



## Short Communication

### RECORD OF THE EYE SPOTTED ARANEID SPIDER *ARANEUS BILUNIFER* POCOCK, 1900 FROM WEST BENGAL

#### INTRODUCTION

Araneid Taxonomy in India was actually started with Westwood (1835). Many other workers like Pocock (1895), Tikader (1970, 1973, 1977, 1982 & 1987) Tikader & Biswas (1981); Biswas 1985; Majumder & Talukdar (2006) and Talukdar & Majumder (2008) and many more contributed in this field of study. But the first comprehensive literature regarding the same was *The fauna of British India including Ceylon and Burma: Araneae* published by Pocock in 1900 and after the publication of the Hand book of Indian spiders by Tikader in 1987 studies in this group has got special impetus among the budding taxonomist in India and adjacent countries. Studies on Araneid spiders of India also were well studied by Tikader (1982) along with some other worker contributing several descriptions.

The genera *Araneus* of the family Araneidae Simon, 1895 can be distinguished with the moderately convex Carapace with no horny out growths; thoracic groove transverse in female, but In male longitudinal, often having lateral prolongations. Ocular quad forming a trapezium, not much longer than wide; median eyes slightly unequal in size; laterals close and usually situated on prominent tubercles; both rows of eyes recurved.

Spider fauna of Bibhuti Bhusan Wildlife Sanctuary at Parmadan in North 24 Parganas District of West Bengal has not yet been studied

in a comprehensive manner. *Fauna of the order Araneae from the state of West Bengal has been described by Biswas & Biswas, 1992. Although there are several published record from the state of West Bengal as well as from India regarding taxonomy of this fauna (Tikader, 1970, 1977, 1977, 1980 & 1982; Tikader & Biswas 1981; Tikader; Biswas 1985) and there are several published papers on the spiders on West Bengal (Pocock, 1900 & 1901; Gravely 1931; Sinha 1951(a,b); Tikader 1970; Tikader 1980 & 1982; Sethi & Tikader 1988; Majumder & Tikader 1991; Biswas & Biswas 1992, Talukdar & Majumder, 2007) and many more but in their account there is no mention of the Orb weaving Spider *Araneus bilunifer* Pocock, 1900 from any other state of India except Tamil nadu and Gujarat.*

In recent years the authors had covered the areas of this Wildlife Sanctuary in different seasons in search of the habitats and behaviors of spider along with the faunal diversity as an approach to prepare an inventory from this environment towards the goal of conservation. *During their survey, the authors came across some 20-21 mm *Araneus bilunifer* spiders belonging to the family Araneidae Simon, 1895 from bushes near the Forest rest house of Parmadan at an altitude of 68 ft. between the GPS co-ordinate of 23°11'18.26" E and 88°45'53.45" N of the state of West Bengal. and conducted taxonomic studies on this fauna.*

## MATERIALS & METHOD

*The Study Area:* The present work was initiated from Spread out over 640 hectares of forestland with a variable altitudes between 50-90 ft. from sea level, the man made forest lies on the banks of Ichhamoti River. The sanctuary is also known as Parmadan Deer Park and is around 150 km North-East from Kolkata between the GPS Co-ordinates of 88°46'03.03"-88°45'13.18"E in East-West direction and 23°11'22.62"-23°10'46.87"N in North to South. More than 65 % of the sanctuary is encircled by the River Ichhamoti along the North-West to South-East boundary. The nearest major town is Bongaon, which is around 30 kms away. The vegetation of these virgin forests are with about 209 species of angiosperms Altogether cover the floral biodiversity containing about 59 trees, 98 herbs, 34 shrubs, 15 climbers and three creepers.

*Climate:* The climate observed in this sanctuary is tropical, like the rest of the Gangetic West Bengal. The hallmark is the Monsoon, which lasts from early June to mid September. The weather remains dry during the winter (mid November to mid February) and humid during summer. Annual Rainfall is about 150–200 cm which is Normal in Southern Bengal (Climate of West Bengal, Wikipedia), Atmospheric temperature ranges between 41°C in May (Max) and 10°C in January (Min) and Relative Humidity Between 50% in March & 90% in July.

*Instruments:* Collections were made by an inverted umbrella, forceps with soft-tension, small brush and with a standard hand sweeping net (129cm in diameter) and Sunca electronic emergency lamp. Taxonomic studies have been made by an Olympus dissecting type binocular microscope with ocular micrometer while photography performed by a Digital SLR.

*Collections:* Spiders were collected from the study areas directly from the webs by hand picking method, by the sweeping net and by beating the furniture's in to an inverted umbrella.

*Preservation:* Collected spider specimens were anaesthetized, killed in a killing jar and finally

preserved in Oudman's preservative (90 parts 70% ethanol, 5parts glycerol and 5 parts glacial acetic acid) in glass vials.

*Identification:* Well preserved spider specimens were sorted transferred in ethyl alcohol and studied under binocular microscope in a Petri dish. Identification was done by following Tikader (1982a & b). The specimens were identified up to species level.

## OBSERVATION

Type Species *Araneus bilunifer* Pocock 1900.

*Type Locality:* Chingleput, Tamil Nadu.

## SYNONYMS

1900. *Araneus bilunifer* Pocock, *Fauna Brit. India, Arachn.*,: 227.

1975. *Araneus bilunifer*: Patel, Vidya, J. Gujarat Univ., **18**(1): 162.

*Diagnostic Characters: General:* Carapace and legs light brownish, abdomen yellowish grey. Total length 20-21mm. Carapace 8.50 mm. long, 7.20 mm. wide; abdomen 14.00 mm. long, 12.00 mm. wide.

*Cephalothorax:* Longer than wide, narrowing in front, clothed with pubescence and hairs. Thoracic region provided with a conspicuous transverse groove. Ocular quad longer than wide and much wider in front than behind. Anterior median eyes larger than the posterior medians. Lateral eyes close and each situated on a tubercle. Both the rows of eyes recurved but anterior row strongly recurved. Sternum heart-shaped, pointed behind, dark brown, clothed with pubescence and hairs, mid-longitudinally provided with a broad black band. Labium wider than long, brown with pale distal border. Maxillae nearly pentangular, brown with pale outer margin, provided with distinct scopulae. Chelicerae strong, brown, provided with medium boss. Legs long and strong, distal ends of all segments having dark brown bands, clothed with pubescence, hairs and spines.

*Abdomen:* Sub-oval, longer than wide, clothed with pubescence and hairs, provided with two small, low shoulder humps and one pair of

conspicuous chalk white large spots, margined by black rings on the dorsum. Three pairs of sigilla arranged mid-longitudinally on the dorsum. A few chalk white patches present anteriorly on the dorsum of the abdomen. Ventral side provided with a large brown patch guarded laterally by a pair of chalk white dumble shaped patches in between the epigastric furrow and the spinnerets. Epigyne provided with a short, broad and bent scape.

### MATERIALS STUDIED

Observed 4 specimens in the field at their original habitat measuring total length of 20-21mm. long in living posture while the body length of the preserved specimen measured female: 20-21mm and no male found at Bibhuti Bhusan Wildlife Sanctuary, Parmadan, Bongaon, North 24 Parganas, West Bengal 26.xi.2010. coll and Examined: S. Talukder.

*Distribution:* India: Chingleput, Tamil Nadu; Vallabh Vidyanagar, Napad, Gujarat.

*Remarks:* Description and illustrations are based on the description of Tikader, 1982.

*Habit & Habitat:* This species builds a moderate, tangled disc web on the bushes of the garden only at night often found nearby, the web also serving as a retreat. They are generally nocturnal hunter and found on roaming over the twigs and leaves while hunting their prey insects from nearby areas.

*Common Name:* Eye Spotted Orb Weaving Spider.

*Economic importance:* Like all other spiders (Except Ulborid Spiders) particularly the Araneid spiders *Araneus bilunifer* Pocock also have neurotoxin poisons in their lively uses and are considered to be medicinally important to human

being. This comb-legged Spiders are used by the tribals of rural areas of the hills as drug for the of Dysmenorrhoea and pain removing purposes as their traditional medicines. The absolute insect predating feeding behavior of these group of animal naturally control the pest insects in IPM and play causative function in agriculture and domestic hygiene.

### DISCUSSION AND CONCLUSION

As spider from this genus have never been collected or reported from this geographical area of India proved to be significant towards the zoo-geographical point of view. Identification of their habitat in the particular Gangetic Plane -ecosystem from which it has been first time recorded in this Subcontinent also note worthy. Description and taxonomic record of this spider species highlighted in this paper for future data base and use. Occurrence of this spider is significant from the view point of *biodiversity* and distributional pattern as hither to unrecorded from the same habitat of this geographical area. Socio-Economic importance and possibilities as a bio-medicinal resource and factor in IPM for exploitation enlighten the importance of conservation of this Biodiversity.

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**S. TALUKDAR**

*Zoological Survey of India, Prani vignan Bhavan,*

*M-Block, New Alipore, Kolkata-700053*

Email ID: [snkr.tlkdr@gmail.com](mailto:snkr.tlkdr@gmail.com)