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A DISTINCTIVE NEW RHYSOTOECHIA (SAPINDACEAE) FROM PAPUA NEW GUINEA

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SUMMARY

A new *Rhysotoechia*, *R. etmanii*, was recently discovered during botanical surveys of the Crater Mt. Wildlife Management Area in Papua New Guinea.

Key words: *Rhysotoechia*, Papua New Guinea, botanical survey.

INTRODUCTION

The Crater Mt. Wildlife Management Area (CMWMA) is one of the largest Papuasian wilderness tracts currently under conservation easement. Substantial numbers of previously unknown taxa were recently documented during a floristic survey of CMWMA environments (Takeuchi, 1999, 2000; Huynh, 2000). A puzzling collection which had resisted earlier identification, has now been determined as an unusual new species of *Rhysotoechia*.

Rhysotoechia etmanii W. Takeuchi, *spec. nov.* — Fig. 1, 2

Inter species *Rhysotoechiae* singularis ob folia valde alata. — Typus: *W. Takeuchi 12694* (holo LAE; iso A, CANB, L), Papua New Guinea, Eastern Highlands Province, Crater Mt. Wildlife Management Area, near Kusare, 1400 m, 28.vii.1998.

Subarborescent to 7 m height. *Branchlets* terete (or weakly compressed), subapical diam. 5–7 mm, puberulous, early glabrescent, periderm pale greyish brown, striate to rugulose, laxly lenticellate. *Leaves* spiral, heteromorphous, simple, paripinnate, or pseudo-imparipinnate, (1–)3- or 4-jugate; petiole pulvinate on simple leaves, resembling the branchlets in coloration and texture, 4–6 by 5–6 mm, otherwise 4.5–9 by 0.6–1.3 cm on compound leaves, petiole and rachis sulcate above (pinnate leaves), rounded beneath, manifestly alate, wings foliaceous, to 8 mm wide per side; simple blades broadly lanceolate, 25–39 by 9.5–15.5 cm, base gradually tapered, symmetrically (or obliquely) reducing to the petiole, margins entire, apex abruptly and bluntly acuminate (or obtuse); leaflets subopposed, sessile, elliptic (or oblanceolate), 11–23.5 by 5–10 cm, base oblique and auriculiform on the basiscopic side, margins entire, apex generally obtuse; all laminae pellucidly punctate, glabrous, coriaceous, not vernicose, adaxially dark green and pusticulate, abaxially lighter green, pulverulent, verruculate, bifacially olivaceous with drying and discolorously marked by greyish purple

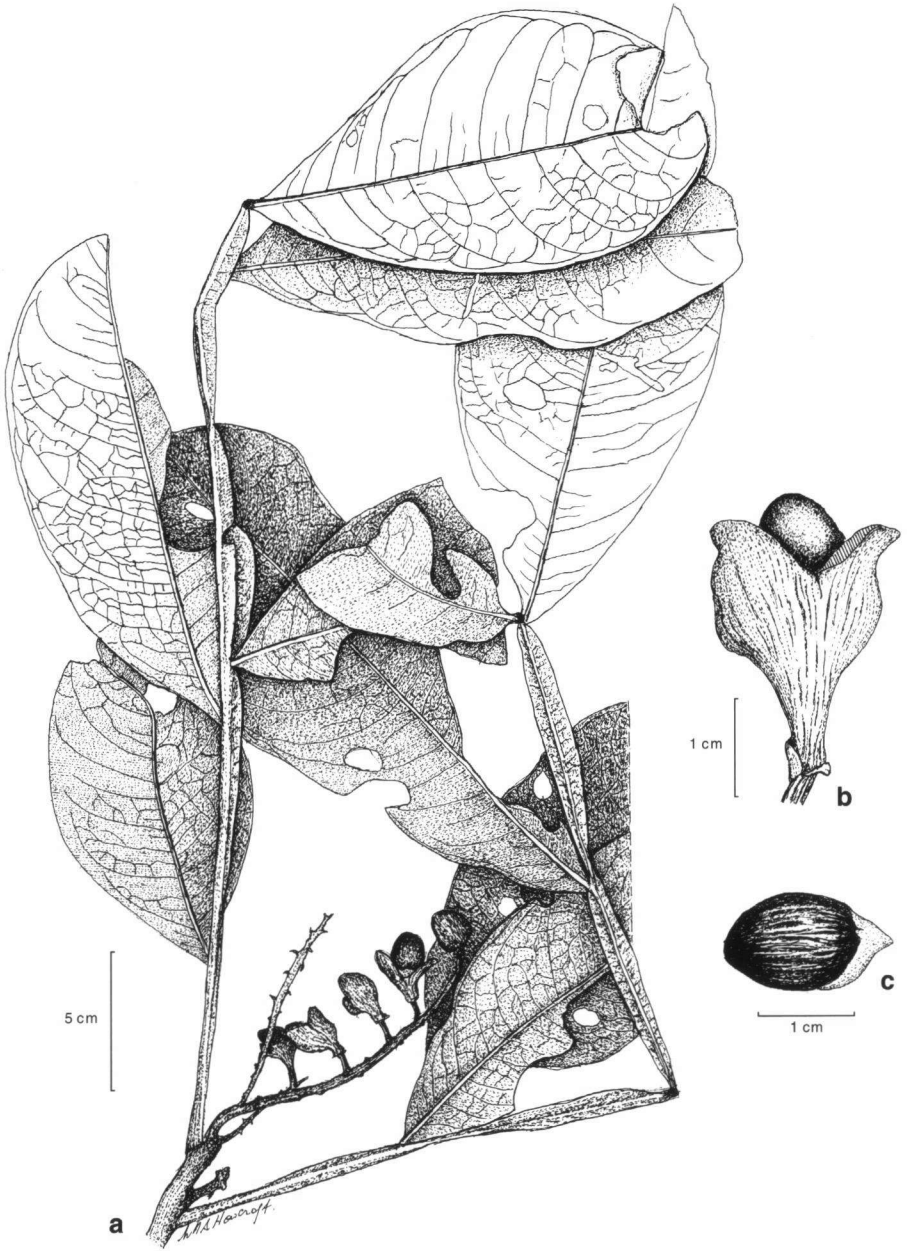

Fig. 1. *Rhysotoechia etmanii* W. Takeuchi. a. Habit; b. dried capsule; c. seed, arillode at right (drawn from *Takeuchi 12694* (LAE) by N.H.S. Howcroft).

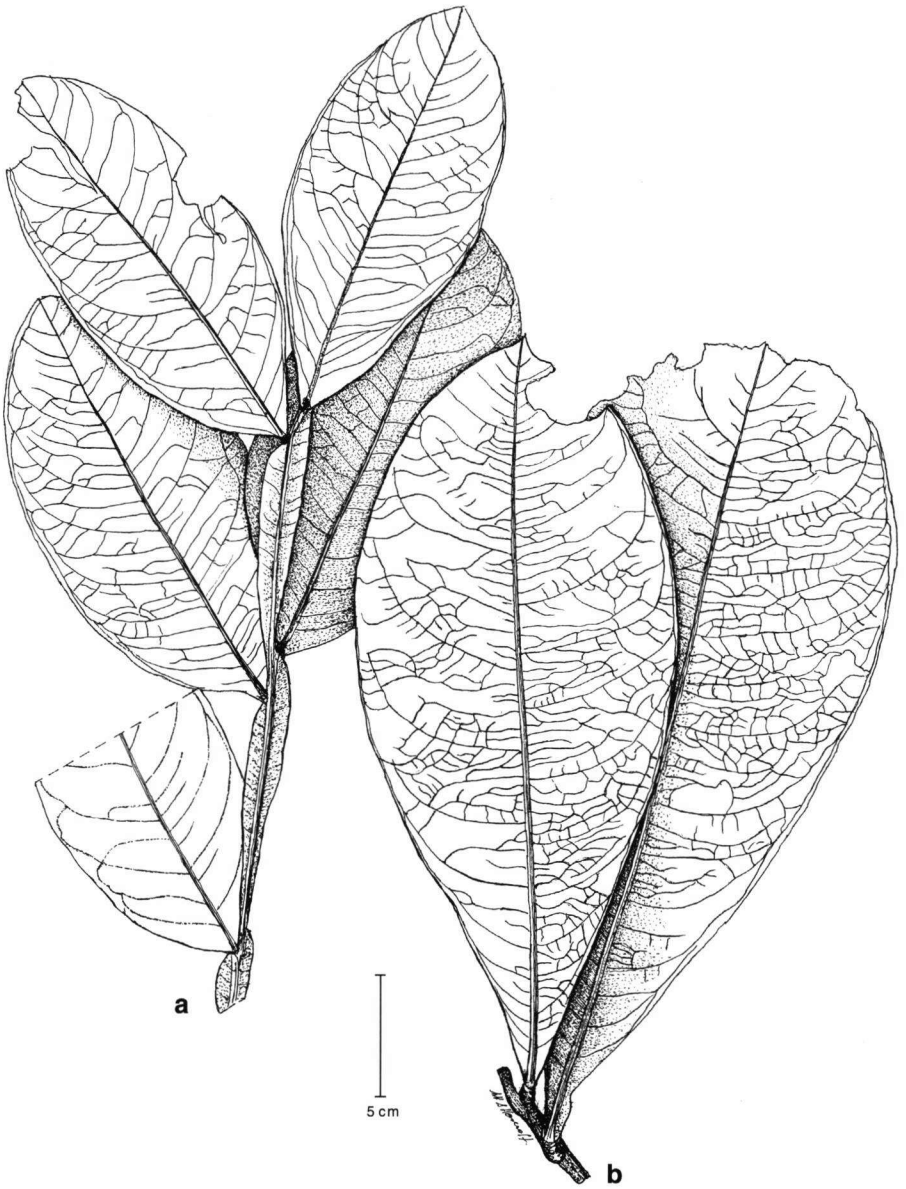

Fig. 2. *Rhysotoechia etmanii* W. Takeuchi. a. Compound leaf; b. simple leaves (drawn from *Takeuchi 12694* (LAE) by N.H.S. Howcroft).

suffused patches; venation camptodromous (or brochidodromous), secondaries 11–19 on simple leaves, 7–12 on leaflets, partial and weaker laterals often medially interposed between the principal ones, interlateral distance 9–35 mm at the lamina centre, there with vein divergence angles 75–90° on simple leaves, 55–75° on leaflets, midribs slightly raised or distinctly carinal, more prominent beneath than above, on leaflets dilate and discolorously brunneous-nigrescent at the rachis, tertiary nervation bifacially prominulous, reticulum densely areolate, conspicuous on all parts including alae; domatia absent. *Inflorescence* not seen. *Infructescence* from terminal (or subapical) axils, racemiform, solitary or 2 or 3 together; peduncle 5–15 by 3–4 mm; rachis 2–13 cm by 1–3 mm, glabrescent or subappressedly puberulent; bracts acuminate, inconspicuous, c. 0.5 mm long, densely strigulose; fruiting pedicel to 9 mm long; fruiting sepals persisting or not, pentamerous, unequal. *Capsules* trigonous, obovoid, 19–27 by 13–16 mm including stipe (0–)2–8 mm long, loculicidal, valves 2 or 3, fleshy, orange, smooth, blackened and rugose after drying, glabrous on the sutures, exterior surfaces with widely scattered hairs (or glabrous), inside with papillate hairs especially near the base. *Seeds* glossy black, oblongoid-ellipsoid, c. 17 by 10 mm; arillode orange, enveloping the base and extending 4–9 mm toward the top, notched on one side.

Etymology — The epithet recognizes B. Etman, the recent monographer of the genus.

Distribution & Ecology — *Rhysotoechia etmanii* is presently known only from montane environments at Crater Mt. There were several sightings during the recent surveys, from advanced-growth forest between elevations 1170–1770 m. The association with mature forest suggests that *R. etmanii* is a late entrant in community succession.

Notes — *Rhysotoechia* was recently reviewed by Reynolds (1984) and Etman (1994a, b), with a total of 14 species recognized from Australia and the Malesian region (Etman, 1994a). Including the present novelty, there are now 9 species recorded for New Guinea.

The new plant is immediately distinguished by its heteromorphous leaves, which are either simple and large (to 39 by 15 cm), or variously pinnate with conspicuously alate rachises and petioles. After drying, the laminae are olivaceous on both sides, and often discolored by purplish patches reminiscent of the *Claoxylon* group '*Purpurascentia*' (Euphorbiaceae, cf. Airy Shaw, 1980: 147).

The capsules of *R. etmanii* fall within the larger end of the size range for the genus, but are even 2(–3) times larger in vivo. Although black and rugose on exsiccatae, the fresh exocarp is hyaline orange and smooth. In *R. etmanii*, the considerable shrinkage of the fruit upon drying is responsible for the wrinkling characteristic of the genus, and is a circumstance probably applicable to congeners. The rugose exocarp is certainly not a field character.

With the new *Rhysotoechia*, the generic keys from 'Flora Malesiana' will require modification because of the heteromorphous leaves. When applied to Key 1 (Adema, 1994: 435–440) the novelty will terminate at couplet 11 and can be accommodated there by addition of a third lead:

11c. Leaves paripinnate and/or simple (not unifoliolate) ..... **R. etmanii**

Using generic Key 2 (Van Welzen, 1994: 440–450), specimens with compound leaves will follow the existing decision train for *Rhysotoechia*. To account for heterophyllous specimens, line 5b should properly read 'occasionally some leaves unifoliolate or simple'. However, if a gathering has only simple leaves, it will key out on a different sequence to couplet 6. The easiest way of proceeding from that point is by again introducing a third lead:

6c. Fruits not winged. Leaves simple ..... **R. etmanii**

In Etman (1994a: 705) the new plant keys to *R. koordersii* but is clearly not that species. *Rhysotoechia etmanii* can be added to the current conspectus by appending the following continuation to fork 14b (ibid.):

14b. Leaflets obovate to elliptic, coriaceous, apex obtuse to acuminate. Petiolule usually a pulvinus only, up to 10 mm long 15
15a. Leaves simple and paripinnate, the compound leaves conspicuously alate on rachises and petioles; capsules 1.9–2.7 cm long. Eastern Highlands Province, Papua New Guinea ..... **R. etmanii**
15b. Leaves paripinnate, 1–4-jugate, sometimes slightly winged below the basal pair of leaflets but never conspicuously alate; capsules 1.5–1.7 cm long. W Malesia ..... **R. koordersii**

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