



***Ombrophytum guayanensis*, the first record of subfamily Lophophytoideae (Balanophoraceae) in the Guayana Shield**

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Abstract

The family Balanophoraceae continues to be poorly known and rarely collected, mostly due to its partially or completely subterranean habit and its general aspect resembling a fungus. A recent collection from French Guiana was identified as a species of *Ombrophytum* unknown to science (*O. guayanensis*), which is here described and illustrated. This species also represents the first record of the subfamily Lophophytoideae for the Guayana Shield.

Key Words: French Guiana, critically endangered species, taxonomy

Introduction

The Balanophoraceae is a pantropical family of holoparasitic plants, partially or entirely subterranean, with extremely reduced morphological features. For example, the family lacks a fully developed ovary and a complete placenta, the ovules are rather rudimentary (Fagerlind 1938, 1945a, 1945b, 1945c, Eichler 1867, 1869), and apparently it lacks stomata (Kuijt & Dong 1990). All these features remain to be studied in detail in order to understand the little-known physiology and reproduction biology of these plants. The family continues to be poorly collected, mostly due to its general aspect resembling a fungus (and not of a flowering plant), and because of its irregular emergence. Ongoing studies in neotropical Balanophoraceae has led to the recent description of two new species, i.e., *Lophophytum rizzoi* Delprete (2004: 292) and *Langsdorffia heterosepala* Cardoso, Alves & Braga (2011: 424). In addition, a recent collection from French Guiana has called my attention, mostly because the morphological features of the specimens do not match any of the known Neotropical species of this family.

In the Neotropics the family Balanophoraceae is currently represented by seven genera and 17 species (18 with the new species described below). Hansen (1980), divided the family into three subfamilies, which he distinguished using the following characters: 1) Balanophoroideae, with one style per flower, wax in tubers and elsewhere, and flowers not imbedded in filiform hairs; 2) Scybalioideae, with two styles per flower, starch in tubers and elsewhere, flowers embedded in a layer of filiform hairs, and anthers merged into a usually tri-merous synandrium; 3) Lophophytoideae, with two styles per flower, starch in tubers and elsewhere, flowers not embedded in hairs, on elongated branches subtended by early deciduous peltate bracts. As no molecular phylogenies focused on this family have been produced to date, the subfamilial classification proposed by Hansen (1980) remains the most recent reference for the systematics of this group.

After detailed study, it became clear that the recently collected specimens that called my attention belong to subfamily Lophophytoideae, as circumscribed by Hansen, because the flowers are not imbedded in hairs, female flowers have two styles, and both female and male flowers are on conspicuous branches terminating with enlarged peltate bracts and the inflorescence branches are intermixed among bracts. In the Lophophytoideae, Hansen (1980, 1993) included the genera *Lophophytum* Schott & Endlicher (1832: 1), *Lathrophytum* Eichler (1868: 550) and *Ombrophytum* Poeppig ex Endlicher (1836: 73). On the other hand, until now, *Helosis cayennensis* (Swartz 1788: 12) Sprengel (1826: 765) and *Langsdorffia hypogea* Martius (1818: 179) are the only two species of Balanophoraceae reported to occur in

TABLE 1. Table comparing morphological features and geographic distribution of the species of *Ombrophytum* (from Hansen 1980, and Delprete, this publication).

Characters	<i>O. violaceum</i>	<i>O. microlepis</i>	<i>O. guayanensis</i>	<i>O. peruvianum</i>	<i>O. subterraneum</i>
Inflorescence length	up to 16 cm	up to 20 cm	13–16 cm	up to 35 cm	(10–)15(–26) cm
Inflorescence sexuality	Monoecious	Monoecious	Monoecious	Monoecious	Monoecious or female
Bracts intermixed or subtending inflorescence branches	Peltate	Peltate	Angular-clavate	Peltate	Peltate
Male branch length (during anthesis)	1.5–4 mm	3–7 mm	5–6 mm	5–10 mm	3–8 mm
Number and position of flowers on male branch	4–8, decussate	up to 20, alternate	10–12, decussate	10–50, alternate	ca. 50, alternate
Filament length	0.25–0.5 mm	1–1.2 mm	0.1–0.2 mm	1 mm	0.6–2 mm
Anther length	1–1.25 mm	1.2 mm	1.5–1.6 mm	2 mm	1.4–2.3 mm
Female branch length (during anthesis)	4–6 mm	4 mm	6.5–8 mm	8–20 mm	(3–)11(–22) mm
Number of flowers on each female branch	many (exact number unknown)	50–80	60–90	40–100	ca. 100
Ovary length	1.2–1.5 mm	1 mm	1.8–2.2 mm	1.5 mm	1–2 mm
Styles length	0.5 mm	0.5 mm	0.6–0.7 mm	unknown	0.5–0.75 mm
Geographic distribution	Ecuador, Peru, Brazil (Amazonas)	Peru, Brazil (Acre)	French Guiana	Ecuador, Peru, Brazil (Acre)	Andes of Bolivia and Argentina

Acknowledgments

I thank Guillaume Leotard, for providing specimens preserved in alcohol, photographs and field observations. I also wish to express my gratitude to the anonymous reviewer for the careful review and the insightful comments that much improved the manuscript.

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