

REVISION OF THE SAPOTACEAE OF THE MALAYSIAN AREA
IN A WIDER SIDE

VIII¹⁾. *Krausella* H. J. Lam

by

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(Rijksherbarium, Leiden)

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Krausella H. J. Lam, Nova Guinea 14, 1932, 566.

Trees. *Leaves* stipulate, alternate, scattered, simple, oblong to obovate, petiolate, tertiary nerves transverse, often numerous, always faint. Inflorescences many-floruous, fasciculate on brachyblasts which are inserted in the axils of leaves or their scars, rarely in those of stout petiole-like bracts. *Flowers* 6(—8)-merous. *Sepals* 6(—8), spirally arranged or pseudo-cyclical. *Corolla* exsert, lobes 6(—8), as long as or longer than tube. *Stamens* 6(—8), inserted just or well below the corolla-throat, epipetalous. *Staminodes* 6(—8), episepalous, inserted in the throat. *Ovary* 6(—8)-celled, borne on a short stout gynophore, disk infundibuliform at apex of gynophore, more or less connate with the basal (fertile) part of the ovary, the whole (except style) hispidulous pilose, cells episepalous, ovules one in each cell, inserted in the lower half of the cells, apotropous, micropyle inferior; style short, glabrous, truncate. *Fruits* unknown.

Type species: *Krausella forbesii* (Moore) H. J. Lam.

Distr.: Some 4 closely allied species in New Guinea.

Key to the species

- 1.a. Secondary nerves (6—)10—12(—19), not joined near margin, angle to midrib about 60°, tertiary nerves inconspicuous, angle to midrib about 140°; sepals connate halfway up, outer ones deltoid, acute, 2—3 by c. 1.5 mm, inner ones more obtuse, as long as outer ones . . . 1. *K. schlechteri* (Krause) H. J. Lam
- b. Secondary nerves 15—40, tertiary nerves faint but conspicuous . . . 2
- 2.a. Secondary nerves 30—40, angle to midrib 70°—90°, distinctly archingly joined near margin, angle of tertiary nerves to midrib about 115°; sepals connate less than halfway up, broadly ovate, c. 1(—4) by 2 mm, apex rounded or subacute
2. *K. patentinervia* (Krause) Erlee
- b. Secondary nerves 15—25, not always or only rarely joined near margin . . . 3

¹⁾ I—III in *Blumea* 6, 3, 1952, 547—595; IV and V in *Blumea* 7, 2, 1953, 364—412; IVa in *Blumea* 7, 3, 1954, 481—483; IIa, IVb, Va, VI—XIX in the present use.

3.a. Secondary nerves 20—24, angle to midrib 55°—70°, mostly, though not always archingly joined near margin, angle of tertiary nerves 100°—110°; sepals connate halfway to 2/3 up, corolla 5—7 mm long, tube 2.5—3.5 mm long

3. *K. polyneura* (Krause) H. J. Lam

b. Secondary nerves (15—)18—22, angle to midrib 55°—70°, rarely archingly joined near margin, angle of tertiary nerves 105°—125°; sepals connate less than halfway up 4. *K. forbesii* (Moore) H. J. Lam

1. *K. schlechteri* (Krause) H. J. Lam, Nova Guinea 14, 1932, 567, t. 128 — *Beauvisagea schlechteri* Krause, Engl. Bot. Jahrb. 58, 1923, 482.

Lofty trees. *Branchlets* terete, sparsely brownish puberulous, glabrescent, bracts ovate or lanceolate, 0.3—1.8 cm long, apex acute, firmly coriaceous, sparsely brownish puberulous without, glabrous within. *Leaves* ovate, 15—17(—32) by 8—9(—14) cm, rounded at apex, gradually narrowing at base; thinly coriaceous, glabrous and nitidous above, sparsely and minutely puberulous below; midrib prominent below, impressed above, secondary nerves (6—)10—12(—19), ascending at an angle of c. 60°, straight, near margin diminishing until inconspicuous, not joined, tertiary nerves almost inconspicuous, reticulation lax, angle to midrib c. 140°; petioles c. 4—5 cm long, canaliculate above, sparsely puberulous. *Inflorescences* crowded in the upper region of the branchlets. *Flowers* 6-merous; pedicels c. 8 mm long, brownish puberulous. *Sepals* whorled in threes, connate halfway up, outer ones deltoid, apex acute, 2—3 by c. 1.5 mm, firmly coriaceous, sparsely brownish to greyish puberulous without, glabrous within, inner ones more obtuse, as long as outer ones, c. 2 mm broad, thin, glabrous on either side, margins irregularly and minutely undulate. *Corolla* c. 4 mm long in bud, tube c. 2 mm long, lobes ovate or ovate-oblong, c. 2 by 1 mm, apex acute. *Stamens* c. 2.5 mm long, filaments subulate or filiform, contracted at apex, c. 2 mm long, anthers ovoid, c. 1 mm long, versatile, basifix. *Staminodes* subulate or dentate (f. Lam), c. 2 mm long. *Pistillum* c. 4 mm long, with the indumentum subglobose, ovary gradually contracted into the style, densely covered with stiff brown hairs, gynophore c. 0.5 mm long, disk densely covered by stiff brown hairs; style c. 2 mm long, glabrous, grooved, truncate.

Type specimen: *Schlechter 16516* in B.

Lectotype specimen: *Schlechter 16516* in SING.

Distr.: New Guinea.

NEW GUINEA. N.E. New Guinea, Kelel, alt. 200 m: *Schlechter 16516* (SING), fl. Sept.

Remarks: Since the type specimen has probably been destroyed, the only duplicate which has come to our knowledge is proposed to serve as the type specimen. In this specimen the secondary nerves are only 10—12 in number (6 in a very small leaf), but in Lam's plate there are up to 19.

The flowers are very much like those of *K. polyneura* but the leaves are distinguished by the rather distant secondary nerves and the almost inconspicuous tertiary nerves which make an unusually large angle towards the midrib.

In the region of the inflorescences there are sometimes small rigid petiole-like organs c. 3—18 mm long, which are probably to be interpreted as bracts or as bud scales (as are found in several *Ganua* species).

2. *K. patentinervia* (Krause) Erlee, nov. comb. — *Sideroxylon patentinervium* Krause, Engl. Bot. Jahrb. 58, 1923, 474; Lam, Nova Guinea 14, 1932, 567 (sub *K. polyneura*), t. 127 fgs b, f—h.

Tall trees. *Branchlets* terete, ferruginously puberulous, glabrescent. *Leaves* oblong, (20—)24—26(—28) by 9—11 cm, apex shortly acuminate, acumen c. 5 mm long, base obtuse or subcuneate; thinly coriaceous, glabrous and nitidous above, sparsely and minutely puberulous on midrib and secondary nerves below; midrib prominent below, impressed and minutely crested above, secondary nerves 30—40, ascending at an angle of 70°—90°, straight, near margin distinctly archingly joined, tertiary nerves distinct, angle of tertiary nerves and midrib c. 115°; petioles c. (3.5—)4—5 cm long, minutely canaliculate above, sparsely brownish puberulous. *Inflorescences* more or less crowded in the upper regions of the branchlets. *Flowers* 6-merous, partly known only; pedicels 8—10 mm long, sparsely brownish puberulous. *Calyx* c. 2 mm long, sepals connate less than halfway up, broadly ovate, firmly coriaceous, sparsely brownish puberulous without, glabrous within, c. 1(—4) by 2 mm, apex rounded or subacute.

Type specimen: *Schlechter 16746* in B.

Lectotype specimen: *Schlechter 16746* in P.

Distr.: New Guinea.

NEW GUINEA. N.E. New Guinea, Kani Mts, alt. 1000 m: *Schlechter 16746* (P), juv. fl. Oct.

Remarks: The number 16747 cited in literature is undoubtedly a printing error.

Since the type specimen has probably been destroyed, it is proposed to consider the only duplicate left as the type specimen.

K. patentinervia is a large tree from the higher hill belt, characterised by the numerous secondary nerves which ascend at almost right angles from the midrib and are distinctly archingly joined near the margin. Probably this species is also found in West New Guinea (cf sub *Kraussella* sp. 1).

In the only duplicate available the flowers were too young to allow an analysis.

3. *K. polyneura* (Krause) H. J. Lam, Nova Guinea 14, 1932, 567, t. 127 fgs a, c—e, k—m — *Sideroxylon polyneurum* Krause, Engl. Bot. Jahrb. 58, 1923, 475.

Trees, 15—20 m high. *Branchlets* terete, brownish puberulous, glabrescent. *Leaves* oblong, 7—19 by 3—9 cm, apex obtuse or acuminate, acumen c. 5 mm long, base cuneate or subabruptly narrowing; thinly coriaceous, glabrous and nitidous above, sparsely ferruginously pubescent on underside of midrib only; midrib prominent below, impressed above, secondary nerves 20—24, ascending at an angle of 55°—70°, straight, near margin mostly archingly joined or sometimes diminishing until inconspicuous, tertiary nerves distinct on either side, angle to midrib 100°—110°; petioles (1.5—)2.5—3(—3.5) cm long, canaliculate above, sparsely puberulous. *Inflorescences* crowded in the upper regions of the branchlets; pedicels c. 1 cm long, sparsely brownish or ferruginously puberulous. *Calyx* c. 3—3.5 mm long, sepals connate halfway or $\frac{2}{3}$ up, rotundate-ovate, 1—1.5 by c. 2 mm.

firmly coriaceous, sparsely brownish to ferruginously puberulous without, glabrous within, apex rounded to obtuse. *Corolla* 5—7 mm long, tube 2.5—3.5 mm long, lobes ovate, 2.5—3.5 by c. 1.5 mm, apex obtuse. *Stamens* exsert, 2.5—4 mm long, inserted in the lower third of the corolla-lobes, but filaments connate with the corolla-tube almost halfway down, subulate, contracted at apex, anthers ovoid, 1.5—2 mm long, apex subacute. *Staminodes* lanceolate or subulate, c. 1.5 mm long, apex acute. *Pistillum* 3—4 mm high, ovary subglobose, 1—1.5 by c. 1 mm, densely covered with long and stiff ferruginous hairs, gynophore c. 0.5 mm high, disk densely covered with ferruginous long hairs; style glabrous, 2—2.5 mm, truncate.

Type specimen: *Ledermann 9054* in B.

Lectotype specimen: *Ledermann 9054* in K.

Distr.: New Guinea.

NEW GUINEA. N.E. New Guinea: Sepik area, Etappenberg, alt. 850 m: *Ledermann 9054* (K, SING), fl. Oct.; Morobe, Sattelberg, hill forest above mission, alt. 1020 m: *J. & M. S. Clemens 1971* (A, B), fl. March.

Remarks: The type being probably destroyed it is proposed to select the Kew duplicate as a lectotype specimen.

The Clemens specimen is most probably conspecific with the type specimen, the only difference being that in the former the secondary nerves are mostly (though not always) archingly joined near the leaf-margin, whereas this is only rarely so in the latter. Also this species is probably found in West New Guinea (cf. *Krausella* sp. 2).

K. polyneura is probably closely related or even identical to *K. forbesii* but for the time being is kept apart, since in the last-mentioned species only young flowers are now available. These are considerably smaller than the adult ones in *K. polyneura*.

Unfortunately Lam's figure in Nova Guinea does not state dimensions. In addition, the description of *Sideroxylon forbesii* by Moore is difficult to compare. This is why we prefer to keep on the safe side and postpone a decision until more material is available.

4. *K. forbesii* (Moore) H. J. Lam, Boissiera 7, 1943, 92 — *Sideroxylon forbesii* Moore, Journ. Bot. 61, June 1923, Suppl. 30 — *Planchonella forbesii* (Moore) H. J. Lam, Bull. Jard. bot. Bzg, Sér. III, 7, 1925, 217 and 8, 1927, 476.

Trees. *Branchlets* terete, minutely ferruginously tomentose on tips only, glabrescent, striate. *Juvenile leaves* recurved, adult ones oblong, 12—19 by 5—9 cm, apex broad, often shortly and bluntly acuminate, acumen c. 5 mm long, subabruptly narrowing at base; thin or firmly coriaceous, glabrous and nitidous above, sparsely and minutely brownish puberulous on midrib and secondary nerves below; midrib minutely crested and prominulous above, prominent below, secondary nerves (15—)18—22, ascending at an angle of 55°—70°, straight but curved near margin, diminishing until inconspicuous, rarely archingly joined near margin or connected by an odd incrassate tertiary nerve, tertiary nerves faint but distinct on either side, angle with midrib 105°—125°; petioles 2—4.5 cm long, canaliculate above, sparsely brownish puberulous. *Inflorescences* crowded in the upper regions of the branchlets; pedicels 8—10 mm long, scattered with ferruginous hairs.

Sepals 6 or 7, connate less than halfway up, rotundate-ovate, 2—2.5 by c. 1.5 mm, apex rounded or obtuse, firmly coriaceous, with scattered ferruginous hairs without, glabrous within. *Corolla* 6- or 7-lobed, examined in bud only. *Stamens* known incomplete only, anthers versatile, subbasifix, ovary covered with stiff ferruginous hairs.

Type specimen: *Forbes 756* in MEL.

Distr.: New Guinea.

NEW GUINEA. S.E. New Guinea, Sogeri region, base of Owen Stanley Range, Mt Wori-Wori, alt. c. 1500 m: *Forbes 756* (FI, K, L, MEL), juv. fl.

UNIDENTIFIABLE SPECIMENS

The specimens mentioned below are undoubtedly congeneric.

The leaves are thin coriaceous, brown when dry, the young ones characteristically curved downwards in all specimens. In some cases there are additional erect bud-scales and a transition between these and petioles may be seen in occasional petiole-like structures or undeveloped leaves as are described for *K. schlechteri*. These characters, together with the general features of leaves and nervature, made us decide that the specimens quoted should provisionally be inserted in *Krausella*, but the comparison is hampered by the fact that in the flowering specimens the tips of the branchlets are either densely covered by flowers or have been cut away. In some cases, however, (*K. polyneura*, Clemens 1971), bud-scales of the type here described are extant.

1. *Krausella* sp.

Innovations with a brown appressed indumentum, young leaves recurved. Leaves ovate or oblong, base acute, apex acuminate, 11—21 by 5.5—11 cm; petioles 2—3.3 cm long, blade sparsely and very minutely pulverulent underneath to glabrous; midrib strongly prominent below, impressed above, secondary nerves 30—40, little or hardly curved, prominent below, angle with midrib 65°—70°, distinctly archingly joined near margin, tertiary nerves faint, transverse, angle with midrib 110°—130°. Sterile.

Specimen: *NIFS bb 30297*, found in West New Guinea, residency Geelvink Bay, Japen Isl., Seroei, alt. c. 700 m (A, L, SING).

Remarks: Probably close to *K. patentinervia*, but the leaf-bases are more gradually contracted and the petioles are shorter.

2. *Krausella* sp.

Leaves similar to those of the preceding specimen but generally smaller and narrower, more particularly so in *NIFS bb 32868*, and with fewer nerves (*32889*: 20—25, *32868*: 18—21), with smaller angle (in narrow leaves down to 50°), not archingly joined near margin. Both specimens show erect bud-scales (or young leaves) and recurved young leaves.

Specimens: *NIFS bb 32868*, found in South New Guinea, residency Geelvink Bay, Mimika district, Aria, old forest, flat country on dry sandy soil, c. 4 m alt. (BO, L), tree 19 m; *NIFS bb 32889* found in the same region near Aindua, old forest on flat country, clayish soil, alt. c. 5 m (BO, L), tree 17 m.

Vern. names: iteroe, kamamina (Tarie dialect).

Remarks: Probably close to *K. polyneura* in which the lower portion of the leaves, however, is usually broader.

Index to collectors' numbers

The numbers between brackets indicate the number of the species in the text. Those with prefix D. indicate the number of the doubtful specimens.

Clemens & Clemens 1971 (3) — Forbes 756 (4) — Ledermann 9054 (3) — NIFS bb 30297 (D 1), 32868 (D 1), 32889 (D 2) — Schlechter 16516 (1); 16746 (2).

General Index

The numbers indicate the number of the species in the text. Synonyms are printed in *italics*, a new combination is printed in **bold** figures.

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