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A NEW RECORD OF A PROSTEMMATINE DAMSEL BUG *PROSTEMMA CARDUELIS* DOHRN (NABIDAE: PROSTEMMATINAE) FROM PAKISTAN AND ITS REDESCRIPTION WITH REFERENCE TO ITS UNKNOWN MALE GENITALIA

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ABSTRACT

A prostemmatine damsel bug *Prostemma carduelis* Dohrn of the family Nabidae is recorded for the first time from Pakistan and is redescribed with reference to its unknown male genitalia.

Key Words: *Prostemma carduelis*, Nabidae, Redescription, Male genitalia.

INTRODUCTION

Distant (1904 and 1910) treated the damsel bug's family Nabidae Costa as a subfamily Nabinae Reuter under Reduviidae Latreille including three divisions (tribes) i.e., Pachynomaria Stål (presently treated as an independent family Pachynomidae Stål) and Prostemmaria Reuter (Prostemmatinae Reuter) and Nabidinaria Stål (presently treated as two independent subfamilies Prostemmatinae Reuter and Nabinae Reuter) within the family Nabidae Stål). Stål (1872) and later Reuter and Poppius (1910) although raised damsel bugs to family status but continued to include Pachynomidae Stål under it. Some of the recent authors such as Carayon (1970) and Kerzhner (1981) excluded the Pachynomidae but included the Medocostidae Stys and Velocipedidae Bergroth under Nabidae. Schuh and Stys (1991) and Schuh and Stater (1995) have used the family name Nabidae in the present concept and Kerzhner (1981) classified the subfamily Prostemmatinae into tribes Prostemmatini including the present old-world genus *Prostemma* Laporte and Phoriticini Stål including Pantropical *Phoriticus* Stål and Oriental *Rhamphocoris* Kirkaldy. The present species was earlier known from Sri Lanka and Myanmar and the record from Sialkot in Punjab, Pakistan is certainly a new one.

MATERIAL AND METHODS

A single male was collected from Sialkot in Punjab in August and was easily determined by the first author as *Prostemma carduelis* Dohrn. The determination was confirmed by the first author after the comparison with reference material lodged at Natural History Museum, London during his recent visit in June-July 2005 to that museum by the courtesy of Mr. Mick Webb, Incharge Hemiptera Section of that Museum. The measurements were taken following Ahmad *et al*., (2002) and the male genitalia was dissected and inflated following the technique of Ahmad (1986) and Ahmad and McPherson (1990 and 1998).

Prostemma carduelis Dohrn
(Figs. 1-6)

Prostemma cardulis Dohrn 1858: 229; Distant, 1903: 253; 1904: 392.
Poecilta carduelis Stål, 1873: 108.
Prostemma placens Walker, 1873: 137.

Colouration

Body black except posterior lobe of pronotum, scutellum, clavus and base of corium pale sanguineous or testaceous, a transverse spot near centre of corium, another near its apex and apex of membrane grayish white; apices of anterior femora and bases and apices of remaining femora, tibiae and tarsi ochraceous, tibiae some times brownish ochraceous, posterior lobe of pronotum with scattered coarse punctures.

Head

Conical, paraclypei as long as clypeus; antennae having pre pedicillite between antennal segments 1 and 2, with third segment longest, 3x of first, slightly longer than second and fourth respectively, length of segments I 0.4 mm, II 1.1 mm, III 1.2 mm, IV 1.0 mm, antennal formula I< IV< II< III; labium with second segment longest, 2.5 x of third, 3.5x of fourth, slightly longer than first, length of segments I 0.5 mm, II 0.7 mm, III 0.3 mm, IV 0.2 mm, labial formula IV< III< I< II; length of anteocuter region of head excluding eyes, 0.7 mm, length of remainder of head 0.5 mm, width of head, 1.1 mm, interocular distance, 0.5 mm, interocellar distance, 0.2 mm.

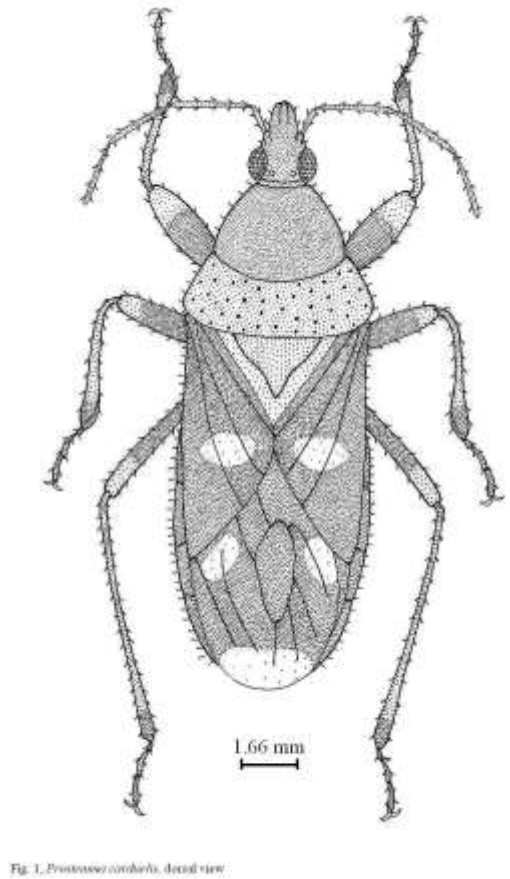

Fig.1. *Prostemma carduelis*, dorsal view.

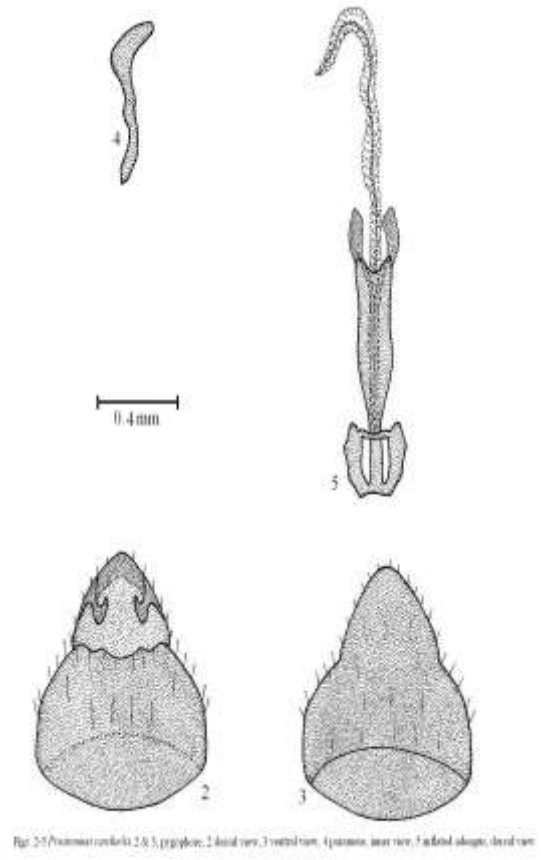

Fig2. *Prostemma carduelis*, 2 & 3: pygophore, 2. dorsal view, 3. ventral view; 4. paramere, inner view; 5. inflated adeagus, dorsal view.

Thorax

Pronotum longer than broad, anterior angles rounded, humeral angles sub-rounded, posterior margin slightly sinuate, length of pronotum 1.6 mm, width 1.3 mm; scutellum broader than long apically tuberculously not produced, with 1-7 pairs of trichobothria laterally, length of scutellum 0.8 mm, width 1.2 mm; membrane of hemelytra passing beyond the last abdominal segment in male; distance apex scutellum-apex abdomen, 4.2 mm; apex abdomen-apex membrane, 0.4 mm; base scutellum-apex clauvs 1.8 mm; apex clavus-apex corium, 2.0 mm; apex corium-apex membrane 1.7 mm.

Abdomen

Connexiva not exposed at repose; in male seventh abdominal sternum with posterior margin concave and rounded. Total length in male, 8.2 mm.

Male genitalia

Pygophore (Figs. 2 and 3) with ventro-posterior margin medially projected above with rounded apex having lateral inner processes with hook-like apices, dorso-posterior margin medially not projected and sinuate; paramere (Fig. 4) having short blade, slightly curved inwardly with outer margin convex, inner margin concave, apically rounded, stem long, having outer and inner margins sinuate; inflated aedeagus (Fig. 5) with pair of lateral sclerotized blade-like appendages with sub-rounded apex, vesica remarkably elongated, apically curved.

Material examined

One male, Pakistan: Punjab: Sialkot on an unidentified grass; leg. Imtiaz Ahmad, 01-08-1972, lodged at NHMUK.

Comparative note

The species *Prostemma cardulis* Dohrn is closely related to the species *P. flavomaculatum* Lethierry in having general external features but it can easily be separated from the same in having antennae with third segment longest, labium with second segment longest and inflated aedeagus with pair of lateral sclerotized appendages in *Prostemma carduelis* Dohrn.

Distribution: Pakistan (Sialkot); Sri Lanka; Myanmar.

DISCUSSION

In the present species pre pedicellite between antennal segments 1 and 2 greatly elongated, giving appearance of 5-segmented antennae. One to seven pairs of trichobothria laterally are present on scutellum of adults. Carayon (1970) also has shown in adults of *Prostemma* sp. Parastigmal pits on abdominal sternum present, apex of hind tibia in males with 10 or fewer setae associated with Ekbolm's organ and situated behind the posterior foramen of the pygophore. Carayon (1970) has also reported that the tibial organs are rubbed across the pygophoral portion of the organ to distribute attractant pheromones from rectal glands. The function of parastigmal pits ("fossettes parastigmatiques") on third sternites (as also reported by Carayon (1948 and 1950) in *Prostemma* spp., are unknown. The vaginal wall is penetrated by the apex of phallus and the sperms are injected into the haemocoel or mesospermage. The fore tibiae and fore femora are enlarged and armed beneath with heavy spine forming a formidable opposable grasping apparatus to prey exclusively on other Heteroptera (Kerzhner, 1981).

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