

ROSTELLULARIA DIFFUSA (WILLD.) NEES (*JUSTICIA DIFFUSA* WILLD.)
COMPLEX (ACANTHACEAE)

J. L. ELLIS

Botanical Survey of India, Port Blair

ABSTRACT

Delimitation of the taxon, *Justicia diffusa* Willdenow is discussed, and 10 taxa falling within the Indian Subcontinent have been treated under the newly erected subsection : *Diffusa* Ellis including four varieties under *Rostellularia diffusa* (Willd.) Nees, and two varieties each under *R. quinqueangularis* Koenig ex Roxb. and *R. vahlii* (Roth) Nees.

Willdenow (1797) described *Justicia diffusa*, keeping in view Vahl's (Symbolae Bot. Pl. 2 : 14, 1791) comment on Plukenet's (Opera, Amal. Bot. p. 83. pl. 392, fig. 4, 1705) work by quoting Plukenet's diagnosis : 'Euphrasia sinica, parietaririae foliis rubiae modo spicatis' Vahl (*op. cit.*) while treating *Justicia procumbens* Linn. had spoken about a variant of *J. procumbens* thus : 'variat spicis brevioribus densioribus pilosis Plukn. tab. 392. fig. 4. spicis longioribus glabris angustioribus Plukn. tab. 56, fig. 3...', thereby indicating the differences between Plukenet's tab. 392, fig. 4 and tab. 56, fig. 3. This is further strengthened by Roth's (Nov. Sp. Pl. 14, 1821) observation under *Justicia diffusa* Willd. : 'Nostrae plantae non male respondent figure Plukenet's Alm. Tab. 392, fig. 4...', and further on page 16 giving some similarities and differences between *J. procumbens*, *J. diffusa* Willd. and *J. vahlii* Roth. Thus, *Justicia* of Linnaeus, being composed of discordant plants, was split up into many genera, one among of which was '*Rostellaria*' (Nees, 1832). *Rostellaria* Nees, being a later homonym, was changed to *Rostellularia* by Reichenbach (1837). Curiously enough, Nees (1832 and 1847) does not speak of Plukenet's plates.

ously enough, Nees (1832 and 1847) does not speak of Plukenet's plates.

An examination of Plukenet's tables cited above reveals that Vahl indeed was right and that Willdenow was justified in describing the new plant. Willdenow states in the protologue : 'Clariss, Vahl, Symb. 2. p. 14. hanc cum praecedente conjunxit, seg mihi bracteis, calyce et foliis diverse, videtur. W.'

Study of microfiche of Willdenow's Herbarium (*see* Inter-Documentation Company—W. Willd. Herb. Museum Botanicum Berolinense 7440. no. 12, p. 312-329/1) No : 326 where Willdenow's two herbarium specimens have been photographed, viz. 724 and 818 indicates that 818 fits in well with *Justicia diffusa* Willd. while 724 is not distinctly discernible for definite prognostication. Paul Hiepko (Herbarium Willdenow Alphabetical Index, 64, 1972) has listed Willdenow's 326 under *Justicia diffusa* Willd.

Wallich (Wall. Cat. 1814) has dealt with four plants, cataloguing them under 2444 A, B, C : the collecting place of A is from Tavoy, dt. 14-9-1817 ; B is from Prome Hills, with no date given, Herb. Wight ; C is from Montes Monghyr, August 1820, and Hills oppositae, Pagahm', 24-12-1822. All the

specimens quoted more or less agree with Willdenow's protologue. Nees (1832 and 1847) quotes Wallich 2444 A, B, C, under *Rostellularia diffusa* (Willd.) Nees, while Anderson (in Journ. Linn. Soc. 9 : 512, 1867) working on the Indian Acanthaceae has not commented on Wall. Cat. 2444. A, B, & C.

C. B. Clarke (in Hook. f. Fl. Brit. Ind. 4 : 536, 1885), while reducing the genus *Rostellularia* to a sectional status under *Justicia* Linn. states, '...small closely allied weeds, abundant in the tropics all collected under 3 or 4 ill-defined species by T. Anderson. To facilitate their description it is necessary to arrange them in more species, or reduce them to var. of one.' Thus, in addition to var. *diffusa* he treats 4 varieties under it, viz. *prostrata*, *vahlîi*, *hedyotidifolia* and *rotundifolia* (= *orbiculata*). Intriguingly he has not included *Justicia micrantha* Wall. ex C.B.Cl. and *J. quinqueangularis* Koen. ex Roxb. under *J. diffusa*. It appears important that in all these taxa the cystoliths on leaves are arranged irregularly ascending from the midrib, in addition to shape and structure of bracts, bracteoles, calyces, etc. which indicates close relationship of these with Willdenow's *diffusa*.

Willdenow (*op. cit.*) describes *J. diffusa* thus : '*J. spici axillaribus terminalibus tetraphyllis glabris, bracteis calyce brevioribus foliis ellipticis.*' Willdenow 818, the type of the species, reveals several characters like the erect habit; bracts, bracteoles, and calyx lobes being ovate-acuminate, sparingly puberulous or not along the margins; capsules glabrous or with a few puberulous hairs at apex; cystoliths on leaves being irregularly ascending in the centre with a faint tendency to be transverse along the margin which point to some difficulties in reconciling to the broad circumscription assigned to it by Clarke, though his is by far the most natural classification of the genus to date.

Of the 4 varieties dealt with by Clarke the totality of the characters indicates that *J. orbiculata* and *J. hedyotidifolia* are more closely allied to *J. diffusa* than to *J. prostrata* : *J. orbiculata* has pubescence on the lower surface of leaves and *J. hedyotidifolia* has smaller leaves and calyx lobes hairy at apices. But for these small differences they do not seem to have any other character to warrant their being treated at specific level. Clarke (*op. cit.*) appears to be more logical in assigning them varietal status. Gamble (*op. cit.*) follows Clarke in assigning varietal status to only *J. hedyotidifolia*; the rest are treated at specific status. Interestingly, the present studies indicate that the array of characters which mark *J. prostrata* does not support its being treated at specific status : it falls within the ambit of Willdenow's *diffusa*, differing only in prostrate habit, perhaps due to ecological conditions, puberulous capsules, and cystoliths on leaves being prominently transverse along margin.

Summarising the studies then, *J. diffusa* Willd. has to be taken in a restricted sense having the following characters : plants erect, sometimes decumbent, drying greenish with a tinge of grey; leaves ovate, elliptic with cystoliths centrally ascending rather wavyly, and marginally transverse or not; inflorescences up to 10 cm long; bracts and bracteoles and calyx ovate-acuminate, faintly puberulous generally along margin; capsules glabrous or glabrescent with some puberulousness near the top.

The plants of *J. diffusa* Willd. are distributed from Tropical Africa (cf. C. B. Clarke in Thiselton Dyer's Fl. Trop. Africa 5 : 194, 1900) to India and Sri Lanka.

In the present work 4 varieties, viz. *diffusa*, var. *hedyotidifolia* (Wall. ex Nees) Ellis var. *prostrata* (Roxb. ex C.B.Cl.) Ellis var. *rotundifolia* (Nees) Ellis are recognised under *Rostellularia diffusa* (Willd.) Nees, and *crinita*, *quinqueangularis*, *vahlîi*, recognised at specific level. All these taxa can be

accommodated in a subsection, *Diffusa* Ellis, *subsec. nov.*, *Justicia diffusa* Willd. is chosen here as Type species and *Willdenow* 818 as its type.

Subsec. *Diffusa* Ellis, *subsec. nov.*

Herbae erectas, decumbentes procumbentes, crescentes in locos aridos saepe invadentes locos palustres, saepe caudicibus lignosis. Folia lineola cystolithis irregularibus positibus, sed generaliter ascendentibus versus vel fere parallilibus ad costo vel saepe transver-

sis versus marginem. Capsulae glabrae vel puberulae.

Species typica *Justicia diffusa* Willd.

Herbs erect, decumbent or procumbent, growing in dry localities often invading marshy places, often with woody rootstock. Leaves lineolate with cystoliths irregularly oriented but generally directed towards apex, or almost parallel to the midrib often transverse towards the margin. Capsule glabrous or puberulous.

Type species : *Justicia diffusa* Willd.

KEY TO THE SPECIES

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| 1a. Cystoliths on leaves minute, about 20 μ long, straight, ascending from the midrib or parallel to midrib : | |
| 2a. Calyx lobes bracts and bracteoles ovate, puberulous ; cystoliths on leaves numerous ; capsules puberulous | <i>vahlII</i> |
| 2b. Calyx lobes, bracts and bracteoles spatulate or oblanceolate, glabrous ; cystoliths on leaves sparse ; capsules glabrous | .. <i>quinqueangularis</i> |
| 1b. Cystoliths on leaves long, about 1 mm long, faintly bent in the middle, ascending from the midrib : | |
| 3a. Calyx lobes abruptly long-acuminate or caudate, prominently white-scarious margined below the middle | .. <i>crinita</i> |
| 3b. Calyx lobes ovate, white-scarious margined throughout | .. <i>diffusa</i> |

1. *Rostellularia vahlII* (Roth) Nees in Wall. Pl. Asiat. Rar. 3 : 102. 1832 et in DC. Prod. 11 : 376. 1847. *Justicia vahlII* Roth, Nov. Sp. Pl. 14. 1821 ; Gamble, Fl. Pres. Madras 1081. 1924 ; Santapau in Univ. Bot. Mem. Bombay 2 : 88. 1952. *J. diffusa* Willd. var. *vahlII* (Roth) C. B. Cl. in Hook. f. Fl. Brit. Ind. 4 : 538. 1885.

Erect or decumbent herbs, up to 70 cm high, often profusely branched, stems rotundly, faintly angled, slightly swollen at nodes, grooved, retrosely puberulous on the angles and almost glabrous in the grooves, rooting at nodes near the base ; root-stock often woody. Leaves up to 11 \times 2 cm, ovate, elliptic-ovate, linear-elliptic, or linear, acute, acuminate obtuse or acute at base, lineolate with cystoliths very minute about 20 μ long, numerous, ascending from the midrib ; petioles up to 0.5 cm long, puberulous to tomentose. Flowers pale pink with white tube maroon fish-bone markings on the

lower lip near the throat, up to 7 mm long, in terminal, close becoming interrupted racemes up to 18 cm long with rachises puberulous ; bracts 5 \times 2 mm prominently scarious margined, ovate, shortly acuminate, puberulous and pruinose without, glabrous within, hirsutely hairy or not along margin mostly towards apex ; bracteoles same as bracts, less broader, rather prominently keeled ; calyx lobe 4.5 mm long, elliptic-acuminate, thinly but more prominently scarious-margined, faintly puberulous without, glabrous within, tube 1 mm long ; corolla 7 mm long, sparsely puberulous without, densely pubescent within near the attachment of filaments ; upper lip slightly bilobed, lower trilobed ; anthers exerted laterally ; ovary seated on a cup-shaped gland, glabrous but becoming retrosely puberulous at maturity ; style placed on the groove formed on the lower lip, puberulous ; stigma simple. Capsules 7 mm long, solidly

stalked, retrorsely pubescent especially at top, becoming glabrous; seeds 2 mm across, slightly flattened, prominently tuberculate.

Flowering and fruiting : Almost throughout the year.

Selected exsiccatae : Etawah, Gangetic Plain, 25-11-1886, J. F. Duthie 6461; Jodhpur, March 1868, S.N. & S.L.; Badami, Sept. 1910, A. Meebold 11263; Hills W. Porharm, June 1885, J. S. Gamble 15757; Nantur, Godavari Dt. 28-11-1902, C. A. Barber 4946; Panthur, Chittoor Dt., 27-1-1918, C. E. C. Fischer 4255; Peninsulae Indiae Orientale, Herb. Wight 2257; Sakmamth, Godavari Dt., Feb. 1895, J. S. Gamble 15981; Sohela, Tonk, Rajasthan, 20-11-1973, B. V. Shetty 1073.

Type : Wallich Cat. No. 2443/g : (Herb. Heyne).

Rostellularia vahlii* (Roth) Nees var. *rupicola

Ellis in Bull. bot. Surv. Ind. 11 : 436-437. 1969.

This variety differs from var. *vahlii*, in having, (i) entirely prostrate habit, (ii) cystoliths on leaves rather sparse and irregularly placed, (iii) glabrous capsules and (iv) sessile and linear leaves.

Exsiccatae : Srisailam, Andhra Pradesh, 12-7-1963, Ellis 16842 (Type !); Srisailam, 5-12-1969, Ellis 32698.

It is of interest that Nees (*op. cit.* p. 376) treats a variety *graminea* Nees under *R. vahlii* (Roth) Nees, adducing the following characters 'foliis linearibus, caule magis diffuso'.

2. *Rostellularia quinqueangularis* (Koen. ex Roxb.) Nees in Wall. Pl. Asiat. Rar. 3 : 101. 1832 et in DC. Prodr. 11 : 375. 1847 ('*quinquangularis*'). *Justicia quinqueangularis* Koen. ex Roxb. Fl. Ind. 1 : 134. 1820; C.B. Cl. in Hook. f. Fl. Brit. Ind. 4 : 537. 1885; Gamble, Fl. Pres. Madras, 1081. 1924; Santapau, Bombay Univ. Bot. Mem. 2 : 89. 1952.

Marsh-loving herbs, 40-45 cm high, erect or decumbent, often rooting at nodes; stems angled, deeply grooved, lineolate. Leaves about 8 × 0.8 cm, elliptic, linear-elliptic, attenuate at base, glabrous, cystoliths arising from the midrib, hairy between the petioles of the opposite leaves. Flowers up to 1 cm long, in rather interrupted racemes 12 cm long; bracts 5 × 1 mm, linear-oblong, lineolate rather coriaceous, faintly-scarious-margined, bracteoles same as bracts; calyx 8 × 1 mm, lobes linear-acute with curved tip, rather scarious, tube 1 mm long; corolla 7 mm long, upper lobe 2-lobed, lower 3-lobed, glabrous without, densely hairy near attachment of filaments to the corolla; stamens 2, laterally attached at sinuses, anthers prominently 2-celled, lower prominently spurred; ovary ovoid with style having a few hairs along its length and placed in the groove in the upper lobe of the corolla. Capsules 5 mm long, clavate, glabrous; seeds 4, 1 mm across, flattened, tuberculate.

Selected exsiccatae : Burdwan, 12-12-1874, C. B. Clarke 2567 B; Burdwan 26-9-1873, C. B. Clarke 20160 A; Dominda, Chota Nagpur, Nov. 1886, Prain s.n.; Ranchi, 9-9-1896, Makim s.n.; Polavaram Agency, 20-9-1962, D. C. S. Raju 538.

Type : Wall. Cat. N : 2443/C !

Rostellularia quinqueangularis* var. *peploides

(Nees) Raizada, Suppl. Duthie's Fl. Gang. pl. 20.9.1976. *R. peploides* Nees in Wall. Pl. Asiat. Rar. 3 : 101. 1832 et in DC. Prodr. 11 : 375. 1847. *Justicia peploides* (Nees) Anders. in J. Linn. Soc. 9 : 511. 1867. *J. quinqueangularis* Koenig ex Roxb. var. *peploides* (Nees) C. B. Cl. in Hook. f. Fl. Brit. Ind. 4 : 537. 1885.

Erect or decumbent herbs growing in marshy places, about 40 cm high; stem angled, grooved, glabrous, often rooting at lower nodes. Leaves 4 × 1.5 cm, oblong, obovate, spatulate, attenuate, at base, glabrous cystoliths minute, generally ascending from

midrib, rather irregular. Flowers pink or purplish pink, about 0.6 cm long, in terminal spikes about 6 cm long (14 cm); peduncles up to 4 cm long, bracts up to 9×1 mm, linear-oblong or spatulate, scarious-margined, sparsely puberulous along margin, glabrous, lineolate; bracteoles same as bracts; calyx 7×1 mm, lobes linear-acute, scarious, tube 1 mm long; corolla same as rest of *Rostellularia* species; stamens laterally exerted; ovary glabrous with style sparsely puberulous or not. Capsules 7×1 mm, clavate, glabrous; seeds 1.5 mm across, flattened, tuberculate.

Flowering and fruiting : September-February.

World Distribution : INDIA : Rajasthan, Madhya Pradesh, Uttar Pradesh, Concan, Delhi.

Exsiccatae : Sillet, Wall. Cat. No. 2443/C ("Ad agros oryzauos prope Rajunahl Aug. 7, 1810").

3. *Rostellularia crinita* Nees in Wall. Pl. Asiat. Rar. 3:101. 1832 et in DC. Prodr. 11:373. 1847. *Justicia micrantha* Wall. [Cat. 2449. 1830. pp.] ex C.B. Cl. in Hook. f. Fl. Pres. Madras, 1080. 1925; Santapau in Univ. Bombay. Bot. Mem. 2:87. 1952. *Justicia neesii* Ramamurthy in Saldanha & Nicolson, Fl. Hassan dt., 551. 1976.

Erect herbs, about 20 cm high; stem angular, hirsutely hairy with bulbous-based hairs, intermixed with retrose puberulouscence. Leaves about 4×1.5 cm or more, ovate, elliptic-ovate, rounded at base, sparsely hairy, cystoliths parallel to the midrib in the centre or irregularly ascending in the centre from the midrib and transverse along margin; bracts and bracteoles 7 mm long, linear-acuminate, thinly scarious-margined, hirsutely hairy; calyx lobes 7 mm long, ovate, suddenly long-caudate from about the middle, prominently white scarious, hirsute along margin, lineolate; corolla pale purple, 7 mm long, upper lobe bilobed, lower trilob-

ed, faintly puberulous without, densely pubescent within near attachment of filaments to the corolla, tube 3 mm long; stamens 2, laterally attached to corolla, anthers prominently spurred by the lower cell; ovary and style sparsely pilose. Carpels 5 mm long, clavate, glabrous with a few hairs at tip; seeds about 1 mm across, flattened finely ridged.

Flowering and fruiting : July-October.

Distribution : Deccan, in dry localities of Andhra Pradesh and Karnataka.

Exsiccatae : Devarayanadurga, Tumkur Dt., 14.7.1978, N. S. Ravindra and S. R. Ramesh 1537; Nagari, Andhra Pradesh, W. Elliot s.n.; "Peninsula India Orientalis", Herb. Wight, Prodr. W.C. 1987 (Type! microfische) (2657, 2658); (Travancore) Kerala 19.4.1918, V. Narayanaswami s.n.; Narasapur, Medak Dt., Andhra Pradesh, K. M. Sebastine 6650.

Type : Wall. Cat. No. 2449 !

Thinking that Pohl's manuscript name had been validated by Nees in 1847, thus effecting a later homonym, Ramamurthy (*loc. cit.*) had proposed a new name under *Justicia* Linn. A. K. Mukherjee (Fl. Pachmarhi & Bori, p. 236. 1984) effected a new combination, *Rostellularia neesii*, based on Ramamurthy's (*loc. cit.*) new name. However, the specific epithet of Nees under *Rostellularia* Reichb. (*Rostellaria* Nees), viz. *R. crinita* has to be taken as that of a new species not in any way referable to *Justicia crinita* Thunberg, thus invalidating Mukherjee's new combination.

4. *Rostellularia diffusa* (Willd) Nees :

The necessity of treating 3 varieties in addition to var. *diffusa* under *Rostellularia diffusa* (Willd.) Nees has become indispensable because of the differences of external characters which, though not that marked, yet, are rather constant,

KEY TO THE VARIETIES

- 1a. Plants prostrate or decumbent, often rooting at nodes, drying green; leaves generally orbicular or broadly ovate with cystoliths parallel to the midrib in the centre and transverse along margin. *prostrata*
- 1b. Plants erect, not rooting at nodes, drying greenish grey; leaves ovate or elliptic ovate with cystoliths irregularly, sometimes wavyly ascending from the midrib: *rotundifolia*
- 2a. Leaves pubescent on both surfaces; plants often brown when dry ..
- 2b. Leaves sparsely hairy on both surfaces or glabrous; plants often greyish green when dry: *diffusa*
- 3a. Inflorescence up to 11 cm long; calyx lobes, bracts and bracteoles faintly puberulous. *diffusa*
- 3b. Inflorescences up to 6 cm long; calyx lobes, bracts and bracteoles glabrous with a few hairs at apex. *hedyotidifolia*

Rostellularia diffusa (Willd.) Nees var. **diffusa** in Wall. Pl. Asiat. Rar. 3 : 100. 1832 et in DC. Prodr. 11 : 371. 1847. *Justicia diffusa* Willd. Sp. Pl. 1 : 87. 1789; Roth, Nov. Sp. Pl. 14. 1821; C.B. Cl. in Hook. f. Fl. Brit. Ind. 4 : 538. 1885; Cooke, Fl. Pres. Bombay 410. 1904; Gamble, Fl. Pres. Madras 1081. 1924; Santapau, Bombay Univ. Bot. Mem. 2 : 87. 1952.

Erect herbs, about 50 cm high, generally turning grey on drying; stems grooved, retrosely puberulent, lineolate, roots dichotomously branched. Leaves up to 5 × 3 cm, ovate, oblong, elliptic, acute at base, sparingly hairy or not; cystoliths irregularly oriented; petioles up to 1.5 cm long. Flowers pink, 0.5 cm long, in terminal 5 cm (10 cm) long racemes; peduncles 3.5 cm long; bracts and bracteoles 4 mm long, ovate-acuminate, broadly ovate and vaginate at base, lineolate; calyx 4 × 1 mm elliptic-long acuminate, scarious, lineolate, hairy along margin; corolla 0.5 cm long, sparsely puberulous without on the lobes, pubescent near attachment of filaments; ovary with style lodged in the groove formed in dorsal corolla and sparingly a few haired along its length. Capsules 5 × 1 mm, clavate, sparsely puberulous when young; seeds 1 mm across, flattened, tuberculate.

Flowering and fruiting : July-January.

Distribution : Andhra Pradesh, Kerala, Bihar, West Bengal, Orissa, Rajasthan, Madhya Pradesh.

Exsiccatae : Vishranthwadi, Poona, 23-9-1960, M. Y. Ansari 64747; Poona, 12.9.1878, G. King s.n.; Ajmir, Apnere, 16.8.1875

Collector? 151; Dhupgarh, Hoshangabad, 20.8.1949, V. Narayanaswami 3384; Hazaribagh, 3.10.1873, C. B. Clarke 20804; Nonda, Singbhum, Chota Nagpore, 15.11.1883, C. B. Clarke 34232. Devarakonda 7.10.1921. V. Narayanaswami 473; Horseleykonda, July 1884, J. S. Gamble 15190. Bengal: Maltha, Purulia Dt., 11.9.1964, K. C. Malick 57 Karnataka: Biligiriragan Hills, Mysore Dt., 5.9.1978, Saldanha & Ramesh 2473; Swamimali Forest, Sandur, 10.1.1980, B. R. Ramesh & S. B. Manohar 10717; 'Maisor & Carnatic', date? G. Thomson s.n.; Shencottah to Aryankadu, 8.9.1910, C.E.C. Fischer 1596; Kullar Hills, Travancore, 1.9.1913, M. Rama Rao 1592; Mundomurali, 27.8.1913, C. C. Calder & S. Ramaswami 253; Peeramade, Dec. 1910, A. Meebold 12905 (912). Tamil Nadu: Courtallam, Aug. 1835, Wight 660.

Type : Willdenow 818, Willdenow 724 and Klein 326 (Paul Hiepko in Herbarium Willdenow Alphabetical Index, 1972).

Rostellularia diffusa (Willd.) Nees var. **prostrata** (Roxb. ex C.B. Cl.) Ellis, comb. nov. *Justicia prostrata* (Roxb. ex C.B. Cl.) Gamble, Fl. Pres. Madras 1081. 1924; Santapau in Univ. Bombay Bot. Mem. 2 : 88, 1952. *Justicia diffusa* Roxb. var. *prostrata* C.B. Cl. in Hook. f. Fl. Brit. Ind. 4 : 538. 1885. *Rostellularia prostrata* (Roxb. ex C.B. Cl.) Majumdar in Bull. bot. Soc. Bengal 25 : 75. 1971.

Herbs prostrate, decumbent, sometimes spreading, rarely erect, about 8 cm high; stems faintly angular, sparsely hairy, nodes

often swollen; roots spreading, often present at nodes. Leaves about 4×3 cm, broadly ovate, or orbicular, cordate or rounded at base, rather thin, lineolate, with cystoliths ascending from the midrib or parallel to it and transfer towards the margin, sparsely hairy; petioles about 1 cm long, patently hairy. Flowers pinkish, about 5 mm long, in terminal and axillary about 4 cm long racemes; bracts 4×2 mm, greyish or green with white margins, ovate-acuminate, rounded at base, lineolate with cystoliths on margins prominent, puberulous, hairy along margin; bracteoles smaller, similar to bracts; calyx lobes 4 mm long, linear-elliptic, scarious sparsely hairy generally along margin, tube small corolla 5 mm long, upper shortly 3-lobed, lower bifid, pubescent without, glabrous within except near the attachment of epipetalous stamens; anthers bilobed, lower prominently spurred, upper a few haired; ovary puberulous, seated on a small disk, style placed in the groove made by the foldings of the corolla within, hairy, stigma shortly bifid. Capsules 4×2 mm, clavate, puberulous, a few haired at the top; seeds 4, faintly flattened, tuberculate.

Selected Exsiccatae: Tamil Nadu: Saidapet. 1878, T. Abboy Naidu s.n.; Mundanthurai, 17-9-1915, K. Rangachari s.n. Tinnevely Ghats date not given, R. H. Beddome s.n.; Ellore, 1879 G. Bidie s.n.; Karnataka; Maisor & Carnatic, G. Thomson s.n. Andhra Pradesh: Sukmanori Hill, Godavari, Feb. 1885, J. S. Gamble s.n.; G. Thomson s.n.; Raman Drug, Nov. 1887, M. A. Lausar s.n.

This plant is distributed from India to Malaysia. The varietal status assigned to it by C. B. Clarke (*op. cit.* p. 538) appears to be logical, for depending upon the habitat the habit of the plant varies from a small, erect, almost glabrous plant to usually decumbent, prostrate, spreading herbs. However, the prostrate, spreading habit with

generally orbicular leaves and nodular stems give a different look, distinct from *Rostellularia diffusa* (Willd.) Nees. The population needs to be recognised at varietal status.

Rostellularia diffusa (Willd.) Nees var. **hedyotidifolia** (Nees) Ellis *comb. nov.* *R. hedyotidifolia* Nees in Wall. Pl. Asiat. Rar 3: 100. 1832 & in DC. Prodr. 11: 370. 1847. *Justicia diffusa* Willd. var. *hedyotidifolia* (Nees) C.B. Cl. in Hook. f. Fl. Brit. Ind. 4: 538. 1885; Gamble, Fl. Pres. Madras, 1081. 1924.

Herbs erect, rarely decumbent, about 20 cm high, generally drying greyish or brownish; stem usually glabrous, often woody at base, rootstock woody or not. Leaves about 2×0.7 cm, ovate, elliptic, rounded at base, glabrous or not. Rest of the characters same as var. *diffusa* except for calyx lobes which are sparsely hirsute at apex.

Selected Exsiccatae: Tamil Nadu: Kodaikanal, Oct. 1943. M.S.N. (sine numero!); Mahendragiri, below Bangalow, 31.12.1922. Collectori 150; Mahendragiri, date P. F. Fyson 134; Kotagiri, Nilgiris, August 1916, L. J. Sedgwick 1765; Kuttathur, Javadi Hills, 35.12.1954, B. G. L. Swamy & E. Govindarajulu 866.

Type: Wall. Cat. 245.

Rostellularia diffusa (Willd.) Nees var. **rotundifolia** (Nees) Ellis, *comb. nov.* *R. rotundifolia* Nees in Wall. Pl. Asiat. Rar. 3: 100. 1832 & in DC. Prodr. 11: 370. 1847. *Justicia diffusa* Willd. var. *orbiculata* (Wall. ex T. Anders.) C.B. Cl. in Hook. f. Fl. Brit. Ind. 4: 638. 1885; Santapau in Univ. Bombay Bot. Mem. 2: 87. 1952 *Rostellularia diffusa* (Willd.) Nees var. *orbiculata* (Wall. ex T. Anders.) Ellis in Biol. Mem. 2: 109. 1977. *Justicia orbiculata* [Wall. Cat. 2489. 1830.] ex T. A. Anders in J. Linn. Soc. 9: 512. 1867.

Except for the rather dense pubescence on the under surface of the leaves and slightly orbicular leaves this is exactly like var. *diffusa*. in microfische Hb. Heyne No. 2441, Futurah ghur, *Griffith s.n.*

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