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The Striated Parachute Spider *Poecilotheria striata* Pocock, 1895 (Araneae: Theraphosidae): a note on taxonomy, distribution and conservation status

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Abstract: The known distribution range of *Poecilotheria striata* Pocock, 1895 in India is from Mysuru in the north to Thiruvananthapuram in the south. During the recent surveys in northern Karnataka, *P. striata* was recorded from six locations in Dandeli and nearby areas in the Uttara Kannada District. With the new records from Uttara Kannada, the distribution range of this species extends to the northern part of the Western Ghats by ca. 400km from Mysuru. Additional records on distribution of *P. striata* are also provided from various surveys carried out in the last 10 years. Based on these new records, the IUCN Red List status of *P. striata* is recommended to be reassessed as Near Threatened. Additional information on the morphology and natural history of *P. striata* is provided in the paper.

Keywords: Araneae, India, IUCN Red List Assessment, mygalomorph, range extension, taxonomy, Theraphosidae.

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Author Details and Contribution: Manju Siliwal has been working on spiders since 1997. She has specialized on taxonomy of primitive spiders (mygalomorphs including tarantulas) and has described many new species from India. Her main interests are taxonomy, ecology and conservation of Indian spiders. Her contribution to this paper is in carrying out surveys, identifying the species and preparing the manuscript. Neha Gupta is MSc in biodiversity and conservation and interested in ecology and conservation of Indian spiders. For her MSc dissertation, she worked on the ecology of trapdoor spiders of the family Idiopidae in Uttara Kannada, Karnataka. Her contribution to this paper is in assisting in examination of specimens and finalizing illustrations and text. Sanjay Molur initiated the research on tarantulas in India in 2000 to understand their distribution, threats and conservation status. His fields of interest include the study and conservation of lesser-known fauna, flora and fungi. He is the Red List focal point for primates and invertebrates. His contribution to this paper is through initial surveys, overseeing the tarantula project, and help with preparing and editing the manuscript.

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INTRODUCTION

The old world genus *Poecilotheria* Simon, 1885 of the tarantula family Theraphosidae is represented by 15 species in the world, out of which eight are endemic to India and seven to Sri Lanka (Gabriel 2010; Platnick 2013). It is the only genus of the Theraphosidae in India that is exclusively arboreal in habit and is found largely in the dry deciduous and evergreen forests or wooded areas in peninsular India and Sri Lanka. This genus is very popular in pet trade. Fourteen species of theraphosid spiders were assessed for their threat status and included in the IUCN Red List of Threatened Species in 2008; eight species were reported to be threatened with extinction due to restricted distribution, habitat loss, fragmentation and pet trade (Molur et al. 2008). This included all nine known species of *Poecilotheria* including, *P. nallamanlaensis* Rao et al., 2006, which was recently synonymised with *P. formosa* Pocock, 1899.

Poecilotheria striata was first described from Pinang, Malaysia, based on a specimen deposited in the British Museum of Natural History (=Natural History Museum), London. However, the type locality was suspect as there had been no previous reports of occurrence of *Poecilotheria* from Malaysia. Four years later Pocock (1899) received another specimen of *P. striata* from southern India and confirmed that the type locality to be southern India rather than Pinang. Later, Pocock (1900) reported this species from Mysuru in Karnataka and Thriuvananthapuram in Travancore (= Kerala). Gravely (1915) reported *P. striata* from Pamben, Rameshwaram Island, Tamil Nadu, but Smith (2004) found it to be a new species and described the Rameshwaram populations as *P. hanumavilasumica*. Kirk (1996) synonymised *Poecilotheria vittata* Pocock, 1895 under *P. striata*, and Molur et al. (2004) stated that the report of *P. regalis* from Vazhachal Forests in Thrissur, Kerala by Cheeran & Nagaraj (1997) was actually *P. striata* due to the absence of the epigynal yellow band.

During the recent theraphosid surveys in Uttara Kannada District, Karnataka, MS and NG collected the specimens of *Poecilotheria* from various locations in Dandeli and nearby areas. On examining the ventral leg pattern, chelicerae and maxillary lyra structure, female spermathecae and male palp structure they were identified as *P. striata*. Despite *P. striata* being common in the pet trade, there is very little information on the habitat, biology and population status in the wild. In this Communication we redescribe the species adding to the few morphological characters described by Pocock (1895), and discuss its distribution, provide natural history notes and reassess the Red List status of this species.

METHODS

All specimens are deposited at the Wildlife Information Liaison Development (WILD) Society Museum, Coimbatore, Tamil Nadu, India. Measurements of body parts except for the eyes are taken with a Mitutoyo™ vernier caliper. Eye measurements are done with a calibrated ocular micrometer. All measurements are in millimeters. Spermathecae are dissected and cleared in concentrated lactic acid in 100^{0}C water bath for 15–20 minutes. Total length excludes chelicerae. All illustrations are prepared with the help of a camera lucida attached to a MOTIC™ and Labomed™ CSM2 stereomicroscopes by NG and MS. The taxonomic description style is after Siliwal et al. (2009).

Taxonomy

***Poecilotheria striata* Pocock, 1895**

(Images 1–6; Figs. 1–21; Tables 1–2)

Poecilotheria striata Pocock, 1895: 172; 1899: 89; 1900: 191.

Poecilotheria vittata Pocock, 1895: 172, (in part) synonymised by Kirk 1996: 22.

Type specimen: Designated female as the type specimen, deposited at Natural History Museum, London, not examined.

Material examined

WILD-10-ARA-632, one female, 7.ii.2010, 15.16187^{0}N & 74.63704^{0}E, 517m, Kulgi, Dandeli WS, Uttara Kannada, Karnataka, India, coll. M. Siliwal, N. Gupta and Ramesh; WILD-10-ARA-647, one juvenile, 9.iii.2010, same data as of 632; WILD-10-ARA-1062, one male, 4.v.2010, 15.16731^{0}N & 74.63402^{0}E, 509m, Kulgi, Dandeli WS, Uttara Kannada, Karnataka, India, coll. Suraj Chauhan and Ramesh; WILD-10-ARA-571, one male 7.i.2010, 15.13203^{0}N & 74.36528^{0}E, 452m, Janta Colony, near Dandeli, Uttara Kannada, Karnataka, coll. Saroj Behera; WILD-10-ARA-553, WILD-10-ARA-560, WILD-10-ARA-561, three

Abbreviations: ALE - anterior lateral eye; AME - anterior median eye; MOQ - median ocular quadrate; PLE - posterior lateral eye; PME - posterior median eye; PLS - posterior lateral spinnerets; PMS - posterior median spinnerets; STC - Superior or paired tarsal claws; WILD - Wildlife Information Liaison Development Society; d - dorsal, fe - femur; mt - metatarsus; p - prolateral, pa - patella, r - retrolateral, ta - tarsus, ti - tibia, v - ventral.

Image 1. Female of *Poecilotheria striata* (WILD-10-ARA-632)

juveniles same locality; WILD-10-ARA-624, one juvenile, 2.ii.2010, 15.18079^{0}N & 74.55275^{0}E, 577m, Ulvi Road, Potoli, Dandeli WS, Uttara Kannada, Karnataka, coll. M. Siliwal, N. Gupta and Ramesh; WILD-10-ARA-390, one juvenile, 15.iii.2010, 15.15822^{0}N & 74.62664^{0}E, 468m, Naghzari, Kulgi, Dandeli WS, Uttara Kannada, Karnataka, coll. M. Siliwal, N. Gupta, Ramesh and S. Chauhan; WILD-10-ARA-732, one juvenile, 20.iii.2010, 15.21611^{0}N & 74.43504^{0}E, 587m, Diggi, Uttara Kannada, Karnataka, M. Siliwal, N. Gupta, Ramesh and S. Chauhan.

Diagnosis

This species closely resembles *Poecilotheria regalis* in colour and patterns on legs but differs as follows: absence of a band ventrally on the abdomen; yellow band on the leg femora with more orange tint; longer legs; carapace much shorter than patella and ti I (Pocock 1900); maxillary lyra present on prolateral face; in female maxillary lyra two black tubercle/teeth-like spines and 3–4 curved rows of pedal setae; in male maxillary lyra a single black tubercle/tooth-like spine with 3–4 curved rows of pedal setae; legs I-II ventrally with bright yellow and black pattern, femur yellow with broader black diagonal band about three quarters distally, patella yellow proximally with black and irregular band across the middle (Smith & Kirk unpub.). Spermathecae, simple fused seminal receptacles, broader at the base, gradually narrowing down to half the width towards apex; male palp, a large pyriform bulb with stout embolus that has a lipped apical keel which divides into three curved keels that spiral over the embolus.

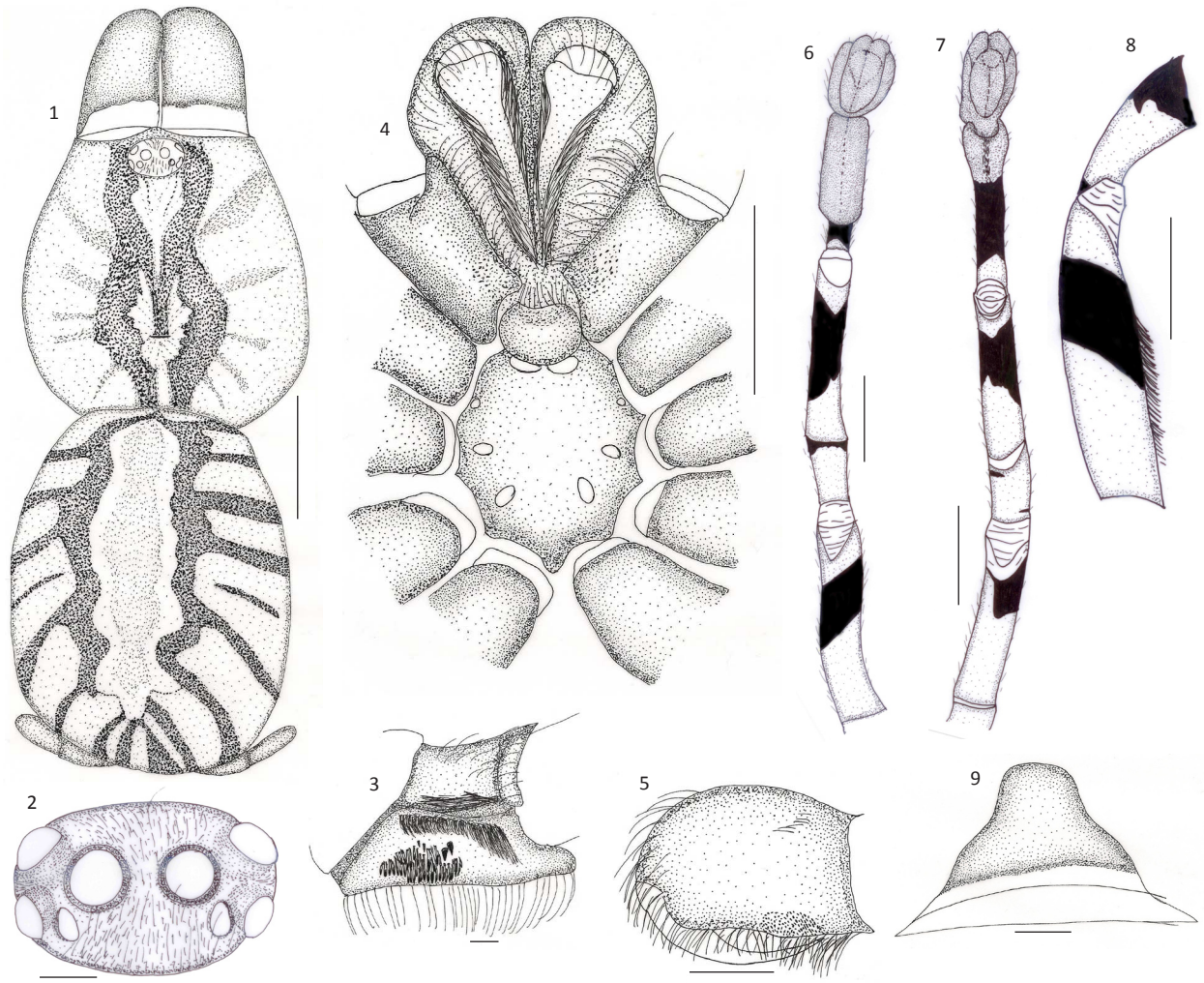
Description of female (WILD-10-ARA-632)

Total length 49.27. Carapace 23.19 long, 20.34 wide, chelicerae 13.73 long. Abdomen 26.08 long, 20.15 wide. Spinnerets: PMS, 2.45 long, 0.71 wide, 0.65 apart; PLS, 3.16 basal, 2.27 middle, 3.92 apical, mid-widths 1.26, 1.14, 1.16 respectively, 9.35 total length.

Colour in life (Image 1): Carapace and chelicerae black at base, covered with dense mat of short wavy golden hairs, more dense towards margins and concentrated along interstitial ridges radiating from fovea, long curved light brown hairs at periphery; mid dorsal black patch surrounding patch of pallid/grey hair around fovea and caput; chelicerae with two black vertical hairless bands running its length. Legs hairy, covered with mat of greyish and black small hair intermixed with long brown hair with pallid tips; dorsal greyish with black annulations and white markings; ventral, black and yellow bands on fe, pa, ti and mt of legs I-II, palp with white and black bands on fe, pa, ti and mt of legs III-IV. Abdomen dorsally, black chevron mark running along length of abdomen, ventrally black.

Carapace (Fig. 1): Length to width ratio 1.14. Bristles: 6 between AME, 10 long, 12 short between PME; 26 long, 19 short on clypeus edge. Mat of fine hair on anterior and posterior ocular area, fine golden hair at base of PLE. Fovea deep, slightly procurved. Caput not much higher than cephalic and thoracic region.

Eyes (Fig. 2): Group occupies 4.25 of head-width 13.36; ratio of group width to length 2.59. AME clearly larger than rest, PME clearly smaller than rest. Eyes on low ocular tubercle. Eye diameter: ALE, 0.94; AME, 1.01;



Figures 1-9. *Poecilotheria striata* female (WILD-10-ARA-632)
1 - Carapace and abdomen dorsal view scale=10.00mm; 2 - Eyes, scale=1.0mm; 3 - Maxillary lyra, prolateral view, scale=1.0mm; 4 - Sternum, maxillae, labium, chelicerae, scale=10.0mm; 5 - Chelicerae, retrolateral view, scale=1.0mm; 6 - Leg I, ventral view, scale=10.0mm; 7 - Leg IV, ventral view, scale=10.0mm; 8 - Femora and patella of leg I, prolateral view, scale=10.0mm; 9 - Spermathecae scale=1.0mm. © Manju Siliwal

PLE, 0.75; PME, 0.32. Distance between eyes: AME-AME, 0.67; PME-PLE, adjacent; AME-ALE, 0.55; PME-PME, 2.01. Ocular quadrate, 1.64 long, 4.25 wide. MOQ: length, 1.53; anterior width, 2.04, posterior width, 2.85. Clypeus absent.

Maxillae (Image 2, Figs 3–4): 7.60 anterior length, 8.99 posterior length, 4.91 wide. Posterior edge near heel slightly concave, anterior lobe distinct, posterior ventral edge gently rounded for whole length. Cuspules: ca. 280 sparsely arranged in triangular shape in anterior corner. On prolateral face, two bands of thick brush of greyish black hairs above and below maxillary suture. Maxillary lyra consists of two thick tooth-like black tubercles with many paddle shape setae in 3–4 rows on prolateral face, all paddle setae reddish-brown except for base and

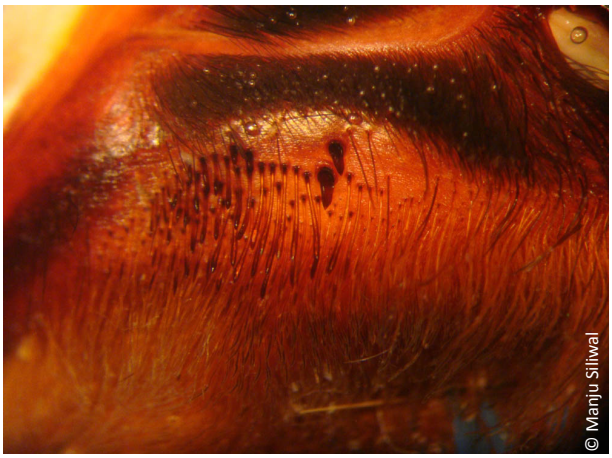


Image 2. Maxillary lyra of female, prolateral view (WILD-10-ARA-632)

Table 1. Morphometry of legs and palp of female (WILD-10-ARA-632) and males (WILD-10-ARA-571, WILD-10-ARA-1062)

	leg 1			leg 2			leg3			leg4			Palp		
	F	M (1062)	M (571)	F	M (1062)	M (571)	F	M (1062)	M (571)	F	M (1062)	M (571)	F	M (1062)	M (571)
femur	21.16	20.05	20.55	18.8	18.07	18.39	15.4	15.56	15.37	17.01	17.96	18.06	13.57	12.78	13.4
patella	12.22	10.54	10.76	10.38	9.08	9.17	9.1	7.42	7.26	8.81	8.42	7.79	7.21	6.71	6.93
tibia	16.83	16.96	18.11	14.1	14.23	15.06	11.74	12.15	12.01	14.6	15.4	15.17	9.13	12.16	12.82
metatarsus	16.68	16.97	17.32	13.7	14.86	15.98	12.45	13.13	13.44	14.91	16.28	17.61	-	-	-
tarsus	6.96	6.12	6.88	6.34	6.09	6.38	6.18	6.64	6.42	6.49	6.32	6.45	6.25	4.57	3.73
Total	73.85	70.64	73.62	63.32	62.33	64.98	54.87	54.9	54.5	61.82	64.38	65.08	36.16	36.22	36.88
Midwidth															
femur	4.13	3.27	4.02	3.85	3.07	3.51	3.84	3.1	3.45	3.56	3.05	3.54	3.34	2.45	2.84
tibia	3.57	2.63	2.98	3.27	2.36	2.69	3.12	2.21	2.58	3.07	2.34	2.45	3.06	2.64	2.92

swollen tips black, two small thick setae present above paddle setae (but absent on other maxilla, this could be a natural variation); two broad bands of grey long hair. Retrolateral face reddish-brown, glabrous in center with thin short spines distal and retroventral edge. Serrula, broad curved band behind anterior lobe running down posteriorly.

Labium (Fig. 4): 2.32 long, 3.19 wide; ca. 80 cuspules in band for one-fourth of length anteriorly; cuspules ca. similar in size to maxillary. Basal groove shallow, distinct. Labiosternal groove convex. One pair of large sternal sigilla present in labiosternal groove.

Chelicerae (Figs. 4–5): Intercheliceral spines absent. Covered with mat of grey, pallid hair intermixed with long black hair on dorsal and lateral sides. Chelicera lyra, with short thorn spines arranged in oval shape on proximal lower retrolateral face. Prolateral face glabrous, reddish-brown; 16 promarginal teeth, 55 basomesal teeth in 2–4 rows.

Sternum (Fig. 4): 10.48 long, 9.05 wide. Almost round, high in centre, sloping gradually, covered with long and short brown hair. Posterior tip short and not very sharp and not separating coxae IV. Posterior edge clearly visible. Prostrate hair mat strong, dense, of pallid hairs intermixed with long black hair, few with pallid tips. Two to three rows of long black hair present on margins. Pedicel pallid, not clearly visible.

Sigilla (Fig. 4): 3 pairs, posterior pair oval, 0.61 diameter, ca. 3.33 apart, 0.88 from margin; middle pair oval, 0.39 diameter, 5.86 apart, 0.43 from margin; anterior pair very small, round, marginal.

Legs: Formula 4123. Anterior legs slightly thicker than posterior legs but overall all of similar thickness. Basifemoral thorns absent on all. All metatarsi longer than tarsi. Mt I 2.4 times longer than ta, mt IV 2.3 times longer than ta, others about 2.0 times longer than tarsi. Spines absent on all legs.

Trichobothria: Tarsi: I, 44 clavate, ca. 100 long and short filiform; II, 47 clavate, ca. 100 long and short filiform; III, 44 clavate, ca. 70 long and short filiform; IV, 45 clavate, ca. 80 long and short filiform; palp, 42 clavate, ca. 65 long and short filiform. Clavate on I-IV in distal half in two bands; filiforms in two bands for length, each band with 4–5 rows of trichobothria. Short epitrichobothrial hair field on all tarsi as wide as trichobothrial hair and uniform height for length. Metatarsi: only filiform present in curved band of 2–3 rows, I, 26; II, 23; III, 28; IV, 46.

Leg coxae (Fig. 6–8): Coxal bases dorsally easily seen from above (Image 1). I longest, about 1.18 times length of II; IV basally with anterior corner indistinct, edge curves dorsally, rounded at interface. Coxae ventrally with blackish-brown mat of small hairs at base intermixed with short and long black hair, prolateral faces of I-IV consists of hairs, all coxa sloping backward. Retrolateral setation: I-IV with median narrow light brush of pallid hair; all coxae retrolaterally lack ventral ledge.

Leg pilosity: All legs covered with long hairs giving them more robust appearance. Fe of all legs ventrally with pallid and black brush-like long hair. All legs covered with mat of grey short hair. Fe I-II with long brush of long hairs on retroventral side, fe III-IV with very few long hairs retroventral sides. I: fe, p=12, d=22, r=v=30; pa, p=30, d=20, r=40, v=24; ti, p=70, d=50, r=v=60; mt, p=40, d=50, r=30, v=5; ta, p=r=15, d=50. II: fe, p=15, d=r=25, v=30; pa, p=v=r=20, d=15; ti, p=50, d=40, r=v=60; mt, p=r=40, d=30, v=7. III: fe, p=r=30, d=20, v=40; pa, p=r=20, d=15, v=25; ti, p=30, d=25, r=35, v=60; mt, p=d= r=30, v=20; ta, p=4, d=30, r=6. IV: fe, p=70, d=40, v=20; pa, p=40, d=23, r=15, v=30; ti, p=50, d=r=40, v=70; mt, p=v=r=40, d=30;

ta, p=15, d=40, r=8.

Scopula: Entire on all tarsi, I-IV not divided but scopulae pattern shows midventral narrow gap-like division but no hair visible dividing scopulae in preserved specimen; mt I-II- on ¾ distal, not divided, few long hair in centre and ventrolateral; mt III- on distal 2/3rd basally divided by few hair; mt IV- on ½ distal divided by 4-5 rows of hair.

Tarsal weakness: Not prominent because of strong mat of hairs on tarsi.

Claws: Paired claws on leg I-IV with unequal bifid tooth. Palp with single bare claw.

Abdomen (Image 1, Fig. 1): Cuticle not exposed dorsally and ventrally; dorsally covered with thick mat of black and grey hair, fine layer of black with pallid tips long hair, many pallid; ventrally and ventrolateral uniformly black, thick mat of fine black hair, intermixed uniformly with long black with pallid tips.

Spinnerets: Two pairs, digitiform, yellowish covered with mat of grey and brown hairs intermixed with many long black hair with pallid tips.

Spermatheca (Fig. 9): Simple, fused seminal receptacles, broader at base, gradually narrowing down to half width towards apex.

Description of male (WILD-10-ARA-1062)

Total length 36.93. Carapace 18.95 long, 16.5 wide, chelicerae 11.11 long. Abdomen 17.98 long, 10.91 wide. Spinnerets: PMS, 1.90 long, 0.54 wide 0.48 apart; PLS, 2.82 basal, 2.02 middle, 3.88 apical, mid-width 1.02, 0.84, 0.74 respectively, 8.74 total length.

Colour in life (Image 3): Markings on carapace, legs and abdomen faded due to aging. Carapace, blackish covered with curved golden and purplish hairs more concentrated towards margins and striae, on either sides of ocular area, faint black patch; on periphery long black hair with pallid tips in 2–3 rows; between eyes strong mat of greyish and golden small hair intermixed with long and short bristles, more dense between PME. Legs, chelicerae, margins of carapace and ventral and lateral sides of abdomen pale/coffee brown. Legs hairy, covered with mat of greyish and black small hairs intermixed with long brown hair with pallid tips; patterns on legs dorsally faded, ventral, black and yellow bands on fe, pa, ti and mt of legs I-II, palp and white and black bands on fe, pa, ti and mt of legs III-IV. Abdomen covered with thick mat of grey hair intermixed with long black hairs with pallid tips, dorsally with faded black chevron mark running whole length of abdomen, ventrally covered with mat of black hair intermixed with long black hair.

Carapace (Image 3, Fig. 10): Length to width ratio 1.15; reddish-brown, darker towards periphery; covered with strong mat of short black hairs, more dense towards margins and concentrated along interstitial ridges radiating from fovea, long curved light brown hairs at periphery. Bristles: 17 long, 14 short anteriormedially; 4 long, 8 short between AME; 6 long, 12 short between PME; 8 long, 12 short on clypeus edge. Mat of fine hair on anterior and posterior ocular area, fine golden hair at base of PLE. No setae. Fovea straight. Caput is not much higher than cephalic and thoracic region.

Eyes (Fig. 11): Group occupies 3.21 of head-width; ratio of group width to length 2.26. AME clearly larger than rest, PME clearly smaller than rest. Eyes on ocular low tubercle. Eye diameter: ALE, 0.62; AME, 0.74; PLE, 0.55; PME, 0.24. Distance between eyes: AME-AME, 0.64; PME-PLE, adjacent; AME-ALE, 0.31; PME-PME, 1.66. Ocular quadrate, 1.42 long, 3.21 wide. MOQ: length, 1.42; anterior width 1.96, posterior width 2.16. Clypeus absent.

Maxillae (Image 4, Figs 12–13): 6.04 anterior length, 7.24 posterior length, 3.96 wide. Posterior edge near heel slightly concave, anterior lobe distinct, posterior verntral edge gently rounded for length. Cuspules: ca. 210 sparsely arranged in anterior corner in triangle region. Maxillary lyra consists of one tooth like setae, on its proximal side paddle setae in 3–4 curved rows forming rectangular band covering ½ area on maxillae; two bands of thick brush of grey hairs above and below maxillary suture. Prolateral face, scattered short and long hair present, band of setae present above maxillary suture. Retrolateral face reddish-brown, glabrous in center, with mat of short grey hair on distal and retroventral edge. Serrula, broad curved band behind anterior lobe running down towards posteriorly.

Labium (Fig. 13): 2.34 long, 3.11 wide; ca. 46 cuspules in band for one-fourths of length anteriorly; cuspules ca. similar in size to maxillary. Basal groove shallow, distinct. Labiosternal groove convex. One pair of large sternal sigilla present in labiosternal groove.

Chelicerae (Fig. 13): Intercheliceral spines absent, covered with mat of grey hair intermixed with long black hair with pallid tips on dorsal and lateral sides. Chelicerae lyra same as female, consists of short thorn seatae on proximal lower side on retrolateral face in an oval shape. Prolateral, retrolateral faces glabrous, reddish-brown; 16 promarginal teeth, 29 basomesal teeth.

Sternum (Fig. 13): 8.11 long, 6.32 wide. Almost oval, sloping towards margins, uniformly covered with short black hair intermixed with long black hair and bristles. Posterior angle short and not very sharp and not separating coxae IV. Posterior edge clearly seen.

Image 3. Male of *Poecilotheria striata* (WILD-10-ARA-1062)

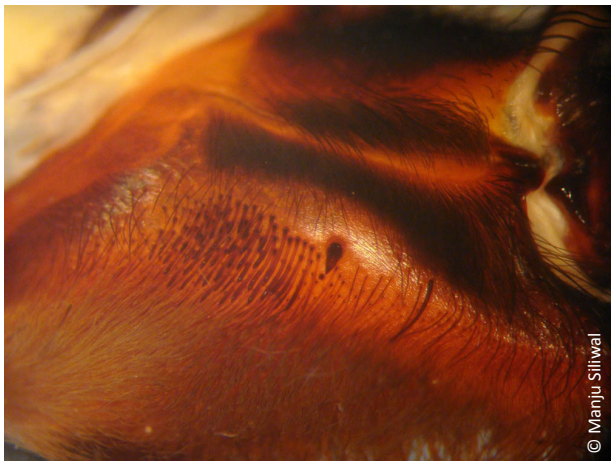


Image 4. Maxillary lyra of male (WILD-10-ARA-1062), prolateral view

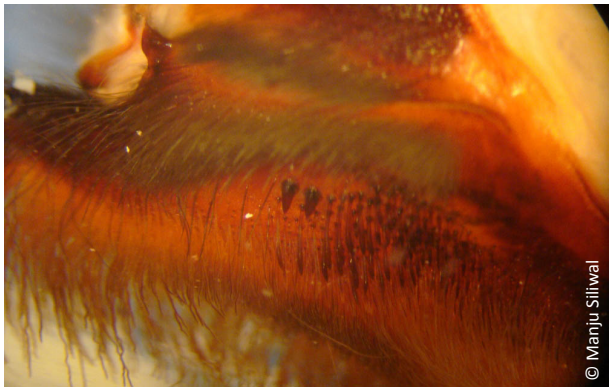


Image 5. Maxillary lyra of male (WILD-10-ARA-571), prolateral view

Prostrate hair mat strong, black hairs intermixed with black bristles. Thick row of long black bristles present on margins. Pedicel pallid, not clearly visible.

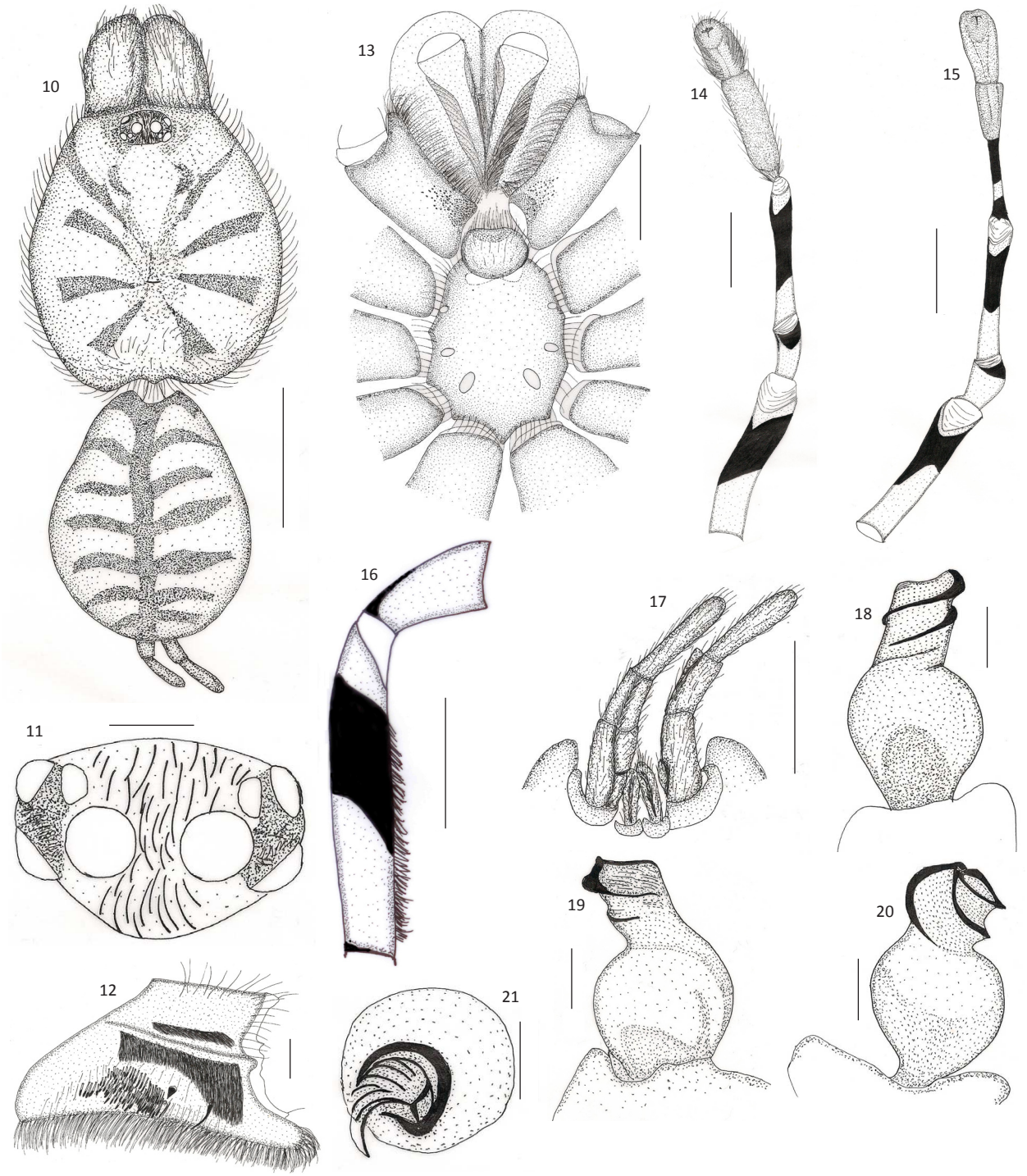
Sigilla (Fig. 13): three pairs, posterior, oval, 1.15 diameter, ca. 2.32 apart, 1.09 from margin; middle, oval, 0.56 diameter, 4.48 apart, 0.63 from margin; anterior, very small, round, marginal.

Legs (Figs 14–16): Formula 4123. All legs of similar thickness. Basifemoral thorns absent on all. All metatarsi longer than tarsi. Mt I 2.8 times longer than ta, mt IV 2.6 times longer than ta, others about 2.4 times longer than tarsi.

Trichobothria: Tarsi: I,16 clavate, ca. 80–100 long and short filiform; II, 32 clavate, ca. 80 long and short filiform; III, 31 clavate, ca. 70 long and short filiform; IV, 12 clavate, ca. 80 long and short filiform; palp, 12 clavate, ca. 30-40 long and short filiform. Clavate on I-IV in distal ½ in two bands; filiforms for length in two bands, each band of 3–4 rows. Short epitrichobothrial hair field on all tarsi as wide as trichobothrial hair and uniform height for length. Metatarsi: only filiform present in curved band of 2-3 rows, I, 30; II, 24; III, 40; IV, 45.

Leg coxae: Coxal bases dorsally easily seen from above (Image 1). I longest, about 1.2 times length of II; IV edge curves dorsally, rounded at interface. Coxae ventrally with short black hair intermixed with long black hair, prolateral faces of I-IV consists of hairs. I-IV ventrally covered with black mat of small hairs at base of coxa intermixed with long and short black hair, all coxa sloping backward. Retrolateral setation: I-IV with median narrow light brush of pallid/grey hair; all retrolaterally lack ventral ledge.

Leg pilosity: All legs covered with hairs saucing it to appear thicker. Fe I with band of black long hair in center. Fe I-II ventrally have pallid brush like long hair retroventral side, fe III-IV with few long hairs on ventral side. All legs covered with mat of greyish short hair. I: fe, p=50, d=20, r=40; pa, p=30, d=3, r=20, v=3; ti, p=40,



Figures 10–21. *Poecilotheria striata* male (WILD-10-ARA-1062).
10 - Carapace and abdomen dorsal view, scale=10.00mm; 11 - Eyes, scale=1.0mm; 12 - Maxillary lyra, prolateral view, scale=1.0mm; 13 - Sternum, maxillae, labium, chelicerae, scale=5.0mm; 14 - Leg I, ventral view, scale=10.0mm; 15 - Leg IV, ventral view, scale =10.0mm; 16 - Femora and patella of leg I, prolateral view, scale=10.0mm; 17 - Spinnerets, scale=5.0mm; 18 - Palp ventral view, scale=1.0mm; 19 - Palp prolateral view, scale=1.0mm; 20 - Palp retroventral view, scale=1.0mm; 21 - Palp top view, scale=1.0mm. © Manju Siliwal

d=15, r=60, v=80; mt, p=10, d=35, r=, v=5; ta, p=r=40-50, d=5. II: fe, p=25, d=10, r=40; pa, p=15, r=5, d=15, v=10; ti, p=15, d=50, r=20, v=25; mt, p=7, d=20, r=30; ta, d=25, p=r=6. III: fe, p=30, d=15, r=20, v=10; pa, p=5, d=7, r=5, v=7; ti, p=15, d=r=25, v=20; mt, p=10, d=20, r=10; ta, p=3, d=17. IV: fe, p=25, d=35, r=15, v=10; pa, p=15, d=8,

Table 2. Distribution of *Poecilotheria striata*

Sno	Locality	Date of sighting and GPS	Tree/ substrate	Sex	Habitat	Source/ Comment
1	Southern India (exact location not known)	Before 1895	Unknown	F, M	Unknown	Pocock 1895
2	Mysuru	Before 1900	Unknown	F	Unknown	Pocock 1900
3	Thiruvananthapuram in Travancore	Before 1900	Unknown	F	Unknown	Pocock 1900: Typesetting error, the *rufilata* site of Trivandrum is repeated for *striata*
4	Vazhachal forests, Thrissur District, Kerala	April 1996	Poovam (*Schleichera oleosa*) tree	F		Misidentified as *P. regalis* by Cheeran & Nagaraj (1997)
5	Thapakkadu, Mudhumalai, Tamil Nadu	November 2000	Teak tree	M	Moist deciduous forest	Sanjay Molur and B.A. Daniel, pers. obser.
6	Siruvani, Coimbatore, Tamil Nadu	September 2000	Teak tree	F, M	Dry deciduous forest	Molur et al. 2003
7	Parambikulam WS, Kerala	September 2001	Teak trees, house	F, M	Evergreen forest	Molur et al. 2003
8	Kerala Forest Research Institute, Peechi, Thrissur district, Kerala	August 2006		M		George Mathew (in litt. December 2006)
9	Mettupalayam Reserve forest	January 2007	Timber tree	J	Evergreen forest	Siliwal et al. 2009
10	Janta Colony, Near Dandeli, Uttara Kannada, Karnataka	January–February 2010	Teak	M	Teak and bamboo forest	Present study
11	Kulgi, Dandeli WS, Uttara Kannada, Karnataka	February-April 2010	Teak, Bamboo	M, F	Teak and bamboo forest	Present study
12	Diggi, Uttara Kannada, Karnataka	March 2010	Bamboo	F	Mixed forest, Bamboo	Present study
13	Kadra, Uttara Kannada, Karnataka	January 2010	Teak	J	Mixed semi-evergreen forest	Present study
14	Harigali, Haliyal, Karnataka	December 2009	Teak	J	Teak forest	Present study
15	Ganeshgudi, Haliyal, Karnataka	December 2009	Teak	J	Teak forest	Present study

r=10, v=15; ti, p=30, d=35, r=25, v=25; mt, p=20, d=35, r=15, v=18; ta, p=8, d=18, r=6.

Scopula: Entire on all tarsi, intermixed with hair, not divided; mt I-II- on ¾ distal, few long hair in centre ventrolateral; mt III- on distal $^{2}/_{3}^{rd}$ basally divided by few hair; mt IV- on ½ distal divided by 2-3 rows of hair. Metatarsi scopulae intermixed with long black hair and bristles at base.

Tarsal weakness: Not prominent because of strong mat of hairs on tarsi.

Claws: Paired claws on leg I-IV with an unequal bifid tooth.

Abdomen (Image 3, Fig. 10): Dorsally with black-haired chevron running from anterior to posterior end, rest covered with thick mat of gray and brown hair; cuticle not exposed dorsally and ventrally; uniformly covered with dense black hairs with pallid tips, more concentrated compared to female (reddish in life); ventrally and ventrolaterally blackish-brown intermixed uniformly with long pallid and golden hair.

Spinnerets (Fig. 17): Two pairs, digitiform, covered with mat of grey and brown hair and many long pallid hair.

Palp (Figs. 18–21): Large pyriform bulb, stout embolus with lipped apical keel dividing into three curved keels that spiral over embolus.

Remarks

In February 2010, a large specimen of *P. striata* was collected (WILD-10-ARA-571), which resembled the female of this species due to its large abdomen. It was kept alive in captivity and after three weeks moulted into a male. Interestingly, when the spider died, the maxilla lyra was found to resemble that of a female (Image 5), consisting of two teeth like spines (only one tooth in males). It is not clear whether it is a case of sex transformation or simply a variation in maxillary lyra setae, coinciding with a large abdomen subadult male. Though there have been reports of sex change in theraphosids due to the bacteria *Wolbachia* (Rowley et al. 2004), we hypothesise captivity related sex change due to stress as this was observed in three more similar individuals observed in captivity in WILD in 2000–2001 (Sanjay Molur pers. obs.). However, more observations in captivity and microbial and molecular studies are needed before deriving any conclusions.

Distribution

Poecilotheria striata closely resembles *P. regalis* but it can be distinguished from *P. regalis* morphologically by the absence of a yellow band on the epigynal area (Pocock 1900). There is an overlap of distribution ranges of both the species, and in the past, these species have been recorded to co-exist in the same localities, habitat and retreats in the Western Ghats (Molur et al. 2004). *Poecilotheria striata* was known prior to this study from only two confirmed locations, i.e., from Mysuru, Karnataka and Thiruvananthapuram, Kerala based on museum records. Despite these spiders being popular in pet trade, their distribution records have been very poorly known. During the past ten years, there have been opportunistic sightings of *P. striata* in different parts of southern India, most of them falling within the known distribution range (between Mysuru and Thiruvananthapuram) except for the recent records of *P. striata* from six locations in Dandeli and nearby areas in Uttara Kannada District extending the range by about 400km north (Image 6). It is likely that *P. striata* has as wider distribution range than that of *P. regalis* but more surveys are required to confirm this.

The distribution information for *P. striata* from literature and field surveys is provided in Table 1 (Pocock 1895; Pocock 1899; Pocock 1900; Cheeran & Nagaraj 1997; Siliwal et al. 2008). The majority of the sightings were in teak forests and very few from evergreen forests, which may be because of better visibility in open or less dense forests. Further, new records show that the species has a wider distribution range than previously reported from a few pockets in the southern Western Ghats. It is mainly due to lack of surveys in these areas that the species has not been reported previously.

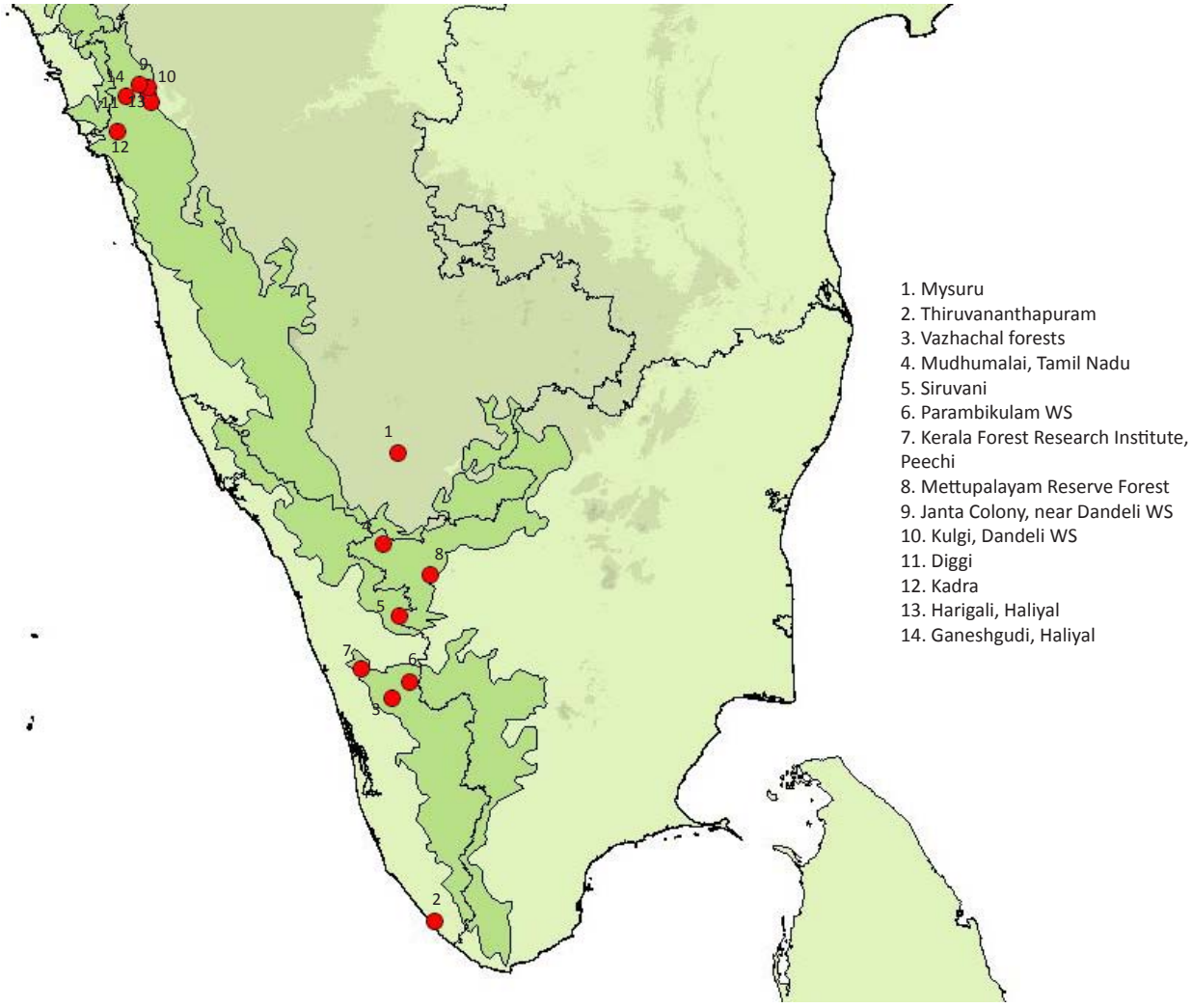


Image 6. Distribution map of *Poecilotheria striata*

Conservation status

Poecilotheria striata was listed as Vulnerable [(B1ab(ii, iii)+2ab(ii, iii)] according to the IUCN Red List, 2008 (Siliwal et al. 2008) due to restricted distribution and various threats like pet trade, habitat loss and fragmentation. The present record of this species from different locations in Uttara Kannada reveals that this species has a much wider distribution range than formerly thought and the area of occupancy and extent of occurrence have increased. Therefore, the threatened status of *P. striata* needs to be downgraded to Near Threatened from Vulnerable.

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