A NEW SPECIES OF THE GENUS TETRAPETALUM (ANNONACEAE) FROM BORNEO

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SUMMARY

A new species is described in Tetrapetalum, a small genus of which two species have been known. Although Van Heusden (1992) stated that Tetrapetalum differs from Cyathostemma only in its dimerous flowers, Tetrapetalum seems to be more closely related with Uvaria than with Cyathostemma, because of spreading petals and unlobed stigmas. A key to the three species of Tetrapetalum is provided here.

Key words: Annonaceae, Uvaria group, Tetrapetalum.

INTRODUCTION

Tetrapetalum Miq. is a small genus of the family Annonaceae, which was described by Miquel (1865). Previously only two species have been reported. It belongs to the Uvaria group sensu Van Heusden (1992: 143), which is characterised by the presence of stellate hairs, valvate sepals, imbricate petals, etc. Among her Uvaria group, Tetrapetalum is unique in having dimerous flowers.

Tetrapetalum lambirense K. Momose, spec. nov. — Fig. 1


Woody climber. Young twigs brown, stellate-pubescent, later becoming glabrous and black, striations distinct. Leaves subcoriaceous, elliptic or ovate, 16–23 × 6–8 cm, apex acute, base cordate, glabrous above except the stellate-pubescent sunken midrib, pale brown when dry, glabrous beneath except the stellate-pubescent raised midrib, brown when dry; nerves 11–16 pairs, curving, prominent beneath, reticulation forming a fine network, visible on both surfaces; petiole 4–5 mm long, stellate-pubescent. Inflorescence a cyme with 1 or 2 flowers, opposite to the leaves; pedicels 8–16 mm, with a bracteole on the upper part; bracts and bracteoles 1.5–3.5 mm long, orbicular; flower buds depressed globose; flowers 30 mm across when fully expanding. Sepals 2, valvate, 5 × 9 mm, orbicular, apex rounded, concave inside, convex outside, subcoriaceous, stellate-pubescent on both surfaces. Petals 4 in two whorls, subequal but inner petals slightly narrower, fully expanding on anthesis, separated at bases and overlapped at tips in bud, rounded at apex, concave on inside, convex on outside, coriaceous, stellate-pubescent on both surfaces; outer ones orbicular, 12 × 12 mm; inner ones elliptic, 12 × 10 mm. Torus convex, depressed ovoid, 7 mm high, 11 mm in...
Fig. 1. *Tetrapetalum lambirense* K. Momose (*Momose 5069, KYO*). a. Flowering twig; b. flower (stamens and petals removed); c. stamen (lateral view); d. staminode (dorsal and lateral view). — Scale bar of a & b = 1 cm, of c & d = 1 mm.
diameter, the first whorl from outside consists of staminodes. Staminodes oblongolate or linear, acute or obtuse at apex, 3.5–4 mm long, strongly or weakly incurved. Stamens numerous; filament 0.2 mm long, anthers latrorse, 1.7 mm long; elongation of anther connectives 1.6–3.2 mm, shorter in inner whorls, tongue-shaped, truncate at apex, incurved, granulate. Ovaries numerous, 2.7 mm long, stellate-tomentose; style absent; stigma flat. Ovules 12 in two rows. Fruits unknown.

Distribution — Only known from the type specimen in Sarawak.

Notes — Van Heusden (1992: 148) noted that “Tetrapetalum differs from Cyathostemma only in its dimerous flowers. Cyathostemma excelsum of Borneo so closely resembles Tetrapetalum volubile that they may be one species in which 2-merous and 3-merous flowers occur.”

Although these two species she noted are very similar in vegetative characters, the differences are not only in the number of tepals. Tetrapetalum volubile Miq. has unlobed convex stigmas and its petals are large and rounded at the apex, fully expanding on anthesis. Stigmas of Cyathostemma excelsum (Hook. f. & Thomson) J. Sinclair are completely different, being bilobed and split down the inner side, and its petals are smaller and subacute at the apex, not expanding on anthesis.

Bilobed stigmas and subacute petals not expanding on anthesis are very constant characters in the genus Cyathostemma (Sinclair, 1955), and never seen in Tetrapetalum, which has flat, convex, or slightly concave stigmas and expanding petals with rounded apex. These characters are common to some species of Uvaria. Among the Uvaria group sensu Van Heusden, staminodes have been known only in Uvaria, although their presence or absence is not constant within the genus. The staminodes found in the new species of Tetrapetalum also suggests the affinity to Uvaria.

If one considers that the difference in the number of tepals is not worth dividing genera (and Cyathostemma is kept separated from Uvaria), Tetrapetalum must be reduced to Uvaria, not to Cyathostemma. However, the decision whether Tetrapetalum is reduced to Uvaria or not should not be made until Uvaria and several genera related to Uvaria are revised thoroughly.

Key to the species of the genus Tetrapetalum

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<tr>
<td>1a</td>
<td>Leaves thinly coriaceous; nerves more than 11 pairs. Flowers c. 3 cm across; the torus c. 1 cm across</td>
<td>T. lambirense K. Momose</td>
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<tr>
<td>b</td>
<td>Leaves thickly coriaceous; nerves less than 10 pairs. Flowers less than 2 cm across; the torus less than 0.7 cm across</td>
<td>2</td>
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<tr>
<td>2a</td>
<td>Leaves densely stellate tomentose beneath; petals coriaceous</td>
<td>T. volubile Miq.</td>
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<tr>
<td>b</td>
<td>Mature leaves glabrous beneath; petals chartaceous</td>
<td>T. borneense Merr.</td>
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Specimens examined (all in SAR):

Cyathostemma excelsum (Hook. f. & Thomson) J. Sinclair — Ng KFN100032, RRI Experiment Sta., Malaya; Hardial & Sidek 417, Selangor, Malaya; Purseglobe P4965, Bako, Sarawak; Haron S 21376, Lambir, Sarawak.

Tetrapetalum borneense Merr. — Haviland 422, Kuching, Sarawak; Ashton BRUN 5167, Brunei; Krispinus SAN 86687, Sabah.

Tetrapetalum volubile Miq. — Haviland 2462/1968, Kuching, Sarawak; Murthy S 22619, Tinjar, Sarawak; Ashton BRUN 606, Brunei.
ACKNOWLEDGEMENTS

I express my thanks to the curator of SAR for the loan of specimens, and Y. Sugino (Lake Biwa Museum) for drawing some illustrations. This study was carried out in the Canopy Biology Program Sarawak (Forest Department Sarawak and Mombusho #06041013, 09N1501), under the supervision of H. Nagamasu (Kyoto University) to whom I express cordial thanks. I also thank the organisers of the project for their kind support, H.S. Lee, A.A. Hamid (Forest Department Sarawak), K. Ogino (Ehime University) and T. Inoue (Kyoto University). This study was partly supported by the JSPS Research Fellowship for Young Scientists.

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