

- b. This area darker, mottled, with metallic flecks sparse; spot of white below lower angle either faint or absent
..... *p. purpuripulcra*
- 3. a. Subterminal dots of fore wing black, incomplete; fore wing basal area and thorax dorsally all chocolate brown with no ruddy tinge; terminal yellowish of both wings similar in tone, pale and washed-out looking; ruddy basal area of hind wing and fore wing not reaching tornus *amabilis*
- b. Subterminal dots of fore wing orange, complete; thorax dorsally and basal area of fore wings brown with a definite ruddy tinge; fore wing yellow bright, contrasting with duller yellowish of hind wing; dark basal areas of both wings reaching tornus *xanthocharis*

Four new species of Odonata from the Belgian Congo

by Lt Col. F. C. FRASER, I. M. S., Retd.
(Bournemouth)

In a collection of Odonata belonging to the Musée Royal du Congo Belge and mainly collected by M. CH. SKYDEL, in Katanga, the south-eastern zone of the Belgian Congo, I have found four new species of Odonata, two belonging to the suborder Zygoptera and two to the Anisoptera. The former belong to the two closely related genera *Pseudagrion* and *Aciagrion*: the latter, one to genus *Macromia* and the other to genus *Rhyothemis*, group *notata*. This latter is perhaps the most interesting discovery as the existence of yet another african species belonging to this genus of conspicuously coloured insects seemed to be quite improbable. It is unfortunate that only the female was discovered as considerable differences often exist between the sexes and the occurrence of polymorphic females is not uncommon. As the present type was taken on the same date and at the same locality as a number of specimens of *Rhyothemis notata fenestrina* RAMBUR, it can not be entirely ruled out that this specimen is a polymorph of *fenestrina* although I think it to be very unlikely as the differences are very broad and it is the only species so far found in Africa with the apices of the wings black. SCHMIDT, with some doubt has described *Aciagrion varians* MARTIN and *africanum* MARTIN from specimens other than the types which he believes to have determined correctly but I am not at all convinced that this is so as the thoracic markings disagree and MARTIN never described the anal appendages, which can only be guessed at.

Family COENAGRIIDAE

***Pseudagrion thenartum* sp. nov.**

Male. Abdomen 38 mm. Hindwing 23 mm.

Head : labium and the underside of head and eyes yellow; frons and vertex blackish brown with a poorly defined paler area on the former, anterior to the black antennae; labrum blackish brown, epis-

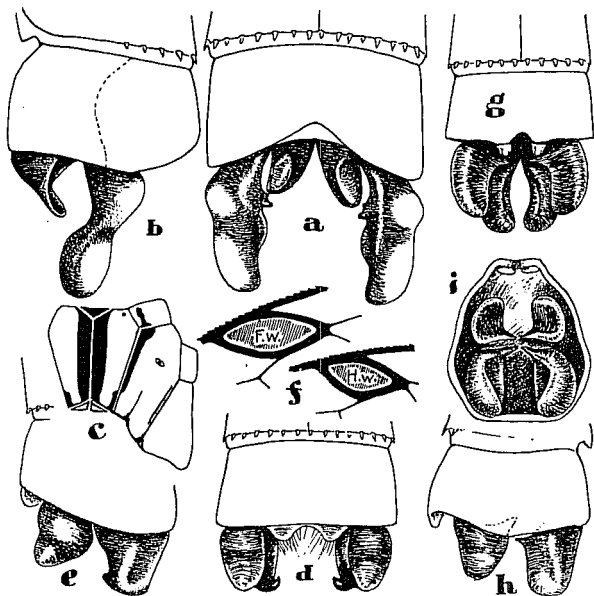


Fig. 1. — a, Male anal appendages of *Paedagron thenartum* sp. nov., dorsal view. b, The same seen from the left side. c, Thoracic markings of the same species (diagrammatic). d, Male anal appendages of *Aciagrion heterosticta* sp. nov., dorsal view. e, The same seen from the right side. f, Pterostigma of fore and hindwings of the same species. g, Anal appendages of *Aciagrion attenuatum* FRASER, dorsal view. h, The same seen from the right side. i, The same appendages viewed from the posterior position.

tome, genae and bases of mandibles pale yellow; occiput black marked by rather large transversely oval citron yellow postocular spots. Prothorax black on dorsum marked with bright citron yellow, — a geminate spot on the centre of the middle lobe, a larger spot on each side of the median one, the lower parts of sides and a small spot on each

side of the posterior lobe; the latter broadly and shallowly convex. Thorax bright ochreous on dorsum changing gradually to paler greenish yellow on the sides, marked sparingly with black as follows. — a moderately thick median stripe which includes the middorsal carina, a very narrow humeral stripe bordering the suture medially for a short distance above and then changing over to the outer side for the remaining three fourths of its length; small spots on the upper parts of the lateral sutures, the posterior of which may be prolonged as a thin interrupted stripe on the anterior border of the postero-lateral suture. Legs yellowish or carneous, with only the distal ends of the femora blackish. Wings hyaline; 13 postnodals to forewings, 12 in the hind; *Ac* meeting the anal vein at the point where it separates from the border of wing; pterostigma bright ochreous, diamond-shaped, all sides of the same length, covering one cell or rather less. Abdomen black on dorsum from segments 1 to 7 and the dorsum of 10; segments 8 and 9 and the sides of 10 azure blue; the sides and beneath yellow; the black on dorsum of segment 2 constricted so as to form an hourglass shaped marking. Segment 10 deeply notched at the apical end of dorsum. Anal appendages black; superiors unguulate, rather longer than segment 10, constricted at middle and bent slightly upwards after the constriction; a thin lamina projects from the middle third of the appendages on its inner side; the whole appendage shaped like the human thumb and its base. Inferior appendages very broad at base, then tapering abruptly and curved upwards with the upper side hollowed out like a spoon; these much shorter than the superiors. On the inner side of the latter is seen obscurely a short dark molariform, spined tubercle which terminates the median lamina.

Habitat : BELGIAN CONGO, Uele, Bambesa, VI-VIII.1938, collected by M. J. VRIJLDAGH. Two males, only one of which is perfect. This new species is characterized by its overall pale colouring and very restricted thoracic, black markings; the pale yellowish legs with only the femoral ends black (but fine black lines on the extensor sides of femora and flexor surface of tibiae in the imperfect specimen), and finally the quite unique shape of the anal appendages, these latter serving to separate it from all the other species of the genus, which now number at least 100. Type in the Musée Royal du Congo Belge, Tervuren.

Aciagrion heterosticta sp. nov.

Male. Abdomen 39 mm. Hindwing 24 mm.

Head: labium and the underside of head a pale yellowish white, labrum greyish or pale bluish, rest of head a pale purplish brown.

the postocular areas obscurely bluish and the antennae yellow. Prothorax and thorax pale bluish or lilaceous with the middorsum and humeral regions bearing broad diffuse, poorly defined fawn coloured stripes. Small black spots or points at the apex of the antealar sinus and the upper ends of the lateral sutures (The whole of this colouring is closely similar to that of *Actiagrion pallidum* SELYS of the orient). Wings hyaline; 14 postnodals to forewings, 12 in the hind; *Ac* meets the anal vein on the wing border at the point where the anal vein separates: pterostigma small, ochreous with the centre infuscated; that of forewing much larger and of a different shape to that of hindwing, the former diamond-shaped and very oblique, the latter with costal side slightly shorter than the posterior side and more quadrate in shape. Legs pale yellow with a geminate black spot on the outer sides of the distal ends of all femora and a poorly defined dark line made up of a chain of spots on the outer sides of the two anterior pairs of tibiae. Spines black. Abdomen of great length and excessively thin, broadening slightly from segment 7 to the end; diffusely black on dorsum from segment 3 to 7; segment 2 with a vestige of this black on the apical half of dorsum, the sides throughout and below pale yellow. Well-defined black apical annules on segments 3 to 7 and conspicuously white basal annules on the same segments; segments 8 to 10 palest blue. Anal appendages dull brown, of the same length, less than half the length of segment 10; superiors short obtuse cones with a sulcus above, after which the conical apical portion is angulated obliquely and slightly upwards. Inferiors much more robust, broadly triangular as seen from the side, where is to be seen a strong keel-like ridge; hollowed on the inner side and dorsally, the inner border of this cavity ending in a small glossy black short spine shaped like a parrot's beak.

Female. Abdomen 38.5 mm. Hindwing 26 mm.

Coloured and marked similarly to the male and differing only in sexual characters; the abdomen rather stouter; the anal appendages shortly conical; ovipositor projecting beyond the end of abdomen; segment 8 with a robust ventral spine.

Habitat: Several males and females from Haut Katanga: Lubumbashi, 13.IX.1951 and Lubumbashi: Elisabethville, 29.VIII.1951, all collected by M. CH. SEYDEL. This new species is closely similar in its colouring to the oriental *A. pallidum* SELYS but it is a larger insect with differently shaped anal appendages. It has quite the longest abdomen of any African species. It differs from *A. africanum* MARTIN (= *Mombagrion congoense* SJÖSTEDT and *Pseudagrion pseuderythromma* SCHMIDT) by the superior anal appendage shorter than the inferior

(Nearly four times as long as inferior in *africanum*); from *A. rarum* (LONGFIELD), (= *Ischmuragrion rarum*) by the much shorter inferior anal appendages (More than twice as long as superiors in *rarum*); from *A. varians* MARTIN by the greater length of abdomen (31 mm in *varians* according to MARTIN against 39 mm in *heterosticta*, and lastly from *attenuatum* FRASER by the inferior anal appendages with an inner apical spine but lacking the basal spines to all appendages. SCHMIDT, l. c. 1951, gives *Mombagrion gracile* SJÖSTEDT and *A. attenuatum* as synonyms for *varians* but on supposition only. MARTIN however gave no description of the anal appendages save that the superiors were short and stout and the inferiors very short, the inference being that these structures were either equal or the inferiors shorter than the superiors. The colouring he gave as largely red and therefore likened the insect to a *Ceriagrion*; there is nothing in the appearance of *attenuatum* or *heterosticta* to suggest a *Ceriagrion*. SCHMIDT's figures are from a supposed specimen of *varians* from Zanzibar in the Vienna Museum and not from the type of *varians* which was unknown to him, so that the question of this synonymy must remain for the time unproven. The species from Zanzibar figured by SCHMIDT is no doubt my *attenuatum* described from Nyassaland.

Type and allotype of the new species in the Musée Royal du Congo Belge, Tervuren.

Family CORDULIDAE

Macromia congolica sp. nov.

Male. Abdomen 38 mm. Hindwing 32 mm.

Resembles *M. picta* (SELYS) in size, colour and markings but differs constantly in the following characters, — the dorsal cone on segment 10 is without a spine (occasionally a few stout setae are present on its apex): the superior anal appendages are blackish brown instead of yellow; the pterostigma is black instead of yellow; the vesicle is without a yellow spot on its posterior face as in *picta*. It is distinguished from *occidentalis* FRASER by its smaller size, darker pterostigma and anal appendages. The thorax is a warm reddish brown with very poorly developed blue metallic reflex in places; epistome bright yellow; lips and face bright ferruginous; frons and vesicle ferruginous, non metallic. Wings uncoloured, costa black but with a fine yellow line running along it; nodal index, — 13 to 14 antenodals and 6 postnodals in forewings; 9 ante- and postnodals in the hindwings.

Female. Abdomen 41 mm. Hindwing 36 mm.

Similar to the male in colour and markings but the frons broadly citron-yellow above; wings, especially in the teneral state, with a broad golden yellow area in between the nodus and pterostigma as in *picta*; 14 antenodals and 6 postnodals to the forewings, 11 antenodals and 9 postnodals in the hind; two rows of cells in the discoidal field of forewings, but only 1 row in the male, again as in *picta*.

Habitat : a number of both sexes from Lubumbashi (Elisabethville), 9-23.IX.1952, all collected by M. CH. SEYDEL. It seems evident that the Ethiopian group of *Macromia*, like the oriental one, possesses a large number of characters, none of which is unique and which are shared unequally and differently among the species, thus producing a large number of complexes. In my paper on the *Macromias* of Tropical Africa (*Rev. Zool. Bot. Afr.* XLIX, 41-76), I stated (page 43) that by reducing these characters to alphabetical letters, a formula could be constructed for each species; the formula for the present species is therefore « ACGJMOSV ».

Type and allotype female in the Musée Royal du Congo Belge, Tervuren.

Family LIBELLULIDAE

Rhyothemis splendens sp. nov., (Fig. 2, a).

Female. Abdomen 16 mm. Hindwing 22 mm.

Head, thorax and abdomen steely black submetallic but frons and vesicle more decidedly dark purple metallic. Legs black. Wings hyaline broadly marked with a sharply defined pattern of blackish brown which by reflected light has a bronzed or coppery metallic sheen. The dark markings disposed as follows. — Apices of all wings to as far as proximal end of pterostigma from where it is continued between the Costa and Radius to as far as Nodus; apically it passes posteriorly gradually narrowing and finally tapering out on the posterior border at about 3 cells proximal to the end of *M*. The base of all wings proximal to Nodus but the outer border of marking very ragged, and in the hindwing, very sinuous, curving basally gradually nearly to the apex of anal-loop. A narrow belt of hyaline wing exists between the marking and tornus of wings. The broad basal dark area bearing irregular patches of partially hyaline membrane: in the forewing, two rows of cells adjacent to discoidal triangle are clear and spaces posterior to *R* and *Riv* are more palely tinted. In the hindwing two or three curved bands are seen at base of wing where the pigmentation is lighter and there is a diffuse pale area at base of discoidal field.

Habitat : a single female, the holotype, from Lualaba : Kabongo, 17.XI.1952, collected by M. CH. SEYDEL. It is the only known species of *Rhyothemis* from Africa which has the apices of the wings black. The male is unknown. It appears to have been taken in company with *R. fenestrina notata* RAMBUR, to which it is nearly related.

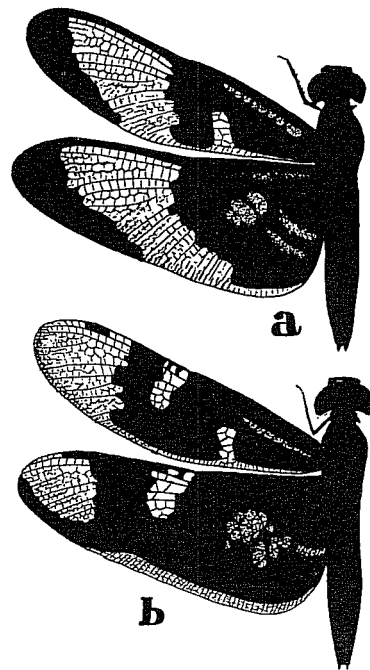


Fig. 2. — a, *Rhyothemis splendens* sp. nov., female.
b, *Rhyothemis notata fenestrina* RAMBUR, female.

REFERENCES

- FRASER, F. C., 1928, *Trans. ent. Soc. Lond.* 1928 : 126.
ID., 1954, *Rev. Zool. Bot. Afr.* XLIX, 1-2 : 44.

- LONGFIELD, C., 1947, *Arc. Bocage*, 16 : 6.
MARTIN, R., 1908, *Ann. Mus. Civ. Genova Stor. Nat.* 43 : 659, 660.
SCHMIDT, E. (Ris), 1936, *Abh. Senckenberg Nat. Ges.* 443 : 67.
 ID., 1951, *Arc. Mus. Bocage*, 20 : 136.
SJÖSTEDT, Y., 1909, *Exp. Kilimandjaro 1906-06*, Stockholm : 40.
 ID., 1917, *Ark. Zool.* II, 24 : 15.
RIS, F., 1913, *Cat. Coll. SELYS, Libellulines*, XV : 959.

Tingides nouveaux africains

par le Dr. H. SCHOUTEDEN
(Musée Royal du Congo Belge, Tervuren)

Je décris ici quelques Tingides nouveaux des collections du Musée Royal du Congo Belge, à Tervuren. La plupart proviennent du Congo Belge, un seul du Kenya.

Plesionema Leroyi nov. spec.

Tête convexe, un peu plus longue que le pronotum, portant, au lieu d'épines aiguës, neuf fortes saillies obtuses : une saillie derrière chaque œil au niveau de son bord interne, une saillie médiane un peu en avant des yeux, une paire en avant de celle-ci, plus rapprochée entre elles que les deux basales, puis une saillie médiane plus forte, dirigée vers l'avant et suivie d'une paire de saillies l'encadrant et aussi écartées que les précédentes, et enfin une saillie médiane antérieure, dépassant les bucculae; tubercules antennifères acuminés. Les bucculae rétrécies en avant, leur extrémité arrondie, leur bord inférieur légèrement bisinué. Pronotum portant trois fortes carènes, la médiane percurrenente, les latérales sinuées en avant et s'arrêtant au col, celui-ci large, de 4 aréoles. Bord antérieur du pronotum dépassant les yeux en dehors, coupé transversalement derrière chacun d'eux, l'angle externe arrondi; paranota de forme typique, comptant 2 aréoles au niveau du col, leurs bords parallèles à ce niveau puis divergeant fortement, les paranota s'élargissant jusqu'à compter 5-6 aréoles vers le milieu de la longueur du pronotum, cette partie séparée de la précédente par une forte échancrure; les paranota se rétrécissent ensuite, avec léger sinus à 3 aréoles, puis 1-2 à l'épaule, leur bord externe se rattachant en angle obtus au bord postérieur du pronotum, qui est transversal et bisinué; la ponctuation du pronotum forte et nette : 5 points entre la carène médiane et la carène latérale, 7-8 entre celle-ci et les paranota à l'épaule. Elytres