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Records of new Genus *Chrysilla* (Group Spider: Sub-order: Araneae: Family: Salticidae) in India at Agroecosystem, at Sonitpur, Assam

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ABSTRACT

The genus *Chrysilla* (Salticidae) was first described by Thorell (1887) and is insufficiently known. Presently eight species has been reported. Three of them were known only from their males, four from females and only one from both male and females. The type species (*Chrysilla lauta)*, *C. albens*, *C. delicata, C. doriai, C. deelemani* and *C. acerosa* belongs to Asia. This is the first record of genus *Chrysilla* from India. The specimen was collected from sugarcane field of Sonitpur district of Assam, India. The type specimen was deposited in the Biodiversity Museum, Department of Zoology and Animal Ecology and Wildlife Biology lab, Gauhati University, India. The genus *Chrysilla* can be distinguished from *Phintella* and *Leius* by the thin , long and more colourfull bodies, stronger RTA and much longer than wide genital bulb of male palps, copulatory openings separated by one diameter or so and piriform spermathecae of epigyne. The new species is similar to that *Chrysilla lauta*, *Chrysilla deelemani* and *Chrysilla acerosa* but differs from the former two by the wider than long RTA with a ventral tip and the much longer embolus as in *Chrysilla acerosa* Wang and Zhang, 2012, differ from the later by the shape of prosoma, hight of clypeus, bulbus and median apophysis.

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Key Words: First record, *Chrysilla*, genus, Salticidae, Sonitpur, Assam, India.

INTRODUCTION

The genus *Chrysilla* (Family: Salticidae) was first described by Thorell (1887) is insufficiently known (Prozynski and Deeleman-Reinhold 2010). Presently, altogether eight species have been reported from this genus but only *Chrysilla acerosa* (Wang & Zhang 2012) is known from both sexes. Three of them were known only from males (*C. deelemani* Prszynski and Deeleman-Reinhold 2010; *C. doriai* Thorell 1890 and the type species *Chrysilla lauta*), four were known only from females (*C. albens* Dyal, 1935; *C. delicata* Thorell, 1892; *C. kolosvaryi* Caporiacco, 1947 and *C. pilosa* Karsch, 1878) and only one species (*C. acerosa* Wang & Zhang, 2012) from both the sexes (Platnick, 2014). The type species (*C. lauta*)*, C. albens, C. delicata, C.doriai, C. deelemani and C. acerosa* belong to Asia under the genus *Chrysilla.* Three species (*C. delicata*, *C. doriai* and *C. pilosa*) need to be revised and the others (*C. albens* Dyal, 1935 and *C. kolosvaryi* Caporiacco, 1947) are misplaced (Proszynski & Deeleman-Reinhold, 2010; Proszynski, 2011). The present study recorded for the first time the genus *Chrysilla* from Indian boundary at agricultural field of Sonitpur locality of Assam. Formarly, *Phintelle versicolor* (Koch, 1847) was recorded as *Chrysilla* from India but later, it has been change to genus *Phintella* (see world spider catalog, ver-14.5, 2014). The new species is similar to that *Chrysilla lauta*, *Chrysilla deelemani* (Proszynski & Deeleman-Reinhold 2010, Figs 3-7) and *Chrysilla acerosa* (Wang & Zhang 2012; fig 1-18) but differs from the former two by the wider than long RTA with a ventral tip and the much longer embolus as in *Chrysilla acerosa* Wang and Zhang, 2012 (Wang & Zhang 2012) differ from the

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later by the shape of prosoma, hight of clypeus, bulbus and median apophysis.

MATERIALS AND METHODS

Study area

The District Sonitpur lies in the northern parts of the mighty Brahmaputra in Assam sharing border with Arunachal Pradesh. The district is on the longitude 92º20' E to 93º45' E and latitude of 26º20' N to 27º05' N. The climate of the district is warm, subtropical, the winter and summer temperature vary from 7 to 36º C. The average rainfall is 135cm to 235cm with 122 to 134 rainy days. The agro climatic zone is as Eastern Himalayan region. It is located in lower Brahmaputra valley zone.

Study methods

The specimen was collected from sugarcane field of village Solmara, Sonitpur district of Assam, India using sweep net method. Specimen was preserved in 70% ethanol and were examined, illustrated, photographed and measured using a ZEISS Stemi 2000C stereo zoom microscope attached with a Axio Cam ERC 5S camera and ZEM software. The type specimen was deposited in the Biodiversity Museum, Department of Zoology and Animal Ecology and Wildlife Biology lab, Gauhati University, India. All measurements given in this paper are in millimeters. The parameters used for the study of specimens were as follows. The abbreviations used in the text were as follows: ALE- Anterior lateral eyes, AME- Anterior median eyes, PME- Posterior median eyes, PLE- Posterior lateral eyes, RTA- Retrolateral tibial apophysis.

Genus *Chrysilla* Thorell, 1887

Chrysilla Thorell, 1887. Annali del Museo civico di Storia Natural di Genova. 25, 5-417.

Type species: *Chrysilla lauta* Thorell, 1887(♂)

Chrysilla deelemani Proszynski & Deeleman-Reinhold, 2010. Arthropoda Selecta, 19; 153-188.
Chrysilla acerosa Wang & Zhang, 2012. Zootaxa, 3243; -68.

Generic diagnosis

Carapace low, twice as long as eye field, gently sloping behind eye field, broader behind posterior median eye. Chelicerae elongate, directed diagonally forwards, slightly diverging distally with prominant retrolateral tooth. Abdomen low and long, narrower than carapace. Spinnerates elongate and dark. Male palp with elongate cymbium, narrow bulbus.

The genus *Chrysilla* can be distinguished from *Phintella* and *Leius* by the thin , long and more colourfull bodies, stronger RTA and much longer than wide genital bulb of male palps, copulatory openings separated by one diameter or so and piriform spermathecae of epigyne.

Recorded distribution of the genus

Mynmar, China, Australia, Africa, Indonessia, Pakistan, Malaysia (Platnick, 2014).
New distribution records: India, Sonitpur district, Assam.

Chrysilla assamensis sp. nov.

Type material. Holotype: Male. specimen has been collected from sugarcane field of village- Solmara, Sonitpur District of Assam, India, coordinates: 92º81' E and 26º68' N, on 18th October, 2012).
Etymology. The specific name is after the name of the state Assam from where the specimen is recorded.

Diagnosis

The male of the new species is similar to that *Chrysilla lauta*, *Chrysilla deelemani* (Proszynski & Deeleman-Reinhold 2010, Figs 3-7) and *Chrysilla acerosa* (Wang & Zhang 2012; figs 1-18) but differs from the former two by the wider than long RTA with a ventral tip and the much longer embolus as in *Chrysilla acerosa* Wang and Zhang, 2012 (Wang & Zhang 2012) differ from the later by the shape of prosoma, hight of clypeus, bulbus and median apophysis. Leg formula: 1432.

Description

Adult Male: Total length- 8.22. Prosoma 2.72 long and 2.39 wide. Opisthosoma 5.40 long and 1.44 wide. Carapace low, twice as long as eye field. Dorsum of prosoma dark brown, oval fairly broad and longer than wide, iridescent setae located on hair region.

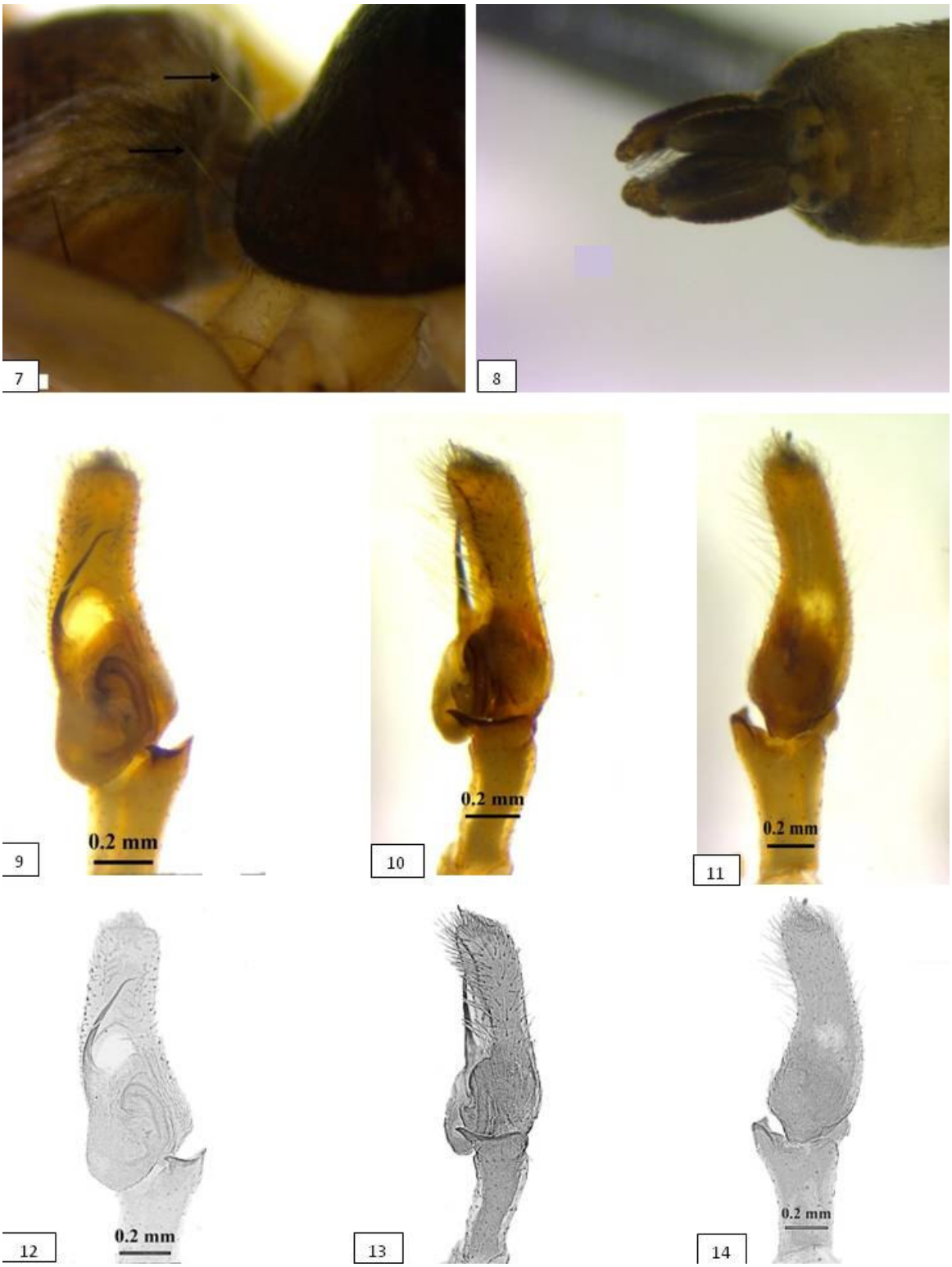
Eye size and mutual distance between eyes

AME-0.62, ALE- 0.31, PME-0.09, PLE-0.34; AME: AME-0.04, ALE: ALE-1.28, AME: ALE-0.04, ALE: PME-0.82, PME: PME-1.65, PME: PLE-0.37. Anterior lateral eyes aligned along dorsal rim of anterior median eyes. Anterior median eyes largest. The diameter of anterior median eyes is twice the diameter of anterior lateral eyes (fig 5, 18). Posterior lateral eyes larger than the posterior median eyes. Posterior median eyes situated midway between

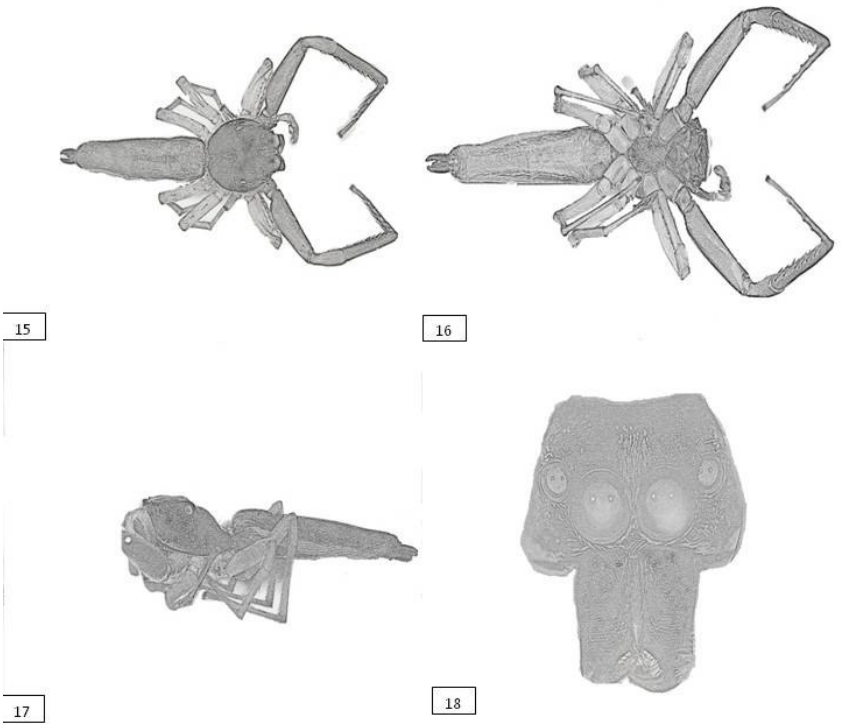
anterior lateral eye and posterior lateral eye. Median ocular quadrangle longer than wide; wider behind than infront. Chelicerae elongate, brown with two promarginal and one retromarginal teeth. Endites and labium brown, longer than wide (fig 6). Thorax region covering with short, dense, brown hairs. Six spines and a notch located near the pedicel (fig 7). Sternum orange, oval shaped, with sparse orange hairs. Legs long and slender, yellowish brown. Femur I with black antero-lateral surface. Ventral spines locating on the surface of forelegs. Leg and palp measurements are provided in Table 1.

Palp: Retrolateral tibial apophysis is wider than long with a ventral tip. Cymbium elongate, Genital bulb wavy and longer than wide, embolus arises laterally from anterior end of bulb with a very long embolus, anteriorly bent (Figs. 9-14).

Figs. 1-6. ***Chrysilla assamensis*** **sp. nov.** 1. *Chrysilla* in habitat; 2. Dorsal view (Preserved specimen); 3. Ventral view; 4. Lateral view; 5. Eyes; 6. Chelicerae with labium and mandite.



Figs. 7-14. ***Chrysilla assamensis*** **sp.nov.** 7. posterior margin of carapace showing spines; 8. Spinnerates; 9 & 12. Male palp(ventral view); 10&13. Retrolateral view; 11&14. Dorsal view.



Figs. 15-18. ***Chrysilla assamensis*** **sp.nov.** 15. Dorsal view; 16. Ventral view; 17. Lateral view; 18 eye pattern.

Table 1. Leg and Palp measurements of male *Chrysilla assamensis* sp. nov.

Leg	Coxa (mm)	Trochanter (mm)	Femur (mm)	Patella (mm)	Tibia (mm)	Metatarsus (mm)	Tarsus (mm)	Total (mm)
Palp	0.42	--	1.24	0.51	0.62	--	1.11	3.90
I	0.67	0.52	2.92	0.99	2.45	1.83	0.65	10.03
II	0.49	0.31	1.86	0.50	1.34	0.93	0.35	5.78
III	0.67	0.35	1.82	0.53	1.03	1.42	0.71	6.53
IV	0.71	0.56	1.74	0.70	1.88	1.99	0.76	8.34

Leg formula: 1432.

Abdomen: Abdomen long and much narrower than carapace. Dorsal coloration of abdomen is brown, with a white longitudinal marking on the midline and several red small markings on the lateral side of white marking centrally when live. Spinnerets elongate and dark brown. Posterior spinnerets are longer than anterior (Fig 8).

Remarks: In *Chrysilla deelemani* and *C. lauta* the embolus base prominent and embolus median. Tibial apophysis bent to form a semicrescent, sharply pointed, without distinct swelling on the dorsal edge. But in the new species the embolus base is not prominent and lateral. The shape of tibial apophysis does not match with the tibial apophysis of the new species. Here tibial apophysis is wider than long with a ventral tip, but the tip is not so long as in other species. In new species the shape of prosoma is more oval than that of the *C. acerosa*. In *C. acerosa* the embolus is needle like, but in the new species it is not needle like and has a bent at the tip. The shape of bulbus, median apophysis is distinct from that of *C. acerosa*. In *C. acerosa* the width of Clypeus is more than that of the new species. The antero lateral surface of femur I is dark brown but in C. acerosa it is black with blue metal lusture when live. Hence due to the above differences it can be concluded that the recorded specimen is a new species.

Distribution: India (Sugarcane field (agricultural field) of Sonitpur District, Assam).

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