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NOTES ON NEW GUINEA RUBIACEAE

Chaetostachydium

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This bizarre pachycaul genus was described and well-figured by Valeton (1911) from a single collection and for many years known under the illegitimate name *Chaetostachys*. A second specimen was later annotated by Valeton as belonging to the same species. Re-examination of this material has shown that the two collections cannot be considered to be conspecific. It was also found that the second collection and later conspecific collections have 5-merous flowers.

CHAETOSTACHYDIUM

Chaetostachydium Airy Shaw, Kew Bull. 18 (1965) 271. — *Chaetostachys* Val., Nova Guinea 8 (1911) 495, *nom. illeg. non* Benth. in Wall., Pl. As. Rar. 2 (1831) 19 (*Labiateae*); K. Schum. in E. & P., Nat. Pfl. Fam. Nachtr. 4 (1915) 300. — Type species: *C. versteegii* (Val.) Airy Shaw.

Understorey treelets, usually unbranched. Stipules interpetiolar, bifid at least for the upper half. Leaves opposite, usually clustered at the stem apex. *Inflorescences* axillary or terminal, pendulous on a long peduncle, or erect, or lateral on a short peduncle; main axis branched or unbranched, side branches short and condensed or long and lax; bracts numerous, borne in pairs at each branch node of inflorescence, filiform to linear-lanceolate. *Flowers* 4- or 5-merous. Hypanthium hypocrateriform, calyx lobes triangular to filiform. Corolla hypocrateriform, lobes valvate in the bud. Stamens inserted in the throat of the corolla, slightly exserted, filaments pubescent. Ovary 2- or 3-locular; ovules solitary, anatropous, inserted basally; disc present; stigma cleft to slightly bifid. *Seeds* bilaterally compressed to some degree, tissues with numerous raphids.

KEY TO THE SPECIES

1a. Bracts of inflorescence linear-lanceolate; flowers 5-merous, calyx lobes over 2 mm long . . . . . **3. C. barbatum**
b. Bracts of inflorescence filiform; flowers 4-merous, calyx lobes less than 2 mm long 2
2a. Leaf base attenuate. Inflorescence pendulous, peduncle over 2 cm long. Calyx lobes triangular, 0.5 mm long . . . . . **1. C. versteegii**
b. Leaf base sub-auriculate. Inflorescence erect, peduncle up to 2 cm long. Calyx lobes linear-oblong, 1.25 mm long . . . . . **2. C. filiforme**

1. Chaetostachydium versteegii (Val.) Airy Shaw

C. versteegii (Val.) Airy Shaw, Kew Bull. 18 (1965) 272. — *Chaetostachys versteegii* Val., Nova Guinea 8 (1911) 496, tab. 74; K. Schum. in E. & P., Nat. Pfl. Fam. Nachtr. 4 (1915) 300. — Type: *Versteeg 1275* (L).

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An understorey treelet *c.* 1.5 m high; young stem brown pubescent. Stipules narrowly ovate, 20—25 × 5 mm, densely rufous-tomentose on outside, bifid for half their length, base slightly carinate. *Leaves* obovate-oblong to oblanceolate, 30—45 × 9—13 cm; apex acute, base narrowly cuneate; above glabrous, below rufous-tomentose, densely so on the nerves. Nerves 15—20 pairs, prominent below. Petiole 1—3 cm, rufous-tomentose. *Inflorescence* terminal or axillary, pendulous on a long peduncle, main axis unbranched, flower bearing portion 7—10 × 3—4 cm, side-branches numerous, short, 3—5 mm, condensed; peduncle 5—10 cm. Bracts numerous, filiform, up to 25 mm long, glabrous. *Flowers* 4-merous, subsessile. Calyx lobes broadly triangular, 0.5 mm long. Corolla tube 5—8 mm long, outside minutely pubescent, inside densely hairy; lobes ovate, 3 mm long, glabrous, margins ciliate. Ovary 2-locular; disc well-developed. *Fruit* obovoid, somewhat compressed, 5 × 4 mm; seeds obovoid, somewhat compressed, 5 × 4 × 0.5—1 mm.

Distribution: West New Guinea, Digul Dist., North River, Nepenthus Hill near Sabang Camp.

Known only from the type collection.

2. Chaetostachydium filiforme Ridsd., *spec. nov.*

Arbuscula. Stipulae anguste-oblongae, 20 mm longae, 5—7 mm latae, glabrae, partes superioribus bifidis, basi laeviter carinatis. *Folia* obovata 20—35 cm longa, 8—15 cm lata, apice acuta, basi sensim attenuatam sed ipsa basi subauriculata, supra glabra, subtus minute pallide pubescentia, nervis lateralibus 12—16 paribus; petioli usque ad 1 cm longi. *Inflorescentia* terminalia, erecta, 5 × 6 cm longa, axe ramoso, ramulo axillari usque ad 30 mm longo, laxo, pedunculo 15 cm longo. Bracteae numerosae, filiformes, usque ad 20 mm longae, glabrae. *Flores* 4-meri (fragmentis tantum cogniti); calycis lobi ovati, 1.25 mm longi, glabri; corollae tubus c. 5 mm longus, extus glaber, intus certe parte 2/3 inferiore glaber; lobi 1.5 mm longi; ovarium biloculare, discus parvus. *Fructus* ignotus.

Typus: *Aët & Idjan 922* (L).

Understorey treelet; young stem glabrous. Stipules narrowly oblong, 20 × 5—7 mm, glabrous on outside, bifid at least at the apex, slightly carinate. *Leaves* obovate, 20—35 × 8—15 cm; apex acute, base tapering and subauriculate; above glabrous, below minutely pallidly pubescent. Nerves 12—16 pairs, prominent below. Petiole up to 1 cm, glabrous. *Inflorescence* terminal, erect, main axis branched, flower bearing portion 5 × 6 cm, side-branches numerous, up to 30 mm long, lax; peduncle 1.5 cm. Bracts numerous, filiform, up to 20 mm long, glabrous. *Flowers* 4-merous, pedicels 1.5 mm. Calyx lobes broadly triangular, 1.25 mm long. Corolla tube *c.* 5 mm long, outside glabrous, inside (at least in the lower 2/3) glabrous; lobes ovate, 1.5 mm long, glabrous. Ovary 2-locular, disc small. *Fruit* unknown.

Distribution: West New Guinea; Geelvink Bay, Biak I., Arijom.

Known only from the type collection.

3. Chaetostachydium barbatum Ridsd., *spec. nov.*

Arbuscula ad 1.5 m alta. Stipulae oblongae, 15—25 × 6—10 mm, glabrae ad dense rufus-tomentosae, bifidae. *Folia* obovato-oblonga ad oblanceolata, 45—50 cm longa, 16—20 cm lata, apice acuta, basi cuneata, haud decurrentia, supra glabra, subtus glabra ad dense rufo-tomentosa, nervis lateralibus 30—35 paribus, subtus prominentibus; petioli 1—2.5 cm longi, glabri ad pubescentes. *Inflorescentiae* axillares, 1—4 × 2—4 cm, interdum pendulae, axibus ramosia vel haud ramosis, ramulis axillaribus condensatis usque ad 10 mm longis, pedunculo 0—12 mm longo. Bracteae numerosae, lineare-lanceolatae, glabrae ad tomentosae. *Flores* 5-meri, pedicelli 2 mm longi; calycis lobi lanceolati, 6 mm longi, 2 mm lati; corolla tubo extro glabro, ore dense pubescente, 6 mm longo, 2 mm diametro, lobis ovatis, 3 mm longis, 1 mm latis. Antherae 1.5 mm longae; filamenta 4 mm longae, pubescentia. Ovarium 2- vel 3-loculare. Stylus 6—8 mm longus; stigma

bifidum. *Fructus* ex ovaria triloculari tantum notus, sectione transversa trigonus, 3 costatus, 20×15 mm; semina tenuia, applanata.

Typus: *Beccari* 571 (F).

Treelet *c.* 1.5 m high; young stem glabrous or brown pubescent. Stipules oblong, 15—25×6—10 mm, glabrous to densely rufous-tomentose on outside, bifid. *Leaves* obovate-oblong to oblanceolate, 45—50×16—20 cm; apex acute, base cuneate, not decurrent; above glabrous, below glabrous to densely rufous-tomentose. Nerves 30—35 pairs, prominent below. Petiole 1—2.5 cm, glabrous or pubescent. *Inflorescence* axillary, short or on a long peduncle, main axis branched or unbranched, flower bearing portion 1—4×2—4 cm, side branches numerous, short, 3—10 mm, somewhat condensed; peduncle 0—12 cm. Bracts numerous, linear-lanceolate, up to 15 mm long, glabrous or tomentose. *Flowers* 5-merous, pedicels 2 mm. Calyx lobes lanceolate, 6×1 mm. Corolla tube 6 mm long, outside glabrous, inside (particularly at the throat) pubescent; lobes ovate, 3×1 mm, glabrous. Ovary 2- or 3-locular, disc large; style 6—8 mm. *Fruit* only known from a specimen with a 3-locular ovary, trigonal, 3-costate, 20×15 mm; seeds thin, flattened, 15×11×1—2 mm.

Distribution: West New Guinea; Vogelkop Pen., Andai (*Beccari* 571); Geelvink Bay, Japen I., Antam near Seroei (*Aët & Idjan 201*); Jayapura Dist., Idenburg River (*Feuilletau de Bruyn 110*).

SYSTEMATIC RELATIONSHIPS

Valeton considered the genus to be closely allied to *Psychotria*; such a disposition was also followed by K. Schumann. Beccari, in an herbarium note, also placed his specimen in the tribe *Psychotrieae*. Features of the genus are: the ovary with 2 or 3 locules, each containing a single, basally inserted, anatropous ovule; the corolla lobes valvate in the bud; the seeds bilaterally compressed to varying degrees, thin and dry, containing numerous raphids. The structure of the fruit bears a superficial resemblance to that found in some genera of the *Paederieae*, but this tribe is characterized by the highly reticulate endocarp, the style branched with 2—5 stigmas, and the presence of foetid substances in the plant, features not present or unrecorded in *Chaetostachydium*. However, within the *Psychotrieae* fruit with characters similar to those found in *Chaetostachydium* are exceedingly rare, being known with certainty only from the Javanese species of '*Cephaelis*' (Bakhuizen van den Brink, pers. comm.).

There has never been a comprehensive revision of the *Psychotria* complex for the whole of the Malesian region and the status of the generic splits from *Psychotria*, such as '*Cephaelis*' and *Calycosia*, still have to be evaluated. Many species of these genera are small, unbranched, understorey treelets. This growth form is apparently more frequently seen in New Guinea than in other areas. The plants complete their whole life cycle in the forest understorey, occurring together with the numerous sterile seedlings and saplings of other forest trees. They are possibly of rare occurrence, but certainly are overlooked amongst the sterile saplings and are, therefore, undercollected. Within the tribe *Psychotrieae* further collections of these treelet taxa are required to elucidate the inter-relationships of components of the *Psychotria* complex. Such a study may well show that *Chaetostachydium* is not sufficiently distinct from *Psychotria* to warrent generic distinction.

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