pallideflava* Schltr. and *O. costeriana* J.J.Sm. The latter, much better-known species is designated here as the lectotype. While Schlechter (1911a: 13) introduced the two infrageneric names without rank, he used the rank of a section when assigning the two species (Schlechter, 1911a: 14). That implicit ranking also follows from his discussion of Lindley's *Acaules* and *Caulescentes*, which were introduced at the rank of a section.

Schlechter (1911b: 143) elevated those two infrageneric names to the rank of subgenus. For *Oberonia* subg. *Apotemnophyllum*, Schlechter (1911b) cited a single species, *O. vieillardii* Rehb.f., a synonym of *O. mucronata* (D.Don) Ormerod & Seidenf. While this inclusion might be considered typification by monotypy, *Oberonia* subg. *Apotemnophyllum* is a combination based on *Oberonia* sect. *Apotemnophyllum*, therefore, they have the same type. As *O. vieillardii* was not included under *Oberonia* sect. *Apotemnophyllum* by Schlechter (1911a), it cannot serve as the type for *Oberonia* subg. *Apotemnophyllum* of Schlechter (1911b). The lectotypification with *O. costeriana* of *Oberonia* sect. *Apotemnophyllum* automatically carries to *Oberonia* subg. *Apotemnophyllum*.

Leaf articulation has been shown to have evolved multiple times in *Oberonia*. Applying Schlechter's diagnostic character, the type of *Oberonia* s.s., *O. ensiformis*, and the type of *Oberonia* subg. *Apotemnophyllum*, *O. costeriana*, belong in the same grouping (subgenus, section). Accordingly, Schlechter's *Oberonia* subg./sect. *Apotemnophyllum* is a synonym of *Oberonia* subg./sect. *Oberonia*.

Although in 1911 the modern code of nomenclature (Turland et al., 2018) was not established, the code applies retroactively to names previously published. With respect to the autonym requirement, Art. 10.8 has no temporal qualifications, see also Turland et al. (2018: Art. 22.3) on automatic introduction of an autonym, in this case by Lindley (1859).

Schlechter (1911b: 143) also used the spelling *Apothemnophyllum* [sic], with ‘th’ instead of ‘t’. Dockrill (1992: 392) misspelled *Apotemnophyllum* as *Aponophyllum* [sic], obviously a lapsus calami. Averyanov (2013: 146) introduced the synonymy of *Oberonia* subg. *Apotemnophyllum* under *Oberonia* s.s.

Van Royen (1979: 706) designated *Oberonia spathipetala* as type of *Oberonia* sect. *Menophyllum*. As *Oberonia* subg. *Menophyllum* is a combination based on *Oberonia* sect. *Menophyllum*, they have the same type, i.e., *O. spathipetala* designated by van Royen (1979).

Leaf articulation has arisen and been lost multiple times in *Oberonia* as shown in phylogenies (Hedderich, 2016). Accordingly, the groupings of species with leaf articulation—*Oberonia* subg. *Oberonia*—and without leaf articulation—*Oberonia* subg. *Menophyllum*—do not represent natural evolutionary groups. Therefore, *Oberonia* subg. *Menophyllum* is synonymised here under *Oberonia* subg. *Oberonia*. In the absence of other subgenera, *Oberonia* subg. *Oberonia*, the automatically generated nominal subgenus, can be omitted. There are well-defined groupings in the genus *Oberonia*, typically used at the rank of a section. Those names will be fully treated elsewhere.

***Oberonia hamadryas* Ridl.**

Notes. Geiger (2023) synonymised the genus *Hippeophyllum* Schltr. under *Oberonia* Lindl. and also synonymised ten species of *Hippeophyllum* and *Oberonia* under *O. scortechinii* Hook.f., including *O. hamadryas* Ridl; the latter is two years older, hence, it is the correct name for this species. There was no intent by Geiger (2023) to give preference to the more frequently used name, it was a simple oversight.

Additionally, Geiger (2023) designated *H. micranthum* Schltr. as the lectotype for the genus *Hippeophyllum*, overlooking the prior lectotype designation by Lin (1987: 140). The designation in Chinese with type in Latin alphabet is valid as the language requirement does not apply to type designations (Turland et al., 2018: Art. 10). However, this prior designation does not change any of the conclusions reached in Geiger (2023) with respect to the synonymy of *Hippeophyllum* under *Oberonia*.

Oberonia equitans (G.Forst.) Mutel, Mém. Soc. Roy. Centr. Agric. Dépt. N. 1835–1836: 84 (1837). – *Epidendrum equitans* G.Forst., Fl. Ins. Austr.: 60 (1786). – *Cymbidium equitans* (G.Forst.) Sw. Nova Acta Regiae Soc. Sci. Upsal., ser. 2, 6: 72 (1799). – TYPE: Society Islands, Tahiti, no date, *Forster [170]* (lectotype BM n.v., inadvertently designated by Hallé (1977: 272); possible isolectotype BM

[BM000082099]). Remaining syntypes: no date, *Forster 192* (BM [BM000084364], P [not seen by Margonska & Szlachetko (2010); Geiger, pers. obs. 2019, not in P database], MW, fide US herbarium photo).

Oberonia hispidula Ames, Philipp. J. Sci., C 7: 8 (1912), **syn. nov.** – TYPE: Philippines, Luzon, Benguet, Baguio, 20 August 1906, *Curran FB 5124* (syntypes AMES [AMES8383/HUH0101971], K [K00942977]).

Notes. This species was treated in detail by Geiger et al. (2020), with multiple new synonyms introduced (see Fig. 1); the attribution of the lectotypification to Kores (1989) instead of Hallé (1977) is here corrected. Forster (1786) did not include a gathering number in the protologue. Hallé (1977) gave *Forster 170* for BM and P specimens, while Kores (1989) noted *Forster “170”*, suggesting he was dubious of that gathering number. No *Forster 170* specimen was found in BM or P; the BM specimen is *Forster 192*, while at P no *Forster* specimen was found recently. It is open to speculate whether there ever was a *Forster 170* gathering/specimen(s), and whether the cited number in Hallé (1977) was in error. Here the printed record and clear specimen data are used to establish the status of the type material.

Oberonia hispidula (Fig. 1H) is a further synonym of *O. equitans*. Habit, lip shape, and the strong papillose pedicelled ovary, bract, and back of tepals of the examined type material all agree with *O. equitans*.

Oberonia lunata (Blume) Lindl., Gen. Sp. Orchid. Pl.: 17 (1830). – *Malaxis lunata* Blume, Bijdr. Fl. Ned. Ind.: 394 (1825). – *Iridorkis lunata* (Blume) Kuntze, Revis. Gen. Pl. 2: 669 (1891). – TYPE: Indonesia, Java, Mount Salak, no date, *collector unknown s.n.* (syntype L [L0061758]); Singapore, Seletar, March 1889, *Ridley 364* (K [K000943003], epitype designated here).

Oberonia biaurita Hook.f., Hooker’s Icon. Pl. 24: t. 2317 (1894). – TYPE: Singapore, Seletar, March 1889, *Ridley 364* (syntypes AMES [AMES13727/HUH00101942], BM [BM000088317], C [C2279] n.v., K [K000943003], SING [SING0056397]).

Oberonia wenzelii Ames, Orchidaceae 5: 77 (1915), **syn. nov.** – TYPE: Philippines, Jaro, Leyte, 30 April 1914, *Wenzel 0388* (syntypes AMES [AMES15019/HUH00102073: Fig. 2D, AMES/HUH00102074], L [L0727747/L.1514739 partim: right specimen only (A), two left specimens *Oberonia* sp., in fruit only (B)], F [F453035], US [US891537]).

Notes. The protologue of *Oberonia lunata* is very general: few ensiform leaves, semilunar lip with toothed margin. The type at L is in poor condition, without flowers. The species concept is used for the biological species discussed here, which fits the limited description and the three established synonyms as well as possible: *O. biaurita* Hook.f., *O. porphyrochila* Ridl., and *O. subnavicularis* King & Pantl. Those names

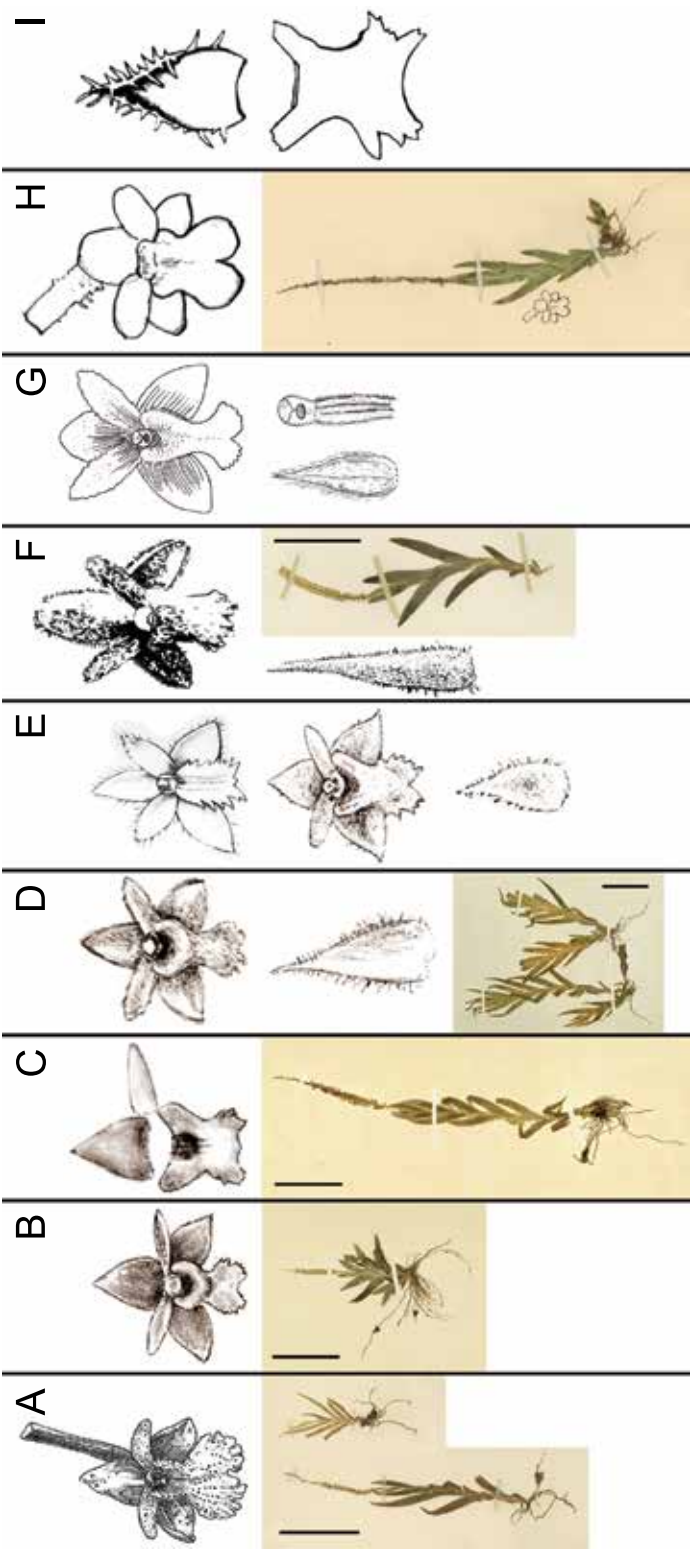


Fig. 1. Illustrations of synonyms of *Oberonia equitans* (G.Forst.) Mutel; from Geiger et al. (2020), expanded. **A.** *Oberonia affinis* Ames: drawing from protologue and habit of syntype *Clemens 102* (AMES). **B.** *Oberonia enoensis* J.J.Sm.: flower illustration by J.J. Smith and habit of syntype *Toxopeus 94* (L). **C.** *Oberonia murkelensis* J.J.Sm.: illustration of flower of by J.J. Smith. Dissected floral parts digitally rearranged to match live position, and habit of syntype *Kornassi ex Ruten 1457* (L). **D.** *Oberonia oxystophyllum* J.J.Sm.: topmost figure from Hooker (1894b); middle and bottom drawings by J.J. Smith and habit of syntype *Korthals s.n.* (L). **E.** *Oberonia ciliolata* Hook.f.: drawing from Ames (1908), and habit of syntype *R.C. McGregor 291* (AMES/HUH). **G.** *Oberonia aurea* Schltr.: drawing of flower, bract and column from Schlechter (1923). **H.** *Oberonia hispidula* Ames: drawing in type sheet, portion of syntype *H.M. Curan FG 5124* (AMES/HUH). **I.** *Oberonia equitans* var. *chaperi* Finet: drawing of lip and bract from Finet (1908). Scale bars = 5 cm.

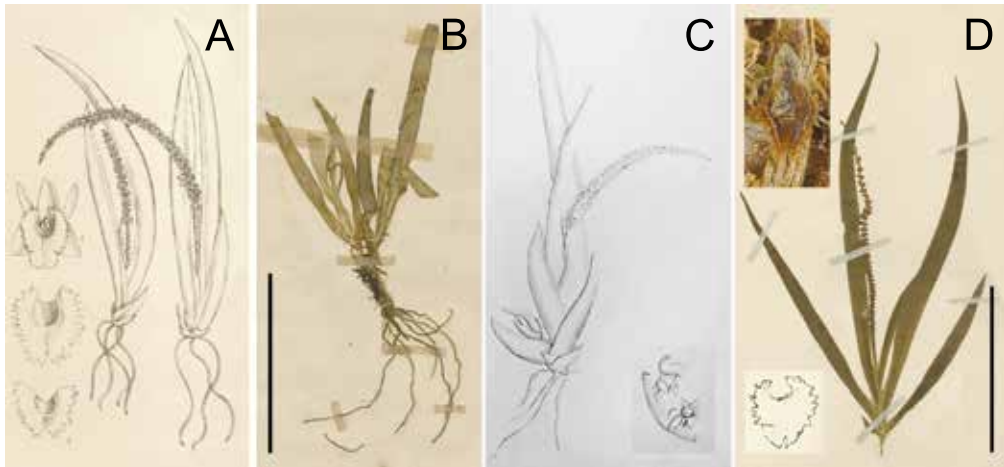


Fig. 2. Synonyms of *Oberonia lunata* (Blume) Lindl.. **A.** *Oberonia biaurita* Hook.f. protologue illustration. **B.** *Oberonia porphyrochila* Ridl. habit of syntype Kelsall s.n. (SING). **C.** *Oberonia subnavicularis* King & Pantl. drawing of type at K, digitally rearranged. **D.** *Oberonia wenzelii* Ames syntype Wenzel 0388 (AMES/HUH); top insert photo of flower of syntype; bottom insert drawing of lip on type sheet, presumably by Ames. Scale bars = 10 cm.

have better material and drawings available (Fig. 2). For *O. lunata*, K000943003 is here designated as the epitype. The specimen is the basis of the excellent illustration of *O. biaurita* in Hooker (1894a: t. 2317) and is in good condition. The two names are considered synonyms and the specimen is in excellent condition with the protologue of *O. biaurita* furnishing exquisite illustrations. While *O. lunata* was described from Java, *O. biaurita* and its type specimens are from Singapore. Ideally, epitypes (and neotypes) should be from as close to the type locality of the original type. Unfortunately, no suitable material from Java is known to the author. On balance, it is considered more advantageous to have a clear understanding of the species concept based on good types from the same floristic province, although not from Java, as opposed to leaving the species concept of *O. lunata* open to interpretation. It maintains current usage and serves the stability of nomenclature.

Oberonia wenzelii Ames (non *Hippeophyllum wenzelii* Ames = *O. hamadryas*) is a synonym of *O. lunata*. The two share all aspects of the habit (fan-shaped habit, narrow leaves: Fig. 2D) and the flower (orange colour, linear petals, semilunar, dentate lip, toothed epichile, bolster roll surrounding disc: Fig. 2D: inserts). Ames (1915) compared his *O. wenzelii* only to *O. cylindrica* Lindl. and noted the teeth along the margin of the lip. Wenzel 20 [K000942976] is not a nomenclatural type because that number is not listed in the protologue.

Oberonia jenkinsiana Griff. ex Lindl., Fol. Orchid. 8: 4 (1859). – *Malaxis jenkinsiana* (Griff. ex Lindl.) Rchb.f., Walpers, Ann. Bot. Syst. 6: 211 (1861). – *Iridorkis jenkinsiana* (Griff. ex Lindl.) Kuntze, Revis. Gen. Pl. 2: 669 (1891). – TYPE: [India],

Assam, Deboroo Mookh [Deboroo = Dibru River (fide Kullander et al., 2017) is a river near Dibrugarh; mookh/mukh = mouth in Sanskrit: mouth of the river Dibru, 27.6°N 95.0°E], no date, *Jenkins s.n.* [20] (var. A lectotype K [K000974202]: inadvertent designation by Seidenfaden (1978: 37; Fig. 3A)); no date, *Lobb s.n.* (former syntype, var. B repository unknown, not found at K in 2018).

Oberonia clarkei Hook.f., Hooker's Icon. Pl. 18: t. 1779A (1888), **syn. nov.** – TYPE: India, Khasia Mountains, Shillong, no date in protologue, 14 October 1867 on sheet, *Clarke 5818* (lectotype K [K000387744]: inadvertent lectotype designation by Seidenfaden (1968: 107)).

Oberonia stenophylla Ridl., J. Linn. Soc., Bot. 32: 218 (1896) (non Schlechter in Schumann & Lauterbach, 1905), **syn. nov.** – TYPE: [Peninsular Malaysia], Johor, Hulo Sembrong, no date in protologue, 30 October 1892 on sheet, *Lake & Kelsall s.n.* (syntype SING [SING0048299]).

Oberonia polyschista Schltr., Bull. Herb. Boissier, sér. 2, 6: 305 (1906), **syn. nov.** – TYPE: [Indonesia], Sumatra, Indragiri district, Sungei Lalah, May 1901, *Schlechter 13264* (syntype B, lost).

Oberonia sumatrana Schltr., Bull. Herb. Boissier, sér. 2, 6: 306 (1906), **syn. nov.** – TYPE: [Indonesia], Sumatra, Indragiri district, Danau-Kotta, May 1901, *Schlechter 13304* (syntype B, lost).

Oberonia rhizophoreti Schltr., Repert. Spec. Nov. Regni Veg. 10: 23 (1911), **syn. nov.** – TYPE: [Indonesia, Sulawesi], Toli-Toli, January 1910, *Schlechter 20645* (syntype B, lost).

Oberonia elbertii J.J.Sm., Meded. Rijks-Herb. 53: 5 (1925), **syn. nov.** – TYPE: [Indonesia, Lesser Sunda Islands], Lombok, N side of Tengengeah, Rindjani, 3 May 1909, *Elbert 986* (syntype L [L0061738]).

Oberonia sumatrana var. *endertii* J.J.Sm., Bull. Jard. Bot. Buitenzorg, sér. 3, 11: 119 (1931), **syn. nov.** – TYPE: [Indonesia] Central E Borneo, W Koetai, Moeara Kaman, 19 June 1925, *Endert 1503* (syntypes BO n.v., L [L0061796]).

Oberonia flabellifera Holttum, Gard. Bull. Singapore 11: 284 (1947), **syn. nov.** – TYPE: [Peninsular Malaysia], Johor, Mawai, no date, *Corner 28162* (SING? [not located by Bunpha et al. 2013, 2019; not seen in 10/2018]).

Oberonia rasmussenii Seidenf., Bot. Tidsskr. 70: 79 (1975). – TYPE: Thailand, on the road to Pai, Kheo Kaw Ma, no date, *Seidenfaden & Smitinand GT 8059* (holotype C [C2190]: spirit sample, n.v.).

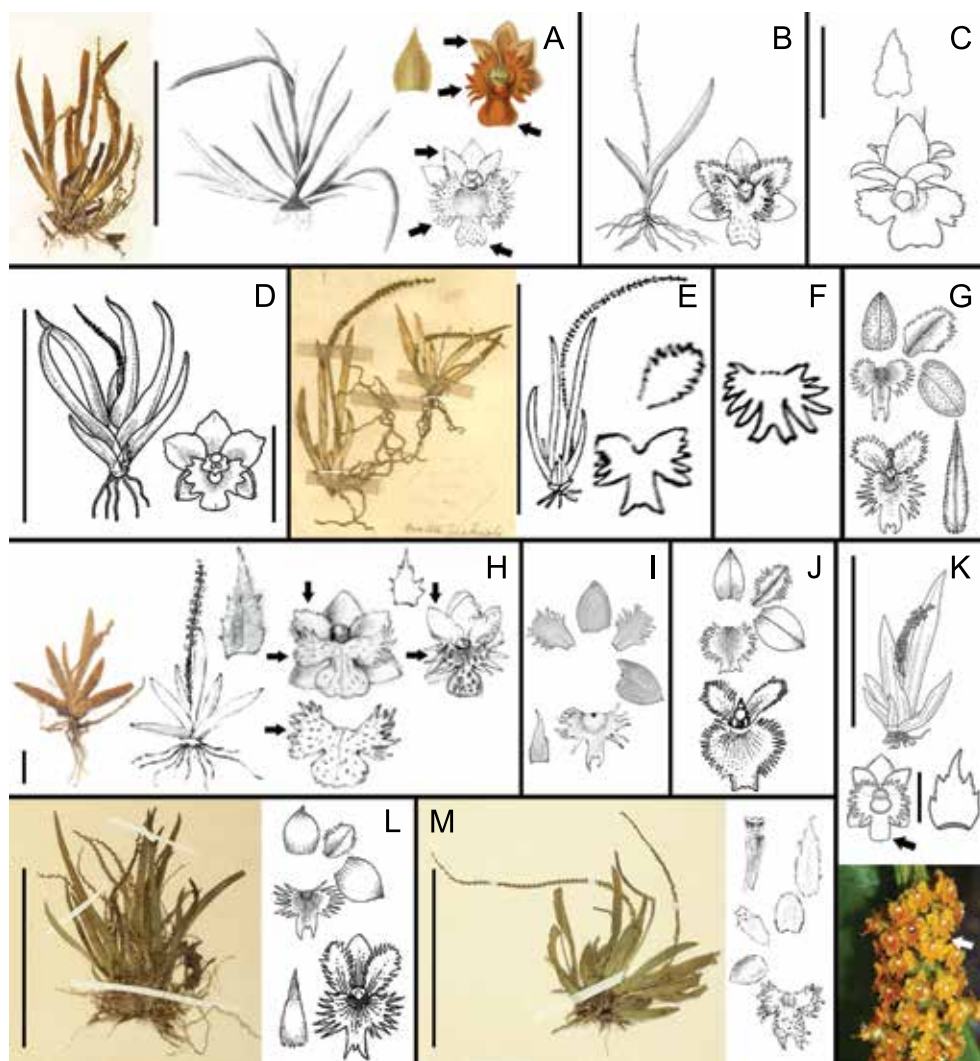


Fig. 3. *Oberonia jenkinsiana* Griff. ex Lindl. and its synonyms. **A.** *Oberonia jenkinsiana*. Habit of syntype *Jenkins s.n.* [20] (K), habit and coloured flower drawing from protologue; drawing of flower on syntype. Arrows highlight differences in the two drawings. **B.** *Oberonia austro-yunnanensis* S.C.Chen & Z.H.Tsi drawing from protologue. **C.** *Oberonia rasmussenii* Seidenf. drawing from protologue. **D.** *Oberonia quadridentata* Aver. drawing from protologue. **E.** *Oberonia stenophylla* Ridl. habit of syntype *Lake & Kelsall s.n.* (SING) and drawing from Holttum (1953: Fig. 38d), evidently from SING syntype. **F.** *Oberonia flabellifera* Holttum drawing from protologue. **G.** *Oberonia rhizophoreti* Schltr. drawing from Schlechter (1934). **H.** *Oberonia clarkei* Hook.f. lectotype *Clarke 5818* (K) habit and drawings on type sheet. Arrows highlight differences in the two drawings. **I.** *Oberonia sumatrana* Schltr. drawing from Schlechter (1934). **J.** *Oberonia polyschista* Schltr. drawing from Schlechter (1934). **K.** *Oberonia multidentata* Aver. drawings and photograph from protologue. Arrows highlight inconsistency between drawing and photograph. **L.** *Oberonia sumatrana* var. *endertii* Ridl. habit of syntype (L) and drawing by J.J. Smith at K. **M.** *Oberonia elbertii* Ridl. habit of syntype *Elbert 986* (L) and drawing of flower by J.J. Smith at K. Scale bars on habit = 10 cm, scale bars on drawings = 1 mm.

Oberonia austro-yunnanensis S.C.Chen & Z.H.Tsi in Chen, Acta Phytotax. Sin. 20: 193, figs 2.4–2.6 (1982), **syn. nov.** – TYPE: China, Yunnan, Mengla, 23 October 1980, Tsi 0081 (syntype PE [PE1222192/barcode27194: Lin & Yang, 2015: 332]).

Oberonia quadridentata Aver., Bot. Zhurn. (Moscow & Leningrad) 73: 423, fig. 1 (1988), **syn. nov.** – TYPE: Vietnam, Vinh Phu Province, Tamdao, 1985 in protologue, field collection 12 September 1985, flowering in garden 27 September 1985 on holotype, Averyanov LX-VN 0/271, 1985 (holotype LE [LE01074314]).

Oberonia multidentata Aver., Taiwania 52: 300, figs 2G, 10 (2007), **syn. nov.** – TYPE: Vietnam, Lai Chau Province, Sin Ho District, Ma Quai Municipality, around point of Can Ti village, no date in protologue, 16 November 2006 on LE isotype, HAL 9839 (holotype HN n.v.; isotype LE [LE01074281: mis-labelled “holotype” in LE database]).

Notes. *Oberonia jenkinsiana* was typified with two varieties (A, B), which were not validly introduced as the varieties fail Turland et al. (2018: Art. 24.2); a single letter cannot be considered an adjective, noun, or word in apposition. The varietal information is only given for clear identification of specimens of *O. jenkinsiana*.

Oberonia jenkinsiana is well-characterised by an acaulescent habit with more or less thin leaves, and orange-red flowers with a lip with incised semilunar lateral lobes and a bilobed entire epichile with more or less distinct median notch and tooth. Two names have been formally synonymised under *O. jenkinsiana*: *O. clarkei* (see Chen, 2003) and *O. rasmussenii* (see Bunpha et al., 2019), following the suspected synonymy by Ansari & Balakrishnan (1990) and Averyanov (2013). Additionally, *O. austro-yunnanensis* has been shown in a molecular analysis to be in a very shallow polytomy with *O. jenkinsiana* (Li et al., 2016). It is clear indication of a single biological species, though no formal synonymy has been proposed yet for those two names. The hyphen in the species epithet *austro-yunnanensis* is to be retained in accordance with Turland et al. (2018: Art. 60.11 Ex. 41).

Several names have been synonymised successively under select taxa all considered here to be synonyms of *O. jenkinsiana*. *Oberonia sumatrana* was synonymised by Comber (2001) under *O. polyschista*. Then *O. sumatrana*, *O. polyschista* and additionally *O. flabellifera* were synonymised by Bunpha et al. (2013) under *O. stenophylla*. Accordingly, the new synonymies of *O. stenophylla*, *O. flabellifera*, *O. polyschista* and *O. sumatrana* proposed here are in fact only a single truly new synonymy, namely *O. stenophylla* (with its already established synonyms of *O. flabellifera*, *O. polyschista* and *O. sumatrana*) under *O. jenkinsiana*.

Oberonia stenophylla was not accompanied by any illustration in the protologue. The figure in Holttum (1953: fig. 38d) is clearly based on the syntype at SING as shown by the juxtaposition of one of the type plants and Holttum's drawing (Fig. 3E). If we accept those already established synonymies, it is possible to identify the intraspecific variability of various characters and extrapolate to other names.

The habit is acaulescent in all names considered here. The ratio of length to width of the leaves varies. *Oberonia jenkinsiana* has rather long and narrow leaves, while *O. clarkei* based on a smaller plant has proportionally wider leaves. The widest leaves are shown in *O. multidentata*. The differences are rather small, and leaf shape is known from cultivation to vary within genotypes (*O. rufilabris*, Geiger, pers. obs.). The flowers of all names under consideration are some shade of orange-red, a remarkable lack of variability in this character. The sepals show the most common configuration in *Oberonia* spp., ovoid and entire (maybe slightly erose), with the median sepal somewhat more narrow than the lateral ones.

The petals are obovate and show rather high degree of variability of the margin from erose to laciniate. There is some documented within-specimen variability (or artistic license/error?: Figs 3A, H–J, L). The published drawing of *O. jenkinsiana* shows the petals entire, while on the drawing on the type sheet it is dentate. The same differences are also shown on the drawings on the type sheet for the established synonym *O. clarkei*. *Oberonia austro-yunnanensis* has strongly laciniate petals, but plants of those two forms are found in a shallow 15-fold polytomy in the molecular phylogeny (Li et al., 2016). Accordingly, the condition of the margin of the petals in *O. jenkinsiana* is highly variable.

The lateral lobes of the lip are semilunar in shape, typically with fimbriate margin, occasionally only dentate. *Oberonia jenkinsiana*, *O. clarkei* and *O. austro-yunnanensis* all have fimbriate lateral lobes, while the established synonym *O. rasmussenii* has dentate lateral lobes. Again, the drawings of *O. jenkinsiana* and *O. clarkei* show various conditions within a single specimen. Those are indications that the precise expression of the lateral lobes of the lip is somewhat variable. With *O. rasmussenii* established as synonym of *O. jenkinsiana*, the indistinguishable *O. quadridentata* is here recognised as a further synonym of *O. jenkinsiana*.

The epichile is bilobed and entire, with the median notch and denticle being more or less strongly expressed. The drawing of *O. jenkinsiana* shows some variability within a single specimen, with the other established synonyms filling in the continuous morphospace. The drawing of *O. multidentata* has no median notch, while the photographs from the protologue clearly show it (Fig. 3K: arrows).

Last but not least, I am unable to identify any patterns of co-variation amongst subtle character states. The morphological attributes appear to vary independently of one another.

One alternative hypothesis should be addressed, namely, that the already established synonyms (*O. clarkei*, *O. flabellifera*, *O. polyschista*, *O. rasmussenii*, *O. sumatrana*) are at least in part erroneous. The molecular study by Li et al. (2016) conclusively demonstrates that *O. jenkinsiana* and *O. austro-yunnanensis* are conspecific. The margin of the petals (erose vs laciniate) is variable and taxonomically insignificant. *Oberonia jenkinsiana/austro-yunnanensis* is morphologically indistinguishable from most of the other synonyms proposed here (*O. elbertii*, *O. flabellifera*, *O. stenophylla*, *O. clarkei*, *O. polyschista*, *O. rhizophoreti*, *O. sumatrana*, *O. sumatrana* var. *endertii*: Fig. 3). It leaves *O. multidentata* with somewhat broader leaves, and *O. quadridentata*, clearly identical to *O. rasmussenii*, which has fewer and shallower notches in the side lobes of the lip.

In the case of *O. multidentata*, the leaves are wider than in typical *O. jenkinsiana*, but well within the intraspecific range known from other species (e.g., *O. rufilabris* Lindl.: Geiger, pers. obs.; both in *Oberonia* sect. *Arachnochilus*). Additionally, the drawing of the flowers indicates the epichile without median notch and with a central denticle, but the photograph clearly shows it as bilobed with median notch and tooth (Fig. 3K: arrows). It is a further example how drawings can be misleading (see also discussion Geiger, 2021).

In the case of *O. rasmussenii*-*O. quadridentata*, the petals appear narrower in *O. rasmussenii* than in *O. quadridentata*. The drawing of *O. rasmussenii* is from the top, which leads to a perspective foreshortening of the petals. Whether the very wide petals of *O. quadridentata* were drawn accurately is open to speculation (see above regarding demonstrated inaccuracy in *O. multidentata*). The precise conformation of the lateral lobes of the lip is known to vary. It is evident from multiple drawings from the same specimen (e.g., *O. jenkinsiana*: Fig. 3A, *O. clarkei*: Fig. 3H) and from other species where inequilateral arrangements on the left and right sides of the very same flower have been documented (e.g., *O. insectifera* Hook.f.: Geiger, 2019). Last but not least, both those names are known from an exceedingly low number of specimens. The statistical principle that it takes a large number of observations to show small differences to be significant applies here. That threshold has not been met. Accordingly, the most parsimonious explanation recognises all those names as a single biological species.

In summary, the established and molecularly demonstrated synonyms demonstrate a high degree of variability in the margin of the petals, the lateral lobes of the lip, and the median notch of the epichile. All other names given here as new synonyms comfortably fit within that morphospace. When the above names were introduced, generally no comparisons were made to any of the names considered synonyms of *O. jenkinsiana*. Only Schlechter (1906) distinguished his *O. sumatrana* from *O. polyschista* introduced in the same publication by the narrower leaves ($8\text{--}10 \times 0.7\text{--}1$ cm vs $5\text{--}8 \times 0.3\text{--}0.4$ cm) and the anterior lobe of the lip. Those characters fall well within the generally known intraspecific variability of *Oberonia* spp., particularly once the size differences (ontogeny) has been taken into account.

Averyanov (1988) and the LE database used the term “epitype” for supplementary material deposited at the time of description. The term epitype has a specific meaning in nomenclature (see Turland et al., 2018: Art. 9.9) and only applies to material designated for taxonomic clarification after the description. Averyanov’s “epitypes” are original material.

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