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New Report of *Phrynarachne ceylonica* (O. Pickard-Cambridge, 1884) (Araneae: Thomisidae) from Assam, India

Das Sangeeta^{1*}, Kalita Jatin², Mahanta Nilutpal³

¹Biodiversity and Conservation Laboratory, Department of Zoology, Gauhati University,
Assam, 781014, India

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

³Animal Ecology and Wildlife Biology Laboratory, Department of Zoology, Gauhati University,
Assam, 781014, India

ABSTRACT

Phrynarachne ceylonica (O. Pickard-Cambridge, 1884), commonly known as the bird dung crab spider belongs to the family Thomisidae. It was first reported by Simon in 1895 from India but henceforth no specimen has been studied or reported from India. This study reports of *Phrynarachne ceylonica* (O. Pickard-Cambridge, 1884) from India after a period of 122 years with a new report from Assam. Identification was done on the basis of specimen collected from Assam, India. Species description is provided with figures and illustrations.

KEYWORDS: *Phrynarachne ceylonica*, new report, Assam, India

*** Corresponding author**

Sangeeta Das

Department of Zoology
Assam Don Bosco University,
Tapesia Gardens, Kamarkuchi,
Sonapur,
Tapesia
Assam 782402
India

INTRODUCTION

The family Thomisidae Sundevall, 1833 comprises of 170 valid genera of which the genus *Phrynarachne* has 32 known species across the world. This group of spider is commonly known as the bird dung crab spiders.¹ Simon in 1895 had mentioned the presence of *P. tuberosa*, *P. peeliana*, *P. nigra* and *P. ceylonica* from India and Sri Lanka (previously Ceylon).² *P. ceylonica* was previously placed in the genus *Ornithoscatoides* by O. Pickard-Cambridge, 1884,³ which was then replaced in to *Phrynarachne* genus by Thorell in 1891.⁴ Although two species *P. peeliana* (Stockliczka, 1869) and *P. tuberosa* (Blackwall, 1864) have been listed in the checklist of spiders of India by Keswani *et al.* in 2012⁵ and the World spider catalogue, 2019,⁶ however, there was no report of these two species in 19th century until Roy *et al.*, reported them in 2010 from West Bengal.¹ Further, Simon's record of the *P. ceylonica* (O. Pickard-Cambridge, 1884) was without any proper description of the specimen from India. In this paper we report and describe *P. ceylonica* as the third addition to Indian *Phrynarachne* spiders after a long gap of 122 years from Simon's literature and a new report from Assam, India.

MATERIALS AND METHODS

Specimen was collected during diurnal survey at 2:00 p.m. on 23rd September 2017 from Tapesia locality of Sonapur, Kamrup (Metropolitan) district, Assam. Collected specimen was preserved in 80% ethanol and deposited to Biodiversity Museum Gauhati University, Northeast Region (BMGU) with Museum Accession No. BMGU/A-10/ARA-25. The specimen was studied and dissected under Olympus Magnus stereozoom microscope (MSZ-Bi). Measurements were done under Leica EZ4 E stereo microscope with Leica Application Suite version 3.3.0 (LAS EZ). Dissected epigyne was cleared in 96% lactic acid for 24 hours followed by 10% KOH treatment for four to five hours and finally transferring to 80% ethanol. Abbreviations are as follows: total body length (TBL), anterior lateral eye (ALE), anterior median eye (AME), posterior lateral eye (PLE), posterior median eye (PME). Eye inter-distance is given by hyphen (e.g. PME-PME). Legs measurements are given as femur, patella, tibia, metatarsus and tarsus. All measurements are given in millimeters.

RESULTS AND DISCUSSION

Taxonomic Accounts

Family: Thomisidae

Phrynarachne ceylonica (O. Pickard-Cambridge, 1884)

Synonyms

Ornithoscatoides ceylonica O.Pickard-Cambridge, 1884: 201

Ornithoscatoides nigra O.Pickard-Cambridge, 1884: 202

Phrynarachne ceylonica Thorell, 1891:97

Phrynarachne ceylonica Simon, 1895:1043

Phrynarachne nigra Simon, 1895:1045

Phrynarachne ceylonica Ono, 1988:25

Phrynarachne ceylonica Zhu & Song, 2006:549

Phrynarachne ceylonica Ono, 2009:504

Diagnosis

Based on the external morphology and female genital structure, *P. ceylonica* can be readily distinguished from other two species found in India, *P. tuberosa* and *P. peelina* by the following characters: Presence of 2 promarginal and 1 retromarginal teeth; Leg I and II prominently large, yellow with white patch from coxae, femur patella and half of tibia and black coloration on the rest part; presence of 2 central and many small muscle depression on the dorsum of abdomen; Abdomen evenly covered with small to large tubercles with a distinct spine (*P. peeliana* has free median region and *P. tuberosa* has 3 distinct tubercles on either side of the cardiac bar). Circular copulatory orifice with large kidney shaped spermathecae (oval shaped spermathecae in *P. peeliana* and bean shaped in *P. tuberosa*. This specimen of *P. ceylonica* from India is slightly larger (TBL of 11.24 mm) compared to specimen reported by Zhu & Song (TBL of 8.55-10.89 mm) 2006 from China,⁷ Ono (TBL of 7.63 mm) in 1988⁸ and Ono (TBL of 7-8 mm) in 2009 from Japan.⁹

Specimens Examined

1 adult ♀ (Coordinate: 26° 8' 3.40" N, 91° 53' 47.74" E, elevation 155 m) from Tapesia locality of Sonapur, Kamrup (Metropolitan) district, Assam, India; collected by S. Das and N. Mahanta on 23 September 2017.

Description

Based on an adult ♀ (BMGU/A-10/ARA- 25) from Assam, India (Fig. 1-7).

Measurements

TBL 11.24; carapace length 4.91, width 4.88; opisthosoma length 6.33, width 6.65; sternum length 2.55, width 1.92; chelicera length 1.57, width 1.11; maxilla length 1.33, width 0.75; labium length 0.79, width 0.68. AME 0.18, PME 0.14, ALE 0.25, PLE 0.18, AME-AME 0.26, PME-PME 0.40, AME-ALE 0.18, PME-PL 0.27, AME-PME 0.32, ALE-ALE 0.91, ALE-PME 0.288, PLE-

PLE 1.30. Lengths of legs: I (6.14+2.30+5.04+2.69+1.68), II (5.97+2.15+4.73+2.42+1.40), III (2.95+1.57+1.82+1.03+1.04) and IV (3.39+1.23+2.16+1.25+1.05); total length: I (17.85), II (16.67), III (8.41), IV (9.08). Leg formula: I > II > IV > III.

Body Shape and Coloration

Prosoma is dark brownish grey margined with white lines (Fig. 1A). Sternum shield-shaped and elongated with white anteriorly white and black posteriorly. Labium greyish white, maxilla light yellow. Dorsum of opisthosoma dark brownish grey, covered with prominent tubercles and with two large conspicuous muscle depressions posteriorly. Tubercles are with long setae on top. Venter of opisthosoma is white with central longitudinal black patch starting from the epigynal plate up to spinnerets (Fig. 1B). Cheliceral furrow with 2 promarginal and 1 retromarginal teeth (Fig. 7). A pair of elongated kidney-shaped spermathecae with gland situated anteriorly is present with short fertilization and copulatory duct (Fig. 3-6).



Figure 1A. Female Habitus, Dorsal View



Figure 1B. Female Habitus, Ventral View

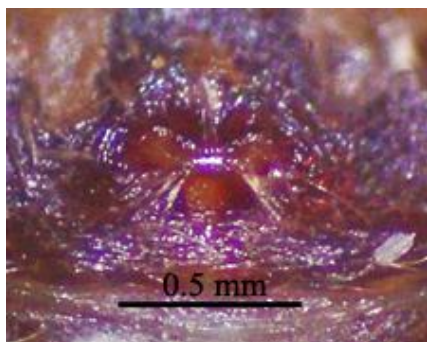


Figure 2. Epigynum

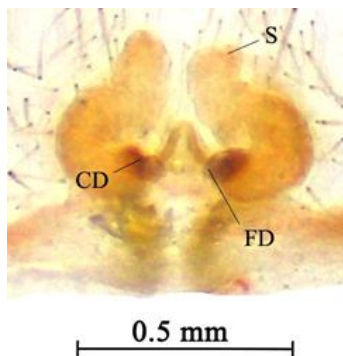


Figure 3. Internal Genitalia Dorsal View; S: Spermatheca, CD: Copulatory Duct, FD: Fallopian Duct

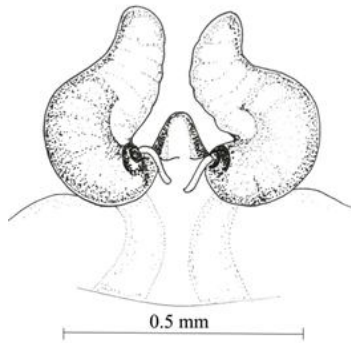


Figure 4. Internal Genitalia Dorsal View Diagrammatic

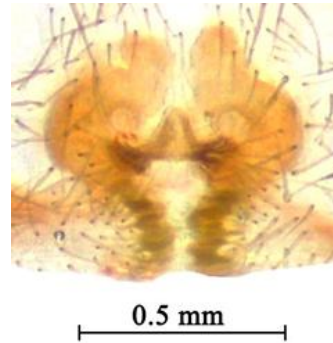


Figure 5. Internal Genitalia Ventral view

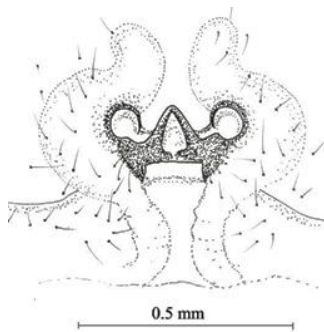


Figure 6. Internal Genitalia Ventral View Diagrammatic

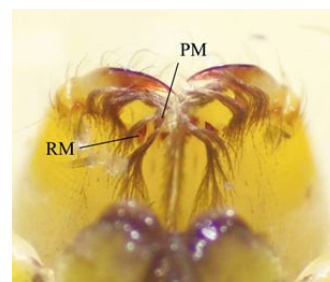


Figure 7. Chelicerae; PM: Promarginal Teeth, RM: Retromarginal Teeth

Distribution

Sri Lanka to China, Taiwan, Japan and India (Assam, new report).

DISCUSSION

Simon in 1895 has mentioned the probable presence of *P. ceylonica* from “*l’Inde et à Ceylan*” i.e. from India and Sri Lanka without any proper taxonomic description. Since then, there was no report on the presence of this species from India. Moreover, the Indian specimen of our study was found to be larger in size (TBL - 11.24) than the ones reported from China⁷ and Japan.^{8, 9} Perhaps this species exhibits a cline in size from the largest at the western end of the distribution (India) and smallest in the east (Japan).

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