A new subspecies of *Bulbophyllum* (Orchidaceae, Bulbophyllinae) from The Society Islands

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Abstract

A new subspecies of the *Bulbophyllum tahitense* (Orchidaceae), from The Society Islands (French Polynesia) is proposed. A new subspecies is described and illustrated. Keys to taxa of Society Islands genus Bulbophyllum, is added.

**Keywords:** *Bulbophyllum tahitense*, French Polynesia, The Society Islands, Orchidaceae, taxonomy

Material and methods

While working on the taxonomy of Orchidaceae from The Society Islands (French Polynesia), I had the occasion to study about 100 *Bulbophyllum tahitense* and about 25 specimens of the newly proposed taxon, from both dried herbarium and preserved in liquid, deposited in various collections. I also examined living specimens: over 100 *Bulbophyllum tahitense* and 30 of the newly proposed taxon in cultivations and in...
natural situations. Pertinent bibliography and iconography (e.g. N. Halle drawings, J. F. Butaud and F. Jacq photography collections) were researched, as well. The studies were also conducted using my own digital database – Archivum Orchidarium (Arch. Orch.).

For the article the classic taxonomy method, with obligatory reference to the original taxonomic material such as type-specimens and protologues, has been used.

The Herbaria acronyms are adopted from Index Herbariorum [2]. The taxa authors’ names abbreviations by Brummitt and Powell [3] have been followed.

Results

Although the Bulbophyllum tahitense Nadeaud lectotype specimen (P 00299144; Fig. 1) is without adult flowers, just with damaged buds, Nadeaud’s protologue is rather not very precise and without icon, the isotypes (e.g. P!, BISH 454996 photo!, G!), have good quality flowers. Therefore, establishing reliable characteristic of the Bulbophyllum tahitense type-form is possible. The most distinguishing features of type-form are amongst other: flowers with tepals purple to red striped; dorsal sepal ovate to oblong ovate; lateral sepals ovate, along nearly the whole length gently and arcuately recurved down; petals orbicular to ovate, with distal margins more or less irregular to dentate; lip epichyle oblong ovate, with only obscurely pale yellowish top.

Without any doubt, quite large number of verified preserved specimens and living plants on the many islands of The Society Islands: Tahiti and Mo’orea, Huahine, Bora Bora, especially Raiatea and Tahaa have different form of some flowers elements. These plants have e.g. tepals obscurely purple to red reticulate, especially well visible at their basal part, only; sepal oblong ovate to nearly lanceolate; lateral ones sinuate curved; petals strongly abbreviated, wider than longer, obcordate; lip epichyle oblong, with distinct pale yellowish top.

Both plant groups have habit identical and without flowers their distinction is impossible. Both two taxa can only be separated by floral elements comparisons.

According to the above, I propose separating these plants as new subspecies of Bulbophyllum tahitense Nadeaud.

Key to Bulbophyllum tahitense taxa from Society Islands

1a. Sepals ca. ovate, lateral ones falcately curved down, petals longer than wider, orbicular to ovate – ssp. tahitense.
1b. Sepals ca. lanceolate, lateral ones sinuate curved, petals wider than longer, obcordate – ssp. butaudianum.

Bulbophyllum Thouars, Histoire Particulière des Plantes Orchidées Table 3 of the species of orchids. 1822.: t. 3. 1822. nom. cons.
Bulbophyllum tahitense Énumération des Plantes Indigènes de l’Île de Tahiti 36. 1873.: 36 (1873).

Fig. 1 The lectotype of Bulbophyllum tahitense Nadeaud (Nadeaud 265, P 00299144). Photo by H. B. Margońska.

Fig. 2 The isotype of Bulbophyllum tahitense Nadeaud with flowers samples (G). Photo by H. B. Margońska.
TYPE. French Polynesia, The Society Islands, Tahiti, Amurahi, val. Haaripo, Paheia et Tearapau, 1857.11.17., J. Nadeaud 265 [lectotype, P 00299144!, photo BISH 454996!, lectotype designated by Margońska and Szlachetko [4], isolecotype, G! (Fig. 2), P 00368806!, P 00368805! photo BISH 454995!].

Plants middle-sized, 15-30(40) cm tall, caespitose. Rhizome decumbent, elongate, with roots and scales at nodes. Pseudobulbs distant ca. 2-8 cm, up to ca. 3 cm long and 2 cm in diameter, oblong ovoid to conical, incurved, covered by tubular scale when young, by its remains with age. Leaf single, blade 10-20 cm long, 1.5-3 cm wide, erect, oblong to oblong ovate, obscurely attenuate, acute at the apex, rather dark green above, brighter, distinctly petiolate. Inflorescence ca. 20-35 cm long, ca. twice higher than the leaf blade; raceme 10-20(30)-flowered, sublax, rachis zig-zag curved. Floral bracts ovate, clasping the base of floral pedicel. Flowers ca. 3-3.8 cm in diameter, pale greenish to yellowish and whitish, with widely spread and purple to red striped, always free and gently concaved tepals (Fig. 3). Dorsal sepal oblong ovate, attenuate and acuminate at the apex, erect; lateral ones ovate, oblique, along nearly whole length gradually and falcately recurved down, apically attenuate and acuminate and incurved, basally adnate to the column foot, lateral down margins somewhat wavy at basal half. Petals abbreviate, longer than wider, ovate to orbicular, always cuspidate at the apices, irregular to dentate on distal margins. Lip lamina purple, purple-red; epichyple moving in the breeze, erect, acutely directed down with age, only gently falcately curved, oblong ovate, apically attenuate and acute, with oblong triangular depression along the main nerves, which bordered by distinct ridges, ending at the lip distal half, lamina papillate on surface and margins, lamina purple, purple-red with only obscure pale yellowish the top. Gynostemium 0.8-1 cm long, erect; staminodes erect exceeding the anther, oblong, acute at the apex. GENERAL DISTRIBUTION. E Polynesia: endemic to The Society Island (Tahiti, Moorea, Raiatea, Tahaa, Huahine, Bora Bora). Alt. 5-15 m in moist and cooler localities, otherwise 60-1500 m. ECOLOGY. Epiphytic, only occasionally terrestrial at higher elevations; on trunks and branches of, e.g. Weinmannia parviflora, Metrosideros collina, Glochidion, Sclerotheca, Alstonia, Aleurites, Fagrea, Cytathoe, Psychotria, Hibiscus tiliaceus and Neonaucles, with Miconia, Tecoma, Ilex, Cyrtandra and Ficus, in wet to moist accumulations of humus, between mosses and other epiphytes; mostly at higher elevations on account of preferring cooler, wetter to moist conditions, usually in shade; sometimes associated with Trichomanes and Dendrobium species. Flowering May and June, September and October, sometimes in March to July and August or November. Locally common and abundant.

_Bulbophyllum tahitense_ Nadeaud ssp. butaudianum Margońska. subsp. nov.

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Fig. 3  The flower of _Bulbophyllum tahitense_ Nadeaud. type-form (Tahiti, Pic Vert 160609 06 gggg d4 Arch. Orch.). Photo by H. B. Margońska.
Fig. 4  The type of *Bulbophyllum tahitense* Nadeaud subsp. *butaudiana* Marg., subsp. nov. (holotype, UGDA-HBM). Photo by H. B. Margońska.
TYPE. French Polynesia, The Society Islands, Tahiti, Hitiaa Distr., Mt. Mauru massif, slope along road, near Faraura viewpoint, 492 m, under Psidium cattleianum with Pandanus pape-nooensis, Cyathea affinis, Davallia solida, Elaphoglossum, and orchids Dendrobium biflorum, Eria rostrifolia, Metrosideros, Crossostylis, Glochidion, 2010.04.28., J. F. Butaud and O. Gargominy 2664 [holotype, UGDA-HBM (Fig. 4), isotype, UGDA-HBM, AK, BISH, PAP, P, UGDA-HBM spirit collection].

Plantarum habitus pro typicam speciem typicus. Flores sepalis distincte angusteque distale attenuatis et colore propria reticulata tantum basale tinctis, typica species differunt. Petala valde abbreviata, latiora quam longa, obcordata, in distales margines irregulariter ciliata, apice utrinque distincte serrata et in medio cuspidata. Labelli epichilus elongatus sepalis lateralis fere subaequans, manifeste oblongus colore vivida apice valde tinctus.

Plants habit typical for type species. Flowers ca. 3.6-4.2 cm in diameter. (Fig. 5) Tepals obscurely purple to red striped to rather reticulate, which well visible at their basal part, only, and very gently concaved at basal portions. Dorsal sepal oblong ovate to nearly lanceolate, distinctly and longly attenuate and acuminate at the apex, erect and gently concaved; lateral ones oblong ovate to lanceolate, distinctly attenuate at apical half, along nearly the whole length sinuate curved, apically attenuate and acuminate, lateral down margins somewhat incurved at basal half. Petals distinctly abbreviate, wider than longer, about obcordate, irregularly ciliate on distal margins, the apex cuspidate and inside of distinct indentation. Lip with epichyle, elongate, nearly subequilateral to lateral sepals apices, distinctly oblong, only gently falcately recurved with age, with distinct depression along the main nerves, which bordered by very distinct ridges, lamina papillate on surface and especially at margins, marked dark yellowish at top. GENERAL DISTRIBUTION. E Polynesia: endemic to The Society Islands (Tahiti, Moorea, Raiatea, Tahaa, Huahine, Bora Bora). Alt.: 70-800 m. REPRESENTATIVES VERIFIED. French Polynesia, The Society Islands. (i) Tahiti. Papenoo: Te Faaiti, 2007.04.19, J. F. Butaud (Arch. Orch.); Hitiaa: 500-650 m, 2007.09, H. B. Margorńska and M. Sawicka (UGDA-HBM Arch. Orch.); Faarone: Vaiiha, 2002.10.12, W. Teamotuaitau s.n. (PAP 003374 spir coll.!, Arch. Orch.); Papara: valley of Taharuu river, plateau Teihomanono, 2007.12.19, recorded by J. F. Butaud (Arch. Orch.). sine prec. loc.: 2001.11.21, W. Teamotuaitau s.n. and cult. (UGDA spir coll.!, UGDA-HBM icone, Arch. Orch.). (ii) Moorea. Mt. Mouaputa, 745 m, 2010.02.10, J. F. Butaud and N. Ingetr 2591 (UGDA 01a! UGDA 01b!)

Fig. 5 The flower of Bulbophyllum tahitense Nadeaud subsp. butaudiana Marg., subsp. nov. (Tahiti, plateau Teihomanono, 191207 Arch. Orch.). Photo by J. F. Butaud.

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References