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THE LOGANIACEAE OF AFRICA

VII. STRYCHNOS II [1])

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INTRODUCTION

Several years ago the present author studied *Strychnos* for the Flora of West Tropical Africa and had to publish his contribution in it before having a complete knowledge of the African species, especially those which occur in that area. Some species were confused as the material available was incomplete. Some others were discovered afterwards. Therefore some comments are given and some of the new species of which more complete material became available, are described below. Furthermore two Central African species are described here.

REMARKS ON CONFUSED SPECIES

1. *Strychnos soubrensis* Hutch. et Dalz. is specifically different from *S. ngouniensis* Pellegr.

S. ngouniensis:	**S. soubrensis:**
Leaves often subcordate, rarely cuneate; corolla slightly smaller and usually wider; pistil at the very base usually not glabrous, hirto-pubescent; anthers with stiff erect hairs if hairy.	Leaves cuneate, very rarely subcordate; pistil glabrous at the base, pubescent; anthers with pilose hairs if hairy.
W. Cameroun, Gabon, Congo (Leopoldville).	Sierra Leone to Nigeria.

Collecting *S. soubrensis* many times in Liberia and Ivory Coast the present author saw that the cordate leaves are very exceptional in the species. Moreover at present he disposes over complete flowers of both species. It turned out, that both are variable in hairiness, but that the kind of hairs is constant within the species.

2. *S. tricalysioides* Hutch. et M. B. Moss is specifically different from *S. ndengensis* Pellegr.

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[1]) Continued from Act. Bot. Néerl. **10**: 1–53, 460–465. 1961; **11**: 47–50. 1962; **12**: 112–118. 1963; **13**: 333–339. 1964, and Meded. Landbouwhogesch. Wageningen **61**: (4): 1–31. 1961.

S. ndengensis:	**S. tricalysioides:**
Branches lenticellate; leaves shortly acuminate, often much shining (when dry); costa and main secondary veins prominent above, only base of costa impressed; seeds unknown.	Branches not lenticellate; leaves caudate, dull (when dry); costa and main secondary veins impressed above, these veins reaching the apex; seeds deeply dented and with curled hairs (like *S. barteri* Solered., *S. gossweileri* Exell, and *S. melastomatoides* Gilg).
Gabon, Congo (Leopoldville).	Nigeria, W. Cameroun.

The identity of Tamajong FHI 16972 (FHO, K) is uncertain.

3. *S. odorata* A. Chev. was based on a mixture, but fortunately Chevalier indicated the type. A new confusion was made in the Flora. Of the cited specimens *S. odorata* is only represented by the type, Chevalier 15435 (P, holotype; isotypes: LY, P) and by Chevalier 17824 (P). The other specimens cited belong to *S. cuminodora* described below.

4. Some of the specimens cited as *S. floribunda* Gilg do not belong to this species. Thomas 5032 (K) is *S. millepunctata* described below. Most W. Cameroun specimens belong to another new species.
S. togoensis Gilg is not a synonym of *S. floribunda*, but of *S. nigritana* Bak. as could be deduced from the description of the fruit and the ecology of the species.

5. *S. talbotiae* S. Moore is a liana with paired tendrils and not an erect shrub. The first collection with tendrils was made in 1964 in Cameroun (W. J. J. O. de Wilde 2202 (WAG)).

6. The subspecific epithet of *S. innocua* Del. subsp. *innocua* should be maintained to distinguish the subspecies from the east African *S. innocua* subsp. *burtonii* (Bak.) Bruce et Lewis. On p. 496 in the Flora of West Tropical Africa erroneously was stated that it should be omitted like the varietal epithets, as the varieties are not maintained.

7. In *Strychnos spinosa* Lam. the anthers are bearded and the seeds irregularly arranged in the fruit. The latter characteristics are in contradiction with figure 209.

NEW SPECIES

1. **Strychnos cuminodora** Leeuwenberg, sp. nov.

Liana magna silvae densae. Cirrhi per paria dispositi. Folia petiolata laminis papyraceis vel tenuiter coriaceis ovatis usque ad anguste ellipticis distincte acuminatis utrinque glabris. Inflorescentia axillaris

brevis pauciflora. Flores tetra- vel pentameri. Sepala pallide viridia late ovate obtusa vel acuta utrinque glabra. Corolla pallide flava extus glabra intus pro parte centrali fere semper pilosa. Stamina fauce corollae inserta filamentis antherisque glabris. Pistillum glabrum biloculari. Fructus immaturus subglobosus parvus monospermus.

Type: Ivory Coast: 25 km S.W. of Guéyo (May) Leeuwenberg & Brader 3737 (WAG, holotype, with spirit collection; isotypes: A, BR, K, P).

Liana, up to 40 m long and 20 m high climbing in trees. Trunk at least 6 cm in diam. Wood yellowish, with bark-islets. *Branches* unarmed, without lenticells; branchlets glabrous, pale green, often dark brown when dry, not lenticellate, with 2 longitudinal grooves below the stipular line, often subquadrangular; main axis when young sometimes so, but less. Tendrils paired, glabrous. *Leaves:* petiole glabrous, 2–7 mm long; blade dark green and slightly or hardly shining above, paler, often with darker veins and matt beneath, thinly coriaceous or papyraceous also when living, ovate, narrowly ovate, elliptic, or narrowly elliptic, 1.5–3.6 × as long as wide, (2)3–10 (11.5) × 1.5—6.2 cm, distinctly acuminate at the apex (acumen 7–15 mm long, narrow), cuneate, rounded, or occasionally subcordate at the base, glabrous on both sides, without odour when living, often with sal-ammoniac- or Cuminum-odour when dry; one pair of secondary veins from or from above the base curved along the margin and often a fainter submarginal pair. *Inflorescence* axillary, rather congested, short, 0.1 — 0.2 × as long as the leaves, 1–1.2 × 1–1.2 cm, few-flowered, 1–2 × branched. Peduncle, branches, and pedicels short, glabrous. Bracts narrowly triangular to sepal-like, glabrous beneath, pubescent above at the base, without colleters. Flowers 4–5-merous. Sepals pale green, connate at the base up to about one-third of their length, equal, broadly ovate, about as long as wide, 0.5–1.2 × 0.5–1.2 mm, obtuse or acute at the apex, minutely ciliate, glabrous on both sides, without colleters. Corolla in the mature bud 2–6 × as long as the calyx, 2–3 (4) mm long, and rounded at the apex, pale yellow, thin at the base, slightly thicker towards the apex, outside glabrous, inside pilose except for the glabrous apices of the lobes and base of the tube or practically entirely glabrous (few minute hairs, only visible on dry corolla under binocular); tube short, 1–2.4 × as long as the calyx, 1.2 mm long; lobes 1.1–1.5 × as long as the tube, oblong, 1.3–1.8 × 0.8–1 mm, acute, slightly spreading. Stamens exserted; filaments glabrous, about 1–1.5 × as long as the anthers, inserted at the mouth of the corolla tube; anthers oblong or ovate, 0.6 × 0.3–0.4 mm, rounded or mucronate at the apex, deeply cordate at the base, glabrous; cells parallel. Pistil glabrous, 2–2.4 mm long; ovary ovoid or globose, 0.6–0.7 × 0.6 mm, 2-celled; style 1.4–1.7 mm long; stigma obscurely bilobed or capitate. In each cell one axial placenta with 5–9 ovules attached to the middle of the septum. Berry subglobose, immature only seen.

Distribution: Liberia, western Ivory Coast.

Ecology: Moist places in rainforests, often on riverbanks. Alt. 0–650 m.

Paratypes:

LIBERIA: Yoma District of the Gola National Forest, N.E. of Bomi Hills (veg.) de Wilde & Voorhoeve 3857 (WAG); ibid. (veg.) Leeuwenberg 4821 (WAG), 4857 (WAG), (with incompl. fl.) Leeuwenberg 4880 (WAG); Bong Range, 32 km N. of Kakata (fl. just over Aug.) Leeuwenberg & Voorhoeve 4920 (WAG); Gbata Ck., 32 km S.W. of Suakoko (veg.) Leeuwenberg & Voorhoeve 4590 (WAG); Peáhtah (fl. Oct.) Bequaert 1065 (A, K); Ganta (fl. Aug.) Harley 989 (K, LIB); Nimba Mts. (fl. buds July) Leeuwenberg & Voorhoeve 4616 (WAG).

IVORY COAST: near Monogaga, 40 km W. of Sassandra (fl., imm. fr. Nov.) Guillaumet 1604 (WAG, a dupl. of ABI); ibid. (veg.) Leeuwenberg 4045 (WAG), 4055 (WAG); near Tapéguhé, right bank Sassandra R., 50 km N.W. of Soubré (veg.) Leeuwenberg 4529 (WAG), 4535 (WAG); 24 km S. of Taï, near Cavally R. (imm. fr. Aug.) Guillaumet 1445 (ABI, WAG); Hana R. bank, near ferry in road Taï-Tabou, Guillaumet 645 (ABI); ibid. (veg.) de Wilde & Leeuwenberg 3526 (WAG); between Man and Danané (imm. fr. Nov.) Aké Assi 3836 (ABI); ibid. (imm. fr. Nov.) de Wilde 856 (WAG).

Strychnos cuminodora was confused by the present author, when preparing the genus for the Flora of W. Trop. Afr. with *S. odorata* A. Chev. They resemble each other strikingly by the flowers, not lenticellate branches, leaves, and tendrils. Moreover the only fruits available were on the type of *S. odorata*. As on the afterwards arrived specimen Guillaumet 1604 the fruits differ clearly from those of the type of *S. odorata* and the leaves of *S. cuminodora* turned out to be punctate, the species could be distinguished as follows:

1. Leaves with many minute translucent dots; branchlets grooved below the stipular line; tendrils paired; fruit globose (?); seed shortly pubescent (?), ellipsoid (?), not dented. . **cuminodora**
   Leaves not dotted; branchlets not grooved; tendrils in 1–2 pairs; fruit ellipsoid; seeds dented and with an elevation at the other side like in *S. barteri* . . . . . **odorata**

2. **Strychnos millepunctata** Leeuwenberg, sp. nov.

Liana silvae densae. Cirrhi per paria dispositi. Folia petiolata laminis coriaceis ellipticis vel ovatis apiculatis vel acuminatis utrinque glabris punctis numerosis translucentibus suffultis. Inflorescentia axillaris solitaria pauciflora. Flores pentameri sepalis suborbicularibus vel late ovatis obtusis vel rotundatis utrinque glabris. Pistillum glabrum ovario ovoideo biloculari stylo gracili. Fructus aurantiacus parvus globosus monospermus semine ellipsoideo pubescenti laevi testa tenui vestito.

Type: Ivory Coast: Forêt d'Abouabou, between Abidjan and Grand Bassam (fr. Feb.) Leeuwenberg 2662 (WAG, holotype; isotypes: A, BR, K, P, PRE).

Liana, at least 20–25 m long and 5 m high climbing in trees. Trunk 3 cm in diam. or more. Bark pale and dark grey-brown-spotted, not lenticellate, thin, smooth; wood pale yellow, with bark-islets. *Branches*

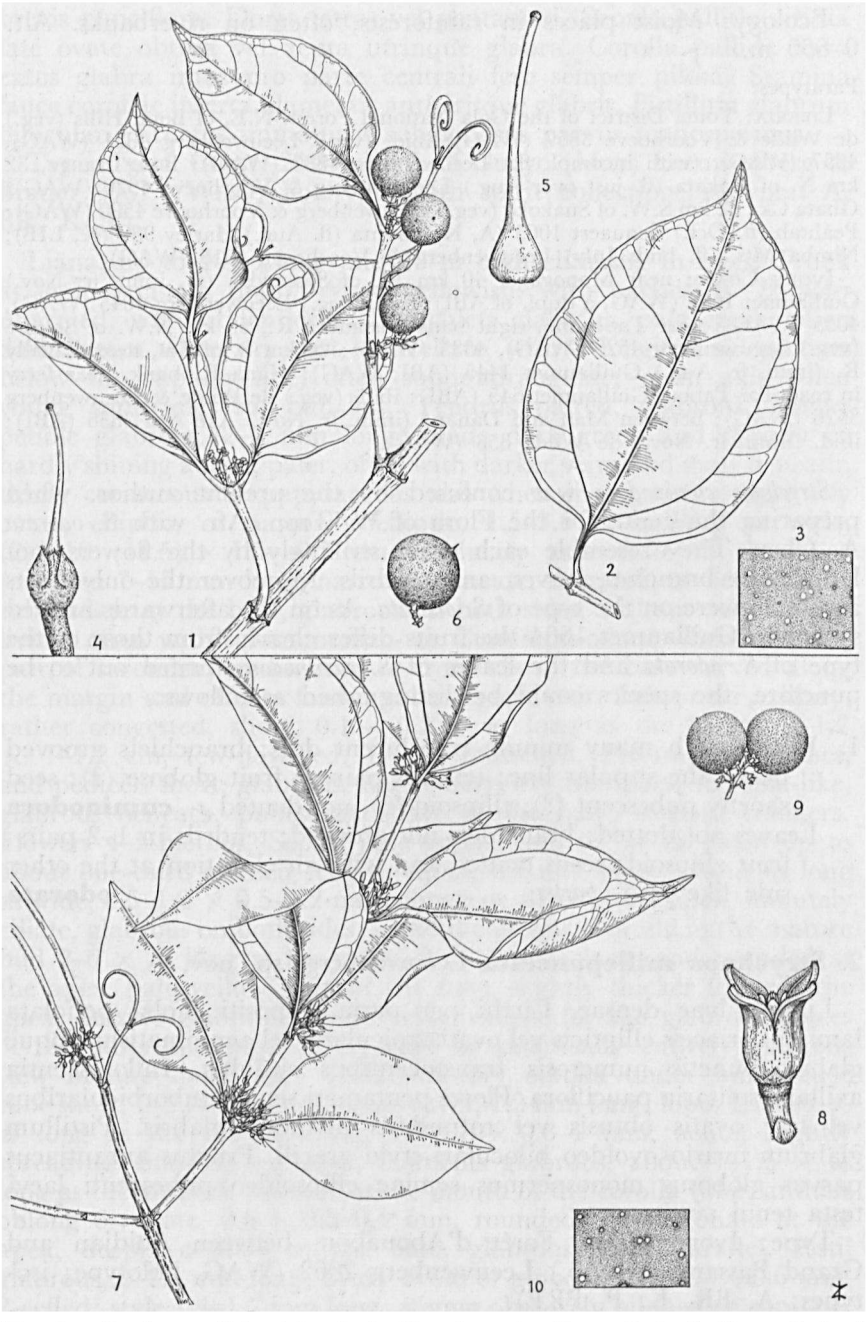

Fig. 1. *Strychnos millepunctata:* 1. fruiting branch, ½ ×; 2. leaf, ½ ×; 3. leaf portion above, 15 ×; 4. calyx with pistil, 5 ×; 5. pistil, 7 ×; 6. fruit, ½ ×. (1–3: Leeuwenberg 2662; 4–5: Nozeran 6 Sept. 1950; 6: de Wilde & Leeuwenberg 3447). *S. cuminodora:* 7. flowering branch, ½ ×; 8. flower, 5 ×; 9. immature fruits, ½ ×; 10. leaf portion above, 15 ×. (7.8 and 10: Leeuwenberg & Brader 3737; 9: Guillaumet 1604).

unarmed, pale to medium brown, not lenticellate, not sulcate when dry; branchlets glabrous, green, not lenticellate, terete, pale greenish-brown and often slightly sulcate when dry. *Leaves:* petiole glabrous, 4–10 mm long; blade slightly or hardly shining, above medium to dark green, beneath paler, coriaceous in the sun, thinly coriaceous or papyraceous in the shade, elliptic or ovate, 1.4–2 × as long as wide, 4–10(14) × 2–7(8) cm, apiculate or acuminate at the apex, cuneate or rounded at the base, glabrous on both sides, above with minute translucent dots; one pair of secondary veins from or from above the base curved along the margin and a fainter submarginal pair; tertiary venation reticulate, not very distinct, prominent beneath. *Inflorescence* axillary, solitary, rather congested, few-flowered, short, 1–1.5 × 1 cm, 2 × branched. Peduncle, branches, and pedicels short, glabrous. Bracts small, sepal-like, glabrous above, without colleters. Flowers 5-merous. Sepals pale green (?), connate at the base, equal or subequal, broadly ovate or suborbicular, about as long as wide, 1.2–1.3 × 1.2 mm, obtuse or rounded, ciliate, glabrous on both sides, without colleters. Corolla in the mature bud about 3.5 × as long as the calyx, and about 4.5 mm long, white (?), thin at the base, thicker towards the apex (?), outside pubescent; tube about 3 mm long; lobes about 1.5 mm long (only incomplete on Nozeran 6 Sept. 1950). Pistil glabrous, 4.5 mm long; ovary ovoid, 1.5 × 1 mm, gradually narrowed into the style, 2-celled; style slender, 3 mm long; stigma capitate. In each cell one axial placenta with about 6 ovules attached to the middle of the septum. Fruit orange, nearly mature dark green, small, soft, globose, 1–2 cm in diam., with smooth skin, hardly shining, slightly obliquely pedicellate. Pulp orange. Seed dull, pale brown, slightly flattened, ellipsoid, 8 × 7 × 6 — 11 × 9 × 7 mm, densely pubescent, smooth; testa thin, gluing to the pulp. Endosperm bony, ochraceous.

Distribution: Guinea, Sierra Leone, Ivory Coast.
Ecology: Rainforests, usually on riverbanks. Alt. 0–200 m.

Paratypes:

GUINEA: Kaoba R. valley (veg.) Chevalier 13128 (P).
SIERRA LEONE: Yonibana (imm. fr. Nov.) Thomas 5032 (K).
IVORY COAST: Forêt d'Abouabou, between Abidjan and Grand Bassam (fr. Feb.) de Wilde & Leeuwenberg 3447 (ABI, WAG); ibid. (fl. just over) Nozeran 6 Sept. 1950 (MPU); ibid. (veg.) Oldeman 94 (WAG); 7 km W. of Oumé (veg.) Leeuwenberg 4145 (WAG); 20 km N.W. of Sassandra (veg.) Leeuwenberg 4030 (WAG); 15 km E. of Soubré, left bank Bo R. (veg.) Leeuwenberg 4098 (WAG).

Strychnos millepunctata resembles *S. floribunda* Gilg by the leaves, calyx, pistil, and size of the fruits. It differs from the latter species as follows:

1. Tendrils paired; leaves finely punctate; branches not lenticellate, dark green, later brown; fruits globose . . . **millepunctata**
   Tendrils solitary; leaves not punctate; branches lenticellate, nearly black; fruits ellipsoid . . . . . **floribunda**

Furthermore it resembles *S. cuminodora* by the paired tendrils, not

lenticellate branches, and the finely punctate leaves, but it differs from the latter in the following characters:

1. Branchlets not grooved; leaves coriaceous or nearly so in the sun; pistil 4.5 mm long . . . . . **millepunctata**
   Branchlets grooved below the stipular line; leaves thinly coriaceous or papyraceous also in the sun; pistil 2–2.4 mm long . . . . . **cuminodora**

4. **Strychnos ternata** Gilg ex Leeuwenberg, sp. nov.; Gilg in Wiss. Ergebn. Deutsch. Zentr.-Afr.-Exped. 1910–1911. 2: 62. 1922, nomen.

Arbor sylvae stirpe caniculato ligno duro cortice tenui ramis crassis horizontaliter expansis. Stipulae mox deciduae minutae liberae per paria base petioli anguste triangulares. Folia opposita non ternata petiolata laminis papyraceis vel coriaceis ellipticis oblongis vel ovatis apice apiculatis acuminatis vel fere caudatis basi rotundatis vel cuneatis subtus nervis magnis pro parte hirsutis ceterum glabris. Inflorescentia terminalis multiflora thyrsoidea pedunculo et pedicellis pubescentibus. Bracteae lineares. Flores pentameri. Sepala in albastro imbricata inaequalia linearia basi connata viridia corollam viridem aliquot superantia. Corolla extus glabra intus fauce corona integra margine pilis rigidissimis suffulta. Stamina inclusa filamentis breviter pubescentibus basi corollae insertis antheras villosas duplo superantibus. Pistillum pubescens ovario ovoideo biloculari stigmate subsessili. Fructus magnus durus globosus parie crassisima. Semina opaca oblique ovata vel elliptica.

Type: Cameroun: Mopwo, km 22 on road Yokadouma-Batouri, flowering on 13 June 1963, Letouzey 5271 (WAG, holotype; isotypes: BR, K, P, YA).

Medium sized deciduous forest tree, 12–25 m high. Trunk 70–80 cm in diam., with long narrow buttresses by which it is more or less irregularly fluted; bark thin, pale grey-brown, somewhat scaly; wood hard, yellowish, with paler sapwood, without bark-islets. Crown flat or composed of flat relatively thick (main) branches. *Branches* unarmed, obscurely lenticellate, pale brown; branchlets often with few hairs when young, soon glabrous, not lenticellate and green when young, like branches when leaves mature. Stipules deciduous (only seen in seedling with very young leaves), 4 on each node, at bases of petioles, small, narrowly triangular. Stipular line distinct. *Leaves* opposite, never ternate (as far as known and seen in living tree, Breteler 2196); petiole with some hairs or glabrous, 5–15 mm long; blade shining and dark green above, less shining and paler beneath, papyraceous to coriaceous, also when living, elliptic, oblong, or ovate, 1.5–2.7 × as long as wide, 10–20 × 4–10 cm (or sometimes some smaller), apiculate, acuminate, or nearly caudate at the apex, rounded or cuneate at the base, glabrous above, beneath on main veins partially hirsute; 2–4 pairs of distinct secondary veins curved along the margin which are impressed above and prominent beneath like

the costa. *Inflorescence* terminal, seemingly umbellate, not very congested, many-flowered, 5–10 × 6–9 cm, 4–5 × branched. Peduncle, branches, and pedicels pubescent. Bracts linear, smaller upwards and then sepal-like, with several distinct colleters in the axils. Flowers 5-merous. Sepals pale green, imbricate in the bud only, connate at the base, unequal, linear, 4–6 × 0.2 mm, subulate at the apex, not ciliate, sparsely pubescent outside, inside often only at the base with some hairs, without colleters. Corolla when mature somewhat shorter than the calyx, 4.5 mm long, pale green, thin at the base, thicker towards the apex, glabrous outside, inside with an entire narrow corona with white brush-like hairs on the margin at the mouth of the tube; tube urceolate, about half as long as the sepals and twice as long as the lobes, 3 mm long, in the middle 3 mm wide, contracted at the base and at the apex; lobes triangular, 1.5 × 0.8 mm, acute, erect. Stamens included; filaments shortly pubescent, twice as long as the anthers, inserted at the base of the corolla tube; anthers cordate, 1.2 × 0.8 mm, apiculate at the apex, deeply cordate at the base, bearded all around with villose hairs, but less so at the apex; cells parallel. Pistil pubescent, 2 mm long; ovary ovoid, 1.8 × 1.2 mm, acuminate at the apex, 2-celled; stigma subsessile. In each cell one large placenta with about 50 ovules attached to the middle of the thin septum. Fruit large, hard, dark green, often slightly yellowish, slightly shining, like a bowl, globose, 9.5–13(15) cm in diam., mostly with relatively few, 10–15 (91) seeds. Wall very thick, hard, ochraceous on section and inside, where it is irregularly knobby by which the thickness varies from 9 to 22 mm, even in a single fruit!, thickest above pedicel. Pulp ochraceous, scented like rotten apples, with thin fibres. Seeds dull, ochraceous when in fruit, white when dried up, flattened, more or less plano-convex, obliquely ovate or elliptic, usually irregularly curved, 1.2–2 × as long as wide, 19–30 × 13–21 × × 4–7 mm, smooth, shortly pubescent (rubbed off by washing). Endosperm bony, ochraceous, composed of two layers united at the margin except near the rootlet. Embryo surrounded by the endosperm, straight; cotyledons leafy, cordate, 3 × 3 mm, rootlet 3 × 1 mm.

Distribution: S.E. Cameroun.

Ecology: Rather dry high forests with *Celtis* and *Sterculiaceae* (e.g. *Triplochiton scleroxylon*); alt. 600–800 m.

Paratypes:

CAMEROUN: near Gounté, 27 km N.E. of Bertoua (fr. Dec.) Breteler 2196 (WAG); near Dimako, 28 km S.W. of Bertoua (nearly mature fr. July) Breteler 1715 (WAG); S.E. of Djémiong, 45 km S.W. of Batouri (bare tree, leaves and fruits picked up from the forest floor, April) Breteler 2855 (WAG); between Yokadouma and Bange R. mouth (fr. March) Mildbraed 4598 (HBG); 25 km N.E. of Bange, km 75 on road Yokadouma-Moloundou (fr. May) Letouzey 5154 (P).

TCHAD: Bifoum, N'Ké Region (fr. April) Durand 1319 (P).

Cultivated: Cameroun, Yaoundé from seeds of herb. Breteler 2196, seedlings, Breteler 2994 (WAG).

Mildbraed discovered *S. ternata* which was named by Gilg, but not yet described. Mr. Breteler collected it again several times and

showed the present author a fruiting tree of which he collected his herbarium nr. 2196. Unfortunately he was not there in the right time to find it in flower. These were found by Mr. Letouzey after several explorations of the area of the species.

S. ternata belongs to the section *Spinosae* as it has the following characters: Flowers 5-merous; sepals linear; corolla campanulate, with a narrow entire corona with brush-like hairs on the margin; stamens included, inserted near the base of the tube; anthers bearded; stigma subsessile; fruit large, globose, hard; seeds obliquely ovate or elliptic, flattened, smooth, shortly pubescent.

It differs from the other species of this section as follows:

1. Climber with paired tendrils; stipules more or less persistent, 4–12 on each node; corolla tube split . **S. congolana** Gilg
   Shrub or tree without tendrils; stipules soon deciduous, 4 on each node at the bases of the petioles; corolla tube not split 2
2. Savanna shrubs or trees, mostly small; leaves smaller than in the next species, mostly less than 8 cm long; colleters absent or occasional; fruit wall 2–5 mm thick 3
   Medium sized forest tree; leaves large, 10–20 × 4–10 cm; colleters in the axils of the bracts; fruit wall 9–22 mm thick . . . . . **S. ternata** Gilg ex Leeuwenberg
3. Sepals outside mostly, at least apically glabrous, never with an even indumentum; branchlets usually glabrous; branches and bark not corky; ovary 1-celled. . . **S. spinosa** Lam.
   Sepals outside with an even pubescence; branchlets usually pubescent; branches and bark corky; ovary 2-celled . . . . . **S. cocculoides** Bak.

5. **Strychnos urceolata** Leeuwenberg, sp. nov.

Liana magna silvae densae. Cirrhi solitarii axillares. Folia petiolata laminis subcoriaceis ellipticis anguste ellipticis ovatis vel anguste ovatis subtus saepe axillis nervorum secundariorum barbatis. Inflorescentia maxima late paniculata multiflora terminalis et in axillis foliorum apud apicem. Flores pentameri minimi calyce lobis acutis corolla griseo-viridi urceolata lobis suberectis. Stamina filamentis brevibus antheris basi barbatis longitudine aequantibus. Pistillum glabrum ovario biloculari. Fructus parvus monospermus.

Type: Cameroun: 40 km S.W. of Batouri, bank Doumé R., near Bimba (April) Breteler 2803 (WAG, 4 sheets, holotype, with spirit coll.; isotypes: A, BR, K; Letouzey 4758 (P, YA) collected on the same day of the same plant).

Large liana, at least 80 m long, high climbing in trees. Trunk up to 18 cm in diam. Wood pale yellowish, with large bark-islets. Bark dark brown, with large lenticells. *Branches* unarmed, not lenticellate, medium brown; branchlets brown-pubescent, medium brown when dry. Tendrils solitary in the axils of ordinary leaves, long, pubescent. *Leaves:* petiole brown-pubescent, 2–4 mm long; blade slightly shining

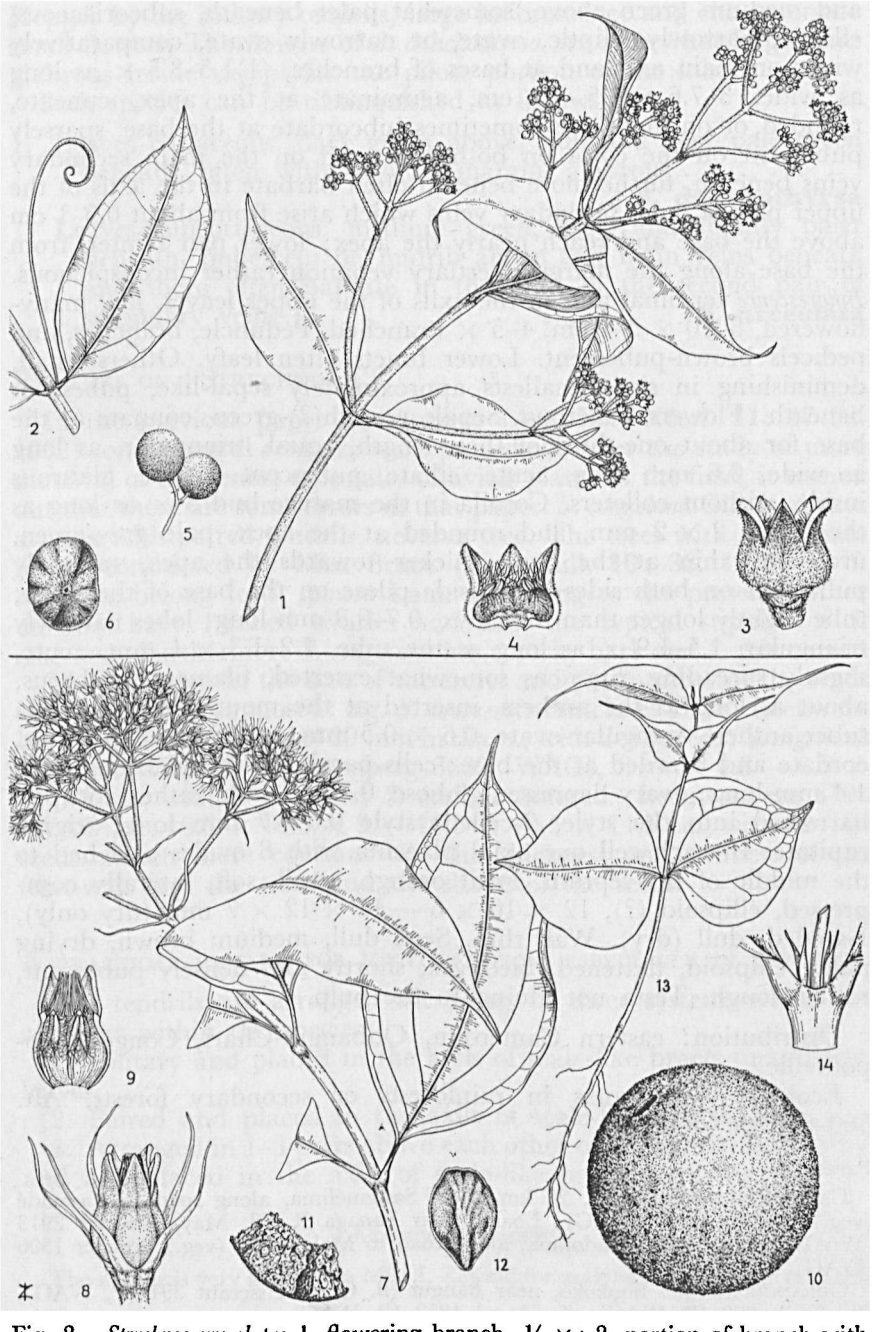

Fig. 2. *Strychnos urceolata:* 1. flowering branch, ½ ×; 2. portion of branch with tendril, ½ ×; 3. flower, 5 ×; 4. opened corolla, 5 ×; 5. fruits, ½ ×; 6. seed, 1 ×. (1–4: Breteler 2803; 5–6: Tisserant 1852). *S. ternata:* 7. flowering branch, ½ ×; 8. flower, 5 ×; 9. opened corolla, 5 ×; 10. fruit, ¼ ×; 11. portion of fruit wall, ½ ×; 12. seed, ½ ×; 13. seedling, ¼ ×; 14. node of seedling with stipules, 5 ×. (7–9: Letouzey 5271; 10–12: Breteler 2196; 13–14: Breteler 2994).

and medium green above, somewhat paler beneath, subcoriaceous, elliptic, narrowly elliptic, ovate, or narrowly ovate, comparatively wider on main axis and at bases of branches, (1)1.5–3.5 × as long as wide, 3–7.6 × 1.5–3.2 cm, acuminate at the apex, cuneate, rounded, or on main axis sometimes subcordate at the base, sparsely pubescent on the costa on both sides and on the main secondary veins beneath, furthermore beneath often barbate in the axils of the upper pair of main secondary veins which arise from about 0.5–1 cm above the base and reach nearly the apex; lower pair fainter, from the base along the margin; tertiary venation rather inconspicuous. *Inflorescence* terminal and in the axils of the upper leaves, lax, many-flowered, 8–10 × 5–7 cm, 4–5 × branched. Peduncle, branches, and pedicels brown-pubescent. Lower bracts often leafy. Others small, deminishing in size, smallests approximately sepal-like, pubescent beneath. Flowers 5-merous. Sepals greyish(?)-green, connate at the base for about one-third of their length, equal, triangular, as long as wide, 0.6 mm long, acute, ciliate, pubescent outside, glabrous inside, without colleters. Corolla in the mature bud 3 × as long as the calyx, 2 × 2 mm, and rounded at the apex, pale grey-green, urceolate, thin at the base, thicker towards the apex, minutely pubescent on both sides and inside pilose on the base of the lobes; tube slightly longer than the calyx, 0.7–0.8 mm long; lobes narrowly triangular, 1.5–1.9 × as long as the tube, 1.2–1.3 × 1 mm, acute, slightly spreading. Stamens somewhat exserted, filaments glabrous, about as long as the anthers, inserted at the mouth of the corolla tube; anthers triangular-ovate, 0.6 × 0.5 mm, apiculate at the apex, cordate and bearded at the base; cells parallel. Pistil glabrous, 1.3–1.4 mm long; ovary depressed-globose, 0.7 × 1 mm, rather abruptly narrowed into the style, 2-celled; style 0.6–0.7 mm long; stigma capitate. In each cell one axial placenta with 8 ovules attached to the middle of the septum. Fruit orange, small, soft, laterally compressed, ellipsoid (?), 12 × 10 × 6 — 14 × 12 × 7 mm (dry only), 1-seeded, dull (dry). Wall thin. Seed dull, medium brown, drying paler, ellipsoid, flattened, biconvex, shortly and densely pubescent, rather rough. Testa not gluing to the pulp.

Distribution: eastern Cameroun, Oubangui-Chari, Congo (Leopoldville).

Ecology: Riverbanks in rainforests or secondary forests. Alt. 500–600 m (or less?).

Paratypes:

CAMEROUN: near Oveng, 27 km N. of Sangmélima, along road to Yaoundé (veg.) Breteler 2666 (WAG); Ebaka, near Sanaga R. (fl. May) Breteler 2913 (WAG); 6 km S. of Yokadouma, along road to Moloundou (veg.) Breteler 1506 (WAG).

OUBANGUI-CHARI: Boukoko, near Bangui (fl. Oct.) Tisserant 391 (P, WAG), (fl. April) 900 (P, WAG), (fr. Aug.) 1852 (P, WAG).

CONGO: EQUATEUR: Djoa, Bolomba Territory (fl. buds Oct.) Evrard 5061 (BR, WAG).

This species is closely allied to *S. dolichothyrsa* Gilg ex Onochie et

Hepper by the solitary tendrils, large inflorescence and characteristic small flowers. The flowers of *S. dolichothyrsa* are somewhat larger and glabrous inside except for the pilose portion of the lobes.

Both species can be distinguished as follows:

1. Leaves coriaceous, dark green above, dull and very pale green beneath, often with revolute margin, glabrous . . . . . .**S. dolichothyrsa**

   Leaves subcoriaceous, medium green, matt and slightly paler beneath, pubescent on midrib above and main veins beneath and there often barbate in the axils of the second pair of secondary veins. . . . . .**S. urceolata**

Remarks on "Strychnos I"

In the previous paper on *Strychnos* (Act. Bot. Néerl. **11**: 47–50. 1962) some general remarks were published. After the study of more material of the genus, especially of living plants in the field, it turned out that there are some errors in that paper. *S. congolana* Gilg is always a liana with paired tendrils, never a tree. The trees with acuminate leaves considered by Miss Bruce (Kew Bull. **10**: 38. 1955) as *S. congolana* belong to *S. spinosa* Lam. according to the present author as they have 1-celled ovaries and lack the typical stipules of *S. congolana*. Furthermore *S. congolana* has a corky bark and *S. spinosa* not.

The variation in the size of the fruits and the number of the seeds is larger than is supposed: e.g. *S. soubrensis* Hutch. et Dalz., Leeuwenberg 3727 (WAG), fr. 18–29 mm in diam., with 2–12 seeds; *S. nigritana* Bak., de Wilde & Leeuwenberg 3602 (WAG), fr. 4 × 4.8 — 6.5 × × 6.7 cm, with 8–45 seeds; *S. aculeata* Solered., Leeuwenberg 3793 (WAG), fr. 10.5 × 10.5 × 9 — 16.5 × 18.5 × 14.5 cm, with 22–145 seeds. Much more constant are the thickness and stiffness of the fruit-wall and the testa and the shape of the seeds.

A practical remark for identification, especially in the field

The tendrils are arranged according to three systems which are constant within the species:

1. Solitary and placed in the axils of scale-like bracts or ordinary leaves.
2. Paired and placed in the axils of scale-like bracts.
3. Arranged in 1–3 pairs above each other on short lateral branches and also placed in the axils of scale-like bracts.

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