

Fig. 1. Anal appendages of *Agriocnemis binocellata*. a. From above. b. Semi-profile.

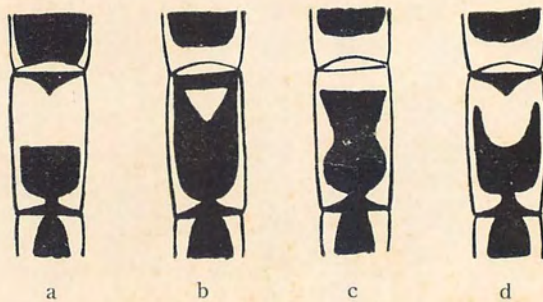


Fig. 2. Dorsal markings of the first and second abdominal segments of—*a. Pseudagrion siamensis*
b. Pseudagrion williamsoni, *c. Pseudagrion laidlawi*, *d. Pseudagrion bengalense* and *microcephalum*.

A COLLECTION OF DRAGONFLIES FROM BANGKOK.

By MAJOR F. C. FRASER, I. M. S.

WITH PLATE 10.

The collection, which contains five new species, consists of a little over a hundred specimens, and was made during the month of September 1921 by General E. W. Trotter.

I have included also a small collection, sent me in the previous year by Dr. Malcolm Smith.

Of interest is a new species of *Pseudocoptera*, the type of the genus being *P. arachnoides* Fraser, collected by Mr. Bainbrigge Fletcher this year at Margherita, Assam. The males of the new species and *P. arachnoides* are almost indistinguishable, but the females vary so much that I have preferred to give the new insect specific rank. The genus will probably be found to be widely spread between the two localities cited. Another insect until now only described from India (Nagpur and Gauhati) is *Agriocnemis d'abreui* Fras., which is represented by two females in the collection. (The latter insect and *Pseudocoptera* are described in MS. in the Memoirs of Pusa.)

No notes have been furnished on the list of dragonflies which follows:—

Sub-family Libellulinae.

1. POTOMARCHA OBSCURA Karsch.
 2. LATHRECISTA ASIATICA ASIATICA Kirby.
 3. ORTHETRUM SABINA Drury.
 4. DIPLACODES TRIVIALIS Ramb.
 5. BRACHYTHEMIS CONTAMINATA Fabr.
 6. CROCOTHEMIS SERVILIA Drury.
 7. NEUROTHEMIS FLUCTUANS Fabr.
 8. NEUROTHEMIS TULLIA TULLIA Drury.
 9. ACISOMA PANORPOIDES PANORPOIDES Ramb.
 10. BRACHYDIPLAX MALCOLMI, sp. nov.
- Several males and a female from Bangkok, 26.9.21.

Male. Abdomen 24 mm. Hindwing 30 mm.

Head. Lips, epistome and face whitish yellow; frons and vesicle metallic blue; occiput black; eyes olivaceous with a cap of reddish brown above.

Prothorax yellowish.

Thorax warm brown on the dorsum, bright golden yellow laterally, the postero-lateral suture marked finely with brown in its upper two-thirds. The dorsum and lateral markings are pruinose.

Legs black, the coxae and trochanters bright golden yellow.

Abdomen. The first three basal segments reddish yellow, the apical two-thirds of the third segment deeply pruinose and almost white on the dorsum, remaining segments warm brown intensifying analwards until quite black. Possibly in the fully adult male all these latter segments are pruinose but all the specimens before me appear to be fully adult and only show pruinoscence on the 3rd segment.

Anal superior appendages as long as the 9th segment (which is nearly 3 times as long as the 10th), narrow at the base, broadening apically where they show a broad, blunt point directed downward, apex pointed.

Inferior appendage triangular, curling upward at the end.

Wings hyaline but faintly enfumed at the apex and warmiy saffronated at the base as far out as the 2nd antenodal nervure; reticulation black and prominent; 2 rows of cells in the discoidal field; trigones and hypertrigones entire; one row of cells between *Rspl.* and *Rs*; *Mspl.* poorly developed; divided cells in outer angle of loop only; 7 antenodal nervures and 6 postnodal nervures in forewing, 6 of each in the hind: stigma very large, light yellowish brown.

Genital organs. Lamina broad and very depressed, its free border fringed with yellow hairs; inner tentaculæ very broad, very robust, rounded, and short, parrot-beak shaped hooks directed directly inward, the outer short, broad, rounded, not nearly overlapping the lobe; lobe small, elongate, converging in a spiral plane.

Female. Very similar to the male but not pruinescent. Differs as follows:—Thorax uniformly golden yellow marked with an oval spot of brown on the upper part of the humeral suture, a small, obsolete, diffuse spot on the lower part of the first lateral suture and a streak on the postero-lateral. The first and last spots are inclined to be metallic in some lights.

Abdomen reddish yellow, the sutures finely black. First segment with a broadish, subdorsal, black, longitudinal stripe; 3rd with a diffuse, brownish, transverse spot just behind the transverse suture; on the 4th to 8th, posterior to the transverse suture a blackish brown streak incomplete apically, merging on the 7th and 8th with the dark brown which covers most of these segments and the whole of the 9th and 10th.

Anal appendages short, conical, pointed, dark brown.

Genital valves, two small, triangular, leaf-like flaps.

Saffronation of the wings at the base not nearly so marked as in the male.

I have named this species after Dr. Malcolm Smith.

11. RHYOTHEMIS VARIEGATA Joh.
12. RHYOTHEMIS PHYLLIS PHYLLIS Sulz.
13. THOLYMIS TILLARGA Fabr.
14. PANTALA FLAVESCENS Fabr.
15. UROTHEMIS SIGNATA SIGNATA Burm.
16. ZYXOMMA OBTUSUM Alb.

Sub-family Gomphinae.

17. ICTINUS PRAECOX Selys.

Sub-family Aeschninae.

18. ANAX GUTTATUS BURM.

Sub-family Coenagrioninae

19. AGRIOCNEMIS D'ABREUI Fraser.
20. AGRIOCNEMIS INCISA Selys.
21. AGRIOCNEMIS BINOCELLATA, sp. nov.

(Fig. I. a and b.)

Male. (Only one specimen.)

Abdomen 24 mm. Hindwing 14 mm.

Head matt black marked with a small, transversely oval, blue spot on either side of the central ocellus, and a large, blue, postocular spot. Labium white, labrum and epistome and cheeks greenish, the former traversed by a broad, black stripe.

Prothorax with the posterior lobe projecting backwards medially in a tongue-like process, black with a yellowish green collar in front and a streak of the same colour on the posterior border limited above by the small, medial lobe mentioned above.

Thorax black on the dorsum marked by a fine, blue, antehumeral stripe, laterally bluish turning to greenish-yellow low down on the sides and marked by a moderately broad, black stripe on the postero-lateral suture.

Abdomen long and slender, black marked with greenish-blue or blue. The 1st segment entirely greenish-blue except for a small, black, quadrate, dorsal spot; 2nd segment has a marking like the spectacles on the hood of a cobra and resembling somewhat that seen in *Agriocnemis d'abrewi* and *Agriocnemis clauseni*; the dorsum is black, this colour constricted apically so that only a narrow stem of black remains on the dorsal carina, whilst basally there are two large, subdorsal, blue, oval spots; segments 3 to 6 have long, narrow, subdorsal lines traversing the basal three-fourths of each segment and encroaching on the black at either end so that the enclosed black tapers abruptly at either end and forms a thick, black annule at the apex of each segment; segment 7 has only two small, subdorsal, blue spots at the base; segment 8 is entirely black, and 9 and 10 are entirely azure blue, the latter shallowly notched behind. Superior anal appendages black, paler beneath and inwardly, rather longer than the 10th segment. Viewed from above they are strongly divaricate, swollen at the base and then constricted and again broadening so as to appear slightly clubbed at the apex. Seen from the side they are foliate, the apex turned down abruptly and ending in a small point. The inferior appendages are very tiny and have been too damaged for purposes of examination.

Wings hyaline; stigma rather elongate, blackish, the circumference paler; the arc is situated widely distal to the 2nd antenodal

nervure and more so than is usual even in *Agriocnemis*; the trigones are not very acutely pointed and rather wider than is usual for the genus; 8 postnodal nervures in the forewing, 6 in the hind.

Legs white, the extensor surface of the femora black, as is also the last joint of the tarsus. Tibiæ armed with 3 to 4 long spines on the outer side, with a row of numerous, smaller ones on the inner side. Claw-hooks robust, situated nearly at the end of the claws.

22. *ISCHNURA SENEGALENSIS* Ramb.

23. *PSEUDAGRION SIAMENSIS*, sp. nov.

(Fig 2. a).

Male. Length of abdomen 30 mm., of hindwing 19 mm.

Head pale sky-blue with a narrow, transverse, black stripe crossing the vertex at the level of the ocelli and throwing a projection back just to the outer side of the ocelli which, meeting the black on the occiput, encloses a large, subtriangular spot of azure blue behind each eye. Eyes dark brown above, greenish below.

Prothorax blue with longitudinal, black, mid-dorsal, sub-dorsal and lateral lines which coalesce anteriorly and posteriorly to enclose spots of the ground colour.

Thorax azure blue, paler at the sides, marked with a mid-dorsal, narrow black stripe and narrow humeral bands of the same colour.

Wings hyaline, stigma lozenge-shaped, blackish; postnodal nervures 9 in the forewing, 7 in the hind.

Abdomen blue on the dorsum, paler on the sides and changing imperceptibly to yellowish below. Segment 1 marked with a dorsal, quadrate, black spot which does not quite reach the apex; segment 2 with a narrow, basal annule, pointed in the middle and an apical, goblet-shaped marking extending only to the middle of the segment, quite square basally and with a very short stem apically where it joins an apical ring; segments 3 to 6 with long, black, dorsal stripes which taper basally and expand apically just before the distal end where they join apical annules; segment 7 similar but with no apical contraction after the expansion; segments 8 and 9

azure blue with narrow, subapical, black annules which are spined; segment 10, the dorsum bearing a large, quadrate, black spot.

Superior anal appendages as long as the 10th segment, strongly bifid at the apex, black, whitish internally, with a robust, basal spur directed downward and inward. Inferior appendages small, short, foliate, white with a minute apical, black point.

Female unknown.

This new species belongs to the group which includes *Pseudagrion bengalense*, *P. microcephalum* and *P. laidlawi*. From the first it is distinguished by having black annules on segments 8 and 9, and by the goblet on the dorsum of the 2nd segment not being hollowed out in front and by the fewer postnodal nervures; from the second by the fewer postnodal nervures and the dorsal marking on the 2nd segment; and from the third by the ground colour being blue instead of lilaceous, by the shape of the dorsal marking on the 2nd segment which is shaped as a thistle-head in *laidlawi*, and lastly by the superior appendage having a basal spine which is absent in *laidlawi*. From *P. williamsoni* it is distinguished by the shape of the marking on the 2nd abdominal segment. (*Fig. 2. b*).

24. *CERIAGRION AURANTICUM*, sp. nov.

3 males from Bangkok, Aug. 20. 21.

Male. Length of abdomen 27 mm., hindwing 18 mm.

This insect is very similar to two closely related forms:—*C. rubiae* Laid., and *C. erubescens* Selys.

It is to be distinguished from both by the shorter petiolation of the wings, this ceasing distinctly before *ac*. In this respect it differs from all other forms that I have had the opportunity of examining.

The are is also well distal to the 2nd antenodal nervure, agreeing in this respect with *erubescens*, but differing from *rubiae* in which the are lies opposite the 2nd antenodal.

The ground colour is a much richer orange than in *rubiae* and differs from *erubescens* in which the colouring of the abdomen is crimson.

The stigma is a warm, light reddish brown, almost brick red. Postnodal nervures number 10 in the forewing, 8 in the hind.

The appendages are very similar to those of the related forms, the superior being foliate, triangular as seen from behind and directed downward between the inferior, blackish above. In *rubiae* they lie either directly above or outside the inferior. The inferior are triangular as seen from the side and rapidly taper before the apex which is tipped with black. They are directed almost directly upward.

25. PSEUDOCOPERA TROTTERI, sp. nov.

2 pairs. Sept. 2. 21.

Male. Length of abdomen 36 mm., hindwing 21 mm.

This species closely resembles a pair of dragonflies,—*Pseudocopera arachnoides* Fras. (Mem. of Pusa), collected by Mr. Bainbrigge Fletcher at Margherita, Assam, 14–19.5.1920 which I had the opportunity of examining this year. It is a curious coincidence that another species, closely allied, should be reported so soon and from a locality far distant.

The genus is closely akin to *Coellicia* from which it differs, however, by the shorter petiolation of the wings, this ceasing proximal to *ac* instead of at *ac*. The two hinder pair of tibiae are also dilated, the hindmost enormously so. Lastly the anal appendages are strongly generic and differ markedly from any found in *Coellicia*.

The male of this new species differs from *P. arachnoides* by the much shorter length of the abdomen, 36 mm. as against 41 mm. in *arachnoides*, by the fewer postnodal nervures, 13/11 as against 15/13, by the longer and narrower stigma and its darker colour, sepia, and lastly by the 9th abdominal segment being entirely pale blue instead of blue marked with black,

The females of the two species differ rather more markedly and this may be better shown in tabulated form as follows:—

P. trotteri.

Abdomen 31.5 mm.
Hindwing 20.5 mm.
Postnodal nervures in forewing 12/13.,
hindwing 11.
10th abdominal segment almost entirely
blue.
Markings of head pale creamy.
Markings of thorax pale blue.
Legs white marked with black.

P. arachnoides.

Abdomen 39 mm.
Hindwing 24 mm.
Postnodal nervures in forewing 14/16.,
hindwing 13.
10th abdominal segment almost entirely
black.
Markings of head deep ochreous.
Markings of thorax deep ochreous
Legs uniform bright ochreous.

The curious and well-defined markings on the head and upper part of the humeral, black band, are exactly the same shape in the two species, as also are the form and colouring of the anal appendages.

26. *LESTES* sp.

Female only. Closely resembles *L. umbrina* Selys. A male of this form is necessary to settle the identification.