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Two new species of the genus *Spiradiclis* (Rubiaceae) from India

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&
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RÉSUMÉ

DEB, D. B. & R. C. ROUT (1989). Deux nouvelles espèces du genre *Spiradiclis* (Rubiaceae) des Indes. *Candollea* 44: 225-229. En anglais, résumés français et anglais.

Spiradiclis arunachalensis Deb & Rout, spec. nov. et *S. seshagirii* Deb & Rout, spec. nov. sont décrites. *S. cylindrica* Hook. f. est rétablie comme espèce distincte. *S. caespitosa* Bl. forme *subimmersa* H. S. Lo est mise en synonymie de *S. arunachalensis*.

ABSTRACT

DEB, D. B. & R. C. ROUT (1989). Two new species of the genus *Spiradiclis* (Rubiaceae) from India. *Candollea* 44: 225-229. In English, French and English abstracts.

Spiradiclis arunachalensis Deb & Rout, spec. nov. and *S. seshagirii* Deb & Rout, spec. nov. are described. *S. cylindrica* Hook. f. is reinstated as a distinct species. *S. caespitosa* Bl. forma *subimmersa* H. S. Lo is treated as a synonym of *S. arunachalensis*.

BLUME (1826) described the genus *Spiradiclis* as monotypic. HOOKER (1873) treated two species. For a long time, the genus was known to comprise 3 or 4 species (HOOKER, 1880; SCHUMANN, 1891; AIRY SHAW, 1973). The genus has been recently revised by H. S. Lo in Act. Bot. Austro Sinica 1: 32-36, 1983, as comprising 13 species, one variety and two forms, of which 8 species and one form are described as new; *S. cylindrica* is reduced to a form of *S. caespitosa* by Lo (l.c.).

The authors of this paper while working on the genus *Spiradiclis* Bl. in India could not agree with Lo (l.c.) in reducing *S. cylindrica* to a synonymy and in the status of *S. caespitosa* Bl. forma *subimmersa* Lo (l.c.) as the distinctions are so much that they deserve to be treated as distinct species. Lo (l.c.), however, does not appear to have examined the specimens extant in Indian herbaria. Two new species are described below.

***Spiradiclis arunachalensis* Deb & Rout, spec. nov. (Fig. 1).**

Differt ab *S. caespitosa* in foliis angustioribus, subcoriaceis, basim attenuatis, hypanthiis, calycibusque pubescentis, calycis dentibus latioribus; corollarum tubis puberulis extus, antheris longioribus linearibusque, stylis, stigmatibus, capsulisque pubescentibus, inter alia; a *S. cylindrica* foliis angustioribus, hypanthiis, calycibusque pubescentibus, calycis dentibus majoribus, corollarum tubis grandioribus, puberulis extus, filis corollarum tubis brevioribus, antheris longioribus, stigmatibus, capsulisque pubescentibus, inter alia.

Typus: India: Arunachal Pradesh, Subansiri dist., Khru river banks, 17.11.1964, A. R. K. Sastry 40721 (holo: CAL); **paratypi:** Abor hills, Janakmukh, 14.12.1911, I. H. Burkill 37134 (CAL); Aka

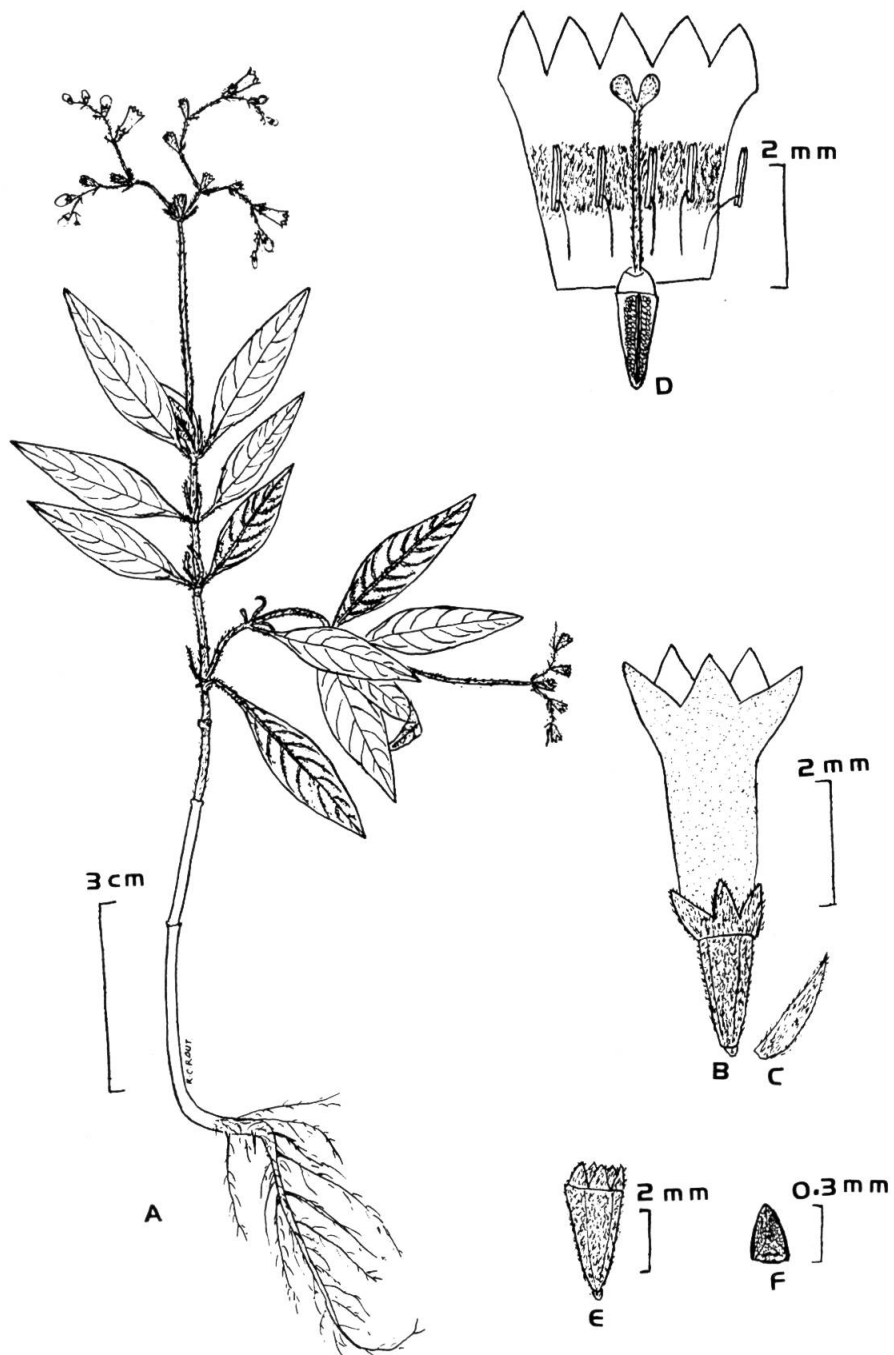


Fig. 1. — *Spiradiclis arunachalensis* Deb & Rout, spec. nov.
 A, habit; B, flower; C, bract; D, flower split opened showing floral parts; E, fruit; F, seed.

Hills, *N. L. Bor 1447* (CAL). Nagaland, Neechugard, 18.10.1885, *C. B. Clarke 40883A* (CAL); Nam-bishi, 900 m, Dec. 1907, *A. Meebold 7413* (CAL); Assam-Dekho valley, 120 m, 2.4.1895, *G. Watt 10347* (CAL).

Differs from *S. caespitosa* in narrower subcoriaceous leaves attenuated at base, hypanthium and calyx pubescent, calyx-teeth broader, corolla tube puberulous outside, anthers longer, linear; style, stigma and capsule pubescent, amongst others; and from *S. cylindrica* in leaves narrower, hypanthium and calyx pubescent; calyx-teeth larger, corolla tube larger and puberulous outside; filaments shorter than the corolla tube, anther larger, stigma and capsule pubescent.

Herbs 0.13-0.24 m in height, erect, more or less branching; stem stout, terete or angled, glabrous or pubescent. Leaves opposite, decussate, rarely falsely whorled above, petiolate, 1.5-7.5 × 0.3-1.3 cm, elliptic-lanceolate or oblanceolate, acute at apex, narrowed at base, subcoriaceous, glabrous or scabrous above, pubescent on the nerves beneath; lateral nerves 6-11 pairs, slender, alternate or subopposite, distinct; petiole 0.2-1.0 cm, slender, pubescent; stipules persistent, interpetiolar, 4-10 × 1.0-2.5 mm, subulate, pubescent. Inflorescence terminal or axillary peduncled, dichasial helicoid cyme, 4.5-14.0 cm long, pubescent; peduncle 2.0-6.0 cm long, pubescent; bracts ± 2-3 × 0.3 mm, linear-lanceolate, pubescent. Hypanthium ± 1.7 × 0.7 mm, obconic, ribbed, pubescent. Calyx tube ± 0.3 × 1.3 mm, obconic, pubescent; teeth 5-6, 0.6-0.7 × 0.5 mm, triangular, acute at apex, pubescent. Corolla tube 3.2-3.6 mm long, 1.5 mm across, campanulate, puberulous outside, pubescent within at the middle; lobes 5, 0.8-1.2 × 0.8-1.0 mm, ovate, acute at apex, pubescent outside. Stamens 5; filaments 1.0 mm, slender, glabrous, adnate above the base of the corolla tube and alternating with the lobes; anthers 1.0 mm long, linear, dorsifixed, 2-lobed, dehiscent longitudinally. Ovary 1.6 × 0.6 mm, 2-loculed, with numerous ovules on elongated axile placenta; disk 0.4 × 0.6 mm, annular; style 2.5-2.8 mm, slender, pubescent; stigma 2-lobed; lobes 0.5-0.6 × 0.3-0.4 mm, obovate, puberulous. Capsule 2.5-4 × 1.5-2 mm, obconic, ribbed, pubescent, dehiscent loculicidally and septicidally from above. Seeds numerous, 0.3 × 0.2 mm, angled; testa reticulate, embryo microscopic; albumen fleshy.

Flowering and fruiting: October-April.

Distribution: India: Arunachal Pradesh, Assam, Nagaland; China.

Note: Lo (l.c.) treated *C. B. Clarke 40883D* at K as the type of *S. caespitosa* Bl. forma *subimmersa* Lo, duplicate of which extant in CAL is treated here as a paratype of this species. The Chinese specimens cited by him, however, have not been examined by the present authors.

***Spiradiclis seshagirii* Deb & Rout, spec. nov. (Fig. 2).**

Differt ab *S. bifida* in hypanthiis calycibusque pubescentibus; corollis majoribus, pubescentibus utrinque infra faucem intus villosis, collarum lobis longioribus; filamentis brevioribus, crassioribusque, antheris majoribus, stylis crassis, pubescentibusque, stigmatum lobis majoribus, pubescentibusque, discis grandioribus; capsulae pubescentibus, inter alia.

Typus: India: Arunachal Pradesh, Siang dist., Tutin, 690 m, 6.11.1958, *R. S. Rao 17354* (holo. and isotypi CAL); **paratypi:** Tuting to Minguing, 900-1110 m, 14.11.1958, *R. S. Rao 17648* (CAL); Garsung to Eyo, 600 m, 22.1.1958, *R. S. Rao 17932* (CAL).

Differs from *S. bifida* in hypanthium and calyx pubescent; corolla larger, pubescent on both sides, villous below the throat within, corolla-lobes longer, filaments shorter and stouter, anthers larger, style stout, pubescent, stigma lobes longer, pubescent, disk larger, and capsule pubescent, amongst others.

Shrubs 1-2.1 m in height, erect, branched; stem angled, pubescent. Leaves opposite, decussate, rarely falsely whorled above, petiolate, 6-20 × 2-7 cm, elliptic, oblong, ovate-elliptic or obovate, acute or acuminate at apex, acute or attenuated at base, membranous, glabrous above, pubescent on the nerves beneath; midrib subcanaliculate and glabrous above; lateral nerves 15-22 pairs, alternate or subopposite, slender, more prominent beneath; petiole 0.3-2.5 cm, pubescent; stipules persistent, interpetiolar, 6-12 × 2-3 mm, subulate with a broad base, pubescent outside, glabrous within. Inflorescence terminal peduncled paniculate cymes, 10.0-33.0 cm long, pubescent; pedun-



Fig. 2. — *Spiradiclis seshagirii* Deb & Rout, spec. nov.
 A, habit; B, flower; C, bract; D, flower split opened showing floral parts; E, fruit; F, seed.

cles 1-3, 6.5-12.5 cm long, cyme branches short, 0.5-2.5 cm; bracts 1-4 × 0.3-0.5 mm, linear, pubescent. Flowers about 80-500, sessile or subsessile, 5-merous; pedicel 0-1.2 mm, pubescent. Hypanthium 1-2 × 1.0-1.8 mm, obconic, ribbed, pubescent. Calyx-tube ± 0.2 × 1.5-1.8 mm, obovate, pubescent; teeth 5, ± 0.4 × 0.8 mm, broadly triangular, obtuse at apex, pubescent. Corolla-tube 1.8-3.0 mm long, 2-2.5 mm across, pubescent on both sides, villous below the throat within; lobes 5, 1.5-1.8 × 0.6-1.0 mm, narrowly triangular, acute, pubescent. Stamens 5; filaments ± 0.6-1.0 mm, stout, glabrous, adnate above the base of corolla and alternating with the lobes; anthers 0.7-1.0 mm, dorsifixed, 2-lobed, oblong, obtuse at apex, glabrous, longitudinally dehiscent. Ovary 0.8-1.5 × 0.8-1.6 mm, 2-loculed, with numerous ovules on elongated axile placenta; disk 0.8-1.5 × 0.8-1.8 mm, conical; style 1.3-1.7 mm long, stout, pubescent; stigma 2-lobed; lobes 0.6 × 0.6 mm, pubescent. Capsules 2-3 × 1.8-2 mm across, subglobose, dehiscent loculicidally and septically. Seeds numerous, 0.3-0.4 × 0.25-0.35 mm, angled, glabrous; testa reticulate; embryo microscopic; albumen fleshy.

Flowering and fruiting time: November-December.

Distribution: India: Arunachal Pradesh, Siang distr.

Note: this species is named after the collector, Dr. Rolla Seshagiri Rao.

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