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A new species of *Scurrula* L. (Scurrulinae: Loranthaceae) from India

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ABSTRACT: *Scurrula neoraindica* L.J. Singh,, V. Ranjan, Anant Kumar & G. Krishna (Loranthaceae) is described and illustrated from Neora Valley National Park of West Bengal, India as a new species along with an inventory of host species and conservation status. The new species closely resembles *S. parasitica* L. and *S. paramjitii* L.J. Singh of the sub-tribe Scurrulinae of Loranthaceae. However, the new species is distinct in morphology of vegetative and reproductive characters from all previously known species. A detailed description, photographs, distribution, illustrations, comparative table of key characters and an identification key to *Scurrula* species of India are provided.

KEY WORDS: Gondwanan loranthstocks, Loranthaceae, new species, Parasitization and haustorial system, *Scurrula neoraindica*.

INTRODUCTION

Scurrula is well-recognized genus in the largest mistletoe family, Loranthaceae (Barlow, 1997). It was originally described by Linnaeus (1753). Thereafter, the genus *Scurrula* L. has been studied by various workers. It is one of the ancestral stock from which some endemic Malasian genera have been derived and probably established there following the original Gondwanan fragmentation (Barlow, 1990).

The genus is related to unspecialized derivative of a Gondwanan stock, *Dedrophthoe* Mart., reached Asia after the fragmentation of Gondwana and differing in the morphology of fruit and small size but more strongly zygomorphic 4-merous flowers. It is also closely related to *Taxillus* Tiegh. and difficult to delineate from each other but on appropriate taxonomic treatment especially based on historical biogeography interpreted from morphological, systematic and karyological data, they can be differentiated by the combination of characters (Parkinson, 1923; Ridley and Hutchinson, 1924; Danser, 1929, 1931, 1933, 1935, 1938; Kuijt, 1964, 1969, 1981, 2013; Barlow, 1966, 1974, 1984, 1990, 1991, 1995, 1997, 2002; Wiens, 1987; Rohde, 1993; Dean *et al.,*1994; Polhill and Wiens, 1998; Wilson and Calvin, 2006a,b; Vidal-Russell and Nickrent, 2008a,b; Nickrent *et al.,* 2010, 2015; Watson, 2011; Su *et al.,* 2015, 2021; Liu *et al*., 2018; Le *et al.,* 2024).

In 1991, Barlow's revealed that their affinities are distinctly with the Afro-Indian loranths, where they represent a relatively unspecialized element. Two genera, *Taxillus* and *Scurrula* are part of floristic elements of Gondwanan origin, migrated to the region from the Asian mainland, underwent limited species radiation, and making a limited advance eastwards across Charles' Line. Barlow (1991) stated that their taxonomic and bio-geographic histories may have been different, because *Scurrula* has diversified to produce local endemic species and has made a limited transgression eastwards across Charles' Line, whilst *Taxillus* is represented only by a single widespread Asian species which has reached Borneo and the Philippines. More recently Le *et al.,* (2024) used three morphological characters viz.: Bract length, stigma and fruit shape in the molecular phylogenetic study and revealed that both genera, *Taxillus* and *Scurrula* are very similar in morphology, and they share ancestral morphological states of most characters. However, they have evolved differently in the shape of fruit and stigma. Morphological characterization revealed that fruits of *Scurrula* are pyriform or clavate. At the same time those of *Taxillus* are usually ellipsoid, ovoid, or cylindrical, although, the clade of these sympatric genera is characterized by bract length. Taxonomic history indicates that the genus *Scurrula* presents a major source of taxonomic difficulty at the species level, even in a family such as Loranthaceae where such difficulty is common. Its native range is tropical and subtropical Asia and comprises ca 27 species (Barlow, 1997; POWO, 2024).

In India, *Scurrula* occurs throughout the country including Andaman and Nicobar Islands (ANI) and comprises ca.12 species including the new species (*S. neoraindica*) described here, In India many species are aggressive with a broad host range and often occur on

cultivated trees (Parkinson, 1923; Duthie 1903; Fischer 1926; Gamble 1967; Wiens, 1987; Rajsekaran, 2012; Singh, 2015). India is an assemblage of diversified phyto-geographical provinces with hot spots of plant diversity where recent plant explorations have resulted in discoveries of novelties in loranthaceae (Singh 2013a, b, 2015, 2021,2023; Singh *et al*., 2014, 2016; Singh and Murugan, 2013, 2014; Singh and Ranjan, 2013, 2021; Singh *et al*., 2020a, b, 2021; Sivaramakrishna *et al*., 2021).

During botanical explorations in the Neora Valley National Park of West Bengal, India conducted between 2016 and 2019, the authors came across an interesting specimen of Loranthaceae. On critical examination based on morphological characterization, and comparative study with specimens held in Indian herbaria and with digital herbaria which appear to fit into the genus *Scurrula* and deserved to get specific status as novelty. Hence present authors propose to recognize the taxon here *S. neoraindica* as new to science for the first time.

MATERIALS AND METHODS

Specimens were collected from the Neora Valley National Park of West Bengal, India during the field studies. Herbarium specimens were prepared according to standard techniques (Johnston, 1939; Benson, 1962). The descriptions and illustrations were made based on living specimens and field data. Plants were photographed and GPS coordinates were recorded.

To ascertain the distinctiveness of new species, we undertook morphological comparisons to a range of specimens, including closely related species based on herbarium specimens housed in Indian herbaria (BSD, BSID, CAL, DD, PBL) and other online herbaria through eFloras, 2008; WCSP, 2012; GBIF, 2020; JSTOR, 2020; The Herbarium Catalogue, 2021; POWO, 2024 and the relevant literature (Linnaeus, 1753; Roxburgh, 1832;Hooker, 1890; Danser, 1929, 1931, 1933, 1938; Barlow, 1990, 1991b, 1997; Wilson and Calvin 2006a,b; Vidal-Russell and Nickrent 2008a, b; Nickrent *et al*., 2010; Watson, 2011; Kuijt 2015; Kuijt and Hansen, 2015; Su *et al*., 2015; Liu *et al.,* 2018; Su *et al*., 2021; Le *et al.,* 2024) were consulted.

TAXONOMIC TREATMENT

Scurrula neoraindica L.J. Singh,, V. Ranjan, Anant Kumar & G. Krishna, ***sp. nov.*** **Figs. 1–5**

Type: INDIA. West Bengal, Kalimpong, Neora Valley National Park, Ruka, 27°125518"N, 88°791255"E. 1829.7 m, 25th September 2019, *Vinay Ranjan, Gopal Krishna and Anant Kumar 086158* (holotype: CAL; isotypes: CAL).

Description: Hemi-parasitic shrubs. **Young parts** with dense light pink (coral) or white indumentum of stellate hairs, becoming sparse on mature stem, leaf (both surfaces), bract, flowers and fruits: stellate hairs of corolla and fruit intermixed with matted prolate or rhomboidal scale- like structure. **Stem**s branched, profusely lenticellate. **Leaf blade** lanceolate dimorphic, sage green, pubescent on both sides, abaxially bright green and adaxially sage green, 6.5–12.8 × 3.5–5.0 cm, base obtuse, apex attenuate; venation anastomosing (pinnate with midrib, the main laterals and reticulate veins), distinct on both sides and more prominent abaxially and somewhat depressed adaxially, with 7–8 pairs of major lateral veins. **Petiole** 0.6-1.0 cm long; **Inflorescence** several at leafless nodes usually or axils 3–14 flowered sub-umbellate raceme; axis (peduncle) 0.2–0.3 cm long, slender; pedicels 0.5–0.6 cm long slender; bract 1 under each flower, lanceolate, acute, light brown, erect or with sheathing base and acuminate apex, clasp around the base of ovary, persistent usually, sometimes caducous, forming visible scars, 2–4 mm long. **Flowers** pubescent/ tomentose of stellate hairs, covered with matted scale like structure, sage green, bisexual, zygomorphic, sympetalous, 4-merous, sage green with bright red below the middle (at base) on the outer side, often bright green on the inner side. **Corolla** in mature bud 1.3–2.0 cm long, dimorphic, sage green above, bright red below the middle (at base), often bright green on the inner side, pubescent/ tomentose of stellate hairs, covered with matted scale like structure, slightly curved before anthesis, hooded (like cobra head) at apex; tube 1.0-1.5 cm long, ventricose at base, deeply split at above the middle, with the hooded lobes, reflexed 0.3–0.5 cm higher to the outer side at anthesis; reflexed corolla lobes spathulate. **Stamens** 4, erect; anther linear, ca 4–6 mm long, about as long as the free part of the filament, red tinge with yellow; filament subterete, adnate to the corolla, black. **Ovary** inferior, obconical, 4–5 mm long, unilocular; placentation basal; style simple, curved, red, with appressed ciliated hairs, filiform, 1.6–2.0 cm long; stigma clavate or knob like. **Fruit** 1.0–1.3 cm long including a thick stripe, 0.6–1.0 cm long, rounded at the apex, with single seed in the widest part of the fruit, pubescent/ tomentose of stellate hairs intermixed with matted scale like structure; sage green when young, turned reddish brown when mature; exocarp leathery; endocarp viscous.

Distribution: India, West Bengal, Kalimpong District, Neora Valley National Park, Ruka (Fig.5).

Habitat and Ecology: Humid, inland forest; altitude: 1829.7 m to 1867.9 m, recorded hosts include *Sloanea dasycarpa* Hemsl. (Elaeocarpaceae)

Phenology: Mature flowers were collected from the end of September to November and mature and immature fruits were collected from October to December.

Etymology: The new species has been named after the type locality; Neora Valley of India.

Parasitization and Host Inventory: During floristic surveys, we observed that *Scurrula neoraindica* shows specific mode of infestation and was found growing as an

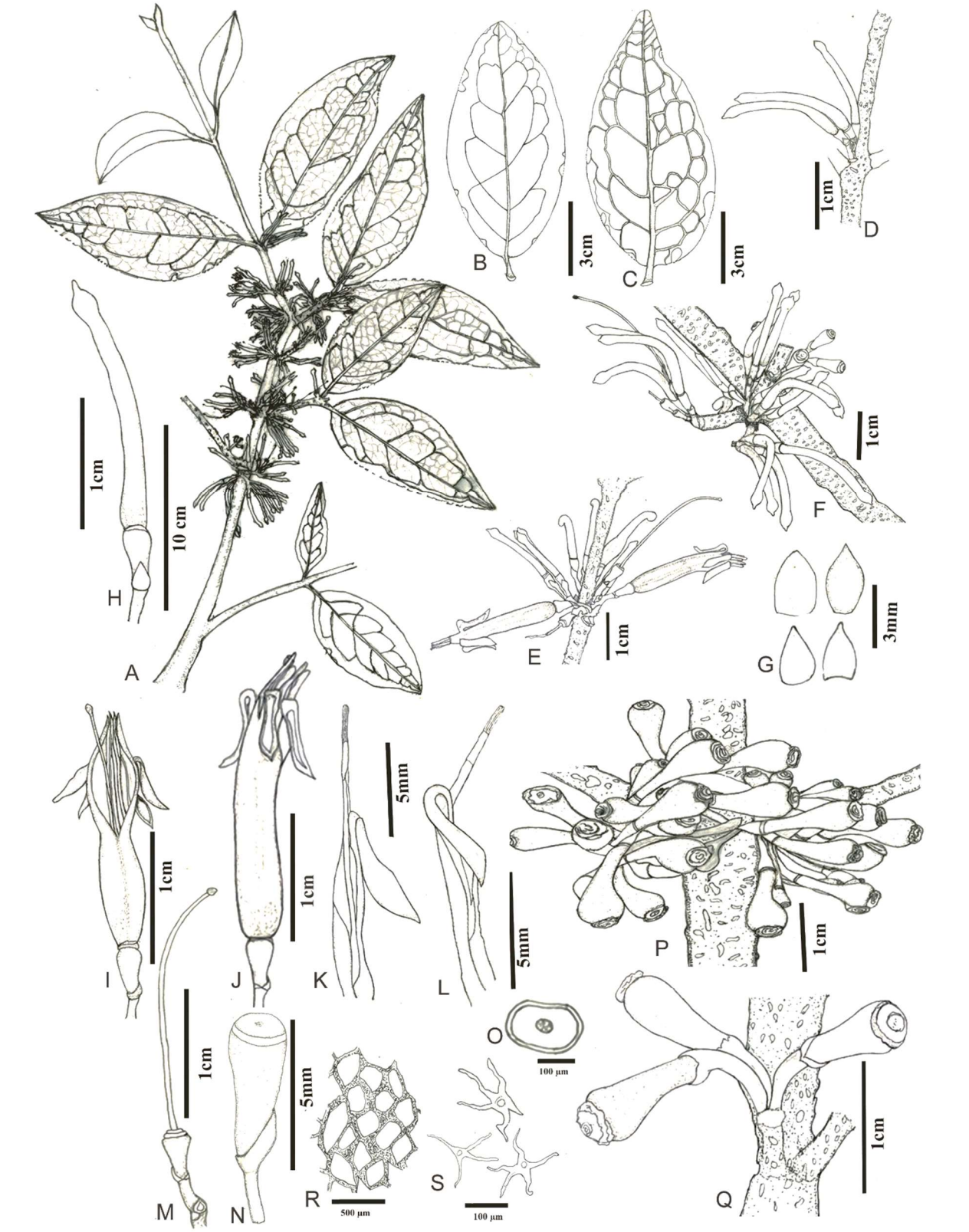

Fig. 1. ***Scurrula neoraindica***. **A.** Twig with inflorescences. **B.** Abaxial surface of leaf blade with anastomosing venation. **C.** Adaxial surface of leaf blade with anastomosing venation. **D-F.** Inflorescence details. G. Bracts. **H.** Flower bud with hooded (cobra head like) apex. **I-J.** Flowers at anthesis. **K-L.** Petals with reflexed lobes and stamen. **M.** Pistil. **N.** Ovary. **O.** Ovary, in cross section **P-Q.** Infructescence. **R.** Matted prolate or rhomboidal scale- like structure of fruit surface. **S.** Stellate hairs.

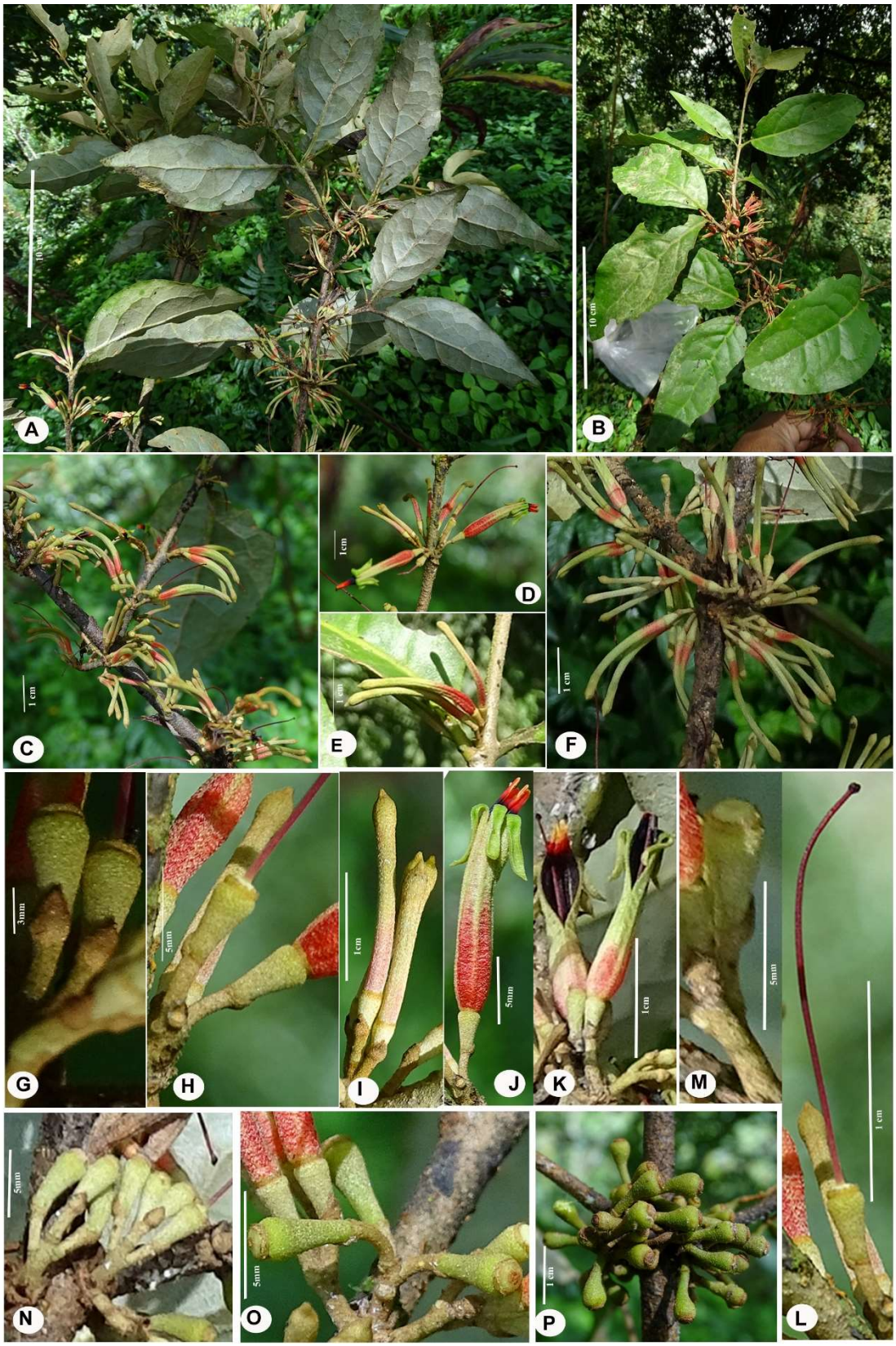

Fig. 2. ***Scurrula neoraindica***. **A-B.** Habit. **C-F.** Details of inflorescence. **G-H.** Bract clasp around the base of ovary and indumentum. **I.** Flower buds with hooded (cobra head like) apex. **J-K.** Flowers at anthesis with reflexed corolla lobes and indumentum. **L.** Pistil. **M.** Ovary and bract. **N-P.** Infructescence and fruit details.

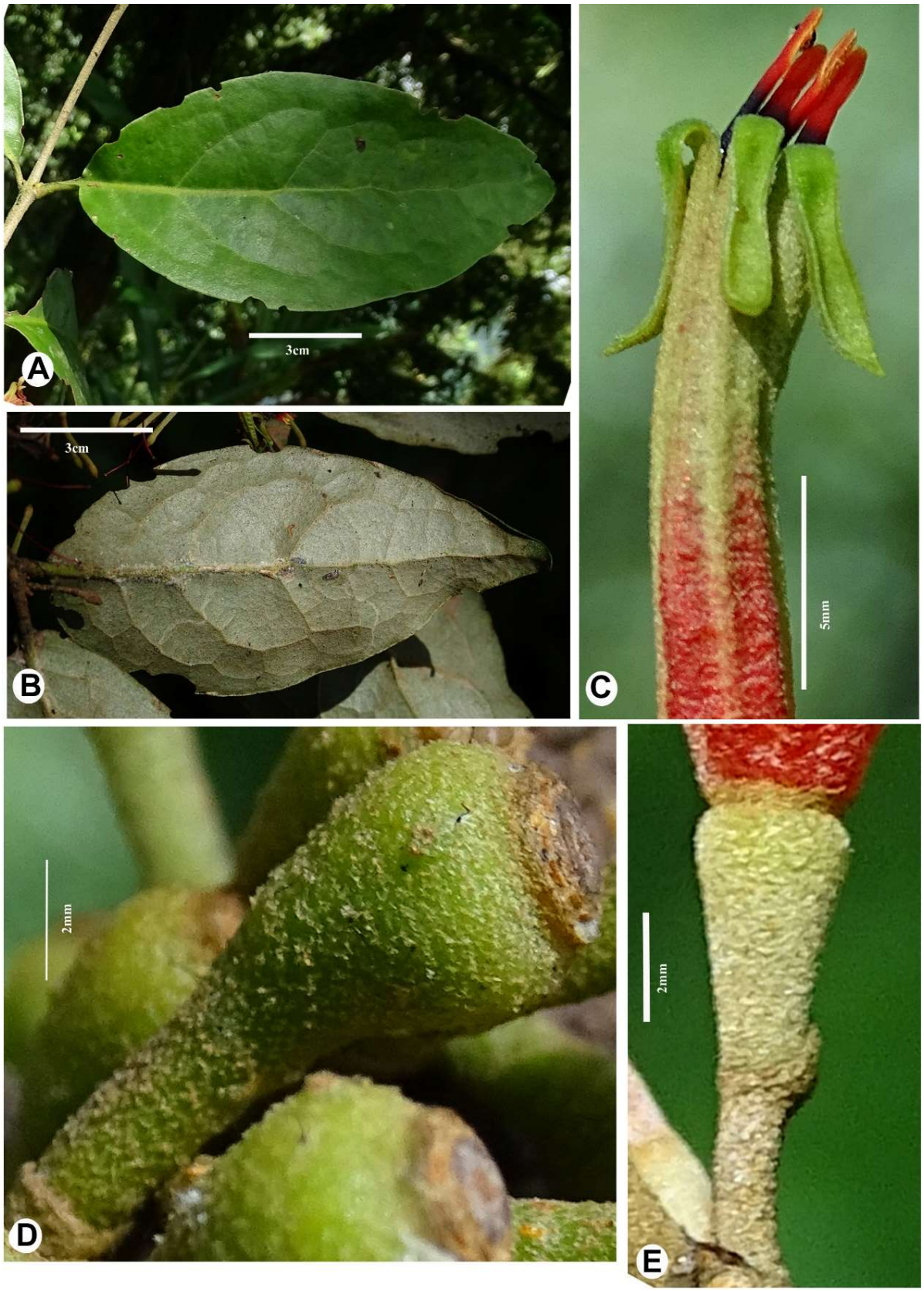

Fig. 3. ***Scurrula neoraindica***. **A.** Abaxial surface of leaf blade with anastomosing venation. **B.** Adaxial surface of leaf blade with anastomosing venation. **C.** Corolla. **D.** Ovary and bract. **E.** Fruit.

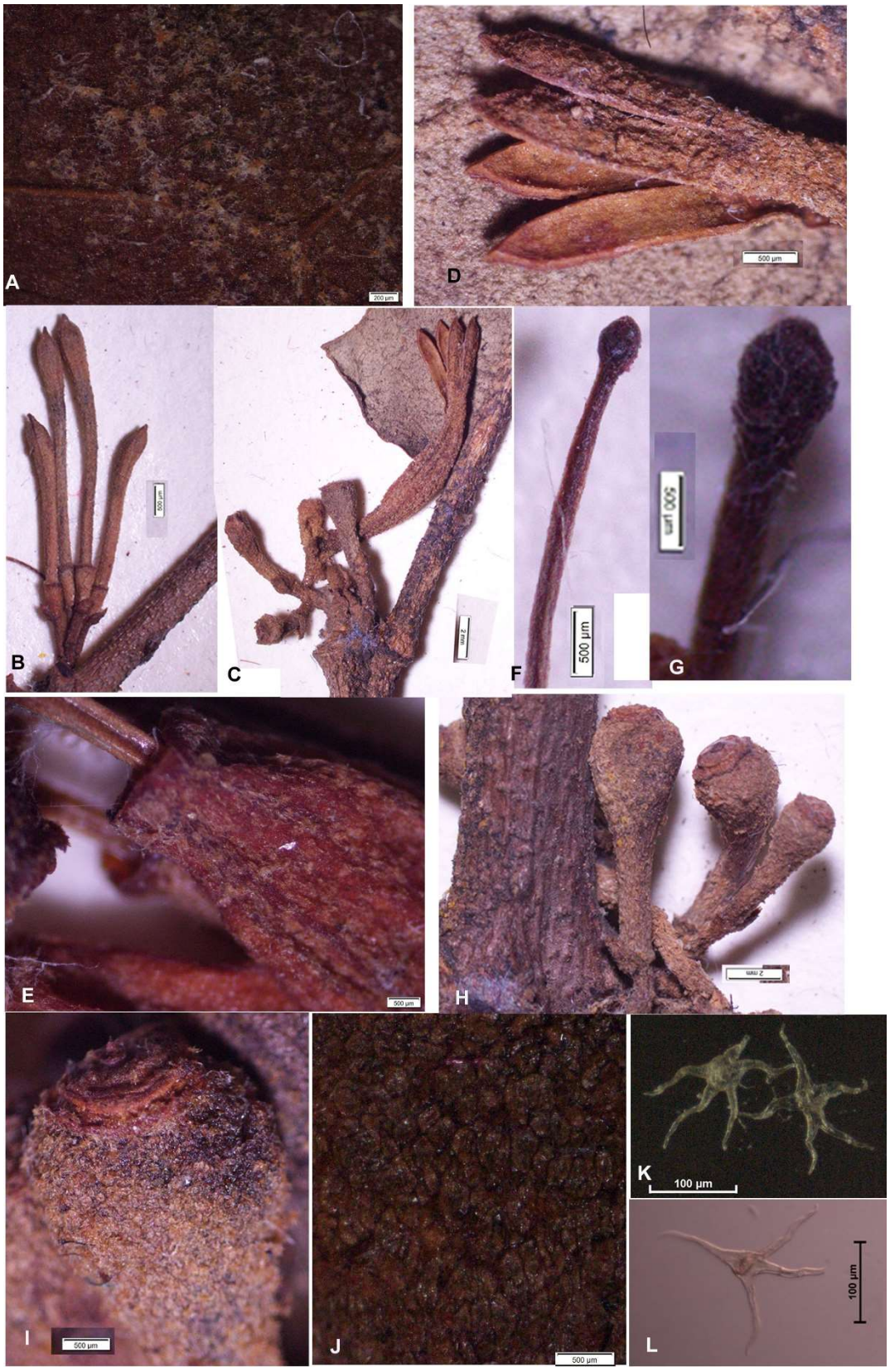

Fig. 4. Magnified view of various parts of ***Scurrula neoraindica*** showing indumentum details from dry specimens. **A.** Leaves. **B.** Flower bud. **C-D.** Pedicel, corolla, filament, ovary, stigma, style. **F-G.** Stigma, style. **H-I.** Fruits. **J.** Matted prolate or rhomboidal scale - like structure on fruit surface. **K-L.** Stellate hairs.

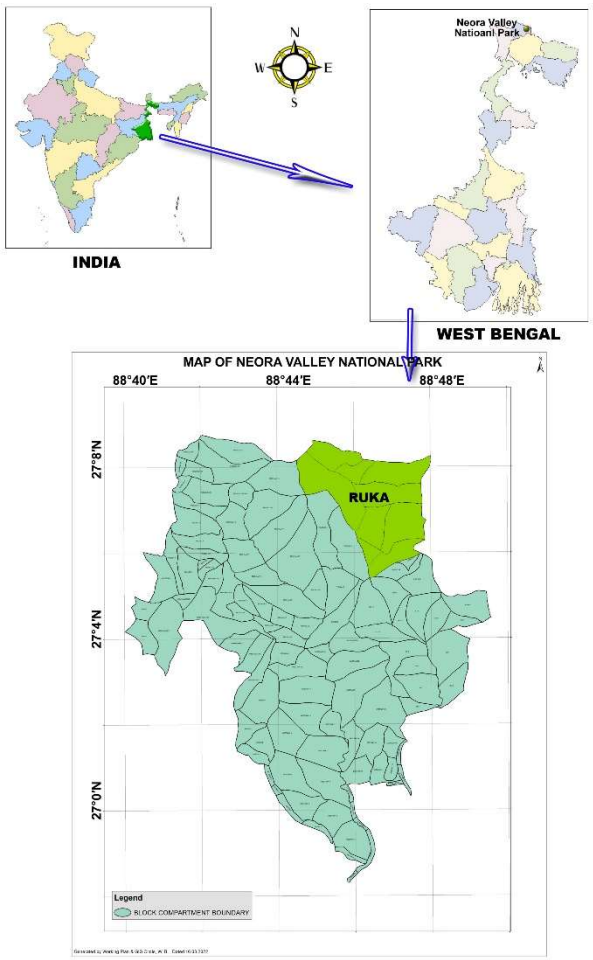

Fig. 5. Map of the Neora Valley National Park, Kalimpong of West Bengal state of India showing distribution of ***Scurrula neoraindica***.

aerial stem hemiparasitic shrub on *Sloanea dasycarpa* Hemsl. (Elaeocarpaceae) and does not show any resemblance to its host. A specific mode of infestation has also been recorded in *S. paramjitii* L.J. Singh, which prefers trees of *Tetrameles nudiflora* R.Br. (Tetramelaceae) as a host in ANI of India (Singh, 2015). Further, we also observed the genus shows broad host range and diversified preference along with host specificity in India. Almost all of the previously recorded species of *Scurrula* in India were found growing on *Aesculus indica* (Wall. ex Cambess.) Hook. (Sapindaceae), *Populus ciliata* Wall. ex Royle (Salicaceae), *Prunus persica* (L.) Batsch (Rosaceae), *Rhododendron arboretum* Sm. (Ericaceae) as aerial stem hemiparasitic shrub.

Preliminary conservation assessment: During our field surveys conducted in the Neora Valley National Park**,** this species is known from two nearby sites of same locality where observed that about 10 mature host individuals with few numbers of individuals of this species. During field study, it was found that the species inhabits Inland forests. The identity of the other sporadic populations in the vicinity of its locality is yet to be confirmed. Hence, we propose the IUCN conservation status of *Scurrula neoraindica* as 'Data Deficient' (IUCN, 2023) until further study.

Additional specimens examined (Paratype): INDIA. West Bengal, Kalimpong, Neora Valley National Park, Ruka, 27°125668"N, 88°789659"E. 1867.9 m, 25 September 2019, *Vinay Ranjan, Gopal Krishna & Anant Kumar 86171* (CAL).

Note: 1. Earlier specimens from the locality, Neora Valley National Park (collection number 86158 CAL!, 86171 CAL!) were identified as *Scurrula parasitica* but it is very distinct in indumentum, vegetative morphology, inflorescence architecture and floral characters:leaves hairy on both surfaces, lanceolate with obtuse base and attenuate apex, with very distinct anastomosing venation and 5–7 pairs of major lateral veins (vs. narrowly ovate or obovate with cuneate or truncate base and acute, obtuse or rounded apex, coriaceous, obscure venation and lateral nerves 4–8 pairs); up to 14 flowered umbellate or sub-umbellate raceme (vs. axillary centrifugal pseudoracemes up to 8 flowered); bract lanceolate, acute, light brown, erect or with sheathing base and acuminate apex, clasp around the base of ovary (vs. bracts ovate or elliptic ovate or narrow erect); sage green with bright red below the middle (at base) on the outer side, often bright green on the inner side(vs. reddish brown outside, purple inside); corolla in mature bud sage green above, bright red below the middle (at base), often bright green on the inner side, stellate hairs intermixed with matted scale like structure, cylindrical, straight, hooded (like cobra head) at apex (vs. pale yellow in mature bud red, slender, weakly clavate and acute at the apex); ovary obconical (vs. clavate); stigma clavate (vs. conical); fruit, pubescent/tomentose of stellate hairs intermixed with matted scale like structure; (vs. rusty brown due to candelabra hairs intermixed with stellate hairs) , confirms it as *S. neoraindica*.

2. In the present study it was observed that cohorts of frugivorous bird especially the Redstart, Whistling Thrush, Golden-headed Black Finch, Niltava, and Yuhina on and around host trees during fruiting which indicates its response to the advent of seed dispersal. So it seems that the mode of seed dispersal in *S. neoraindica* might be through frugivorous birds that feed largely on its fruit.

CONCLUSION

In India Loranthaceae is represented by nine genera *viz.*: *Dendrophthoe* Mart. (10 spp.), *Elytranthe* (Blume) Blume. (5 spp.), *Helicanthes* Danser (1 sp.), *Helixanthera* Lour. (10 spp.), *Macrosolen* (Blume) Rchb. (5spp.), *Scurrula* L. (13 spp. including the new species described here), *Septemeranthus* L.J. Singh (1 sp.), *Taxillus* Tiegh. (13 spp.), and *Tolypanthus* (Blume) Rchb. (3 spp.), of them *Scurrula* shows greater diversity at species level. Except *Septemeranthus,* other genera are distributed across the country while *Septemeranthus* is a monotypic

Table 1. Comparison of morphological characters between ***Scurrula neoraindica***, ***S. parasitica*** and ***S. paramjitii***

Characters	*S. neoraindica*	*S. parasitica*	*S. paramjitii*
Indumentum	light pink (coral) or white short stellate hairs intermixed with prolate or rhomboidal scale - like structure	rusty, candelabra hairs intermixed with stellate hairs	cream to purple, short stellate hairs
Leaves colour	sage green, pubescent abaxially and bright green glabrous adaxially	bright green to dark green on both sides	yellowish green on both sides
Leaves shape and size	lanceolate 6.5-12.8 × 3.5-5.0 cm	narrowly ovate or obovate, 3–7(–9) × 1.5–3.5(–4.5) cm	elliptic or lanceolate, 2–12×1.5–5.5cm
Leaves base	Obtuse	cuneate or truncate	attenuate or cuneate
Leaves apex	Attenuate	acute, obtuse or rounded	broadly acuminate or acute
Venation	anastomosing (pinnate with midrib, the main laterals and reticulate veins), distinct on both sides and more prominent abaxially	obscure except for the mid- rib and major lateral veins	obscure except for the mid-rib and 6–9 pairs of major lateral veins visible adaxially
Petiole	0.6–1.0 cm long	0.3–1.0 cm long	1.2–2.0 cm long
Inflorescence	3–14 flowered sub-umbellate raceme	2–6 flowered raceme	2–10 flowered pseudo raceme
Peduncle	0.2-0.3 cm long	0.4–0.7 cm long	0.3–1.0 cm long
Pedicel	0.5 -0.6 cm long	0.1–0.5 cm long	0.8–1.5 cm long
Bract	single under each flower, persistent lanceolate, acute, light brown, erect or with sheathing base and acuminate apex, clasp around the base of the ovary, 2–4 mm long	single, under each flower, persistent Narrow, erect, 1–3 mm long	single, under each flower, persistent, concave, erect, 3–4 mm long
Flower	sage green with bright red below the middle (at base)on the outer side, often bright green on the inner side	reddish brown	yellowish green
Corolla in the mature bud	sage green above, bright red below the middle (at base), often bright green on the inner side, stellate hairs intermixed with matted scale like structure, cylindrical, straight, hooded (like cobra head) at apex, 1.3-2.0 cm	pale yellow, in mature bud red, slender, weakly clavate and acute at the apex, 0.8–1.6 cm long	yellowish green on the outer side, reddish violet on the inner side, 1.6–2.8 cm long
Corolla	covered with a matted scale- like structure	deeply split to the middle or lower	deeply split at above the middle, extending up to two-third the length
Corolla tube length	1.0-1.5 cm long, split at above the middle	0.6–1.2 cm long, split to the middle or lower	0.9–1.8 cm long, split to at above the middle
Corolla refixed lobes	0.3- 0.5 cm long	0.5-0.6 cm long	0.5-0.7 cm long
Anther	0.4-0.6 mm long	0.7–1.5 mm long	2–4 mm long
Ovary	obconical, 4.0-5.0 mm long	clavate, 2-2.3mm long	obconical, 2.5–3 mm long
Fruit	1.0-1.3 cm long including a thick stripe, 0.7-1.0 cm long, sage green, tomentose, covered with matted scale- like structure rounded at the apex	0.8–1.0 cm long, including a stripe 0.4–0.8 cm long, rounded at the apex, reddish yellow	1.2–1.6 cm long, including a thick stripe 0.8–1.2 cm long, contracted at the apex, yellowish green
Fruit surface	stellate hairs intermixed with matted scale- like structure	candelabra hairs intermixed with stellate hairs	with stellate hairs
Fruit stripe	0.6-1.0 cm long	0.4-0.8 cm long	0.8-1.2cm long
Geographic distribution	West Bengal, India **(Present study)**	Southern and Eastern parts of India **(Present study).** China, Vietnam, W. Malesia, Extending East Wards as far as the Philippines, Molluccus and Timor **(Barlow ,1997).**	Andaman group of Islands, ANI, India **(Singh, 2015)**

genus restricted to Nicobar group of Islands (Singh, 2021). In the present study, *Scurrula neoraindica* L.J. Singh, V. Ranjan, Anant Kumar & G. Krishna is described and illustrated as new to science. The range of type locality of this new species is in the West Bengal State of India, situated in mainland India, under the range of Bay of Bengal. The newly discovered taxa and the closely allied species *S. paramjitii* and *S. parasitica* do not show similarity in geographical distribution as these are not present in the same geographical location of new species. The geographical range of *S. paramjitii* is ANI which is very disjunctive as well as separated by the sea of Bay of Bengal from mainland India and ca 1600 km away from the distributional range of new species. In India the distribution of *S. parasitica* has been recorded throughout the country including ANI. The ANI is one of the hotspots of biodiversity, consisting of 572 Islands and considered as a rich and unique phytogeographical region of India with a high endemism (Singh *et al*., 2014, 2021a, Singh 2021, 2023; Singh and Ranjan, 2021).

The new species, *S. neoraindica* exhibits the most successful haustorial parasitism with specific host species, *Sloanea dasycarpa* Hemsl. (Elaeocarpaceae) in Wes Bengal of India. Although, diversified preference and specificity of host for loranths mistletoes have been recorded time to time by various authors (Barlow and Weins, 1977; Hawksworth, 1983; Hoffmann *et al*., 1986; Bernys and Graham, 1988; Turner, 1991; Shaw, 1994; Hawksworth and Wiens, 1996; Barlow, 1997; Downy, 1998; Norton and Carpenter, 1998; Singh, 2013a,b, 2015; Singh and Murugan, 2013; Singh and Ranjan, 2013; Singh *et al*., 2016, 2020a,b; Singh, 2021, 2023; Sivaramakrishna *et al*., 2021). In India the choice of host is vary region to region as an endemic species, *S. paramjitii* L.J. Singh is recorded growing only on *Tetrameles nudiflora* R.Br. (Tetramelaceae) in ANI (Singh, 2015). The present study revealed that the most of the species of the *Scurrula* genus preferred very tall tree species as a host throughout the country.

Scurrula neoraindica is easily recognized in the field by the dimorphic leaves (sage green abaxially and bright green adaxially) with very distinct, an anastomosing venation and 5–7 pairs of major lateral veins on both sides; inflorescence umbellate raceme up to 14 flowered; bract 1 under each flower, lanceolate, acute, light brown, erect or with sheathing base and acuminate apex, clasp around the base of the ovary, very prominent and persistent usually, sometimes caducous, forming visible scars; flowers sage green with bright red below the middle (at base) on the outer side, often bright green on the inner side; corolla in mature bud with hooded at apex, indumentum of stellate hairs of corolla and fruits covered with matted scale like structure. Among the *Scurrula*, this is the only species that has over 10 flowered inflorescences, single bract with sheathing base and acuminate apex, clasp around the base of the ovary under each flower, indumentum of stellate hairs of corolla and fruits covered with matted scale like structure. Thus, the several structural peculiarities outlined above, when taken in aggregate, sharply distinguish it from all other Loranths species and deserves to get a new species status.

In India the genus *Scurrula* is represented by 12 species viz.: *S. atropurpurea* (Blume) Danser*, S. cordifolia* (Wall.) G. Don, *S. eglandulos* Rajasek.*, S. elata* (Edgew.) Danser*, S. fusca* (Blume) G. Don, *S. gracilifolia* (Roxb. ex Schult.f.) Danser*, S. leenhoutsii* Rajasek.*, S. paramjitii* L.J. Singh*, S. parasitica* L.*, S. pulverulenta* (Wall.) G. Don.*, S. steenisii* Rajasek. including new species (*S. neoraindica* L.J. Singh,V. Ranjan, Anant Kumar & G. Krishna). Most of the *Scurrula* species were recorded from main land India and two species (*S. parasitica* and *S. paramjitii*) are recorded from ANI. *Scurrula neoraindica* is very distinct in morphology of vegetative and reproductive traits from known species of the genus as mentioned in Table 1 and the key of the species.

Key to the species of *Scurrula* in India

1. Leaves hairy on both surfaces; inflorescence up to 14 flowered; corolla in mature bud hooded at apex, indumentum of stellate hairs of corolla and fruits covered with matted scale like structure ……..…….... ***S. neoraindica***
–Leaves hairy on upper surface or glabrous; inflorescence up to 10 flowered; corolla in mature bud not hooded at apex; corolla and fruits pubescent/ tomentose of stellate hairs, not covered with matted scale like structure or glabrous ...……..……..…….... 2
2. Inflorescencesin centrifugal pseudoracemes …….……..... 3
–Inflorescences in compound dichasia ……..……...……..…… 10
3. Peduncle 2 or 3 in each axil; inflorescences up to 5 flowered ……..…. ***S. cordifolia***
– Peduncle solitary or more than 1 in each axil; inflorescences more than 5 flowered ……..... 4
4. Corolla in mature bud up less than 2 cm long ……. ***S. atropurpurea***
–Corolla in mature bud more than 2 cm long ……..…….. 5
5. Bract scaly; inflorescences 6-10-flowered ……...…. ***S. pulverulenta***
–Bract ovate or elliptic-ovate or narrow or concave, erect; inflorescences 2-10 flowered ……..…….. 6
6. Inflorescence 2 to 10 flowered, fruit pubescent ……..…….. 7
– Inflorescence 6 to 10 flowered, fruit glabrous 8
7. Leaves elliptic or lanceolate, attenuate or cuneate at the base, broadly acuminate or acute at apex; inflorescence 2–10 flowered; flower yellowish green; fruits contracted at the apex ... ***S. paramjitii***
–Leaves narrowly ovate to obovate, cuneate to truncate at the base, obtuse or rounded at apex; inflorescence 2–6 flowered; flower reddish brown; fruit rounded at the apex ..... ***S. parasitica***
8. Bracts elliptic-ovate, cucullate, obtuse; anthers oblong; fruits obovoid or turbinate ….....…….... ***S. elata***
–Bracts ovate; anthers linear or linear-oblong; fruits pyriform …… 9
9. Peduncle solitary in each axil 6-8-flowered; ovary obconical ……..…. ***S. eglandulosa***
–Peduncle 1 (or 2) per axil, 8-10-flowered; anthers linear; fruits sparsely or densely rugose, brown stellate hairy when young …. ***S. leenhoutsii***
10. Peduncle 1 or 2 in each axil, each 3-5-flowered; corolla in mature bud up to 1.2 cm long; bract ovate; anthers oblong to ovate; ovary obcuneate ……..…. ***S. fusca***
–Peduncles 2 or 3 in each axil, each 3-5-flowered; corolla in mature bud more than 1.2 cm long; anthers oblong; ovary clavate ……..... 11
11. Leaves bifarious, narrowly elliptic-ovate, oblong-lanceolate or obovate, attenuating towards both ends, shortly decurrently at base, sub-acute at apex, sub-coriaceous; with 5-7 pairs of lateral nerves; inflorescence 3-5-flowered; bract elliptic-ovate, obtuse; stigma elliptic-ovate ……..... ***S. gracilifolia***
–Leaves ovate to elliptic, rounded at base, sub acute or rarely obtuse at apex; coriaceous, rusty brown hairy as in branches when young, glabrous above and rusty brown on the lower surface when old; with 3 or 4 pairs of lateral nerves; inflorescence 4 or 5-flowered, bract conical; stigma globose ..... ***S. steenisii***

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