

# AN UPDATE ON *XYLOBIUM* (ORCHIDACEAE: MAXILLAREAE)

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**Abstract.** An update on nomenclature and taxonomy within the genus *Xylobium* is provided. The distribution of *Xylobium miliaceum* is extended from western South America to Venezuela. *Xylobium subpulchrum* is treated as a new synonym of *X. stanhopeifolium*. Miscellaneous notes are provided on overlooked transfers, misidentifications, and prior synonymy.

**Keywords:** *Xylobium*, update, new synonymy, transfers, records

A synopsis of the genus *Xylobium* was provided five years ago (Ormerod 2018) wherein 18 species were recognised, along with three varieties. In the intervening time, literature research has revealed a number of transfers to *Xylobium* that were made by Robert Rolfe in 1896 that had long been overlooked. It has also been discovered that *Maxillaria sulfurina* Lemaire had already been transferred to *Xylobium* by Louis van Houtte in 1848. On the taxonomic front, the realisation that *X. miliaceum* occurs in Venezuela solved a problem around the misapplication of the name *X. truxillense*. Another entity, *X. subpulchrum*, had been weakly differentiated from the earlier *X. stanhopeifolium* solely on leaf petiole length (5 vs. 20 cm). This seems not a feasible difference since material that would be called *X. subpulchrum* from Peru has been found with a 23 cm long leaf petiole. So, it would seem best to combine the two taxa. Thus, there are only 17 species in the genus.

***Xylobium bractescens*** (Lindl.) Rolfe, Kew Hand-list Orch.: 149. 1896.

Basionym: *Maxillaria bractescens* Lindl., Edwards's Bot. Reg. 28: 44, misc. 92. 1842. TYPE: ECUADOR. Loja, K. T. Hartweg, cult. Hort. Soc. s.n. (Holotype: K-L, image seen).

**Distribution:** Ecuador and Peru.

Previously (Ormerod 2018) there was some skepticism about the validity of Kraenzlin's (1908) transfer to *Xylobium*, and the combination was instead attributed to Rolfe (1912). However, the discovery of the earlier combination in the "Hand-list" of 1896 negates any such discussion.

***Xylobium colleyi*** (Batem. ex Lindl.) Rolfe, Gard. Chron. ser. 3, 7: 288. 1890.

Basionym: *Maxillaria colleyi* Batem. ex Lindl., Edwards's Bot. Reg. 24: misc. 161. 1838. TYPE: NOT CITED. [GUYANA. Demerara, leg. T. Colley, cult. J. Bateman s.n.] (Holotype: K-L, image seen).

Homotypic synonym: *Lycaste colleyi* (Batem. ex Lindl.) P.N. Don in Donn, Hort. Cantabr. ed. 13: 721. 1845.

Heterotypic synonyms: *Maxillaria brachypus* Rchb.f., Bot. Zeit. 10: 734. 1852. TYPE: GUATEMALA.

Without locality, *J. R. Warcewicz s.n.* (Holotype: W-R [41348], image seen; drawing AMES; Isotype: K-L, image seen).

*Xylobium brachypus* (Rchb.f.) Hemsl., in Godm. & Salv., Biol. Centr.-Amer., Bot. 3: 252. 1883.

*Maxillaria rebellis* Rchb.f., Fl. Serres Jard. Eur. ser. 1, 9: 102. 1853–1854; Bonplandia 2: 92. 1 Apr 1854. TYPE: VENEZUELA. Without locality, H. Wagener, cult. G. Schiller s.n. (Holotype: W-R [41366], image seen).

*Xylobium rebellis* (Rchb.f.) Schltr., Orchis 7: 23. 1913.

**Distribution:** Belize, Guatemala, Costa Rica, Panama, Colombia (?), Venezuela, Trinidad and Tobago, Guyana, and Brazil.

Another synonym of this entity is *Xylobium brachystachyum* Kraenzl. from Brazil. Ormerod (2018) did not list *Maxillaria brachypus* in the synonymy due to the divergent drawing of the lip, showing it to be narrowly clawed with two keels and an expanded apical blade. These differences I now accept are due to the lip rehydrating poorly and thus agree with the placement of the name in synonymy with *Xylobium colleyi*.

The transfer *Lycaste colleyi*, as cited above, properly belongs to *Xylobium colleyi*, not to *Batemannia colleyi* Lindl. as is found in some databases (e.g., POWO).

First publication place of the name *Maxillaria rebellis* has not been ascertained. It has not been possible to discover when the relevant part of *Flore des Serres* was published (possibly mid-1854). However, Reichenbach also published the name in Bonplandia on the first of April in 1854. Here he gives the actual origin (Venezuela) of the species and who collected it (Wagener); these were details previously not cited in 2018.

***Xylobium corrugatum*** (Lindl.) Rolfe, Gard. Chron. ser. 3, 5: 459. 1889.

TYPE: COLOMBIA/VENEZUELA. Between Maracaibo (Venezuela) and Bogota (Colombia), leg. J. Linden, cult. G. Barker s.n. (Holotype: K-L, image seen).

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Basionym: *Maxillaria corrugata* Lindl., Edwards's Bot. Reg. 30: misc. 14. 1844.

Heterotypic synonyms: *Maxillaria wagneri* Rchb.f., Bot. Zeit. 10: 735. 1852. TYPE: VENEZUELA. Federal District, Caracas, leg. H. Wagner, cult. in Krollwitz by Bottyer for C. Keferstein s.n. (Holotype: W-R [40285], image seen).

*Maxillaria corrugata* Lindl. var. *wagneri* (Rchb.f.) Rchb.f., in Walp., Ann. Bot. Syst. 6, 4: 508. 1863.

*Xylobium corrugatum* (Lindl.) Rolfe var. *wagneri* (Rchb.f.) Schltr., Orchis 7: 22. 1913.

*Xylobium wagneri* (Rchb.f.) Schltr., Repert. Sp. Nov. Regni Veg., Beih. 6: 85. 1919.

**Distribution:** Colombia, Venezuela, and Ecuador (?).

In the previous synopsis of 2018, the combination *Maxillaria corrugata* var. *wagneri* was overlooked. Also, there was some discussion about the collection *J. Linden* 655 (K-L, P) sometimes wrongly treated (e.g., Kolanowska, et al., 2011) as type material of *Maxillaria corrugata*. That collection is correctly assigned to *Xylobium miliaceum* (see below).

*Xylobium foveatum* (Lindl.) G. Nicholson, Ill. Dict. Gard. 4: 255. 1887.

Basionym: *Maxillaria foveata* Lindl., Edwards's Bot. Reg. 25: misc. 2. 1839. TYPE: GUYANA. Demerara, *imp.* & *cult.* Messrs. Loddiges s.n. (Holotype: K-L, image seen).

Heterotypic synonyms: *Maxillaria hyacinthina* Rchb.f., Linnaea 22: 855. 1852. TYPE: VENEZUELA. Merida: Rio Chama, December, J. W. K. Moritz 1084 (Lectotype [proposed by Ormerod 2018: 62]; BM [000533404], image seen; Isolectotype: W-R [41337], image seen).

*Xylobium hyacinthinum* (Rchb.f.) Rolfe, Kew Handlist Orch.: 149. 1896.

**Distribution:** Jamaica, Mexico, Honduras, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, French Guiana, Guyana, Brazil, Ecuador, Peru, and Bolivia.

The citation for the transfer of *Xylobium hyacinthinum* is corrected from Schlechter (1913) to that of Rolfe in 1896. There may also exist an earlier transfer for the name *Xylobium foveatum* (along with *X. decolor* [Lindl.] G. Nicholson, and *X. pallidiflorum* [W.J. Hook.] G. Nicholson) since van Houtte (1847) mentions those names but without reference to the basionyms in a way that would validate the combinations.

Further synonyms of *Xylobium foveatum* such as *Maxillaria chapadensis* Barb. Rodr., *M. concava* Lindl., *Xylobium ecuadorensis* Rolfe, *X. filomenoi* Schltr., and *X. modestum* Schltr. are listed in Ormerod (2018). Though this synonymy might reflect the broad distribution of *X. foveatum*, it also points to some interesting variation. Stephane Bailleul of the Montreal Botanic Gardens kindly sent images of two quite different plants. One that was presumed to have been collected by Clarence Horich in

Costa Rica in 1958 has rather short leaf petioles (5–8 cm long), and densely flowered, arching inflorescences of whitish-yellow flowers with relatively broad sepals. The other plant (origin unknown) had much longer (7–19 cm) leaf petioles, and erect, subdensely flowered inflorescences of yellow starry flowers with relatively narrow sepals. However, looking at material from the whole range of *X. foveatum*, I have been unable to separate out any of these forms due to the number of intermediate variants.

*Xylobium miliaceum* (Rchb.f.) Rolfe, Orch. Review 20, 230: 43. 1912.

Basionym: *Maxillaria miliacea* Rchb.f., Xenia Orch. 3: 22. 1878. TYPE: BOLIVIA. La Paz: Larecaja Prov., near Sorata, Cerro de Iminapi, on rocks at the source of the Rio Cacique, 2650 m, December 1859, G. Mandon 1148 (Holotype: W-R [40279], image seen; Isotypes: G [00355206], image seen, K [000588957], image seen, P [00455853], image seen).

Heterotypic synonyms: *Xylobium buchtienianum* Kraenzl., Orchis 2: 129. 1908. TYPE: BOLIVIA. La Paz: Sud Yungas Prov., Sirypaya, near Yanacachi, 2300 m, 19 December 1906, O. Buchtien 383 (Holotype: HBG [502090], image seen; Isotypes: AMES [00090696], US [00093927], image seen).

*Xylobium medinae* Szlach. & Kolan., Phytion (Horn) 54, 1: 74. 2014. TYPE: COLOMBIA. Putumayo: Valle de Sibundoy, Vereda La Cumbre, 2300 m, fl. in cult. 29 November 2012, R. Medina 817 (Holotype: HPUJ, not seen; photo.: MEDEL, not seen).

*Xylobium miliaceum* (Rchb.f.) Rolfe var. *patens* Ormerod, Harvard Pap. Bot. 23, 1: 65. 2018 *syn. nov.* TYPE: PERU. Amazonas: Bongara Prov., on the road to La Rioja, 5 km N of the N end of Lake Pomacocha, 2000 m, 8 October 1964, P. C. Hutchinson & J. K. Wright 6793, 5 October 1968, *cult.* Univ. Calif. Bot. Gard., Acc. No. 64.1634 (Holotype: NY).

Usage synonyms: *Maxillaria scabrilinguis auct. non* (Lindl.) Lindl., Edwards's Bot. Reg. 30: misc. 71, no.66. 1844; Orch. Linden.: 19. 1846.

*Xylobium truxillense auct. non* (Rchb.f.) Rolfe, Dunsterv. & Garay, Venez. Orch. Illustr. 6: 444, f. 1976.

*Xylobium variegatum auct. non* (Ruiz & Pav.) Garay & Dunsterv., Fernandez, Orquid. Nat. Tachira: 238, ph. 2003.

*Xylobium corrugatum auct. non* (Lindl.) Rolfe, Kolan., Perez Escobar, Parra Sanchez & Szlach., Illustr. Field Guide Orch. Yotoco For. Res.: 272. 2011 *pro parte* (quoad type citation).

**Distribution:** Colombia, Venezuela, Ecuador, Peru, and Bolivia.

**Additional specimens examined:** VENEZUELA. Merida, 1525 m, June 1842, *J. Linden* 655 (K-L, P, images seen); 2000 m, 26 April 1949, *O. Renz* 5353 (RENZ, image seen); 2000 m, 1 March 1949, *O. Renz* 5133 (RENZ, image

seen); 1600 m, 1 March 1949, *O. Renz 5306* (RENZ, image seen). Trujillo, 1800 m, 14 April 1948, *O. Renz 5539* (RENZ, image seen).

This species has long been known from Venezuela but never correctly identified. Part of the problem was the availability of material to study and confusion with forms of *X. undulatum* (Ruiz & Pav.) Rolfe. Judging from the above cited images of specimens showing intermediate floral position (patent to erect), it seems not justifiable to recognize the variety *patens*, and it is thus reduced to synonymy here.

***Xylobium stanhopeifolium*** Schltr., Repert. Sp. Nov. Regni Veg., Beih. 27: 84. 1924.

TYPE: COLOMBIA. Putumayo: near Mocoa, 550 m, May 1921, *W. Hopp 79* (Holotype: B, destroyed).

Heterotypic synonym: *Xylobium subpulchrum* Dressler, Orquideologia 21, 3: 310. 2000 *syn. nov.* TYPE: PERU. Huanuco: Tingo Maria, leg. *E. Jara*, purchased by *H. Hills*, fl. in cult. June 1999, *R. L. Dressler s.n.* (Holotype: MO [197288], image seen; Isotypes: FLAS [207882], image seen, FLAS [228861], image seen, SEL [001132], image seen, USM [000664], image seen).

Usage synonyms: *Xylobium colleyi auct. non* (Batem. ex Lindl.) Rolfe, C.H. & P.M. Dodson, Icon. Pl. Trop. ser. 2: t. 600. 1989; *R. Escobar R.*, Nat. Colomb. Orch. 4: 600, ph. 700. 1992; Bennett & E. A. Christenson, Icon. Orch. Peruv.: t. 198. 1993; Zelenko & Bermudez, Orch. Sp. Peru: 372. 2009.

*Xylobium hyacinthinum auct. non* (Rchb.f.) Rolfe, Fernandez, Orquid. Nat. Tachira: 237. 2003.

**Distribution:** Colombia, Venezuela, Ecuador, and Peru.

**Additional specimen examined:** PERU. Junin: Satipo, Distrito Rio Tambo, Comunidad Nativa Parijaro, Parque Nacional Otishi, 786–1086 m, 18 November 2013, *L. Valenzuela G., J. Flores, G. Shareva M., E. Cruz Ortiz, & C. Barboza 26993* (MO, image seen).

*Xylobium subpulchrum* was weakly distinguished from *X. stanhopeifolium* in my prior paper (Ormerod, 2018) by the shorter leaf petiole (5 vs. 20 cm long). However, on the GBIF (Global Biodiversity Information Facility) site, misidentified as *X. colleyi* is the above cited specimen with an accompanying color photograph. This specimen has a leaf petiole about 23 cm long and shows that this character cannot be used to distinguish *X. subpulchrum* from *X. stanhopeifolium*; therefore, the two are treated as synonymous here, with the older name naturally taking precedence.

Possibly the shorter leaf petiole length in the type material of *X. subpulchrum* was partly caused by its cultivation. Though *X. stanhopeifolium* seems to be a unifoliate species, some online images (e.g., from the Atlanta Botanic Garden) have been seen of what appear to be bifoliate plants.

***Xylobium sulfurinum*** (Lem.) van Houtte, Cat. [van Houtte] 35: 31. 1848. Basionym: *Maxillaria sulfurina* Lem., Fl. Serres jard. Eur. ser. 1, 4: 330b. March 1848. TYPE: GUATEMALA. Without locality, *imp. & cult. L. B. van Houtte s.n.* (Holotype: W-R 40251, image seen).

Heterotypic synonyms: *Maxillaria hypocrita* Rchb.f., Hamb. Gart.-Blumenz. 16: 15. 1860. TYPE: ORIGIN UNKNOWN. *Cult. E. Stange s.n.* (Syntype: W-R 40255, image seen); *cult. F. W. G. Lauche s.n.* (Syntype: W-R 40255, image seen).

*Xylobium hypocritum* (Rchb.f.) Rolfe, Kew Hand-list Orch.: 149. 1896.

**Distribution:** Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, and Panama.

Further synonyms (*X. powellii* Schltr., *X. sublobatum* Schltr., and *X. tuerckheimii* Kraenzl.) are listed in my prior account of 2018. Louis van Houtte first transferred *Maxillaria sulfurina* to *Xylobium* in his Autumn catalogue of 1848, thus the transfer of Schlechter in 1918 is an isonym. Furthermore, Rolfe transferred *Maxillaria hypocrita* to *Xylobium* in 1896, not 1912, as previously cited.

***Xylobium undulatum*** (Ruiz & Pav.) Rolfe, Orch. Review 20: 43. 1912.

Basionym: *Maxillaria undulata* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil. 1: 221. 1798. TYPE: PERU. Huanuco: forests of Chinchao and Muna, August/September 1786, *H. Ruiz & J. Pavon s.n.* (Holotype: MA, image seen; Iconotypes: MA [2 paintings], images seen).

Homotypic synonym: *Dendrobium undulatum* (Ruiz & Pav.) Pers., Syn. Pl. 2: 524. 1807.

Usage synonym: *Xylobium coelia auct. non* (Rchb.f. & Warc.) Rolfe, Sambin & Aucourd, Richardiana n.s., 5: 27–33, Fig. 1–2. 2021.

**Distribution:** Costa Rica, Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

The extensive synonymy of this species can be found in my 2018 paper. Recently, Sambin and Aucourd (2021) recorded *Xylobium coelia* (Rchb.f. & Warc.) Rolfe from French Guiana, but their plant differs from the latter in having bifoliate (vs. unifoliate) pseudobulbs, yellowish-cream flowers suffused with pinkish red (vs. yellow to orange flowers), and a 5-keeled labellum midlobe hardly wider than long (3.5 × 5.0 mm). In *X. coelia*, the midlobe is reniform and 4.0 × 8.5 mm. The upper half of the lip is five-veined but not (or very weakly) developed into keels. Also, the lip of *X. coelia* is cuneate-flabellate when spread out (not oblong-elliptic as in the French Guiana plant). In my opinion their plant is a form of *X. undulatum*, a quite variable species.

*Xylobium wilhelminae* Ormerod, Harvard Pap. Bot. 23, 1: 72. 2018. TYPE: SURINAME. Wilhelmina Range, near summit of hill, West Rivier, 4 km S of Juliana Top, 700 m, 1 September 1963, *H. S. Irwin, G. T. Prance, T. R. Soderstrom & N. Holmgren* 55297 (Holotype: NY).

**Distribution:** Suriname.

**Additional specimen examined:** SURINAME. Near airfield on the Oelemari River, 19 March 1963, *J. G. Wessels Boer* 1010 (U [0123867], image seen).

The above collection would appear to be a second herbarium specimen of this species. It shows the unifoliate

(a separate pseudobulb is bifoliate) pseudobulbs and 5- to 6-flowered inflorescences that are some of the features that characterize the species. According to Wessels Boer, the plant is epiphytic, and the flowers are yellow with the upper lip lined inside with pink. In the protologue, I could not determine if the flowers were non-resupinate, but Wessels Boer's note about the "upper lip" seems to indicate that they are indeed non-resupinate. The Oelemari River is next to the border with French Guiana, so one could expect *X. wilhelminae* to occur in that country too.

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