

**PROTOSTICTA DAMACORNU SPEC. NOV. AND OTHER
ODONATE RECORDS FROM NORTHEASTERN INDIA
(ZYGOPTERA: PLATYSTICTIDAE)**

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Received August 15, 1997 / Revised and Accepted February 3, 1998

The new sp. is described from 1 ♂ (holotype ♂: NE India, Meghalaya, East Khasi Hills, Umran, 33 km N of Shillong, alt. 800 m; 29-VI/2-VII-1995; deposited at "La Specola"). Also provided is a list of 27 spp., collected in 1995, with notes on *Ceriagrion fallax* Ris, 1914, *Copera vittata assamensis* Laidlaw, 1914, *Dysphaea gloriosa* (Fraser, 1938), and *Burmagomphus* sp.

INTRODUCTION

Material collected in 1995 by Dr L. Bartolozzi during a trip to Meghalaya and Assam in northeast India contained some interesting finds: a male belonging to a new species, a female Zygoptera with extensive teratology of the nervatures on all four wings, two species new to Meghalaya and two to Assam.

SITES VISITED

MEGHALAYA

- (1) East Khasi Hills, Umran, 33 km N of Shillong, alt. 800 m; 29-VI/2-VII-1995
- (2) East Khasi Hills, Umloi, 20 km NE of Shillong, alt. 950 m; 28/29-VI-1995
- (3) East Khasi Hills, Shillong-Cherrapunji Road, 20 km S of Shillong; 26-VI-1995
- (4) East Khasi Hills, Mawphlang, alt. 1500 m; 25-VI-1995
- (5) East Khasi Hills, Cherrapunji, alt 1780 m; 26-VI-1995

ASSAM

- (6) Barpeta District, Barpeta Road; 23/24-VI-1995
- (7) Kamrup District, Guwahati, alt. 300 m; 3-VII-1995
- (8) Golaghat District, Kaziranga N. P., alt. 300 m; 4-VII-1995

SPECIES LIST

The species marked with an asterisk (*) are new for Meghalaya; the species marked with two asterisks (**) are new for Assam. The specimens are deposited at the Zoological Museum of the University of Florence (MZUF).

	Collecting site	Specimens	MZUF No.
COENAGRIONIDAE			
<i>Ceriagrion fallax</i> Ris, 1914	5	3 ♂	3409
<i>Aciagrion tillyardi</i> Laidlaw, 1919	1	1♂ 1 ♀	3410
<i>Agriocnemis clauseni</i> Fraser, 1922	2	1 ♀	3411
	5	3♂ 3♀	3412
<i>A. lacteola</i> Selys, 1877	5	1 ♂	3413
	7	1 ♂	3414
	8	1 ♀	3415
<i>Mortonagrion aborensis</i> (Laidlaw, 1914)	7	1 ♀	3416
* <i>Onychargia atrocyana</i> Selys, 1865	1	1♂ 1 ♀	3417
PLATYCENEMIDIDAE			
<i>Copera vittata assamensis</i> Laidlaw, 1914	1	1 ♀	3418
	4	1 ♂	3419
PLATYSTICTIDAE			
<i>Protosticta damacornu</i> sp. n.	1	1 ♂	3408
PROTONEURIDAE			
<i>Elatoneura c. campioni</i> (Fraser, 1922)	1	1 ♂	3420
CALOPTERYGIDAE			
<i>Matrona basilaris nigripectus</i> Selys, 1879	1	5♀ 1 ♂	3421
CHLOROCYPHIDAE			
<i>Rhinocypha perforata beatifica</i> Fraser, 1927	1	1 ♂	3422
<i>R. quadrimaculata</i> Selys, 1853	4	1 ♂	3423
EUPHAEIDAE			
* <i>Dysphaea gloriosa</i> Fraser, 1938	1	1 ♀	3424
<i>Euphaea ochracea brunnea</i> Selys, 1879	2	1 ♀	3425
GOMPHIDAE			
<i>Burmagomphus</i> sp.	7	1 ♂	3426
LIBELLULIDAE			
<i>Orthetrum glaucum</i> (Brauer, 1865)	1	1 ♂	3427
<i>O. japonicum internum</i> MacLachlan, 1894	3	1 ♂	3428
<i>O. luzonicum</i> (Brauer, 1868)	1	1 ♂	3429
<i>O. pruinatum neglectum</i> (Rambur, 1842)	2	2 ♂	3430
<i>O. s. sabina</i> (Drury, 1770)	2	2 ♂	3431
<i>O. t. triangulare</i> (Selys, 1878)	4	1 ♂	3432
<i>Crocothemis s. servilia</i> (Drury, 1770)	7	1 ♀	3433
<i>Diplacodes trivialis</i> (Rambur, 1842)	2	1 ♀	3434
	7	3 ♀	3435
<i>Neurothemis fulvia</i> (Drury, 1773)	1	3 ♂ 3 ♀	3436
	2	1♂ 1 ♀	3437
** <i>N. t. tullia</i> (Drury, 1773)	8	1 ♀	3438
<i>Palpopleura s. sexmaculata</i> (Fabricius, 1787)	1	1 ♂	3439
	2	3 ♀	3440
<i>Rhyothemis v. variegata</i> (Linnaeus, 1763)	8	1 ♂	3441
** <i>Aethriamanta brevipennis</i> (Rambur, 1842)	6	1 ♀	3442
	8	1♂ 1 ♀	3443

PROTOSTICTA DAMACORNU SP. NOV.

Figures 1-5

Material. — **Holotype** ♂: NE India, Meghalaya, East Khasi Hills, Umran, 33 km N of Shillong, alt. 800 m; 29-VI/2-VII-1995, L. Bartolozzi leg.

E t y m o l o g y. — The species is named for the form of its cerci, which resemble the horn of fallow-deer.

MALE. (holotype). — Dimensions (in mm): total length including cerci 50.0; abdomen 45.0; hindwing 21.0.

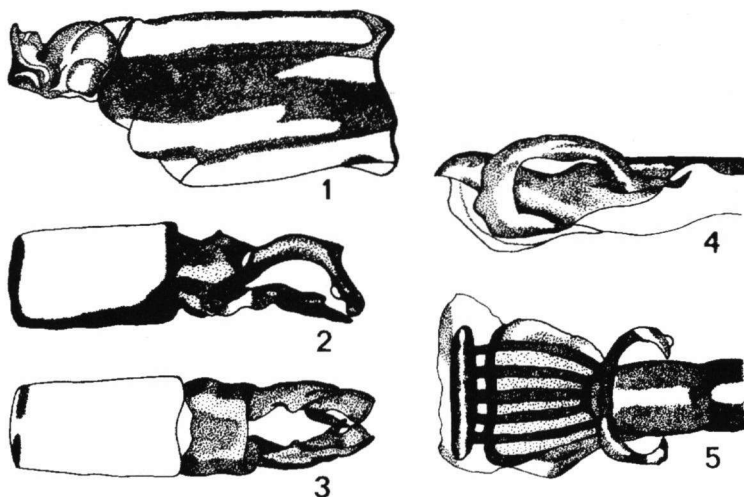
H e a d. — Completely black with a whitish band on the upper edge of the labium and anteclypeus and a cream colored thick 'V' barely visible on the forehead. Ocelli and basal segments of the antenna (the others are missing) hazel-brown speckled with black.

T h o r a x. — Prothorax: Hazel-brown but paler laterally and shaded with black dorsally.

Pterothorax: Mesepisternum pale yellow; posterior lower border of the carena brown; mesoepimeron and metepisternum yellowish with a wide, irregular, oblique brown stripe proceeding caudally from top to bottom; second lateral suture bordered with brown; metepimeron pale yellow with a posterior lower small brown spot; metainfraepisternum and metasternum pale yellow (Fig. 1).

Legs: Only one anterior leg is present. Femur yellow; tibia yellow anteriorly and black posteriorly; tarsi black; claws and tibial spines yellow.

Wings: Hyaline, with dark brown pterostigma and yellow lateral borders, px fw: 15; px hw: 13-14.



Figs 1-5. *Protosticta damacornu* sp. n., holotype ♂: (1) thorax, lateral view; — (2-3) segment X and caudal appendages, lateral and dorsal views; — (4-5) penis, lateral and ventral views.

A b d o m e n. — Segments I-II brown dorsally and yellowish ventrally; III-VIII brown with yellowish proximal ring; segment IX pale grey (blue “in vivo”) with black lateral and proximal margins; these latter not joined medially; distally the black border rises somewhat; segment X and caudal appendages black (Figs 2-3); inferior anal appendages spatulate with internal spines directed obliquely towards the extremities; penis with terminal filaments curved towards the central body (Figs 4-5).

FEMALE. — Unknown.

AFFINITIES. — The caudal appendages, whose tips are spatulate but not bifid, strongly resemble those of *P. himalaica* Laidlaw, 1917, as can be seen by comparing our drawings to fig. 54 in FRASER (1933). The two species differ in the following characters:

- forehead completely black; prothorax and pterothorax black dorsally; inner spines of the lower anal appendices bent inwards perpendicularly with respect to the upper anal appendices *himalaica*
- forehead black with cream-colored 'V'; dorsally the prothorax is hazel-brown shaded with black and the pterothorax brown; inner spines of the lower anal appendices bent inwards obliquely with respect to the upper anal appendices *damacornu* sp.n.

OBSERVATIONS. — Also present in Assam is *Protosticta fraseri* Kennedy, 1936; however, its lower appendages inferior differ markedly from *himalaica* and *damacornu*.

NOTES ON SOME OTHER SPECIES

CERIAGRION FALLAX

The proximal segments of the three males resemble those of *C. pendleburyi* Laidlaw, 1931, which ASAHINA (1967) considers to be a subspecies of *fallax*, and LAHIRI (1987) to be a synonym of the nominal form. Despite this, PRASAD & VARSHNEY (1995) still consider *pendleburyi* as a separate subspecies. Our specimens have very fine black distal rings and a variable blackening of their proximal segments, perhaps due to a different stage of development. As the subspecies attribution is still in question among various authors, as our specimens do not help to answer that question, we believe it is best to indicate them only at a specific level.

COPERA VITTATA ASSAMENSIS

Figures 6-9

All four wings of the female MZUF No. 3418 collected at station (1) are teratological, with more or less irregular nervatures and cells. The wing nomenclature in the following description is taken from CONCI & NIELSEN (1956).

Left fw (Fig. 6): incomplete and irregularly placed nervatures in the postnodals between the costa and R1; some slightly ramified nervatures between R1 and R2;

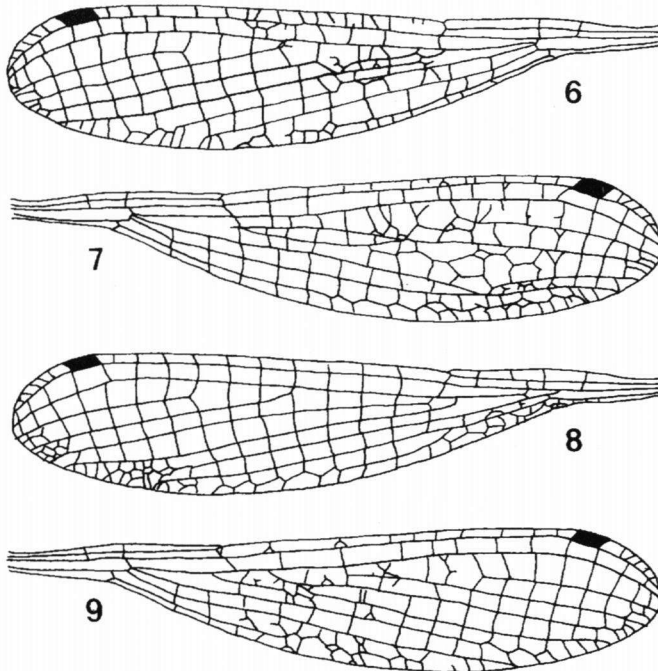
completely disorganized proximal zone between the R2 and the medial; cells somewhat irregular in shape and size between the median and cubital, and along the margin between the anal and the median.

Right fw (Fig. 7): some incomplete nervatures in the postnodals between the costa and R1; irregular principal longitudinal and transverse nervatures between the R2 and the cubital from the nodus to the pterostigma; cell shape and size also irregular; cells somewhat irregular in shape and size between the cubital and the wing margin up to the anal.

Left hw (Fig. 8): irregularly shaped nervatures and cells in the proximal zone between the cubital and wing margin at the height of the nodule; the anal originates abnormally from the cubital at about the middle of the third supplementary discoidal cell. Groups of irregularly shaped and size cells present near the wing margin in the lower third.

Right hw (Fig. 9): proximal postnodal cells abnormally broad and transverse nervatures ramified; cells and nervatures between the IR2 and the third proximal of the median incomplete or abnormally ramified. An analogous situation is found between the cubital and the posterior wing margin.

Thus, while the size and form of all four wings is normal, their nervatures are



Figs 6-9. *Copera vittata assamensis*, wing teratology, ♀: (6) left fw; — (7) right fw; — (8) left hw; — (9) right hw.

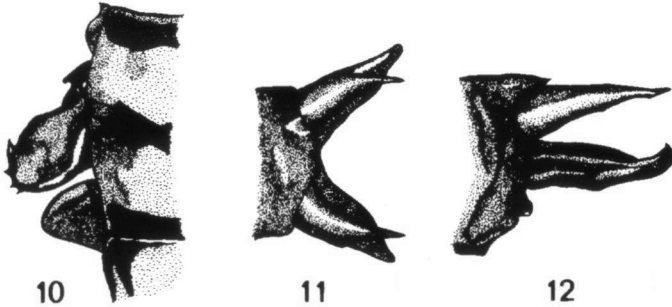
irregular in differing degrees according to the sector.

Though we have no definite elements to explain the cause of such a teratology, it is probably embryological.

BURMAGOMPHUS SP.

Figures 10-12

The uncertainty of the specific attribution of the male specimen, collected at station number 7 is due to its similarity to other species of the same genus. According to CHAO's (1990) illustrations, the secondary genitalia strongly resemble those of *B. arboreus* Lieftink 1940, but the caudal appendages do not coincide. We believe it helpful to provide drawings of the posterior lobe (Fig. 10) and of the caudal appendages (Figs 11-12).



Figs 10-12. *Burmagomphus* sp., ♂: (10) secondary genitalia, lateral view; — (11-12) caudal appendages, dorsal and lateral views.

ACKNOWLEDGEMENT

We wish to thank Dr L. BARTOLOZZI of the Museum of Natural History of the University of Florence for having kindly allowed us to study this material.

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