

New record of *Phrynarachne decipiens* (Forbes 1884) (Araneae: Thomisidae) from India

Sangeeta Das¹, Jatin Kalita², Nilutpal Mahanta², Dulur Brahma⁴, Paris Basumatary^{4*}

¹Department of Zoology, Pragjyotish College, Assam, 781009, India

²Department of Zoology, Gauhati University, Assam, 781014, India

⁴Department of Zoology, Bodoland University, Assam, 783370, India

E-mail: parishbasumatary@gmail.com

*Corresponding author

Abstract — The bird dung crab spider *Phrynarachne decipiens* (Forbes 1884) is redescribed based on female specimens collected from Assam, India. Photographs and illustrations of the female genitalia are provided. This is the first record of *P. decipiens* from India.

Key words — Taxonomy, bird-dropping, camouflage, Thomisidae

The genus *Phrynarachne* was erected by Thorell in 1869 with *P. rugosa* (Walckenaer 1805) as its type. It presently consists of 35 accepted species of which only three species have been reported from India: *P. ceylonica* (O. Pickard-Cambridge 1884), *P. peeliana* (Stoliczka 1869) and *P. tuberosa* (Blackwall 1864) (World Spider Catalog 2024).

Phrynarachne decipiens (Forbes 1884) was described based on female sex from Indonesia. The last description of this species was made by Jacobson in 1921 with only sketch of the habitus apart from which there are no detailed illustrations of the species since its original description. Only 10 species have been studied after their original description (Lin et al., 2022). The present paper aims to re-describe *P. decipiens* along with its first report from Assam, India.

Specimens were hand collected from Sonapur locality, Kamrup (Metropolitan) district of Assam (2 females) and Chirang Reserve Forest, Kokrajhar district of Assam (1 female). All the collected specimens were preserved in 80% ethanol, and were studied for their morphological descriptions under Leica EZ4 E stereo microscope. A single studied specimen collected from Chirang Reserve Forest was deposited to the museum of Zoological Survey of India (ZSI), Shillong. Dissected epigynum was kept in 96% lactic acid for 24 hours and then treated with 10% KOH for three to four hours followed by preservation in 80% ethanol. Abbreviations used are as follows: ALE: anterior lateral eye, AME: anterior median eye, ARA: Arachnida, ERS: Eastern Regional Centre, PLE: posterior lateral eye, PME: posterior median eye. Legs measurements are given as total length (femur, patella, tibia, metatarsus and tarsus). All measurements were in millimeters (mm).

Genus *Phrynarachne* Thorell 1869

Type species: *Phrynarachne rugosa* (Walckenaer 1805)

Phrynarachne decipiens (Forbes 1884)
(Figs. 1–10)

Thomisus decipiens Forbes 1884: 586; Jacobson 1921: 186.

Ornithoscatoides decipiens O. Pickard-Cambridge 1884: 199.

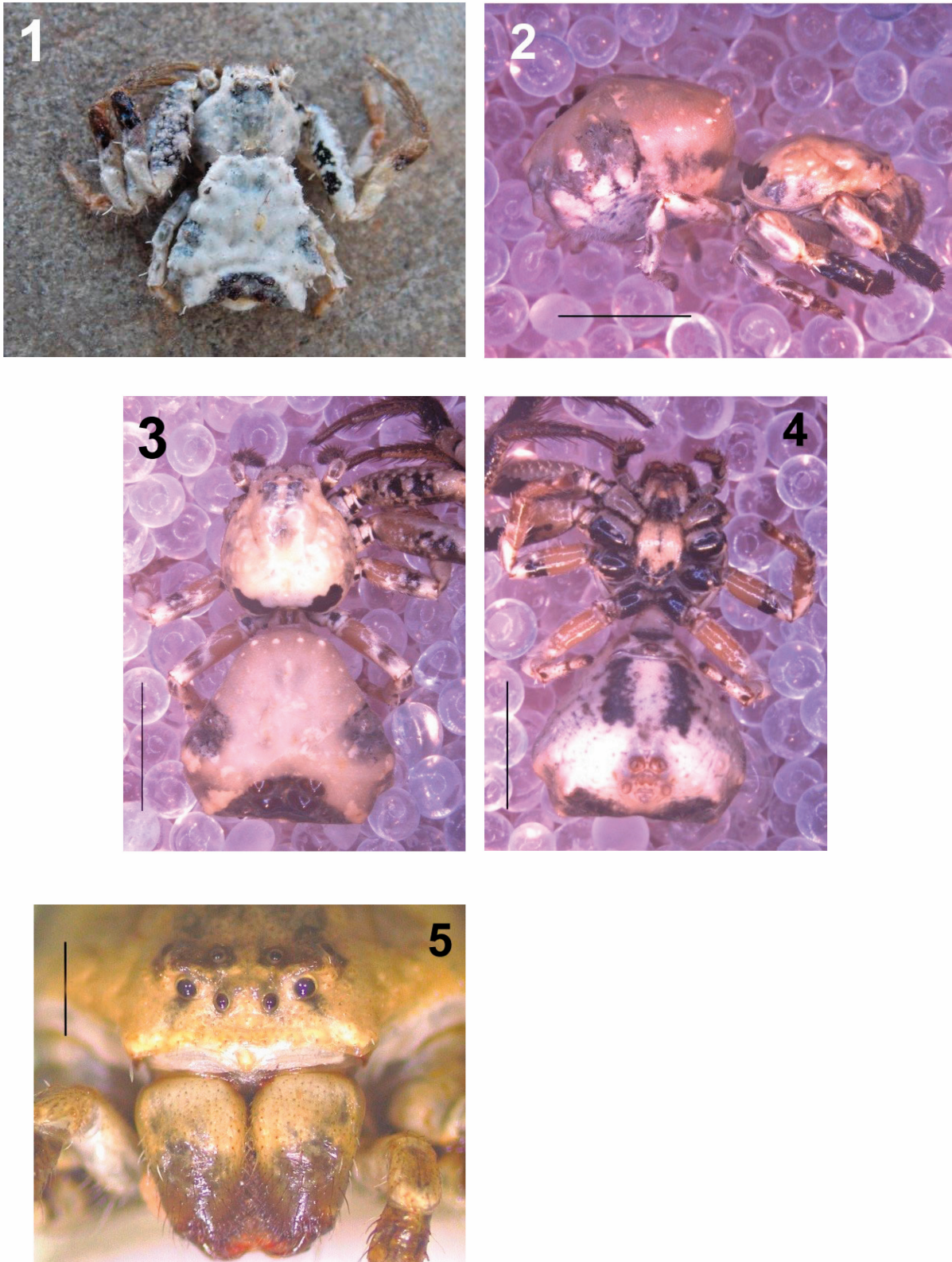
Phrynarachne decipiens Thorell 1890: 63; Workman 1896: 92.

Type material. *Holotype* Collection of Forbes from West Java, specimen deposit location unknown, not examined.

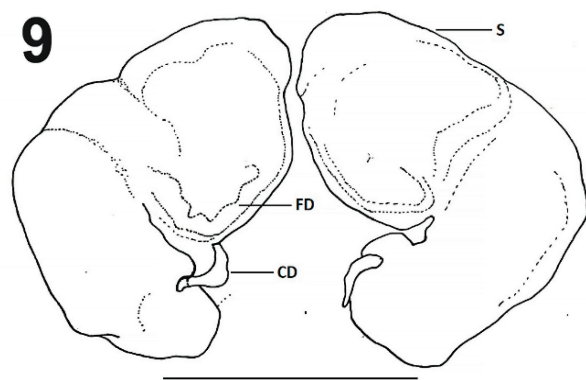
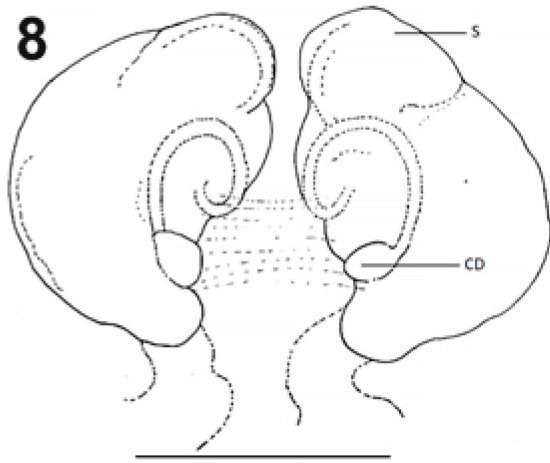
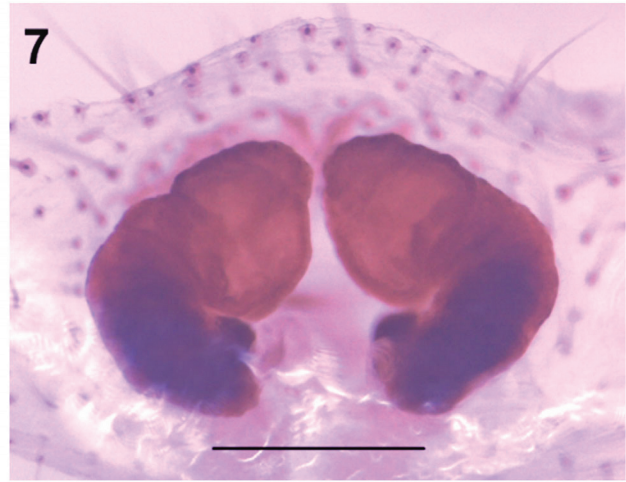
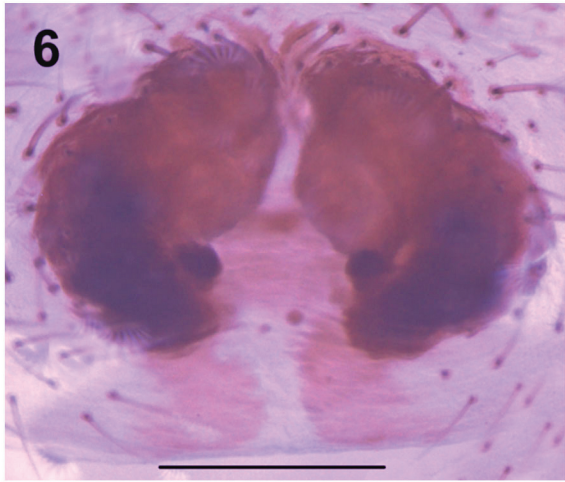
Material examined: 1 adult ♀ (ZSI Accession number: IV/ARA/ERS/44) from India, Assam, Jharbari Reserve Forest, (26.6809 N, 90.2275 E) 90 m a.s.l., 28 July 2018, leg. P. Basumatary, 2 adult ♀ Sonapur locality, Kamrup (Metropolitan) district of Assam (26.13111 N, 91.89694 E) 22 August 2018, leg. S. Das and N. Mahanta.

Diagnosis: The species resembles *P. peelina* in habitus but can be separated from the later by stout spermathecae with posterior heads almost touching each other (vs. oval shaped spermathecae and widely spaced) and short copulatory ducts with slightly curving outwards laterally (vs. copulatory ducts long and narrow, highly curved forming an arch) (cf. Figs. 6–9, with figs. 11–12 in Roy et al. 2010).

Description. Female. Total length 13.14 long; carapace: 5.24 long, 5.47 wide; abdomen: 7.9 long, 9.38 wide. Carapace chalk white with a pair of prominent lateral black markings at the posterior end, pale blackish markings at ocular region and at cephalothoracic junction anteriorly, cephalothorax with numerous tubercula dorsally, elevated cephalic area with eyes present on tubercles (Figs. 1, 3, 5). Eye measurements: AME 0.192, ALE 0.279, PME 0.168, PLE 0.19, AME–PME 0.30, AME–ALE 0.146, PLE–PME 0.382, ALE–PLE 0.278, AME–AME 0.358, PME–PME 0.40, PLE–PLE 1.39, ALE–ALE 0.92. Chelicerae pale blackish, sternum brownish white with blackish spots pos-



Figs. 1–5. *Phrynarachne decipiens* (Forbes 1884). 1, female habitus; 2, same, lateral view; 3, same, dorsal view; 4, same, ventral view; 5, eyes, anterior view; Scales = Fig. 2–4 (5 mm), 5 (2 mm)



Figs. 6–10. *Phrynarachne decipiens* (Forbes 1884). 6, cleared epigyne, dorsal view; 7, same, ventral view; 8, diagrammatic representation of epigyne, dorsal view; 9, diagrammatic representation of epigyne, ventral view; 10, Resting position with silk deposited on leaf mimicking bird droppings. Scales = Fig. 6–9 (0.5 mm).

teriorly, maxilla dull blackish white and labium blackish. Legs chalk white covered with blackish setae and whitish miniscule spines, legs I and II directed forward in resting position, has dirty brown femur with several tubercles, chalk white patella and the tibia is blackened at the anterior region (Figs. 2, 4). Leg measurements: I: 16.21 (5.11, 2.24, 3.37, 3.71, 1.78); II: 10.07(3.20, 1.09, 2.06, 2.31, 1.41); III: 8.25 (2.86, 1.45, 1.72, 1.25, 0.97); IV: 8.18 (3.04, 1.19, 1.70, 1.15, 1.10). Leg formula: 1243. Abdomen chalk white with dark blackish semicircular patch anteriorly, eight tubercles on the anterior side dorsally, pair of round blackish patches laterally, dorsum with whitish tuberculum laterally and anteriorly, venter chalk white in colour and pleated laterally with two prominent black line running medially from epigastric furrow to the base of spinnerets (Figs. 1, 3, 4). Spinnerets whitish brown (Fig. 4).

Epigynum (Figs. 6–9). Epigynum with an anteriorly situated atrium; epigynal ridges sclerotized, copulatory ducts short and curved anteriorly forming a hood shape, directed outwards anteriorly with heads facing each other; spermathecae stout and curving inwards bilaterally.

Male. Unknown.

Natural history. The spider is usually seen lying motionlessly on upper side of broad leaves (Fig. 10). Chalky white colour of the spider and whitish deposition on leave makes it very difficult to be sighted by mimicking that of bird excreta. It generally lies 1–2 ft above the ground.

Remarks: The identification of the present species was done without examination of the type specimen, however the morphological characters and natural history of the studied specimen match those of the previously described specimens (cf. Figs 1–3, 5 and 10 with figs a, g in Workman 1896 and figs 1–2 in Jacobson 1921), thus leaving no doubt that the studied specimen indeed belongs to *P. decipiens*.

Distribution. Malaysia, Indonesia (Java, Sumatra) and India (new record).

Acknowledgements

Our sincere thanks go to Additional PCCF and CHD, Forest, BTC, Kokrajhar, for granting study permit and Assam State Biodiversity Board is highly acknowledged for granting collection permit. We acknowledge the Zoological Survey of India, Shillong for allowing us to use the Leica microscope.

References

- Blackwall, J. 1864. Descriptions of seven new species of East Indian spiders received from the Rev. O. P. Cambridge. *Annals and Magazine of Natural History*, 14 (3): 36–45.
- Forbes, H. O. 1884. On the habits of *Thomisus decipiens*, a spider from Sumatra. *Proceedings of the Zoological Society of London*, 51(4, for 1883): 586–588, pl. 51.
- Jacobson, E. 1921. *Thomisus decipiens* Forbes, a spider supposed to imitate the excrement of birds. *Tijdschrift voor Entomologie*, 64: 186–190.
- Lin, Y., Yu, L., Koomen, P., Yan, X., & Li, S. 2022. Taxonomic notes on the genus *Phrynarachne* from China (Araneae, Thomisidae). *ZooKeys*, 1085, 69.
- Roy, T. K., Dhali, D. C., Saha, S. & Raychaudhuri, D. 2010. Resurrection of the endemic bird dung crab spiders, *Phrynarachne* Thorell (Araneae: Thomisidae) of 19th century India. *Munis Entomology and Zoology*, 5: 543–550.
- Stoliczka, F. 1869. Contribution towards the knowledge of Indian Arachnoidea. *Journal of the Asiatic Society of Bengal*, 38(pt.2): 201–251.
- Thorell, T. 1869. On European spiders. Part I. Review of the European genera of spiders, preceded by some observations on zoological nomenclature. *Nova Acta Regiae Societatis Scientiarum Upsaliensis*, 7(3): 1–108.
- Thorell, T. 1890. Aracnidi di Nias e di Sumatra raccoltinel 1886 dal Sig. E. Modigliani. *Annali del Museo Civico di Storia Naturale di Genova*, 30: 5–106.
- Workman, T. 1896. *Malaysian spiders*. Belfast, 25–104.
- World Spider Catalog 2024. World Spider Catalog. Version 24. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, accessed on 24 April 2024. doi: 10.24436/2.

Received September