

REVISION OF THE SARCOSPERMATACEAE

by

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Introduction.

The genus *Sarcosperma* was excluded from the Sapotaceae by the first-named writer in 1925, the group being considered as of family rank. In 1926 the same author published a concise and fragmentary revision of the monotypic order, in which two new Malaysian species were described. The continental species, however, were merely quoted from literature. To this a key was added.

As since then more material has been collected, it seemed desirable to give a new revision of this small but interesting order. For this purpose materials have, at our request, kindly been sent on loan to the Rijksherbarium (L) ¹⁾ from the following institutions:

Royal Botanic Gardens, Kew — K.

Botanischer Garten und Botanisches Museum, Berlin — B.

Musée d'Histoire Naturelle, Phanérogamie, Paris — P.

Botanical Garden, New York — NY.

U.S. National Museum, Division of Plants, Washington — W.

Gray Herbarium and Arnold Arboretum, Harvard University,
Cambridge (Mass.), U.S.A. — H.

Botanical Institute, Coll. of Agriculture, Sun Yatsen University,
Canton — Ca.

We are pleased to render our best thanks to the directors of these institutions for their valuable help, through which the type specimens of all species and much interesting material could be investigated. Thanks are, moreover, due to the Siamese Legation at London and particularly to Dr A. F. G. KERR for kindly giving information concerning some habitats in Siam.

¹⁾ Some of these are also in the Herbarium of the Botanic Gardens, Buitenzorg, especially as far as the Malaysian species are concerned.

SARCOSPERMATACEAE

Sarcosperma(ta)ceae H. J. LAM, Bull. Jard. bot. Buitenzorg, Sér. III, Vol. 7, 1925, 248 and Vol. 8, 1926, 18 and in Phil. Journ. Sci. 49, 1932, 143 ss.

Trees or shrubs with latex (always?; with certainty only known in *S. arboreum* and *S. paniculatum*). *Stipules* extant, small and caducous. *Leaves* simple, entire, subopposite or opposite, rarely subverticillate (*S. laurinum*), often with some alternate ones between, penninerved, the petiole sometimes with auricles (stipels) at the top (*S. paniculatum*, *kachinense*), the blade often with glandular pits in the axils of the secondary nerves or scattered on the surface underneath; tertiary nerves slender but conspicuous, transverse and usually crowded, more or less perpendicular to the midrib. *Inflorescences* consisting of small fascicles or of solitary flowers, placed along racemose or more or less broadly paniculate axillary shoots, the whole of them usually more or less pubescent, rarely densely tomentose (*S. kachinense*) or entirely glabrous (*S. Griffithii*); bracts minute, deltoid. *Flowers* hermaphroditic, little variable, except regarding the indumentum of the calyx. *Sepals* 5, imbricate, with quincuncial aestivation, the two inner ones thinner and with scarious margins. *Corolla* glabrous, more or less infundibuliform, with a short and slightly thickened tube and 5 spreading lobes, which are imbricate in bud. *Staminodes* 5, alternipetalous, inserted in the throat of the corolla and of various shape. *Stamens* 5, epipetalous, the short filaments connate at base with the base of the petals, anthers basifix or very slightly introrse, two-celled, longitudinally dehiscent. *Ovary* superior, glabrous, contracted into a short and stout, more or less truncate style or the stigma capitate or faintly 2-lobed, usually 2-celled, more rarely 1-celled (*S. laurinum*, *Uittienii*); cells 1-ovulate, the ovules anatropous and apotropous, ascending, attached to the basis of the central axis, integuments 2 (?). *Fruit* drupaceous, usually 1-, rarely 2-seeded, ovoid or oblong, pericarp thin. *Seeds* with a thin-crustaceous pale, non-shining testa. Scar small, round and basal, the hilum close to the micropyle; albumen none, the cotyledons being thick and completely surrounding the inferior radicle — *Monotypic in East Asia.*

Relation with other families — The genus *Sarcosperma* has a long time formed part of the *Sapotaceae*, until it was excluded from that family by the first-named writer. Our present investigations are supporting this opinion and though *Sarcosperma* is certainly related to the *Sapotaceae* and particularly to the genera of the *Planchonellidae* (*Sidero-*

xylon s.s.!), relations to such families as the *Rhamnaceae* are also likely to exist, as will be shown in a separate paper on the probable phylogeny of the group. The instability of its insertion in the Sapotaceae is also demonstrated by its eventual synonyms, three of which (*Apoia*, *Disco-calyx*, *Reptonia*) are or have been put with the Myrsinaceae, whilst others were supposed to be Olacaceae (*Bracea*), Celastraceae or Combretaceae. Our provisional opinion is that *Sarcosperma* is a relatively old genus, having probably common ancestors with some of the Sapotaceae (latex, fasciculate partial inflorescences [cf. *Planchonella nitida* and also "*Sarcosperma*" *pedunculatum* HEMSL. = *Sideroxylon* spec.], flower and fruit type), with several new (?) acquisitions which are lacking in the last-named order (glandular pits, auricles, subopposite leaves, branched inflorescences¹) and, moreover, a few characters showing a more advanced phase than is reached in the *Sapotaceae* (2—1-celled ovary), or a more primitive one (basifix anthers). The geographic distribution of some of the species is in support of our suggestion that *Sarcosperma* is a genus in regression or at least stationary.

SARCOSPERMA

Sarcosperma HOOK. F. in BENTHAM and HOOKER F., Gen. Pl. II, 2, 1876, 655; CLARKE in HOOKER F., Fl. Brit. Ind. II, 1882, 535; BAILLON, Hist. d. Pl. XI, 1891, 279; ENGLER in ENGL. und PRANTL, Nat. Pfl. Fam. IV, 1, 1897, 146; KING and GAMBLE, Journ. As. Soc. Beng. LXXIV, 2, Extra nr. 17, 1905, 159 (contin. pag. 369); DUBARD, Ann. Mus. Col. Mars. XX, 1912, 78; LAM, Phil. Journ. Sci. 49, 1932, 145 — *Bracea* KING, Journ. As. Soc. Beng. LXIV, 2, 1896, 101 — *Apoia* MERRILL, Phil. Journ. Sci. 17, 1920, 605. — Generic characters as those of the family — 4 Species in Sikkim, Assam, Upper Burma, Siam and S.W. China, 1 in Sumatra and 1 in various places in Malaysia.

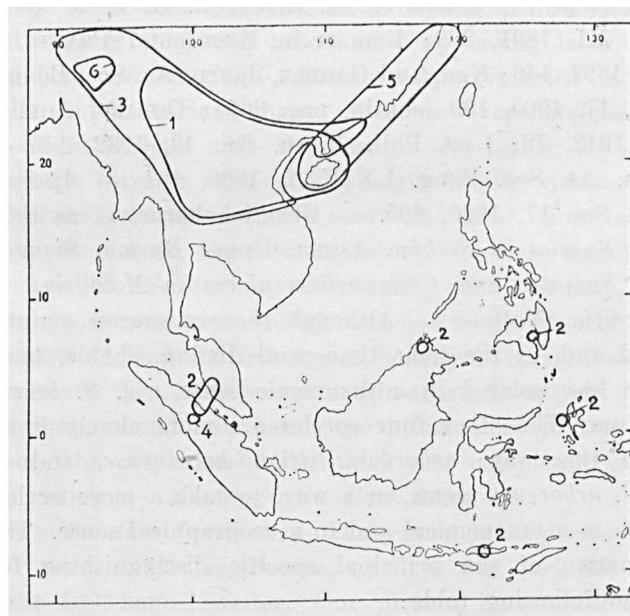
Interspecific relations — Although the six species maintained are closely allied and, at the same time, well distinguishable, two of them are more or less isolated in a taxonomic sense, viz. *S. laurinum* and *S. paniculatum*. The other four species are more closely linked mutually, viz. in this way: *arboreum-Uittieni-kachinense*, and *arboreum-Griffithii*. *S. arboreum* seems, in a way, to take a more or less central position, both in a taxonomical and in a geographical sense. The sharing and participation of the principal specific distinguishing features is shown in the following table:

¹) *Aulandra* is the only Sapotaceae genus with an indication towards branched inflorescences (short shoots), known to us.

TABLE I.

Species \ Characters	Auricles	Glandular pits	Leaves pubescent below	Inflorescences pubescent	Ovary	
					2-celled	1-celled
1. kachinense	(+)	(+)	(+)	+	+	-
2. paniculatum	+	+	-	(+)	+	-
3. arboreum	-	+	-	+	+	-
4. Uittienii	-	-	(+)	+	-	+
5. laurinum	-	+	-	(+)	-	+
6. Griffithii	-	-	-	-	+	-

(+) means: usually extant, rarely none; (-) means: usually none, rarely extant.



Areas of *Sarcosperma*-species
(for numbers cf. Table I and the text, pp. 187—188).

Geographic distribution (cf. the map) — The taxonomic isolation is only fully correlating with a geographic isolation in *S. paniculatum*. The disjunct Malaysian area of this species together with the fact that the tree seems to be scarce in some of its partial areas (especially in the eastern ones) points to a relic nature. In general, the Malaysian areas are strikingly different from the continental ones by their size. In view of the pretty close relations of *S. Uttienii* and *S. kachinense*, it might be suggested that these species are offshoots of ancestors with a larger area and that this is another example of regression. Possibly also *arboreum*-ancestors were involved, as *S. Uttienii* is more or less intermediate between *S. arboreum* and *S. kachinense*. The fact that *S. Uttienii* possesses a 1-celled ovary, and *S. arboreum* and *S. kachinense* a 2-celled one, may be interpreted as an indication that the *Uttienii*-habitat was an excentric one and that the centre of origin of these three species must have been somewhere on the continent.

S. laurinum is the only continental species, the area of which is more or less excentric, which is in accordance with its taxonomical isolation. The fact that *S. laurinum* and *S. kachinense* are found in Hainan, may indicate that these species are relatively old, as they have probably reached that island before it was severed from the mainland.

S. kachinense and *S. arboreum* have about the same area, though that of the last-named species is the larger one. The fact that the former has reached Hainan, and the latter not, does not necessarily imply that *S. arboreum* is the younger species throughout, although it apparently is in the eastern part of its area.

The mutual relation of the areas of *S. arboreum* and *S. Griffithii* is in accordance with their close taxonomical relations.

The species may, finally, be characterized in the following way:

1. *kachinense*: fairly variable in many features (leaf shape, auricles, pits, inflorescences); a common species with a large area; close relations with 3 and 4.
2. *paniculatum*: rather variable (leaf dimensions, branching and size of inflorescences); area strongly disjunct, apparently rather rare in its small partial areas; taxonomically isolated; relic or at least in regression.
3. *arboreum*: somewhat variable in some characters (width of leaf); a very common tree covering a large area; close relations with 1, 4 and 6.

4. *Uttienii*: not very much variable; a few specimens known from a single very small area; close relations with 1 and 3; relie?
5. *laurinum*: somewhat variable (leaf shape, inflorescences); a characteristic, taxonomically isolated species, with a rather large but pretty excentric area, in which it is abundant.
6. *Griffithii*: little variable (leaf shape, etc.); apparently not unfrequent in a small area within the area of 3, to which it is closely related.

Key to the species

- 1.a. Auricles at the top of the petiole extant (rarely wanting in *S. kachinense*) . . . 2
- b. No auricles at the top of the petiole 3
- 2.a. Young branches, inflorescences and lower side of leaves conspicuously pubescent, more or less glabrescent; leaves light brown below when dried, pits in the axils of secondary nerves rarely extant, petioles densely tomentose, short (usually less than 1 cm) (*Burma, Siam, S. China*) 1. **S. kachinense**
- b. Branches, inflorescences and leaves entirely glabrous or the inflorescences slightly pubescent; leaves dark brown when dried, pits scattered on the lower leaf surface, petioles 1—2.5 cm long (*Malay Peninsula and Archipelago*) 2. **S. paniculatum**
- 3.a. Inflorescences more or less pubescent, glabrescent; leaves 11—36.5 by 3—12.8 cm, often rather broad; secondary nerves 7—16 4
- b. Inflorescences almost or entirely glabrous, leaves glabrous, usually rather narrow, 3.7—20 by 1.5—5.6 cm, secondary nerves 5—10 5
- 4.a. Leaves entirely glabrous; glandular pits always extant in the axils of secondary nerves; pedicels 0.1—0.15 cm long; ovary 2-celled (*Himalaya to Siam and S. China*) 3. **S. arboreum**
- b. Leaves slightly pubescent below; no pits in the axils of secondary nerves; pedicels 0.2—0.4 cm long; ovary 1-celled (*Sumatra*) 4. **S. Uttienii**
- 5.a. Leaves obovate-lanceolate to lanceolate, irregularly arranged, narrowly cuneate at base, blunt at apex; glandular pits, if any, in the apical nerve axils only; ovary 1-celled (*S. and E. China*) 5. **S. laurinum**
- b. Leaves ovate-lanceolate or oblong-lanceolate, rather regularly opposite, acute at base; glandular pits none or very rare; ovary 2-celled (*Assam*) 6. **S. Griffithii**

Type species. No type species can be indicated, as BENTHAM and HOOKER mention the names of three species (1. *S. arborea*, 2. *S. Griffithii*, 3. *S. laurina*) under the generic description.

1. **S. kachinense** (KING & PRAIN) EXELL, Journ. of Bot. 69, Apr. 1931, 100 — *Combretum kachinense* KING & PRAIN, Journ. As. Soc. Beng. 69, 2, 1900, 169 — *Sarcosperma kachinense* COWAN, Notes Roy. Bot. Gard. Edinburgh XVI, nr. LXXIX, Oct. 1931, 222 — *S. pedunculatum* sensu MERR., Lingnan Sci. Journ. 13, 1934, 66, not of HEMSL. — *S. siamense* FLETCHER, Kew Bull. 1937, 380 — *S. caudatum* MERRILL, ined.

Shrub or tree, branches terete, densely tomentose, glabrescent. *Stipules* subulate, tomentose, 0.3—0.8 cm long, caducous. *Leaves* fairly opposite, oblong, light brown below when dried, ovate-oblong, elliptic or obovate-oblong to lanceolate, acute at base, more or less abruptly acuminate at apex, 8.6—32 cm long, 2.7—10.6 cm broad, acumen 0.7—1.5 cm long, often acute or mucronate, blade glabrous above, more or less pubescent below, glabrescent; secondary nerves 6—11, more or less conspicuous above, prominent below, straight or somewhat curved, especially in the apex, starting at an angle of 40°—65° from the midrib, not joined near the margin, except sometimes in the apex; tertiary nerves often conspicuous above but more prominent below, more or less crowded, almost parallel and regularly arranged at an angle of 100°—110° with the midrib, undulate, more or less curved and 0.1—0.3 cm apart; glandular pits usually lacking, sometimes extant; auricles tomentose, 0.1—0.25 cm long, rarely none; petioles densely pubescent, 0.2—1(—1.4) cm long. *Inflorescences* densely tomentose, broadly and laxely paniculate, 1.3—15 cm long, the branches 1.2—10 cm long, peduncle usually short; or the inflorescences not branched and 1.7—8.5 cm long; flowers in fascicles, pedicels 0.1—0.3(—0.7) cm long, bracts subulate, densely tomentose, 0.1 cm long. *Calyx* densely tomentose without, glabrous within, about 0.3 cm long and 0.2 cm broad, sepals ovate. *Corolla* tube 0.2—0.3 cm long, lobes about 0.3—0.35 cm long and 0.2 cm broad, rounded. *Staminodes* subulate, about 0.2 cm long and 0.1 cm broad. *Stamens* elliptic, 0.15 cm long, 0.075 cm broad. *Pistillum* glabrous, about 0.3 cm long, 0.1 cm broad, style 0.1—0.2 cm long, with capitate stigma, exerting from the calyx, ovary 2-celled. *Fruit* ellipsoid, 1.7—2 cm long, 1 cm in diam., 1-seeded, pedicel 0.3 cm long.

BURMA, Upper Burma, Kachin Hills: TOPPIN 4271 (*Type specimen*, K), a tree, 10' high, flow. white in Dec. — Fort Hertz, Hkamti Plain, in jungle, alt. 1200': F. KINGDON WARD 9054 (H), small tree, young flowers white 20.12.1930.

SIAM, Hui Kua, alt. 300 m: A. F. G. KERR 5027 (*Type specimen of S. siamense*, K), evergreen tree about 6 m high, flow. white, March 1921.

CHINA, S.E. Tibet, 28°25' N.Lat. and 97°55' E.Long., in jungle, 2—3000': F. KINGDON WARD 10199 (H), shrub, stems and under leaf surface rusty pubescent, flow. cream-coloured, 4.12.1931 — Yunnan, Szemeo, in forest, alt. 4000': A. HENRY 12768 (H, K, NY), tree 15—20', flow. white, Dec. 1926; alt. 4500': ID. 12017 (H, K, W), tree 20', fr. red on 30 May; alt. 5000': ID. 13291 (= *S. caudatum* MERR., H), shrub 7' — Mengtse, S.E. Mountains, in forest, alt. 5000': A. HENRY 13307 (H, K, NY), tree 50', flow. white, in Nov.; ID. 11424 (H, NY, W), shrub 7', flow. white-yellow, in Dec. — Kwangsi, on Annam boundary: H. Y. LIANG 67431 (Ca), small tree or shrub, leaves green, flow. greenish white, 16.12.1935 — Kwangtung, Hainan, in mixed woods: C. WANG 35214 (Ca, H, L, NY), tree, up to 8 m high, bark grey, flow. white, 7.12.1933; Chim Shan, Fan Maan Ts'uen, Ling Shui Dist.:

H. FUNG 20109 (H, NY), woody, 4.3 m high, 18 cm diam., fr. red, 3.5.1932; in light woods, along riverbank: H. Y. LIANG 64059 (Ca, H, NY), shrub 2 m, petals yellow, stamens white, anthers yellow, flow. on 6.1.1934; S. slope of Five Finger Mts., in moist wooded ravine: F. A. McCLURE 9331 (H, K, NY), tree 10' high, diam. 12 cm, fr., 28.4.1922.

Remarks:—An evergreen shrub or a tree 2—8—15 m high, with grey bark, the stem 12—18 cm in diam., growing in jungle, woods and forests between 1000' and 5000' alt., the branchlets, leaves and inflorescences more or less rusty pubescent; flowers white or slightly yellowish, greenish or cream-coloured, usually in December, more rarely in November, January or March (Siam); fruit red in April—May.

A species, distinguished by its auricles (rarely absent), its short, woolly pubescent petioles and its pubescent and large inflorescences with relatively large flowers. Its relation is with *S. arboreum*, from which it differs by the auricles, the indumentum and the short and pubescent petioles; and with *S. Vittienii*, from which it is different by the auricles, the occasional glandular pits, the more woolly and longer indumentum and the 2-celled ovary.

2. *S. paniculatum* (KING) STAPF & KING, Icon. Plant. 7, 1901, tab. 2690; LAM, Bull. Jard. bot. Buitenz. Sér. III, Vol. 7, 1925, 248, fig. 64, and Vol. 8, 1926, 21 and Phil. Journ. Sci. 49, 1932, 146 — *Bracea paniculata* KING, Journ. As. Soc. Bengal 2, 1896, 54 — *Discocalyx macrocarpa* ELMER, Leaflet. Philip. Bot. 8, 1915, 2781 — *Apoia macrocarpa* (ELM.) MERRILL, Phil. Journ. Sci. 17, 1920, 605 — *Sarcosperma breviracemosum* H. J. LAM, Bull. Jard. bot. Buitenz. Sér. III, Vol. 8, 1926, 21, fig. 2.

Rather large tree, branches terete, glabrous or slightly tomentose. *Stipules* subulate, glabrous, about 0.4 cm long, caducous, scars triangular or linear. *Leaves* opposite or alternate, dark brown when dried, oblong to elliptic, acute or more or less acuminate at base, gradually and bluntly acuminate at apex, 6—28 cm long, 3.5—10.2 cm broad, glabrous at both sides; secondary nerves 6—11, not prominent, straight or curved, starting at an angle of 50°—70° from the midrib, not joined near the margin, except sometimes towards the apex, tertiary nerves more or less conspicuous, not very much crowded and regular, reticulate, 0.1—0.3 cm apart, at an angle of 85°—95° with the midrib, undulate; glandular pits extant, scattered; auricles glabrous, acute, 0.05—0.2 cm long; petioles glabrous or slightly tomentose, 1—2.5 cm long. *Inflorescences* glabrous or slightly tomentose, either paniculate and 1.1—14 cm long, branches 2—9 cm long, or the inflorescences hardly branched and 0.8—1.6 cm long, bracts glabrous, acute, 0.1 cm long; flowers in fascicles or solitary, pedicels

0.1—0.15 cm long. *Calyx* slightly pubescent without, glabrous within, about 0.2 cm long and broad, sepals round or broadly acute. *Corolla* tube 0.1 cm long, lobes obovate, about 0.3 cm long and 0.2 cm broad. *Staminodes* acute, 0.1 cm long. *Stamens* ovoid, 0.1 cm long and broad. *Pistillum* glabrous, 0.2 cm long and 0.1 cm broad, style 0.1 cm long, ovary 2-celled. *Fruit* ovoid, 1.7—2 cm long and 0.7—1.5 cm in diam., 1- or rarely 2-seeded, pedicel 0.3 cm long. Scar of seed 0.3 × 0.4 cm.

MALAY PENINSULA, Perak, Batang Padang, open jungle, on the banks of B. P. River, alt. 300—400': KING's collector 7970 (K), a tree with spreading branches 50' high, stem 12—18" in diam., leaves green, flowers waxy yellow in Aug. 1885; open old jungle, top of low hills, alt. 300—500': ID. 8086 (*Type specimen*, B, K), tree 50—70' high, stem 15—20" in diam., leaves light green, flow. pale greenish white, fr. green, not fully grown in Aug. 1885 — Ulu Bubong, dense jungle, alt. 400—600': KING's collector 10284 (B), tree 50—70' high, stem 10—15" in diam., flow. pale yellow with light green calyx in June 1886; mixed open jungle, alt. 400—600': ID. 10554 (K), tree, spreading branches, 40—60' high, stem 18—24" in diam., flow. pale green, not well open in July 1886; amongst large bamboos, alt. 500—700': ID. 10835 (B, K, P), tree, spreading crown, 40—60' high, stem 15—20" in diam., flow. waxy pale yellow, petals thick, in Aug. 1886 — Locality unknown (Mal. Penins.): SCORTECHINI s.n. (K) (= n. 288 from Perak?).

SUMATRA, Sum. East Coast, Sibolangit Gardens, alt. about 500 m.: J. A. LÖRZING 10159 (L, K), flow., 25. 7. 1923; Asahan, Hoeta Bagasan: RAHMAT SI BOEBA (BARTLETT) 6878 (H), nat. n.: *kajoe majang rata*, flow. buds, Sept. 1934—Febr. 1935 — Karo-districts, Lau Boeloeh, alt. about 1000 m: FOREST RESEARCH INST. bb. 11981, nat. n.: *perawas samboengan*; nr. Lautkawat, in old forest, rather scarce, alt. about 500 m: ID. bb. 8600 (Herb. Buitenzorg), a tree, 27 m high, bole 17 m high, 0.53—0.25 m in diam., latex white, abundant, nat. (Karo-Batak) n.: *beroe*.

BORNEO, Mt. Kinabalu, Kappok forest margin, grassland, alt. 1500': J. and M. S. CLEMENS 51286 (L), tree 40', fr. green on 1. 1. 1934.

TIMOR AND DEPENDENCIES, Flores, Ende, nr. Soekoeria, in second growth forest on andesite, rather scarce, scattered, alt. 1110 m: FOR. RES. INST. bb. 8234 (*Type specimen of S. breviraemosum*, L), tree, 15 m high, bole 11 m high, 0.37—0.21 m in diam., nat. (Ende) n.: *wowo*, flow. buds on 19. 3. 1925; same loc., alt. 1050 m: ID. bb. 8232 (B, K, L, NY), tree, 15 m high, bole 6 m high, 0.3—0.25 m in diam., nat. (Ende) n.: *lama kamba*, buds and very young fr. on 19. 3. 1925.

MOLUCCAS, Ternate, Foramadiah, alt. about 600 m: BEGUIN 1325 (L), nat. n.: *koeriaba*, flow. on 15. 1. 1924.

PHILIPPINE ISLANDS, Mindanao, Davao, Todaya, Mount Apo, alt. 750—1100 m: ELMER 10553 (H, L, NY), flow. in May 1909; ID. 10660 (*Type specimen of Disocalyx macrocarpa*, H, L, NY), flow. in May 1909; ID. 11867 (H, L, NY), fr. in Sept. 1909.

Remarks: Laticiferous trees with spreading branches, up to 27 m high (with a bole of 17 m) and 0.53 cm in diam., with white abundant latex, growing apparently scattered in open or dense jungle, second growth forests and old forests at 300—600' in British Malaya, at 500—1000 m in Sumatra, at 1500 m on Mt. Kinabalu in British North

Borneo, at 750—1100 m in Mindanao, at 600 m in Ternate and at 1000—1100 m in Flores. Flowers pale waxy yellow- or greenish white, the petals thickish, the calyx light green, mostly in June to August (Mal. Peninsula, Sumatra), or in January (Ternate), March (Flores) or May (Mindanao). Young fruit green, in August (Mal. Penins.), January (N. Borneo), March (Flores) or September (Mindanao). Native names: *kajoe majang rata* (Asahan); *perawas samboengan* (Ml., Karo dist.); *beroe* (Karo Batak); *wowo* and *lama kamba* (Flores, Endeh); *koeriaba* (Ternate).

Rather isolated both taxonomically and geographically. The part of its disjunct area in N.E. Sumatra and S.W. Malaya suggests a post-glacial local disjunction of a formerly continuous area. It is particularly distinguished by its glabrous, i. s. dark brown leaves with auricles and scattered glandular pits.

3. *S. arboreum* (err. *arborea*) HOOK.F. in BENTH. and HOOK., Gen. Pl. II, 1876, 655; CLARKE in HOOK.F., Fl. Brit. Ind. III, 1882, 535; KURZ, Journ. As. Soc. Bengal 46, II, 1877, 229; BURKILL, Bot. Abor. Exp., Rec. Bot. Surv. Ind. X, 2, 1925, 316; LAM, Bull. Jard. bot. Buitenz. Sér. III, Vol. 7, 1925, 250; and Vol. 8, 1926, 19 — *Celastrinea* WALLICH, Cat. 1828, 9011 — *Sapotea* GRIFFITH, Not. IV, 1851, 291 and Ic. Pl. Asiat., 1854, 501 — *Sideroxylon arboreum* HAM., Ms.

A fairly large tree, branches terete, young branches glabrous or slightly tomentose. *Stipules* about 0.3 cm long, acute, caducous, scar triangular or round. *Leaves* light brown when dried, usually opposite, oblong-elliptic or oblong-lanceolate or lanceolate, acute or cuneate at base, apex acute or acutely acuminate, (7—)11—36.5 cm long, (2—)2.9—12.8 cm broad, blade glabrous at both sides; secondary nerves 7—13, curved, starting at an angle of 50°—60° from the midrib, sometimes joined in the apex; tertiary nerves often prominent at both sides, almost parallel and very regularly arranged at an angle of 90°—95° with the midrib, usually rather straight, 0.1—0.2 cm apart; glandular pits always extant and in the nerve axils only; auricles lacking; petioles minutely tomentose, glabrescent, sulcate above, 1.2—3 cm long. *Inflorescences* minutely tomentose, glabrescent, generally broadly and laxely paniculate, 4.5—18.5 cm long, branches 1—10.5 cm long, the flowers either in fascicles, the pedicels tomentose and 0.1—0.15 cm long, or solitary on very short pedicels; bracts pubescent, deltoid, about 0.1 cm long. *Calyx* tomentose without, glabrous within, 0.2—0.3 cm long and broad, sepals rounded. *Corolla* tube 0.1 cm long, lobes ovate, 0.3 cm long and

0.25 cm broad. *Staminodes* subulate, 0.1—0.15 cm long. *Stamens* ovoid, 0.15 cm long, 0.1 cm broad. *Pistillum* glabrous, 0.25 cm long and 0.15 cm broad, style stout, about 0.1 cm long, hardly exsert, ovary 2-celled. *Fruit* ellipsoid or oblong, about 2.5 cm long and 1—1.5 cm in diam., 1-seeded; pedicel about 0.3 cm, sepals reflexed. *Seed* about 2.3 × 1.3 cm.

INDIA, Sikkim, Darjeeling, Badamtam, 7000' alt.: J. S. GAMBLE 7491 (K), flow. in Dec. 1879; Terai: Id. 28009 (K) — Kulyat-Koong (loc.?, nat. name?), alt. 4000': Id. 2300 A (K), big tree, fr. June 1874 — Dumsong: G. KING s.n. (K) — Loc. unknown: THOMSON s.n. (L); lower hills, alt. 3—5000': J. D. H. 280 (K); outer hills, lat. 3—5000': Id. 279 (K); alt. 3—5000': Id. s.n. (K, L); without any indications: Id. s.n. (B, H, K, L) — Bengal, East Bengal, Kalimpong, alt. 4000': H. H. HAINES 1061 (K), flow. in Febr. 1905 — Buxa Reserve: J. S. GAMBLE 6678A (K), flow. 6.2.1879 — Loc. unknown: GRIFFITH 3603 (B, H, NY, P) — Assam, Khasia Hills, alt. 2000': J. D. H. & T. T. s.n. (H, K, NY, P); Id. 2476 (K), bushy tree, flow. Oct. 1850; SIMONS 104, flow. Febr. 1850 (K); GRIFFITH s.n. (K); NAT. COLL. Bot. Gard. Calc. s.n. (L, P) — Manipur, Kala Naga Hills, alt. 4000': G. WATT 7276 (K), flow. in May 1882; Sakok, alt. 5000': A. MEEBOLD 7176 (B, K), a small tree among *Quercus*, flow. in Dec. 1907 — Laimetak Hills, alt. 1500': C. B. CLARKE 42136 (B), flow. 28.11.1885 — Lushai Hills, Aijal, alt. 3000': Mrs. N. E. PARRY 624 (K), flow. in Febr. 1928 — Loc. unknown: JENKINS s.n. (L, P); GRIFFITH s.n. (herb. A. Gray) (NY, P); WALLICH 9011 (*Type specimen*, K).

BURMA, Upper Burma, Kachin Hills: SHAIK MOKIM s.n. (H), flow. in June 1898 — Bhamo, on hills, alt. 5000': MONTAGUE HILL s.n. (K), a large tree, flow. yellow — Namyoon (teste KURZ, l.c.) — Loc. unknown, 1000' alt.: SMALES s.n. (K), flow. in Febr. 1902 — Southern Shan States, W. Thitsidaung, Loilong, alt. over 2000': W. A. ROBERTSON 104 (K), tree 30' high, flow. in Jan. 1910; Keng Tung Territory, between Pang Sop Lao and Bang Yang Kha, valley of Meh Len, alt. 660—930 m: J. F. ROCK 2178 (H, W), tree, leaves leathery, flowers yellow, 29.1.1932 — Loc. unknown, in forest: C. E. PARKINSON 4969 (K).

SIAM, Chiangmai Prov., Kun Awn, in oak jungle, alt. 1200 m: A. F. G. KERR 4740 (K), tree about 7—8 m high, flow. yellowish on 31.1.1921, scented, juice milky; Muang Ha, in mixed forest by stream, alt. 500 m: Id. 6384 (K, P), tree with milky juice, about 20 m high, flow. buds on 18.10.1922; Doi Sutep, in evergreen jungle, alt. 750 m: Id. 3497 (K, P), tree about 6—7 m high, flow., 1.1.1915; evergreen jungle, alt. 3000': Id. 2599 (K), tree; Doi Chiengdao, alt. 2200': Id. 2858 (K), tree about 40' high, flow. pale green on 27.1.1913 — Pa Mieng, Chê Sawn, in evergreen jungle, alt. 1100 m: A. F. G. KERR 3107 (K), tree 15—18 m high, flow., 19.1.1914, inflorescences with galls.

CHINA, S.E. Tibet, Abor Hills (teste BURKILL l.c.) — Yunnan (Sen), Lofou, Kouy Tcheou, J. CAVALERIE 3508 (K), flowers yellowish-green, 1.4.1909; Szémeo, West mountains, alt. 4500': A. HENRY 12837A (H, K, L, NY, W), tree 15' high, flowers yellow in Jan. 1915: Id. 12191 (NY), tree 30', fr. in May; Yuanchiang, alt. 4500': Id. 11588 (H, NY), tree 15', flow. yellow; Muang Hun and Muang Hai, in evergreen forest: J. F. ROCK 2396 (H, W), tree 60—70' high, flow. waxy yellow, very fragrant, 13.2.1922: same loc.: G. FORREST 9683 (H, K) — Kwangsi, loc. unknown: R. C. CHING 7708 (Ca, NY), young flow. buds, 27.9.1928; CHINESE COLL. 461, fruit 24.5.1916.

LOCALITY UNKNOWN, in very heavy wood, alt. 3500': J. S. GAMBLE 630 A (K), big tree, used for canoes, leaves used to feed cattle, fr., 5.5.1876.

Remarks: A tree with milky juice, up to 21 m high, growing in evergreen jungle, in mixed woods and in *Quercus* woods at an altitude of 1000—7000'. Flowers pale green or yellowish or usually waxy yellow, fragrant, mostly in (October—)November to January(—February) (Sikkim, Assam, Burma, Siam, E. Bengal), or in February to April (China); fruit in May and June.

Distinguished by its large glabrous leaves with conspicuous pits in the nerve axils, by its minutely tomentose inflorescences with comparatively large flowers and by the absence of auricles. It is closely related to *S. kachinense*, from which it may be distinguished by the absence of auricles, by its glabrous leaves with much longer petioles and by the glandular pits in the nerve axils; to *S. Uttienii*, from which it differs by the glandular pits, the glabrous leaves and the 2-celled ovary; and to *S. Griffithii*, from which it is different by its glandular pits, its pubescent inflorescences and its broader leaves.

4. *S. Uttienii* H. J. LAM, Bull. Jard. bot. Buitenz. Sér. III, Vol. 8, 1926, 19, fig. 1. — *S. sumatranum* URRTIEN, nomen in Herb. Rheno-Traj. Tree?. Branches terete, tomentose, glabrescent. *Stipules* subulate, tomentose, 0.5—0.8 cm long, caducous. *Leaves* fairly opposite, light brown when dried, oblong-elliptic to ovate or obovate, narrowing into an acuminate apex and base, 10—25.5 cm long, 4.5—9.5 cm broad, glabrous above, sparsely pubescent below, glabrescent; secondary nerves 8—16, slender but prominent, slightly curved or straight, starting at an angle of 50°—60° from the midrib, diminishing near the margin, sometimes archingly joined in the apex; tertiary nerves hardly conspicuous, not very much crowded, rather regularly arranged, at an angle of 105°—110° with the midrib, 0.1—0.3 cm apart, slightly sigmoidly curved; glandular pits none; auricles none; petioles minutely tomentose, 1.2—2 cm long. *Inflorescences* densely but minutely tomentose, generally broadly and laxely paniculate, sometimes almost unbranched, 3.7—13.3 cm long, branches 1.5—6.7 cm long; bracts tomentose, deltoid, 0.1—0.2 cm long; flowers in fascicles or solitary, pedicels 0.2—0.4 cm long. *Calyx* densely tomentose without, glabrous within, 0.25 cm long and 0.2 cm broad. *Corolla* tube in bud 0.05 cm long, lobes obovate, 0.2—0.25 cm long. *Staminodes* deltoid, 0.05 cm long and 0.03 cm broad (in bud). *Stamens* ovoid, 0.1 cm long and broad. *Pistillum* glabrous, about 0.25 cm long and 0.15 cm broad, style 0.1 cm long, ovary 1-celled. *Fruit* unknown. SUMATRA, Sum, East Coast, Hoch Angkola: JUNGHUHN 543 (L); same

loc.?: JUNGHUHN 231 (L); Asahan, Aek Moente (Aer Moette), N.E. of Tomoean Dolok, West of Salabat, alt. 500 m: RAHMAT SI BOEEA (BARTLETT) 9312 (H), native name: *kajoe sori baja*, flow. 15 June—9 July 1936 — Locality unknown: COLL. s.n. (*Type specimen* ex herb. Miq. in Herb. Utrecht).

Remarks: Closely related to *S. kachinense*, from which it differs by the absence of auricles and of glandular pits, by its minute indumentum and by its 1-celled ovary; and to *S. arboreum*, from which it differs by the absence of glandular pits, by its more or less pubescent leaves, by its 1-celled ovary and by its longer pedicels.

5. *S. laurinum* (err. *laurina*) HOOK.F. in BENTH. and HOOK., Gen. Pl. II, 1876, 655; HEMSLEY, Journ. Linn. Soc. XXVI, 1889, 68; LAM, Bull. Jard. bot. Buitenz., Sér. III, Vol. 7, 1925, 269, and Vol. 8, 1926, 19 — *Reptonia laurina* BENTH., Fl. Hongkong, 1861, 208.

Shrubs or trees, branches terete, glabrous. *Stipules* acute, 0.5—0.8 cm long, caducous, scars triangular or round. *Leaves* irregularly arranged, alternate, subopposite or in whorls of 3 or 4 (especially at the tips of the branchlets), pale brown when dried, spathulate or obovate-lanceolate to lanceolate, bluntly acute or acuminate at apex, narrowly cuneate at base and usually pretty gradually narrowing into the petiole, (3.7—)7.2—17.5 cm long, (1—)1.6—5.6 cm broad, blade glabrous at both sides; secondary nerves 5—10, not prominent, slightly curved, starting at an angle of (25°—)40°—50° from the midrib, not joined near the margin, except sometimes in the apex; tertiary nerves almost inconspicuous at either side, not very much crowded, almost parallel and regularly arranged at an angle of about 90° with the midrib, 0.1—0.25 cm apart, rather straight; glandular pits, if any, in the axils of the apical nerves only; auricles none; petioles glabrous, sulcate above, (0.5—)0.7—2.2 cm long. *Inflorescences* glabrous or slightly tomentose, either racemose, 1.5—10(—17.5) cm long, the pedicels 0.05—0.2 cm long, or paniculate and branched at the base, 5.5—12.5 cm long, the branches, 1—6 cm long, pedicels 0.2—0.3 cm long, bracts more or less pubescent, deltoid, about 0.15 cm long and broad; flowers solitary or in few-florous fascicles. *Calyx* glabrous or slightly tomentose without with rounded sepals, glabrescent, glabrous within, 0.15—0.25 cm long, 0.2—0.3 cm broad. *Corolla* tube 0.1 cm long, lobes rounded, about 0.2 cm long and broad. *Staminodes* subulate, 0.075 cm long. *Stamens* 0.04 cm long and broad. *Pistillum* glabrous, 0.2 cm long and 0.15 cm broad, style 0.05 cm long, ovary 1-celled. *Fruit* ellipsoid or oblong, 1.7—2.3 cm long, 0.8—1.1 cm in diam., 1-seeded, sepals reflexed; pedicels 0.2—0.3 cm long. *Seed* 1.7 cm long and 0.85 cm in diam., the scar 0.35 cm in diam.

CHINA, Kwangtung, Hainan, Yaichow, in woods, alt. 2000': F. C. How 70332 (H, NY), tree 14 m high, fruit green, March—July 1933; in mixed woods, dense shade: H. Y. LIANG 63202 (NY), tree, 6—8 m high, flowers green-white, still closed on 13.10.1933; id. on mountain top: Id. 63290 (NY), tree 10 m or more high, flow. on 16.10.1933; between Paai Poon Ts'uen and Fan Maan Ts'uen, growing in sandy ravine: H. FUNG 20062 (H, NY), woody, 7 m high, 30 cm in diam., fruit red, turning black when ripe, nat. n. (?): *chai chi sik*, April—May 1932; Mo San Leng, in forest, alt. 3000': N. K. CHUN and C. L. TSO 44330 (H, NY), tree, 10 m high, 40 cm in diam., flowers creamy white, fragrant in Nov. 1932; Sha Po Shan, Tan-hsien Dist., in big ravine: TSANG WAI TAK 769 (B, NY, W), 10' high, flow. and green fruit on 3.9.1927; Nam Fung, Hong Ma Ts'uen, ravine, alt. 350 m: F. A. McCLURE 8301 (H, K), tree, 7 m high, 12 cm in diam., flowers yellowish, fragrant, on 2.12.1921; Po-ting, in forest, alt. about 700': F. C. How 71895 (H), shrub 3 m, leaves lustrous green above, pale green below, fruit when young pale green, when matured red, 14.4.1935; along stream: C. WANG 36446 (H, NY), tree 15 m high, flowers green on 12.1.1934; Id. 34308 (H, NY), tree 10 m high, flower buds green, on 27.9.1933; in mixed forests: Id. 36544 (NY), tree 20 m high, young fr., 13.1.1934; in mixed and shaded forest along margin of stream: H. Y. LIANG 63792 (NY), tree 15 m or more high, 2—3 m (dm?, ft?) in diam. (girth?), flow. green, 26.10.1933; same habitat, top of mountain: Id. 63380 (NY), tree 11 m high, 1.33 m (dm?, ft?) in diam. (girth?), flow. 4.10.1933; Id. 63373 (NY), tree 10 m high, flow. green-white, 4.10.1933 — Ting Wu (Hu) Shan: T. N. LIU 7583 (NY); in partial shade, side of trail: TSIANG YING 1519 (H), tree 40', flow. 6.11.1928; back of temple: Id. 1518 (H), flow. 6.11.1928; C. O. LEVINE 2004 (H), fr. and flow. buds on 26.5.1918; Id. 3116 (H), flow. buds on 22.9.1918; in dense woods: W. Y. CHUN 6381 (H), tree 6 m high, bark gray brown, branches green, becoming gray brown, fruit purplish red, succulent, tawny black, leaves deep lustrous green above, deep green beneath, 5.5.1928; West River: C. FORD 9 (K), used by priests as a charm, 6.5.1882 — Lo Fou Shan, Chong Shu Kwan, East River, in dense mixed woods: TSIANG YING 1710 (H, K, NY), tree 10 m high, flow. on 23.12.1928; Id. 1678 (H), tree 10 m high, flow. 21.12.1928; Pok-lo District, alt. 4100': T. M. TSUI 91 (NY); Ng Tung Shan, San-on dist., mountain forest, alt. 3080': Id. 226 (NY), woody, 4' high, 1" diam. on breast height, fr. green and red in April 1932; C. O. LEVINE 702 (H), ster. 5.7.1917 — Hong Kong: HARLAND 753 (*Type specimen*, K); W. J. BRIGHAM s.n. (H); Bot. Gard.: C. FORD 21 (K), fr. on 10.4.1880; Happy Valley: Id. 10 (K), a small tree, fr. on 23.4.1879; Id. s.n. (H, NY), flow. 1879; C. S. SARGENT s.n. (H), flow. on 5.11.1903; Peak: TSIANG YING 344 (H), fr. on 23.4.1928; Lantau: DUNN 8266 (H), fr. on 16.3.1909; Wu (U) Kan Tin: W. Y. CHUN 6208 (H), fr. 2.4.1928; COLL. 10222 (H), fr. 22.4.1913 — Kwangsi, Tan Ngok Shan, along Kwantung border, nr. Tung Chung, Waitsap Dist., dry silt, sandy soil: TSANG W. T. 23270 (H), woody, 9' high, flow. light yellow, odourless, 24.11.1933; Seh-Feng Dar Shan, S. Nanning, in wood, in ravines, 2000' alt., common: R. C. CHING 8126 (H, NY, W), tree 60', 1' in diam., branches dense, dark gray, bark gray, leaves thick, crisp, dark shining green above, light green below, flowers: petals spreading, sepals green, 22.10.1928; Id. 8278 (H, NY, W), tree 60' high, 1' in diam., bark gray, shoot smoky green, flow. yellow, scented, 28.10.1928; alt. 2500': Id. 8076 (H, NY, W), tree 30' high, 10" in diam., bark gray, leaves thick leathery, dark shining green above, light green below, flow. buds on 21.10.1928; alt. 1200': Id. 7882 (H, NY, W),

tree 30' high, 1' in diam., flow. creamy yellow, 15. 10. 1928; Id. 7851 (NY), tree 30' high, 10" in diam., bark dark gray, branches green, flow. creamy yellow, 15. 10. 1928 — Fu Kien, Eng Hok Hsien: H. H. CHUNG 1351 (H, K), tree 10 m high, young fr. on 5. 4. 1923; Inghok, Fang Quang Yen: Id. 7744 (H, NY), fr. 9. 5. 1928; Foochow: O. WARBURG 5798 (H, K), A° 1887 — Che Kiang, Ning-po Mts.: E. FABER s.n. (K), flow. in Aug. 1885; Id. 285 (W) — Locality unknown: W. Y. CHUN 5229 (H).

Remarks: A shrub or tree, 1.2—20 m high, 0.025—0.40 m in diam., growing in dense woods both on mountain tops and in ravines, usually in dense shade, at altitudes between 1150 and 4100'; bark gray or gray brown, the branches green, afterwards gray brown or dark gray, leaves thick and crisp, leathery, dark shining green above, pale green below; flowers greenish or yellowish white or cream-coloured, usually fragrant, with green calyx and spreading petals, main blooming time in October and November, but also found flowering in August (Che Kiang), September (Hainan, Ting Wu Shan), December (Hainan, Lo Fou Shan) and January (Hainan). Fruit green when young, red to purple and black when ripe, main fruiting time in April to May.

Fairly isolated both taxonomically and geographically. The species is particularly distinguished by its relatively small, irregularly arranged, coriaceous, glabrous and oblanceolate leaves with (if any) the glandular pits restricted to the apical nerve axils, with narrowly cuneate base and without auricles and with only 5—10 secondary nerves, and by its 1-celled ovary.

6. *S. Griffithii* HOOK.F. in BENTH. and HOOK., Gen. Pl. II, 1876, 655; CLARKE in HOOK.F., Fl. Brit. Ind. III, 1882, 536; LAM, Bull. Jard. bot. Buitenzorg, Sér. III, Vol. 7, 1925, 250 and Vol. 8, 1926, 19.

A large tree, branches terete, glabrous. *Stipules* glabrous, lanceolate-acuminate, with a black central stripe, about 0.2 cm long, caducous, scars triangular. *Leaves* more or less light brown when dried, usually opposite, oblong-lanceolate or ovate-lanceolate, apex rather gradually and acutely acuminate and often curved, acute at base, 5.5—20 cm long, 1.5—5.5 cm broad, glabrous at both sides; secondary nerves 6—9, not prominent, curved, especially in the apex, starting from the midrib at an angle of 50°—55°, diminishing and not joined near the margin; tertiary nerves not prominent above, 0.05—0.25 cm apart, almost inconspicuous below, not very much crowded, more or less irregular and undulate, at an angle of 90° with the midrib; glandular pits none or very rare; auricles none; petioles glabrous, sulcate above, 0.4—1.3 cm long. *Inflorescences* glabrous, paniculate, 3.2—

6.8 cm. long, branches 1—4.5 cm long, flowers in fascicles, pedicels slender 0.1—0.2 cm long, bracts glabrous, subulate or acute, 0.1—0.15 cm long. *Calyx* glabrous, 0.15—0.2 cm long and 0.25—0.3 cm broad. *Corolla* tube 0.05 cm long, lobes ovate, 0.2 cm long and broad. *Staminodes* subulate, 0.1 cm long. *Stamens* deltoid, 0.1 cm long and 0.05 cm broad. *Pistillum* glabrous, about 0.25 cm long and 0.1 cm broad, style 0.1 cm long, ovary 2-celled. *Fruit* unknown.

INDIA, Bengal, East Bengal: GRIFFITH 3602 (*Type specimen*, B, K, P) — Assam, Mausmai (locality?): C. B. CLARKE 14385 (K), flow. on 11.12.1871 — Khasia Hills: GRIFFITH 324 (H, K); *Id.* s.n. (L); NAT. COLL. Bot. Gard. Calc. s.n. (H, L); 3—4000': J. D. H. & T. T. (K), flow. buds on 29.9.1850; 3—5000': *Id.* (K), flow. on 30.11.1850; 4—6000': *Id.* (B, H, L, NY, P) — *Loc.* unknown: MASTERS (K); KING's collector s.n. (B, H).

Remarks: Habit and habitat insufficiently known, growing in hilly country between 3000 and 6000'. Flowers apparently in November and December.

Closely related to *S. arboreum*, from which it is distinguished by the absence of glandular pits, smaller leaves with fewer secondary nerves and often curved tips, and glabrous and smaller inflorescences.

Excluded species:

S. pedunculatum(-a) HEMSLEY, Journ. Linn. Soc. Bot. 26, 1889, 68; LAM, Bull. Jard. bot. Buitenzorg, Sér. III, Vol. 8, 1926, 19 (not E. D. MERRILL, Lingnan Sci. Journ. 13, 1934, 66 = *S. kachinense*).

The type specimen (C. FORD 246, K), and several other specimens (CANTON CHRIST. COLL. [To & TSANG] 12855, H, P, W [= *Sarcosperma pedunculatum* HANCE, nomen?]; R. C. CHING 5316 and 5353, H; W. Y. CHUN 498, H; POILANE 16477, H; according to an annotation by E. D. MERRILL possibly also POILANE 2540, which number we did not see) undoubtedly represent a Sapotaceous species, probably a *Sideroxylon*.

S. tonkinense(-sis) H. LECOMTE, Bull. Mus. Nat. Hist. Nat. Par. 24, 1918, 534, and in Flore Gén. Indo-Chine III, 7, 1930, 914.

The type specimen (BON 3974, P) consists of two sheets, bearing a few immature or sterile fruits and no flowers. As the leaves are fully alternate, without auricles or glandular pits and with a venation that is different from the usual *Sarcosperma*-type, we hardly doubt to suggest that this species does not belong to this genus. The tertiary venation superficially certainly recalls somewhat that of *Sarcosperma*, since it runs perpendicular to the midrib, but it is much more minute and more

crowded than in any *Sarcosperma* species, which are pretty uniform regarding this feature. Flowers and seeds are thus far unknown. We don't consider it probable either that the specimens are Sapotaceae.

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(Numbers indicate the number of the species; synonyms in italics).

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| <i>Bracea paniculata</i> KING = 2 | <i>kachinense</i> (KING & PRAIN) EXELL |
| <i>Celastrinea</i> WALL. = 3 | (1) |
| <i>Combretum kachinense</i> KING & PRAIN | <i>laurinum</i> HOOK.F. (5) |
| = 1 | <i>paniculatum</i> (KING) STAPP & KING |
| <i>Discocalyx macrocarpa</i> ELM. = 2 | (2) |
| <i>Reptonia laurina</i> BENTH. = 5 | <i>pedunculatum</i> HEMSL. = Sapotacea |
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Collectors' Numbers

BARTLETT, V. RAHMAT SI BOEBA — BEGUIN: 1325 (2) — BRIGHAM, W. J.: s.n. (5) — CAVALERIE, J.: 3508 (3) — CHINESE COLL.: 461 (3) — CHING, R. C.: 7708 (3), 7851 (5), 7882 (5), 8076 (5), 8126 (5), 8278 (5) — CHUN, N. K. (and C. L. TSO): 44330 (5) — CHUN, W. Y.: 5229 (5), 6208 (5), 6381 (5) — CHUNG, H. H.: 1351 (5), 7744 (5) — CLARKE, C. B.: 14385 (6), 42136 (3) — CLEMENS, J. & M. S.: 51286 (2) — COLL.†: 10222 (5) — DUNN: 8266 (5) — ELMER: 10553 (2), 10660 (2), 11867 (2) — FABER, E.: 285 (5), s.n. (5) — FORD, C.: 9 (5), 10 (5), 21 (5), s.n. (5) — FOREST RESEARCH INSTITUTE bh. numbers: 8232 (2), 8234 (2), 8600 (2), 11981 (2) — FORREST, G.: 9683 (3) — FUNG, H.: 20062 (5), 20109 (1) — GAMBLE, J. S.: 630 A (3), 2300 A (3), 6678 A (3), 7491 (3), 28009 (3) — GRIFFITH: 324 (6), 3602 (6), 3603 (3), s.n. (Assam) (3), s.n. (Khasia) (6), s.n. (Sikkim) (3) — HAINES, H. H.: 1061 (3) — HARLAND: 753 (5) — HENRY, A.: 11424 (1), 11588 (3), 12017 (1), 12191 (3), 12768 (1), 12837 A (3), 13291 (1), 13307 (1) — HILL, MONTAGUE: s.n. (3) — J. D. H(OOKER): 279 (3), 280 (3), s.n. (2 ×) (3) — J. D. H(OOKER) & T. T(HOMSON): 2476 (3), s.n. (3), s.n. (6) — HOW, F. C.: 70332 (5), 71895 (5) —

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Rectification.

In the key to the Orchid genera of the Netherlands Indies etc. (Blumea I, 1934) by J. J. SMITH, part of the genus *Cystorchis* BL. has been omitted. The omission can be redressed by pasting the following strip on p. 200:

- 65. Spur of lip with 2 bubbles at the base . . . **Cystorchis** BL.
- Spur without bubbles 65a
- 65a. Spur of lip distinctly projecting etc.