
The genus *Oxytate* L. Koch 1878 from Sri Lanka, with description of *Oxytate taprobane* sp. n. (Araneae: Thomisidae)

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Abstract

The genus *Oxytate* L. Koch, 1878 comprises a homogenous group of night active crab spiders. Two species of this genus were previously reported from Sri Lanka; *O. virens* (Thorell, 1891) and *Oxytate subvirens* (Strand, 1907). *O. virens* most probably does not occur in Sri Lanka. The taxonomic status of *O. subvirens* is discussed and the species is redescribed from both sexes and a neotype designated. *O. subvirens* is characterised by an oval bulbus and a slender tapering embolus which rest on the tegulum. A new species, *O. taprobane* sp. n. is described from both sexes. *O. taprobane* sp. n. is characterised by a short and broad-based embolus and a bifurcated ventral tibial apophysis. The range of *O. taprobane* sp. n. is possibly restricted to the central highlands of Sri Lanka.

Key words: Araneae, Thomisidae, *Oxytate*, Sri Lanka.

Introduction

The genus *Oxytate* L. Koch, 1878 comprises a homogenous group of nocturnal crab spiders. During the night they stalk for pray hanging onto the under-side of leaves. When the spider senses the vibrations caused by pray moving on the upper side of the leaf, it quickly pounces on the victim. Ono (1978) in a study of the *Oxytate* of Japan redescribed the type species, *O. striatipes* L. Koch, 1878. It is known from Japan and Korea. Diagnostic characters which enable the recognition of species were provided by him. *Oxytate* are known to occur in Asia, West Australia, East and Central Africa (Ono, 1988).

Two species of this genus were thought to occur in Sri Lanka: *O. subvirens* (Strand, 1907) and *O. virens* (Thorell, 1891). Both species are known only from their original descriptions. The presumptive occurrence of *O. virens* in the island goes back to records of Simon (1906) and Sherriffs (1929). They believed that their *Oxytate* specimens were conspecific with Thorell's *O. virens*, but most probably never saw any original type material of the species. The type material of the second species, *O. subvirens* was destroyed during the second world war. The lack of types, the presence of two species with the possibility of the existence of even more, makes

the designation of a neotype necessary.

This study discusses the presence of *O. virens* in Sri Lanka and the taxonomic status of *O. subvirens*. A new species, *O. taprobane* sp. n. is reported from Sri Lanka.

Material and methods

The specimens were collected either by hand or by beating. Study areas are described in Benjamin (1999). Structures were examined in temporary mounts embedded in glycerine. Preparation of material and drawings were done as in Benjamin (2000). Specimens examined are deposited in the "Muséum d'histoire naturelle, Genève" (MHNG) and the "Naturhistorisches Museum, Basel" (NMB).

Abbreviations used in text and figures: AER anterior eye row; AH anterior hood; ALE anterior lateral eyes; AME anterior median eyes; CD copulatory duct; CF cymbial flange; CO copulatory opening; E embolus; FD fertilisation duct; MOA median ocular area; PER posterior eye row; PLE posterior lateral eyes; PME posterior median eyes; RTA retrolateral tibial apophysis of male palp; S spermatheca; VTA ventral tibial apophysis of male palp.

***Oxytate subvirens* (Strand, 1907)**

(Figures 1a, 1b, 4a–5b, 6)

Dieta subvirens Strand, 1907: 198–199. Syntype series, all females from Sri Lanka (Ceylon), leg. Redemann.
Dieta subvirens Strand, 1907: Sherriffs, 1929.
Oxytate subvirens (Strand, 1907): Ono, 1988.

Remarks. The spiders described by Strand (1907) were deposited in the Staatlichees Museum für Naturkunde, Stuttgart. This collection was destroyed during the second world war (W. Schawaller, in litt.). As this study was published in the journal “Abhandlungen der Naturforschenden Gesellschaft zu Goerlitz”, I looked for the material at the Staatlichees Museum für Naturkunde, Goerlitz. According to A. Christian (in litt.); no spiders from E. Strand were deposited there.

The description of *O. subvirens* by Strand was based on female specimens. He provided no illustrations. There is no recent redescription of *O. subvirens* or any other *Oxytate* species from Sri Lanka. As closely related *Oxytate* species can be reliably identified only by male genital morphology the designation of a male neotype and redescription of the species based on both sexes becomes necessary. The original locality given by Strand was “Ceylon” and could be anywhere in the island. I have chosen Bellanwila-Attidiya, Colombo, because it is a protected nature reserve and in the hope that the species might survive there. I have been unable to collect males of *O. subvirens* from other protected areas.

Neotype. Male (NMB 2650a): Sri Lanka, Western Province, Colombo, Bellanwila-Attidiya, altitude 0.6 m, leg. S. P. Benjamin, 17.07.1996. The neotype was collected by beating shrubs and flowering plants up to a height of ca. 1 m, along the Bolgoda canal, outside the boundaries of the Bellanwila-Attidiya sanctuary (Fig. 10).

Paraneotypes. Male (NMB 2650b): Sri Lanka, Colombo, Thimbirigasyaya, 2 m, 22.03.1998. Female: Bellanwila-Attidiya, 0.6 m, 28.02.1998. Female: Kalugala, Close to Labugama forest reserve, 90 m, 28.02.1998, all leg. S. P. Benjamin. Female: Sabaragamuwa Province, Uda walawe National park, 80m, 28.02.1998. Leg. K. Manamendra-Arachchi, M. M. Bahir, S. V. Nanayakkara. Two males and one female (NMB 2650c): Sri Lanka, Colombo, Thimbirigasyaya, 2 m, 10/11.03.2000, leg. S. P. Benjamin. Paraneotypes are also deposited in MHNG and provisionally in the author’s collection.

Diagnosis. *O. subvirens* is distinguished from *O. taprobane* sp. n. by the long and tapering RTA, oval bulbus and slender tapering embolus which rest on the tegulum (Fig. 1a, 1b).

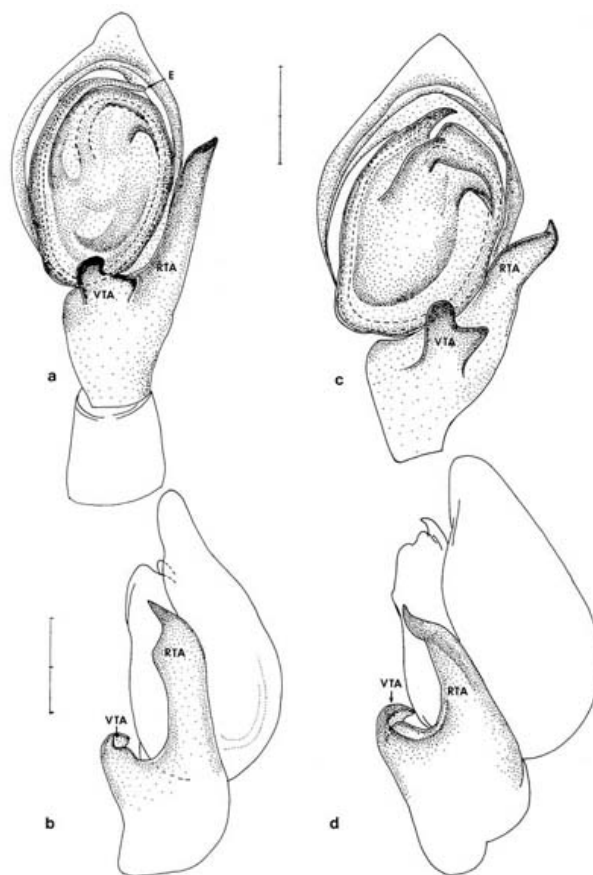


Figure 1. *Oxytate subvirens* and *O. taprobane* sp. n. a, b, *O. subvirens*, male neotype from Bellanwila-Attidiya. c, d, *O. taprobane* sp. n., male holotype from Talawakele. a. Palp, ventral view. b. Ditto, retrolateral view. c. Palp, ventral view. d. Ditto, retrolateral view. Scale line: 0.2 mm.

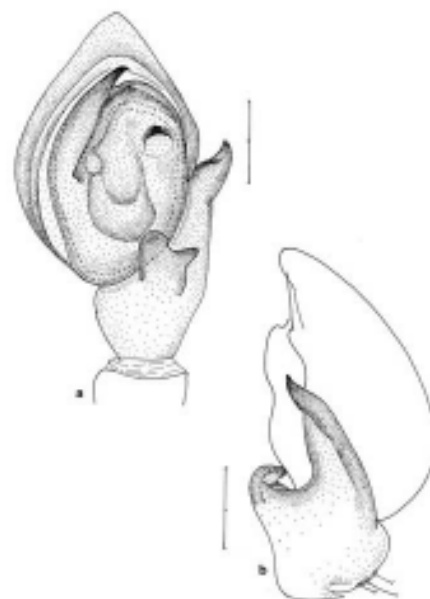


Figure 2. *Oxytate taprobane* sp. n., male paratype from Agrapatane. a. Palp, ventral view. b. Ditto, retrolateral view. Scale line: 0.2 mm.

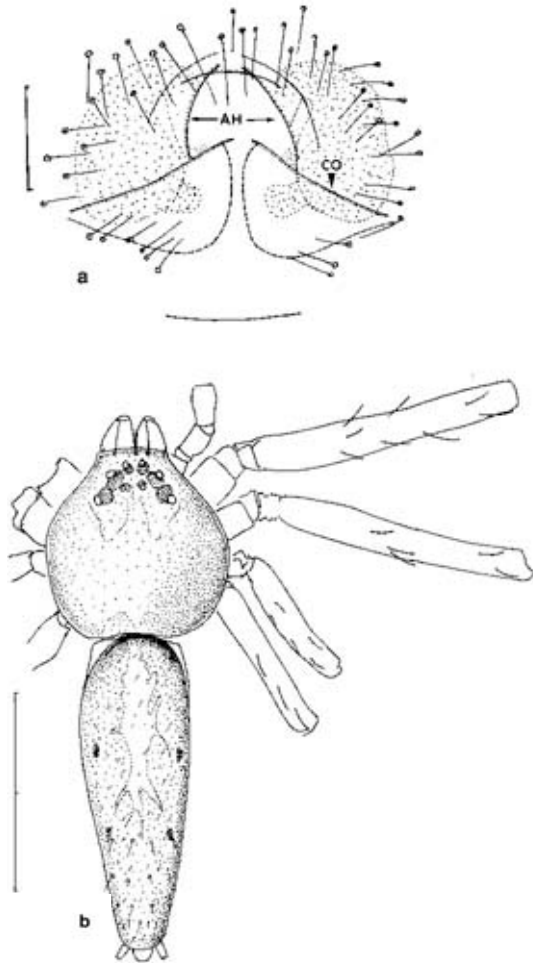


Figure 3. *Oxytate taprobane* sp. n., female paratype. a. Epigynum, ventral view. b. Male, holotype from Talawakele, habitus, dorsal view. Scale line: a = 0.1 mm; b = 2.0 mm.

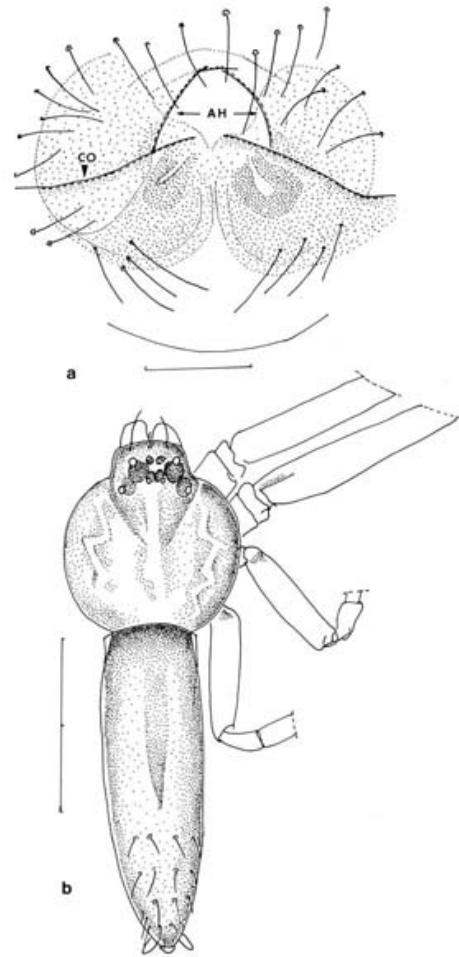


Figure 4. *Oxytate subvirens*. a. Female paraneotype from Kalugala, epigynum, ventral view. b. Male, neotype from Bellanwila-Attidiya, habitus, dorsal view. Scale line: a = 0.1 mm; b = 2.0 mm.

Description. Male: Prosoma longer than wide, dorsally smooth, sides sparsely haired. Fovea absent. Opisthosoma much longer than wide, protruding over prosoma. Dorsum in adult spiders with narrow scutum, bearing regular transverse rows of spines.

Coloration and markings: living specimens are pale green. Prosoma with a pair of red/brown spots, opisthosoma with two pairs of prominent red/brown spots and several markings (Fig. 6). Male palp red/brown. Specimens preserved in alcohol pale yellow or colourless, markings faintly visible (Fig. 4b). All eyes are on tubercles. AER and PER recurved. ALE>PLE>AME=PME. MOA longer than wide. Leg formula 1234. Femur of leg I with 5 dorsal spines, 2 anteriolateral and 5 posteriolateral.

Male palp: Tibia slender, longer than broad. VTA broad, with lateral projection, RTA long, tapering. Bulbus oval, without apophysis (Figs. 1a, 1b). Embolus slender, tapering, resting on tegulum as in Fig. 1a.

Measurements in mm (neotype): Total length: 6.25; carapace length: 2.25; carapace width: 2. Legs:

	I	II	III	IV
femur	3.10	3.10	1.30	1.50
patella	0.10	0.10	0.50	0.50
tibia	3.25	3.10	1.50	1.05
metatarsus	2.50	2.25	1.05	1.05
tarsus	0.10	0.10	0.50	0.50
total	9.05	8.65	4.85	4.60

Female: Except for being larger and possessing 5 dorsal and 2 curved anteriolateral spines on femur I, morphology as in male. Coloration and markings are given in Fig. 6.

Epigynum and vulva: Figs. 4a, 5a, 5b. Deeply divide anterior hood (AH, Figs. 4a, 5a), copulatory opening broad (CO, Figs. 4a, 5a). Distal part of CD funnel shaped, moderately sclerotized. Well sclerotized proximal part

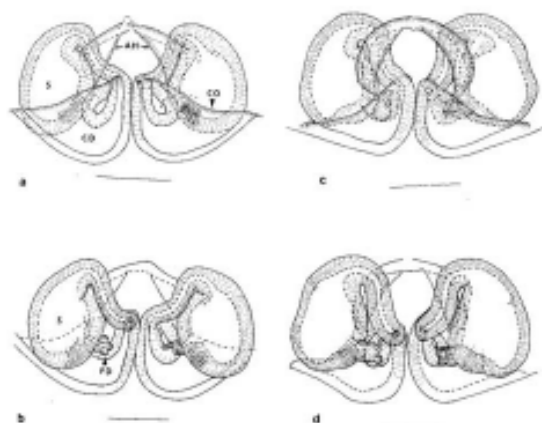


Figure 5. *Oxytate subvirens* and *O. taprobane* sp. n. a, b, *O. subvirens*, female, paraneotype from Kalugala. c, d, *O. taprobane* sp. n. a. Vulva, ventral view. b. Ditto, dorsal view. c. Vulva, ventral view. d. Ditto, dorsal view. Scale line: = 0.1 mm.

of CD leading forward and opening anteriorly into spermathecae. Spermathecae with glandular pores.

Measurements in mm (female from Kalugala): Total length: 7.25; carapace length: 2.50; carapace width: 2.25. Legs:

	I	II	III	IV
femur	3.25	3.25	1.50	1.85
patella	0.10	0.10	0.50	0.50
tibia	3.25	3.25	1.60	1.25
metatarsus	2.50	2.50	1.25	0.10
tarsus	1.10	1.10	0.55	0.55
total	10.20	10.20	5.40	4.25

Distribution: Presently known only from Sri Lanka. Collected also in habitats strongly influenced by man, such as home gardens.

Taxonomy. Two species of this genus were previously reported from Sri Lanka. *Oxytate virens* (Thorell, 1891), originally described as *Orus virens* Thorell, 1891 from Singapore and *O. subvirens* (Strand, 1907). Simon (1906) synonymised the genus *Orus* with *Dieta*, which in turn was united with *Oxytate* by Song & Hubert (1983), see Ono (1988: 32) and Song et al. (1999). *Oxytate subvirens* is known only from Sri Lanka.

Both these species are known only from their original descriptions. The supposed presence of *O. virens* in the island goes back to records from Simon (1906) and Sherriffs (1929). They believed that their *Oxytate* specimens were conspecific with Thorell's *O. virens*, but as in most other cases they probably never saw any original type material of the species (see Benjamin, 2000 for a similar taxonomic problem).

The presence in Sri Lanka of a species native to Singapore is rather unlikely. Types of *O. virens* unfortun-

ately cannot be located. The description of *O. subvirens* by Strand was based on female specimens, and there is no recent redescription. As closely related *Oxytate* species can only be reliably identified with the help of male genital morphology, even a comparison with type material will not help to clarify the identity *O. subvirens*.

As the description of Strand (1907) agrees well with my specimens, they are considered here to be conspecific with *O. subvirens*.

***Oxytate taprobane* sp. n.**
(Figures 1c–3b, 5c, 5d, 7)

Holotype. Male (NMB 2651a): Sri Lanka, Central Province, Talawakele, altitude 1100m, leg. S. P. Benjamin, 24.07.1996. The holotype was collected by beating, from overgrown tea plants in secondary forest.

Paratypes. Three females (NMB 2651b–d): collected between 15.07.1996 and 19.08.1996. All from the type locality and leg. S. P. Benjamin. Male (NMB 2651e): Sri Lanka, Central province, Agrapatana, 08.03.2000, leg. S. P. Benjamin and S. V. Nanayakkara. The specimen was collected by beating from secondary forest.

Etymology. Named for present-day Sri Lanka, as it was called by ancient Greek geographers. Used as noun in apposition.

Diagnosis. Distinguished from *O. subvirens* by the bifurcated VTA and the twisted and shorter RTA. The Embolus is short and broad-based in *O. taprobane* sp. n. whereas *O. subvirens* has a longer, tapering embolus which rests on the tegulum.

Description. Male: as in *O. subvirens*, differs by the oval shape of the prosoma and larger dorsal, opisthosomal spines (Fig. 7). Leg formula 1243. Femur of leg I with 8 dorsal spines: 3 anteriolateral and 5 posteriolateral. Coloration and markings as in *O. subvirens* but without any opisthosomal markings (Fig. 7).

Male palp: Tibia broader than long. VTA bifurcated. RTA twister. Bulbus without apophysis. Embolus broad based, short, hook shaped (Figs. 1c, 1d, 2a, 2b).

Measurements in mm (holotype): Total length: 5.15; carapace length: 1.75; carapace width: 1.75. Legs:

	I	II	III	IV
femur	2.60	2.60	1.20	1.50
patella	0.80	0.80	0.30	0.30
tibia	2.50	2.50	1.20	1.00
metatarsus	2.00	2.00	0.85	0.85
tarsus	0.85	0.85	0.50	0.50
total	8.75	8.75	4.05	4.15



Figure 6. *Oxytate subvirens* from Thimbirigasyaya, female, **a**, frontal view; **b**, **c**, lateral views.

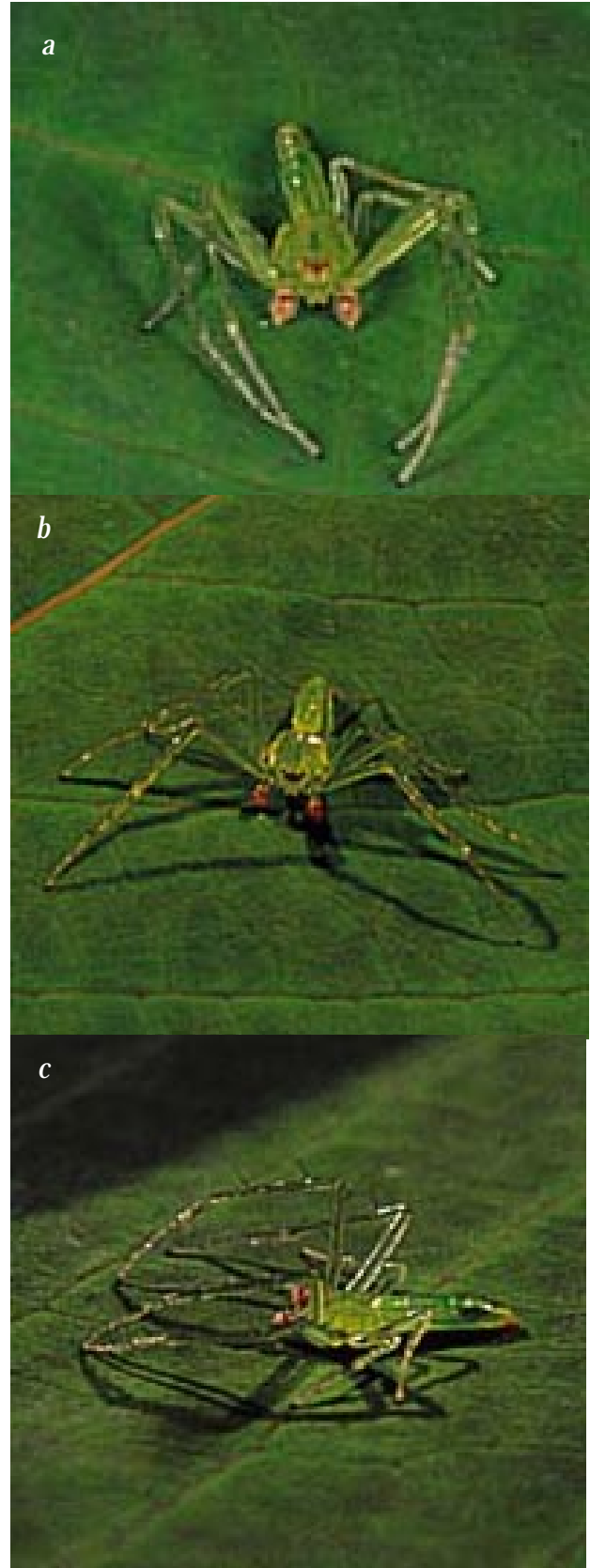


Figure 7. *Oxytate taprobane* sp. n. from Agrapatana, male, **a**, **b**, frontal views; **c**, lateral view.



Figure 8. Type locality of *Oxytate subvirens*, Bellanwila-Attidiya, near Colombo, Sri Lanka.

Epigynum and vulva (Figs. 3a, 5c, 5d): Closely resembling *O. subvirens*; clear distinguishing characters in the shape of epigynum and vulva were not found. Although subtle differences in genital characters such as, CD narrower than in *O. subvirens*; spermathecae oval (rounder in *O. subvirens*), (cf. Figs. 5a–5d) are present, they should be further assessed in a study of more material.

Measurements in mm (female paratype from Talawakele): Total length: 8.60; carapace length: 2.60; carapace width: 2.35. Legs:

	I	II	III	IV
femur	3.25	3.25	1.50	1.75
patella	1.10	1.10	0.50	0.50
tibia	3.25	3.25	2.25	1.75
metatarsus	2.50	2.50	1.25	1.25
tarsus	1.10	1.10	0.65	0.65
total	11.20	11.20	5.40	5.90

Distribution: Collected in secondary forest in Talawakele and Agrapatana, Central Province, Sri Lanka. All specimens were collected from overgrown tea plants. Presently known only from these two localities.

Discussion

During four visits to Sri Lanka beginning in 1996, I visited 14 localities in the Western, Central and Sabaragamuwa Provinces. Although *Oxytate* species were sought in all localities, they were only found in the localities mentioned above. *Oxytate subvirens* and *O. taprobane* sp. n. were never found sympatrically. *Oxytate taprobane* sp. n. was only found in two localities in the Central province: Talawakele and Agrapatana. It appears that *O. subvirens* is replaced by *O. taprobane* sp. n. in the central highlands of Sri Lanka.

The two Sri lankan *Oxytate* species are certainly closely related, but their taxonomic affinities to other species in the Oriental Region are unclear owing to the limited availability of phylogenetic information. Although the type species of *Oxytate* was redescribed, a generic revision still remains to be done: thus most species of the genus are only known from their original descriptions. Related species are likely to occur in India.

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