BULL. BOT. SURV. INDIA
Vol. 25, Nos. 1-4 : pp. 211-216, 1983

NEW TAXA OF THE GENUS *PSYCHOTRIA* (RUBIACEAE) IN INDIA

D. B. DEB AND MOHAN GANGOPADHYAY
Botanical Survey of India, Howrah

1. Psychotria balakrishnii Deb et Gang. sp. nov. Fig. 1 G-O.

Differt a *P. kurzii* Deb et Gang. cymis capitatis simplicibus, calycis lobis lanceolatis, fructibus angustioribus, seminibusque ellipsoidis, longioribus.

Type: North Andaman, Saddle Peak, ± 650 m, 2.12.1976, *N. P. Balakrishnan & N. C. Nair* 4785 (A holotype CAL, B isotype PBL); Middle Andamans, Tugapur, ± 15 m, 31.7.1974, *N. Bhargava* 1949 (paratype CAL).

Differs from *P. kurzii* Deb et Gang. in simple capitate cymes, lanceolate calyx lobes, narrower fruits and longer ellipsoid seeds.

Shrubs 1-2 m high, branchlets compressed, pubescent or glabrous when young, terete, striate in age. Leaves petiolate, 9-23 × 2-8 cm, obovate or broadly elliptic, acuminate, cuneate, thin coriaceous, glabrous above, hirsute beneath mainly on the midrib and nerves; midrib channelled above; lateral nerves 20-26 on either side, subopposite, close set, subparallel, joining at an intramarginal vein, axil imperforate, nervules inconspicuous; petioles 0.8-3.5 cm long, pubescent; stipules ovate, shortly two lobed, glabrous above, pubescent beneath. Inflorescence terminal, sessile or subsessile globose head or trichotomously branched cymose panicle, 2-3 × 3-5 cm when fruiting; branches pubescent; bracteoles 2-4 mm long, linear or linear-lanceolate, acuminate, coriaceous, pubescent, persistent. Flowers subsessile, ± 5 mm long, short tubular, white; pedicel ± .5 mm long, pubescent. Hypanthium 0.5-1 mm, obovoid, pubescent. Calyx 1.5 × 2 mm, tubular, pubescent above, lobes 5, subulate or linear-lanceolate, pubescent. Corolla tube ± 2 mm long, glabrous above, villous at the throat; lobes 5, ± 1.5 mm long, ovate, shortly inflexed, thick, pubescent above, glabrous beneath. Stamens 5, inserted; filaments ± 0.5 mm, thin, adnate below the throat; anthers ± 1 mm long, linear-oblong, two celled, dorsally slightly convex. Ovary 2 celled, obovate; ovule solitary in each locule, basal; style 2-2.5 mm long, thin, narrow, glabrous; stigma lobes 2, oblong, truncate, ± 0.5 mm long, glabrous; disc ± 0.5 × 0.7 mm, subglobose, smooth. Fruits ± 10 × 4 mm, narrow ellipsoid, asymmetrical, one side almost straight, the other side convex, apex crowned with persistent calyx limbs and disc, acute at the base, sessile to shortly stalked, with 8 sharp ridges and 10 deep grooves; pericarp thin, pubescent, stalks 0-1 mm, pubescent; pyrenes 2, one always empty, ± 9 × 2 mm, narrow ellipsoid, acute at the apex, acuminate at the base, planoconvex, dorsally 4 ridged and 5 furrowed, ventrally flat and shallow grooved at the base, wall thin coriaceous, with few raphides. Seeds ± 7 × 2 mm, narrow ellipsoid, acute at both ends, shortly cuneate at the base, plano-convex, dorsally 4 ridged and 5 grooved, ventrally flat, with a shallow groove at the base; albumen ruminate at

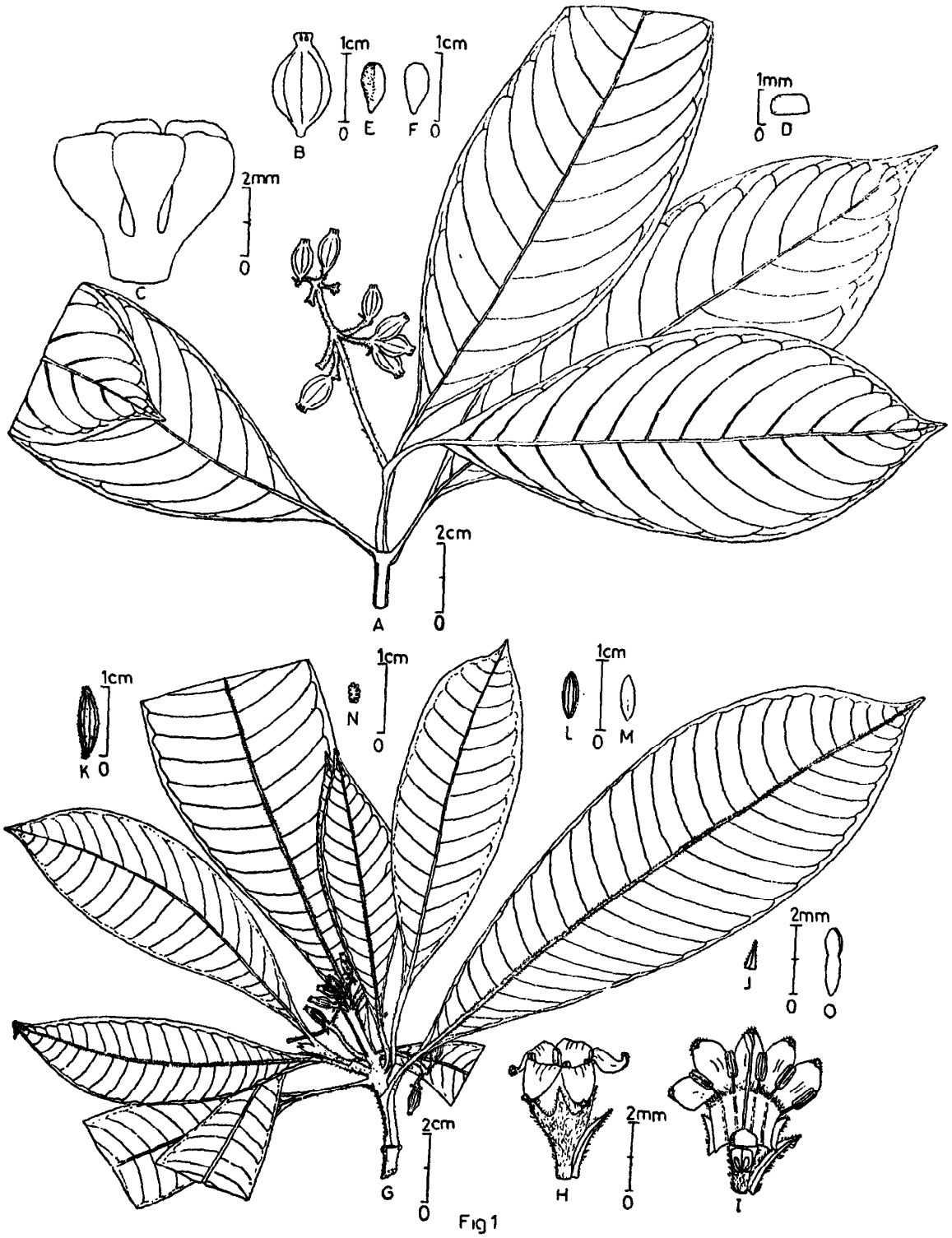


Fig 1

Psychotria keralensis Deb et Gang. sp. nov.

Fig. 1. (A-F): A. Habit. B. Fruit. C. Calyx. D. Disc. E. Seed (dorsal view), F. Seed (ventral view).

Psychotria balakrishnii Deb et Gang. sp. nov.

Fig. 1. (G-O): G. Habit. H. Flower. I. Opened flower. J. Bracteole. K. Fruit, L. Seed (dorsal view). M. Seed (ventral view). N. T. S. of Seed O. Embryo.

the depression of the wall, attached at the base. Embryo ± 2 mm long, axis 1-1.2 mm long, acute at the base, shallow longitudinally channelled ventrally, convex dorsally; cotyledons 2, ± .6 mm long, oblong-elliptic, acute at the apex, conspicuously veined.

Flowering : July. *Fruiting* : December.
Ecological note : In evergreen forest on sandy loam.

2. P. burkillii Deb et Gang. sp. nov.
Fig. 2 A-E.

Differt a *P. denticulata* Wall. foliis majoribus, nervis lateralibus magis distantibus, cymis paniculis dichotome ramosis, fructibusque grandioribus inter alia.

Type: Arunachal Pradesh, Siang dt., Tuting to Koppu, 2000-2400 ft. (600-720 m), 7.11.1958, *R. S. Rao* 17415 (A holotype, B-C isotype CAL); Subansiri dt., Lalik valley, 2000 ft. (600 m), 2.3.1912, *I. H. Burkill* 38166 (paratype CAL).

Differs from *P. denticulata* Wall. in larger leaves, dichotomously branched cymose panicle, and larger fruits amongst others.

Trees 6-20 (?) m high, with wide horizontal branches; branchlets 6 mm-1 cm thick, striate, glabrous. Leaves petiolate, 20-32 × 8-14 cm, obovate, shortly acuminate, slightly incurved at the margin, slightly unequally attenuated at the base, thinly coriaceous, glabrous above, strigose or shortly pubescent along the midrib and nerves beneath, pale brown when dry; midrib prominent beneath, channelled above; lateral nerves subopposite, 10-14 on either side, channelled and pressed above, strong beneath, arcuate, axil with bacterial nodules opening by a large pore, nervules transversely subparallel; petiole stout, 1.5-2.5 cm long, glabrous; stipules interpetiolar, 1-1.5 × 0.8-1 cm, ovate, acute or acuminate, thick, glabrous on both sides, deciduous. Inflorescence axillary, subsessile, panicle of dichotomously branched cymes, ± 10 × 17 cm, stout, spreading, hispid; bracts deciduous, bracteoles minute, ± 1 × 2 mm, ovate, acute or obtuse, entire, glabrous above, slightly pubescent beneath. Flowers not seen. Disc annular, persistent. Fruits 1-1.5 × 1-1.5 cm, short stalked, globose drupe with persistent calyx, smooth; wall thick and fleshy; pyrenes 2, ovoid, plano-convex, obtuse at the apex, wall thick, raphides absent. Seeds 8-9 × 7-8 mm, ovoid-orbicular, obtuse at the apex, cuneate at the base, dorsally convex, without ridges and grooves, ventrally flat and with a shallow groove; albumen uniform; embryo 4-4.5 mm long, axis 2-2.5 mm long, blunt at the base; cotyledons 2, 2-2.5 × 2-2.5 mm, ovate, acute, thin, conspicuously veined, radicle inferior.

Fruiting : November-March.

Distribution : Arunachal Pradesh, Siang and Subansiri districts.

The species is named in honour of I. H. Burkill who collected it for the first time and tentatively determined as a new species of *Psychotria*.

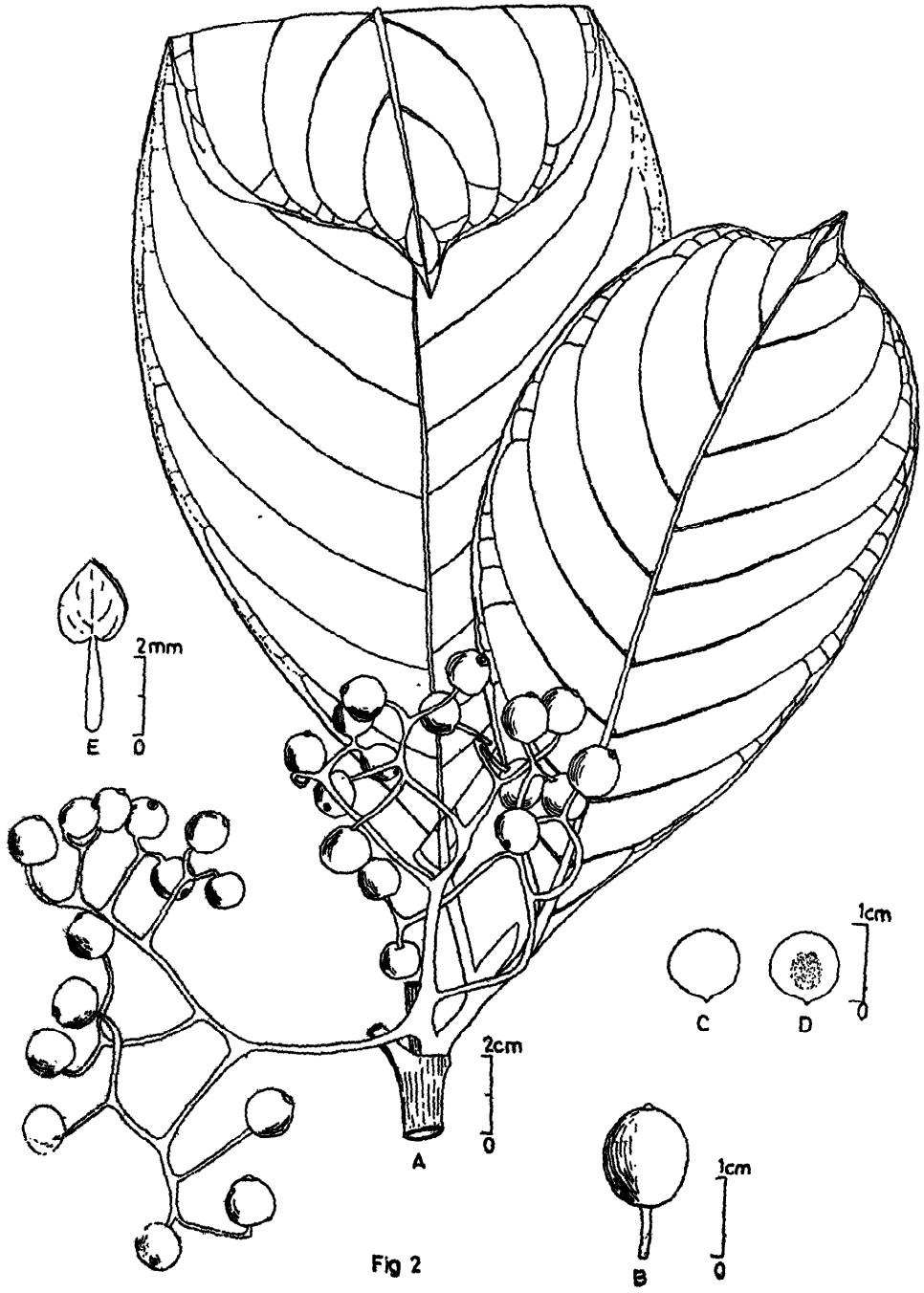
3. P. keralensis Deb et Gang. sp. nov.
Fig. 1 A-F.

Differt a *P. flavida* Talb. stipules caducis, cymes capitatis, calycis lobis obovatis, fructibusque majoribus.

Type: Kerala, Cannanore dt., Chandanathode, 800 m, 1.11.1965, *J. L. Ellis* 26357-B (holotype MH).

This differs from *P. flavida* Talb. in caducous stipules, capitate cymes, obovate calyx lobes and larger fruits.

Shrubs; branchlets quadrangular when young, terete in age, stout, smooth, raphides and lenticels present, pale green. Leaves petiolate, 15-19 × 4.5-6 cm, elliptic-oblong, or obovate; acuminate, cuneate, thin coriaceous, glabrous, green when dry; midrib channelled above, terete beneath, few



Psychotria burkillii Deb et Gang. sp. nov.
Fig. 2. (A-E): A. Habit. B. Fruit. C. Seed (dorsal view). D. Seed (ventral view). E. Embryo.

raphides present; lateral nerves 14-16 on each side, slender, subparallel, bent at the margin, axil imperforate, nervules prominent; petioles 1.5-2 cm, stout, glabrous, raphides present; stipules caducous, ferruginous villous at the stipular scars. Inflorescence terminal peduncled panicles of cymose heads; branches bearing heads in whorls of 4, pendulous, short, stout, pubescent; bracts deciduous; bracteoles ± 2 × 1 mm, ovate-lanceolate, acute or acuminate, deciduous. Calyx persistent, ± 3 × 3 mm, tube ± 1 mm long; lobes 5, obovate, obtuse, glabrous, concave ventrally, margin thin. Disc ± 1 × .5 mm, subglobose, shallow grooved towards the apex. Fruits 1-1.3 × .5-.6 cm, minutely stalked, ellipsoid-ovoid, crowned above with persistent calyx lobes, faintly 6-8 striped, ferruginous tomentose at the base; pericarp thin; stalk 1-2 mm; pyrenes 2, 8-10 × 4-5 mm, obovoid, acute at the apex, cuneate at the base, plano-convex, without ridges and grooves, wall thin, with few raphides mainly at the base; seeds 7-8 × 3-3.5 mm, obovoid, plano-convex, obtuse at the apex, cuneate at the base, ventrally flat, dorsally smooth, without ridges and grooves, with few raphides mainly at the base; albumen ruminated.

Fruiting : November.

Distribution : Kerala.

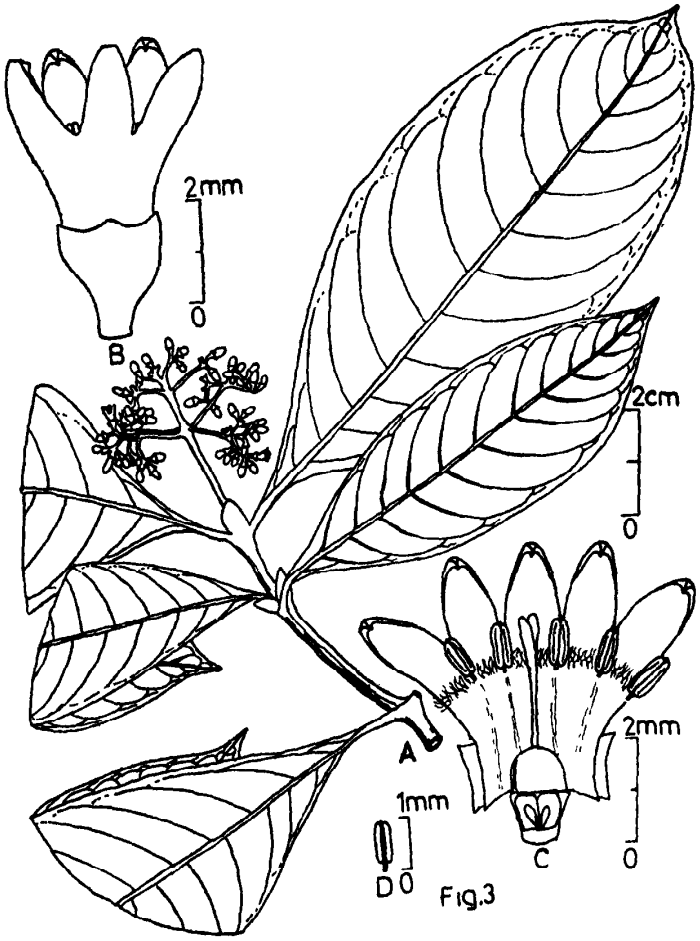
4. P. nudiflora W. & A. var. **latifolia** Deb et Gang. var. nov. Fig. 3 A-D.

Differt a *P. nudiflora* var. *nudiflora* foliis latioribus, corollisque pubescentibus.

Type: Tamil Nadu, Kanniyakumari dt., Vallachithodu, Lower Kodayar, ± 550 m, 7.10.1980, *A. N. Henry* 68941 (holotype CAL); Kilaviarumalai, ± 500 m, 29.8.1976, *A. N. Henry* 48121 (paratype CAL); Muthukuzhivayal, ± 1400 m, 6.8.1977, *A. N. Henry* 49621 (paratype CAL); Tirunelveli dt., Kannikatti, 830 m, 10.11.1959, *K. M. Sebastine* 9627 (paratype CAL).

Differing from the typical variety in broader leaves and pubescence of the corolla.

Shrubs, branchlets di or trichotomous, compressed when young, terete in age, glabrous, smooth, brown when dry. Leaves petiolate, 10-19 × 3-6 cm, obovate or obovate-oblong, shortly acuminate, incurved at the margin, attenuate, coriaceous, glabrous, brownish green when dry, midrib channelled above, terete beneath, slender, lateral nerves 10-16 on either side, subopposite, slender, arcuate, raised, axil imperforate, nervules conspicuous; petioles 1-2 cm, slender. glabrous; stipules 4-10 × 2-6 mm, ovate, acuminate, coriaceous, glabrous above, densely ferruginous villous at the base beneath, deciduous. Inflorescence terminal pedun-



Psychotria nudiflora W. & A. var. **latifolia** Deb et Gang. var. nov.
Fig. 3. (A-D): A. Habit. B. Flower. C. Opened flower. D. Stamen (dorsal view).

cled panicle, 4-6 × 3-4 cm when flowering, branches 5 in a whorl or trichotomous, flattened, slender, puberulous, branchlets short, di or trichotomous, puberulous, flowers in cyme at the end of the branchlets; bracts and bracteoles absent; peduncle 2-4 cm long, flattened, slender, puberulous. Flowers sessile to subsessile, white; pedicel less than 0.5 mm long, glabrous or puberulous. Hypanthium less than 1 mm long, puberulous or glabrous. Calyx cupular, entire or minutely five toothed at the margin, teeth triangular, surface puberulous or glabrous, margin puberulous, glabrous beneath. Corolla tube 3-4 mm long, thin, glabrous above, pubescent at the throat; lobes 4 or 5, ovate, acute, inflexed, glabrous. Stamens 4-5, inserted, filaments minute, to 0.5 mm long, thin, adnate at the throat; anthers ± 1 mm long, oblong, dorsally shallow convex, two celled, opening longitudinally. Disc .5-.7 × 1-1.2 mm, subglobose, smooth. Stigma lobes 2, ovate, 5 mm long; style 3-4 mm long, narrow, thin, glabrous; ovary ± .5 mm long, 2 celled, with 1 ovule in each locule; ovule basal.

Flowering : August-November.

Distribution : Tamil Nadu, Kanniyakumari and Tirunelveli dts.

ACKNOWLEDGEMENTS

The authors are grateful to Dr. S. K. Jain, Director, Botanical Survey of India for granting Emeritus Scientistship (D.B.D) and Senior Research Fellowship (MG) and other facilities for continuing taxonomic study. Thanks are due to the Joint Director, Southern Circle, Coimbatore, and Regional Botanist, Andaman and Nicobar Circle for loan of specimens and to the Deputy Director, Central National Herbarium for facilities.