

## A SYNOPSIS OF DRYADORCHIS SCHLTR. (ORCHIDACEAE)

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### SUMMARY

Contrary to published descriptions, the poorly known New Guinea genus *Dryadorchis* Schltr. neither has a footless column, nor an immobile labellum. The merger of *Dryadorchis* with *Thrixspermum* Lour., as proposed by Clements, Wallace, and Jones, is not justified. *Chamaeanthus singularis* J. J. Sm. and *Sarcochilus huliorum* Schuit. are transferred to *Dryadorchis*. A key to the four known species is given.

### INTRODUCTION

*Dryadorchis*, a monopodial orchid (subtribe Aeridinae), is one of the least known of all orchid genera. It was established by Schlechter in 1913 with two species, *D. barbellata* and *D. minor*, both from Papua New Guinea. Schlechter compared his genus with *Sarcochilus*, from which *Dryadorchis* was said to differ by having a completely footless column and a firmly attached labellum. In 1988 Senghas chose *D. barbellata* as the type species, but had nothing to add beyond Schlechter's account, as he apparently had not seen any material. We agree with this lectotypification. In 1989 Clements, Wallace, and Jones reduced *Dryadorchis* to *Thrixspermum*; according to these authors "there is nothing of any significance in Schlechter's description of *Dryadorchis* to differentiate it from that of *Thrixspermum*." They also listed *Sarcochilus brevirhachis* Upton, a species described from Australia, as a synonym under *Thrixspermum barbellatum* (Schltr.) Clements et al.

We agree with Clements et al. that *Sarcochilus brevirhachis* is conspecific with *Dryadorchis barbellata*. This is readily apparent from Upton's illustration as well as from drawings kindly provided by L.A. Garay, which were based on material of *S. brevirhachis* received from Clements. We disagree, however, with the merger of *Dryadorchis* with *Thrixspermum*. Upton's and Garay's illustrations are much more informative than Schlechter's rather crude sketches. The former show that in *S. brevirhachis* the lip is clearly articulated with the swollen apex of a short but distinct column foot. This is unlike the situation found in *Thrixspermum*, where the column foot forms a single unarticulated structure which is continuous with the base of the lip (see Fig. 1b). It is evident that in *Dryadorchis barbellata* the lip is really hinged to the column foot in much the same way as in *Sarcochilus*, *Pteroceras* etc. In these genera the lip can easily be pulled downward without severing the connection be-

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tween lip and column foot. In *Thrixspermum*, on the other hand, the same action will usually break off the lip. Moreover, in *Thrixspermum* there is always a callus in the centre of the concave base of the lip; this is lacking in *Dryadorchis*.

When describing *Sarcochilus huliorum*, one of us (A.S.) pointed out that this species was an aberrant member of *Sarcochilus*, apparently related to *S. singularis*, and that these two species might make up a genus of their own. Also discussed were the differences between *Sarcochilus*, *Brachypeza*, and *Pteroceras*. Being misled by Schlechter's erroneous description of *Dryadorchis* and the reduction of *Dryadorchis* to *Thrixspermum* by Clements et al., *Dryadorchis* was not included in the discussion. From the above it is quite clear, however, that *Sarcochilus huliorum* and *S. singularis* are congeneric with *Dryadorchis*. The necessary combinations are made below.

The relationships of *Dryadorchis* within the subtribe Aeridinae are difficult to assess. Without the backing of a thorough cladistic analysis statements about affinities are largely guesswork. We do not know, for example, whether the character states 'flowers ephemeral' and 'lip articulated with the column foot' are apomorphic or plesiomorphic in the clade in which *Dryadorchis* belongs. We are convinced, however, that a subdivision of the subtribe based on the structure of the pollinia alone, as frequently practised in recent literature, often brings together discordant elements and separates genera which may well be closely related.

## DRYADORCHIS

*Dryadorchis* Schltr., Fedde Rep., Beih. 1 (1913) 976; Senghas in Schltr., Die Orch., Ed. 3 (1988) 1201; Clements, Wallace & Jones, Austral. Orch. Res. 1 (1989) 144 (in syn. sub *Thrixspermum*). — Lectotype: *D. barbellata* Schltr. (chosen by Senghas, l.c.).

Almost stemless epiphytes. Leaves subfalcate, twisted at the base and more or less spreading in one plane. Inflorescence a raceme, solitary; peduncle elongated, patent; rachis swollen, angular, pointing downward. Flowers ephemeral, appearing successively, singly or in pairs. Column stout; foot relatively short, swollen, pubescent. Lip hinged to the column foot, with shallow concavities, not spurred. Pollinia 4, subequal, in 2 globose masses (NB: *D. minor* is in several respects incompletely known).

Distribution — New Guinea (incl. Schouten Archipelago), probably endemic (see note under *D. barbellata* below). Sea level up to 1700 m.

## KEY TO THE SPECIES

- 1a. Upper surface of the lip with a median pair of lateral keels . . . . . **4. *D. singularis***
- b. Upper surface of the lip unadorned at the median, smooth . . . . . 2
- 2a. Lip with a transverse crest between the lateral lobes . . . . . **1. *D. barbellata***
- b. Lip without a transverse crest between the lateral lobes . . . . . 3
- 3a. Sepals more than 10 mm long . . . . . **2. *D. huliorum***
- b. Sepals less than 5 mm long . . . . . **3. *D. minor***

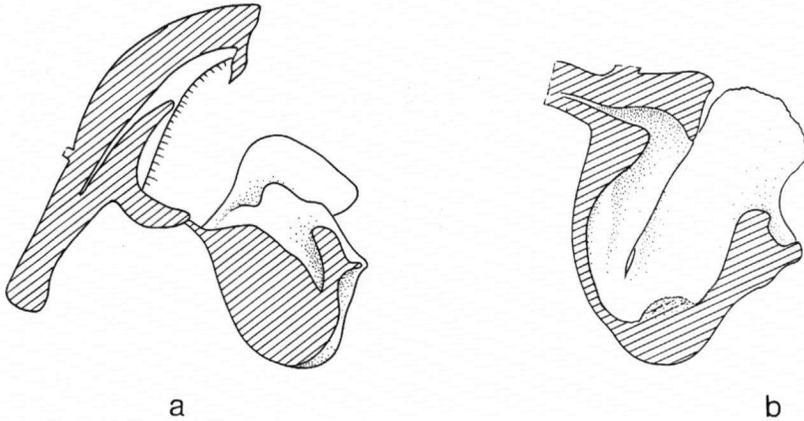


Fig. 1. Cross sections through column and lip of: a. *Dryadorchis huliorum* (Schuit.) Christenson & Schuit.; b. *Thrixspermum purpurascens* (Blume) Rchb. f. (Drawn by A. Schuiteman; a: after *Leiden cult.* 31682; b: after *Leiden cult.* 25253).

### 1. *Dryadorchis barbellata* Schltr. — Fig. 2a, b

*Dryadorchis barbellata* Schltr., Fedde Rep., Beih. 1 (1913) 976; *ibid.* 21 (1928) t. 344 f. 1325; Senghas in Schltr., Die Orch., Ed. 3 (1988) 1201, f. 1025. — *Thrixspermum barbellatum* (Schltr.) Clements, Wallace & Jones, Austral. Orch. Res. 1 (1989) 144. — Syntypes: *Schlechter 18550* (B †), 19052 (B †), Papua New Guinea, Madang Prov., 1300 m.

*Sarcochilus brevirhachis* Upton, Orchadian 5 (1976) 24, fig. — Type: *Karnaghan 3* (NSW, n.v.), Australia, North Queensland, 1200 m.

Note — According to Clements et al. there is considerable confusion as to the type locality of *Sarcochilus brevirhachis*. Although no such confusion is apparent from Upton's article, we agree that it is unlikely that a species previously known only from the Madang Province of Papua New Guinea should occur in Queensland, Australia.

### 2. *Dryadorchis huliorum* (Schuit.) Christenson & Schuit., *comb. nov.* — Fig. 1a, 2c, d

*Sarcochilus huliorum* Schuit., Blumea 38 (1994) 513, f. 1. — Type: *Leiden cult.* 31682 (leg. Schuiteman, Mulder & Vogel 90–375) (L holo; K, LAE iso; spirit mat.), Papua New Guinea, Southern Highlands Prov., 1700 m.

Note — Mr. P. Ormerod and Mr. J. J. Wood both and independently drew our attention to an earlier collection of *D. huliorum*, of which they also generously provided sketches: *Reeve 624*, Papua New Guinea, Southern Highlands Prov., Lake Kopiago, 1300 m (AMES, CBG, E, K, L [?], LAE). The Leiden duplicate appears to be missing, hence our oversight.

### 3. *Dryadorchis minor* Schltr. — Fig. 2e

*Dryadorchis minor* Schltr., Fedde Rep., Beih. 1 (1913) 977; *ibid.* 21 (1928) t. 344 f. 1326. — Type: *Schlechter 16914* (B †, Papua New Guinea, Madang Prov., 1000 m.

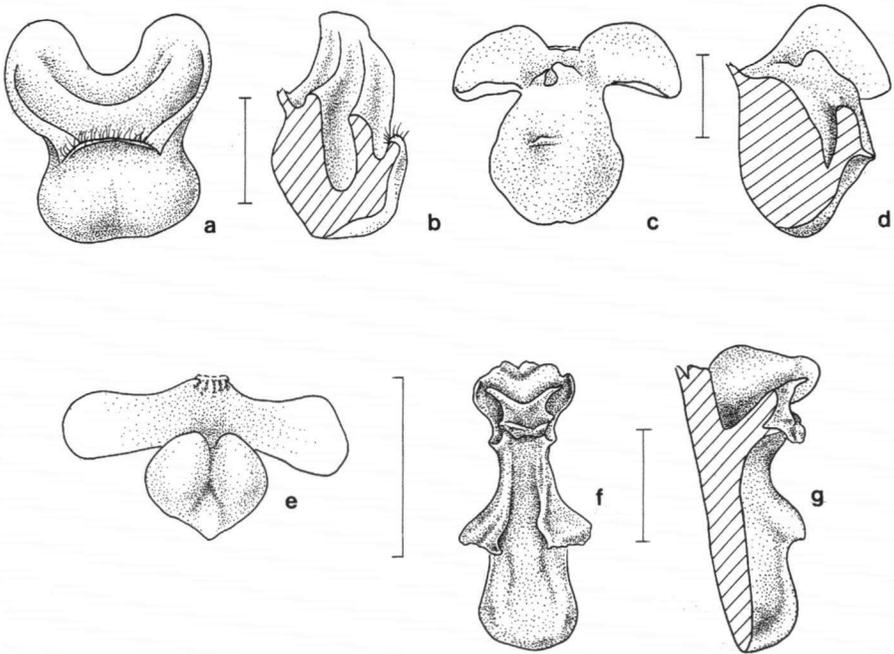


Fig. 2. Labelli of *Dryadorchis*. a, b. *D. barbellata* Schltr.; c, d. *D. huliorum* (Schuit.) Christenson & Schuit.; e. *D. minor* Schltr.; f, g. *D. singularis* (J.J. Sm.) Christenson & Schuit. — Scale bar = 3 mm (Drawn by A. Schuiteman; a, b: redrawn after an unpublished sketch by Garay based on material received from Clements; c, d: after *Leiden cult.* 31682; e: redrawn after Schlechter [1928]; f, g: redrawn after J.J. Smith [1915]).

**4. *Dryadorchis singularis* (J.J. Sm.) Christenson & Schuit., *comb. nov.* — Fig. 2f, g**

*Chamaeanthus singularis* J.J. Sm., Bull. Jard. Bot. Buitenzorg II, 3 (1912) 77. — *Sarcochilus singularis* (J.J. Sm.) J.J. Sm., Fedde Rep. 12 (1913) 27; Nova Guinea 12 (1915) 457, t. 178 f. 331; *ibid.* 14 (1929) 493. — Type: *Gjellerup 451* (BO, n.v.), Irian Jaya, northeastern part, 50 m.

Note — Also found on the island of Biak (Schouten Archipelago), at sea level.