

A hitherto overlooked field identification character for Borneo *Scaphochlamys* Baker (Zingiberaceae: Zingibereae)

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Abstract

The consistent presence of a pulvinus above the insertion at the base of the petiole of *Scaphochlamys* species has been observed in Sarawak and is here proposed as a useful field character for recognizing and separating *Scaphochlamys* Baker from its nearest allied taxa *Boesenbergia* Kuntze and *Haplochorema* K.Schum.

Introduction

The genus *Scaphochlamys* Baker was last revised for Borneo by Smith (1987) at which time taxonomically important inflorescence characters were discussed (see Table 1). Poulsen & Searle (2005) added another reproductive character, splitting of the bracteole, to those proposed by Smith (1987). In the key to genera of Hedychieae (at that time *Scaphochlamys* included in Hedychieae) (Smith, 1987), characters other than those pertaining to inflorescence or flowers received very little attention. Recent work (Kress *et al.*, 2002) has shown that Hedychieae is embedded in a newly expanded Zingibereae. The only vegetative character mentioned is well-developed stem in *Hedychium* König as compared to stem-less and tufted or shoots single-leaved (*Scaphochlamys* Baker, *Boesenbergia* Kuntze, *Haplochorema* K.Schum. and *Kaempferia* L.) (Smith, 1987).

For the present study, numerous species from three closely related genera (*Scaphochlamys*, *Boesenbergia* and *Haplochorema*) have been observed in Sarawak. The presence of a pulvinus at the base of the petiole (Plate 1) has been shown to be generically diagnostic in all the *Scaphochlamys* so far studied, which includes the six species currently recognized for Borneo

and at least a further 25 unidentified and seemingly novel taxa revealed during the first author's ongoing studies in Borneo. This is a very useful character especially if plants are not in flowering at the time of collection since assigning sterile individuals to one of the three above genera is often problematic.

Despite our confidence in the diagnostic pulvinate petiole, care still needs to be exercised when examining *Boesenbergia* and *Haplochorema* since the insertion of the leaves can *appear* to be pulvinate (Plates 2 & 3). Careful comparison with the true pulvinate petiole of *Scaphochlamys* reveals that in *Scaphochlamys* the pulvinus is situated *above* the insertion of the petiole (Plate 4).

Scaphochlamys and its allied genera look very similar in the vegetative state. Thus, the presence of pulvinus will make determining these closely related taxa easier at the genus level.



Plate 1. *Scaphochlamys* sp. (Boyce & Shafreena ZI-157); note the pulvinate petioles.



Plate 2. *Boesenbergia pulchella* (Ridley) Merr. showing leaf insertion (Boyce & Shafreena ZI-860)



Plate 3. *Haplochorema magnum* R.M.Sm. showing leaf insertion (*Boyce & Shafreena* ZI-1013)



Plate 4. *Scaphochlamys polyphylla* (K. Schum.) B.L. Burtt & R.M. Sm.: note many leaves each with a pulvinate petiole (Boyce & Shafreena ZI-904)

A comparison of inflorescence characters among *Scaphochlamys* and allied genera (based on Smith, 1987; Poulsen & Searle, 2005) and additional characters from this study are set out in Table 1 below.

Table 1. Comparative table of inflorescence and vegetative characters of *Scaphochlamys*, *Boesenbergia* and *Haplochorema*.

Character	<i>Scaphochlamys</i>	<i>Boesenbergia</i>	<i>Haplochorema</i>
Inflorescence bract arrangement	Spiral	Distichous	Distichous
Flowering mode	Acropetalous	Basipetalous	Basipetalous
Flower arrangement	Cincinni	Solitary	Solitary
First bracteole (shape and position)	More or less keeled, arising opposite bract	Boat-shaped, arising at right angle to bract	Boat-shaped or split, arising at right angle to bract
Bracteole splitting	Split to base	Split to base	Split to $\frac{2}{3}$
Labellum	Bilobed or entire, lobes overlapping	Usually saccate, rarely bilobed, never flat	Bilobed or emarginated, flat
Base of thecae	With very short free basal spurs	Spurless	Spurless
Pulvinus	Present	Absent	Absent

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