

**SARCOCHILUS HULIORUM (ORCHIDACEAE),
A NEW SPECIES FROM PAPUA NEW GUINEA**

A. SCHUTTEMAN

Rijksherbarium / Hortus Botanicus, Leiden, The Netherlands

SUMMARY

Sarcochilus huliorum Schuiteman from Papua New Guinea is described and illustrated. A very distinct species, it is probably related to *S. singularis* (J.J. Smith) J.J. Smith. These two species, having ephemeral flowers, four pollinia and a relatively short column-foot, are more or less intermediate between the genera *Sarcochilus*, *Pteroceras* and *Brachypeza*.

INTRODUCTION

The subtribe Aeridinae, in which about 100 genera are currently recognized (Senghas 1988), is one of the most problematical subtribes in the Orchidaceae as far as generic delimitation is concerned. The work of J.J. Smith, Holttum, Seidenfaden, Garay, Senghas, Christenson and others has considerably reduced the chaos prevalent in this group until the beginning of this century, but the phylogenetic relationships among the c. 1300 species are still far from clear in most cases. Genera in the Aeridinae are frequently distinguished on the basis of very few characters, often difficult to observe or of an arbitrary nature (e.g. the relative length of the column-foot). Many genera contain some problematical species which seem to defy generic limits. Their presence may indicate that further divisions are required, but may also be a symptom of excessive splitting. The new species described below is an example.

***Sarcochilus huliorum* Schuiteman, *spec. nov.* — Fig. 1**

Grosourdyia spec., D. Mulder & T. Mulder-Roelfsema, Am. Orch. Soc. Bull. 61 (1992) 1095 (colour photograph of *Leiden cult.* 31682).

Caulis brevis. Foliorum margines crenulato-denticulati. Flores ephemeri successivi. Labellum 3-lobatum, lateralibus magnis late obovatis, mediali late pyriformi parum latiore quam longo late elliptico in sectione transversali carnosissimo, basi cavitate parva cum 2 lobulis brevibus ad orem, in medio crista parva transversali. Columna crassa pubescens pede relative brevi. — Typus: *Leiden cult.* (*Schuiteman, Mulder & Vogel 90-375*) 31682 (holo L, spirit mat.; iso K, LAE), collected in Papua New Guinea, Southern Highlands Province, Tari District, Tagari River, 1700 m, Sept. 1990.

Roots glabrous, not or sparsely branching, 0.8–1.5 mm thick. Stem unbranched, 2–2.5 cm long, rooting at the base. *Leaves* 3–4, somewhat obliquely elliptic, slightly falcate, coriaceous, 2.5–4 cm by 13–18 mm, twisted 90 degrees at the base, spreading in one plane; margins minutely crenulate-denticulate; top unequally

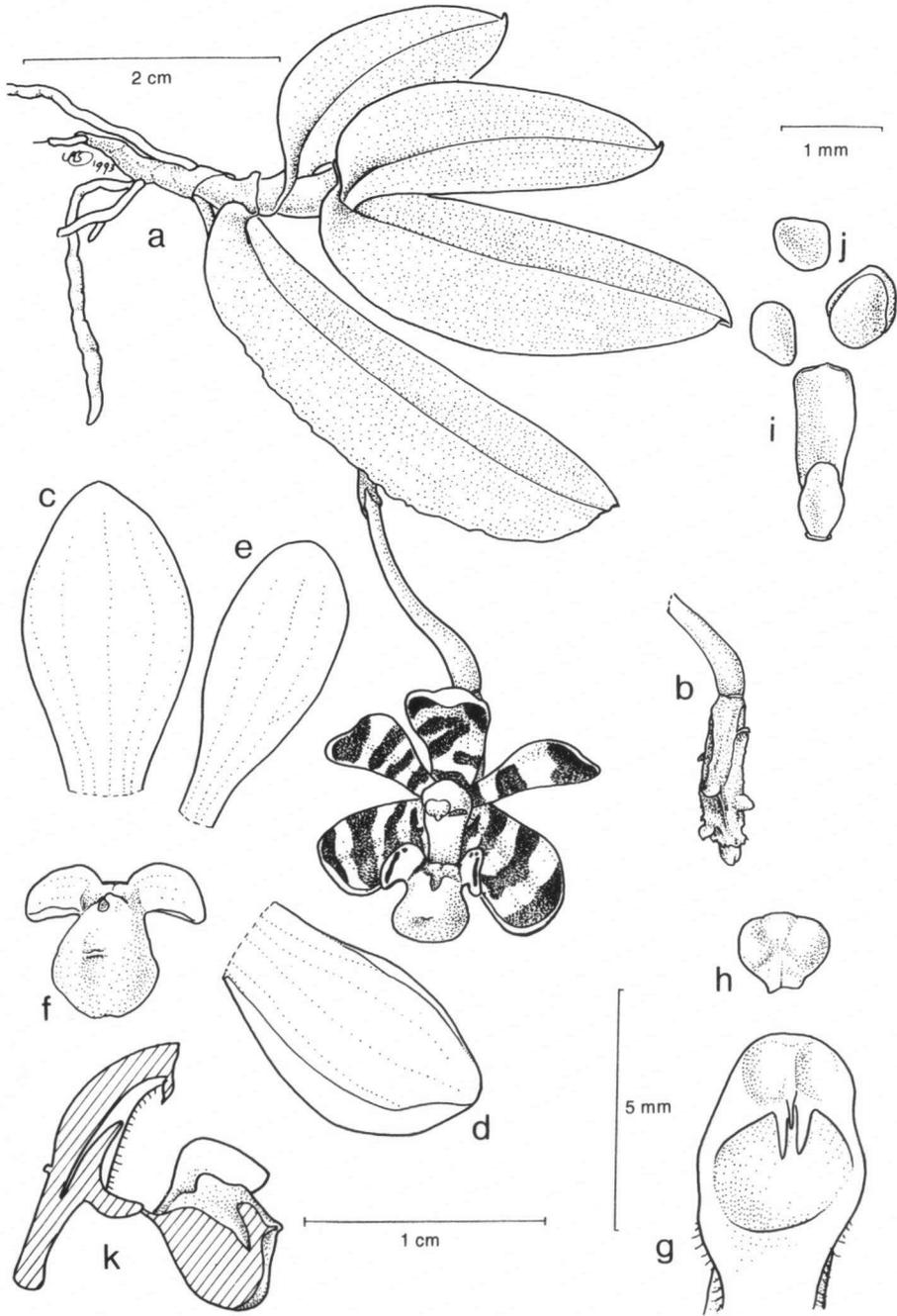


Fig. 1. *Sarcochilus huliorum* Schuiteman. a. Habit; b. rachis; c. dorsal sepal; d. lateral sepal; e. petal; f. lip; g. top of column without anther; h. anther; i. stipe with viscidium; j. pollinia; k. longitudinal section through lip and column (drawn by the author, all from *Leiden cult.* 31682).

bilobed, the adaxial lobe largest and more or less falcate; keeled below, the keel crenulate-denticulate near the top; veining reticulate. *Inflorescence* below the lowest leaf, patent, racemose, c. 7-flowered. Peduncle 5 cm long, with two distant tubular scales 2 mm long, gradually thickened towards the rachis. Rachis pointing downward, elongating, finally c. 1.5 cm long, 3.5 mm across, winged, with the wings more or less distinctly irregularly serrulate. Floral bract cupular, obtuse, 1.5 mm long and wide. Pedicel and ovary terete, glabrous, 5 mm long. *Flowers* opening successively or in pairs, ephemeral, widely opening, c. 2 cm across. *Sepals* strongly concave, obtuse; dorsal one obovate, 12.7 by 6.9 mm when flattened; lateral ones broadly obovate, 11.7 by 8.4 mm when flattened. *Petals* narrowly obovate-subspatulate, 12.2 by 4.8 mm, obtuse. *Lip* 3-lobed, 6.4 mm long, hinged by a short claw 1 mm long to the column foot; lateral lobes broadly obovate, 2.7 by 2.3 mm, suberect, obtuse; midlobe strongly swollen, broadly pear-shaped, 5 mm long, 5.6 mm wide, 3.8 mm thick, at the base with a narrow cavity 2 mm deep, otherwise solid, at the entrance to the cavity with two semiorbicular lobules 0.45 mm long, at 2 mm below the top with a low transverse ridge, concave at the top; exterior parts of the lip minutely pubescent, with some larger hairs near the apex. *Column* stout, slightly curved, 6.7 mm long, minutely pubescent, with larger hairs along the margins; foot 2 mm long. *Stigma* large, concave, suborbicular, 3 mm wide; *rostellum* 3-lobed, the lateral lobes subulate, 1 mm long, the median lobe more narrowly subulate, 0.4 mm long; *clinandrium* rather flat, with two shallow concavities separated by a low smooth ridge. *Anther* cucullate, transversely elliptic, 1.4 by 1.9 mm. *Pollinia* 4, hemispherical, subequal, in two dorso-ventrally compressed spherical masses 0.8 mm across. *Stipe* oblong, 1.6 by 0.6 mm, apex truncate; *viscidium* rather large, elliptic, 0.75 mm long. Fruit not seen.

Distribution – Papua New Guinea, Southern Highlands Province. Only known from the type collection.

Habitat & Ecology – Rather open, fairly low forest on rocky terrain. Epiphyte on tree trunk along a brook about 2 m above the ground in a well-shaded position. Altitude 1700 m. In cultivation flowering several times a year. Individual flowers last less than 12 hours.

Colours – Sepals and petals pale yellow with red-brown transverse bands. Lip whitish, lateral lobes spotted red-brown, midlobe with pale magenta interconnected bands. Column light yellow, in front around and below the stigma tinged red-brown. Anther light yellow. Leaves velvety mid-green above, paler green and tinged purplish below. Peduncle red-brown, rachis green.

Notes – 1. *Sarcochilus huliorum* is a very distinct and isolated species which seems to be related to the peculiar *S. singularis* (J.J. Smith) J.J. Smith from West New Guinea and the Schouten Archipelago. They have in common the relatively short, pubescent column-foot and the long, stout column, the shape of the inflorescence, the successively appearing ephemeral flowers, and the lip of which the fleshy midlobe is not hollow. *Sarcochilus singularis* is a more robust lowland species with a very differently shaped lip, well illustrated by J.J. Smith (1916: t. 178). J.J. Smith recorded two pollinia in *S. singularis*, but an examination of one of the flowers preserved at the Rijksherbarium (*Bogor cult.* 85) revealed four hemispherical pollinia in two globular masses, as is typical for *Sarcochilus*. A detail not mentioned

by Smith is the small subulate tooth present on the abaxial side of the stipe somewhat above the middle. Otherwise the pollinarium of *S. singularis* is similar to that of *S. huliorum*. By their successive ephemeral flowers and the short column-foot these two species differ from the other known species of *Sarcochilus* (syn. *Parasarcochilus* Dockrill; see Clements 1989: 131).

Closely related genera are *Brachypeza* and *Pteroceras*. *Pteroceras* was recently revised by Pedersen (1993). According to Pedersen (1993: 11), *Pteroceras* is distinguished from *Sarcochilus* by having two pollinia (cleft or porate), ephemeral, mostly successive flowers, and a lip which always continues the line of the column-foot, lacking backwall calli in the spur.

There are, however, a number of exceptions, both in *Pteroceras* and in *Sarcochilus*:

- a) *Pteroceras leopardinum* (Parish & Reichb. f.) Seidenf. & Smitin. usually has 4 hemispherical pollinia (as noticed by Pedersen himself).
- b) The flowers of *P. fragrans* (Ridley) Garay may last about a week (pers. obs. in Hortus Botanicus Leiden).
- c) The flowers of *Sarcochilus huliorum* and *S. singularis*, as already stated, are ephemeral, with the lip more or less continuing the line of the column-foot.
- d) Some Australian species of *Sarcochilus* lack a backwall callus in the spur.

It seems therefore, that the arguments to separate *Pteroceras* from *Sarcochilus* are flimsy at best. In *Pteroceras*, as opposed to *Sarcochilus huliorum* and *S. singularis*, the spur is hollow throughout and the column is short, with the column-foot mostly about as long as the column or longer. These character states can also be found in *Sarcochilus*.

Pteroceras sensu Pedersen is absent from Papuasias and Australia. The four species of *Sarcochilus* from New Guinea described by Schlechter and transferred to *Pteroceras* by Garay are true species of *Sarcochilus* according to Pedersen. They are quite different from both *S. huliorum* and *S. singularis*, having sessile one-flowered inflorescences. Schlechter (1913: 964) assigned them to the section *Monanthochilus*. About *S. singularis* Schlechter (1913: 965) remarked that it is of uncertain position and hardly belongs to *Sarcochilus*.

Brachypeza is exceedingly similar to *Pteroceras*, the only differences being the slender column and the very short column-foot of *Brachypeza*, and, according to Pedersen (1993), the floral bracts of *Brachypeza* being narrower than the rachis. The latter character state is also found in *S. huliorum* and *S. singularis*. Like *Pteroceras*, *Brachypeza* is widely distributed in Southeast Asia. *Brachypeza indusiata* (Reichb. f.) Garay is the only species known from New Guinea.

It should be apparent from this discussion that *S. huliorum* and *S. singularis* are more or less intermediate between the genera *Sarcochilus*, *Pteroceras* and *Brachypeza*. In the end it may be inevitable to unite these three genera, the conglomerate bearing the name *Sarcochilus*. The alternative would be to maintain *Pteroceras* and *Brachypeza* and to split up *Sarcochilus* into two or three rather ill-defined genera, one of which would consist of *S. huliorum* and *S. singularis*. The final decision is best left to a future monographer of *Sarcochilus*.

2. The leaves of the type specimen initially had undulate and crenulate-denticulate margins; those that developed in cultivation had straight margins, but they remained distinctly crenulate.

3. The specific epithet refers to the Huli people, who inhabit the area where this apparently rare orchid was discovered.

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