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LEIDEN
ARNOLDIA

(RHODESIA)

SERIES OF MISCELLANEOUS PUBLICATIONS

NATIONAL MUSEUMS OF RHODESIA

No. 9

Volume 5

24th March, 1971

A NEW ZYGOPTERAN GENUS (ODONATA) FROM
MALAWI

by

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In November-December 1970 my African Assistant Philip accompanied a National Museums (Rhodesia) expedition to Malawi. In December part of the expedition, joined by a team from Falcon College (Rhodesia), climbed Mount Mlanje and amongst the miscellaneous insect material brought back to the National Museum, Bulawayo, there was a very interesting new genus and species of the family Platycnemididae. A series of this new species was collected by the joint efforts of Mr. J. Stakesby Lewis and two students, David Killick and Robert Evison, of Falcon College; and Philip. One of the males was taken by Philip below the massif on a stream in Lujeri village, but the others were all collected on the plateau, high up just below the peaks.

Family PLATYCNEMIDIDAE
OREOCNEMIS gen. nov.

In applying a name to the new genus I have had the valuable assistance of Mr. Richard Brooke. I have retained the suffix *-cnemis* which is the usual termination in this family, the only African genus with a different form being *Paulianagrion* Fraser. Nevertheless the suffix *-cnemis* is derived from the Greek for "leggings" (or *cneme* a calf or tibia), suggesting the flat tibial expansions found in the typical genus *Platycnemis* Burmeister on which the family name is founded. Mlanje, like the Greek *oros*, means a mountain.

This genus is distinct in several features. One of the most important generic characters is the shape of the discoidal cell (quadrilateral) which is generally more or less rectangular in the family. In three African genera, which may be considered nearest to the new one, this cell is acute-angled at the lower distal angle, as it is in this new genus. Another important characteristic is a negative one in this genus, the lack of tibial expansions in the male.

Leptocnemis Selys, 1886, from the Seychelles, has the most acute angle, corresponding with the new genus. In the other two African relatives it is much less acute: *Paracnemis* Martin, 1902, of Madagascar and *Paulianagrion* Fraser, 1941, of the Cameroons.

Generic Description

Moderately large and robust. Head not especially wide. Prothorax of female without stylets (similar in other genera of the family); the hindlobe well arched laterally. The legs are not expanded. Female without ventral spine on 8th abdominal segment; the ovipositor sheath scarcely extending beyond the 10th segment. Superior appendages of male robust, as long as segment 10, forcipate; inferior appendages extending about half as far as superiors. Prophallus without flagella.

Wings petiolate. Pterostigma a long narrow parallelogram in all wings and normally covering more than one subpterostigmatal cell. Posterior margins of wings not sinuous, nor notched. No extra intercalary veins. First antenodal cross-vein (Ax) parallel to or more oblique than second Ax. Arculus at or very close to second Ax. Discoidal cell with lower distal angle very acute, the anterior side of this cell much shorter in forewing than in hindwing: anterior/posterior sides give a ratio of approximately 0.3 in forewing, 0.5 or more in hindwing. Subdiscoidal cell (subquadrangle) with distal end angled. From base to nodal level there are usually 3-4 cells between MA and Cu₂, but aberrationally 2 cells. 1R₃ starts at subnodus, R₄₊₅ before this; R₅ starts at approximately the 6th postnodal cross-vein Px. Anal vein leaves posterior margin at the anal crossing Ac. Ac is midway between the two Ax or nearer the second Ax.

Type-species *Oreocnemis phoenix* spec. nov.

Leptocnemis Selys is a much more slender insect; the pterostigma is more oblique; the superior appendages are down-curved. The glans of the prophallus is extended as a short lateral filament. The female prothorax is deeply bifid posteriorly and the ovipositor is longer. In other respects it is close to the new genus and is, in fact, its closest relative in the African continent.

Paracnemis Martin has the discoidal cells rather less acute at the lower distal angle. Pterostigma a short broad parallelogram. The anal vein leaves the margin before Ac. The anal appendages are very short. The female prothoracic hindlobe is broadly rounded, only slightly kinked laterally. It is a more slender insect.

In *Paulianagrion* Fraser the discoidal cell is less acute at the lower angle. The arculus is distal to the second Ax. The pterostigma is rhomboidal and barely covers one subpterostigmatal cell. The superior appendage is quite different, being forked and the inferior as long as the superior, much shorter than the 10th segment.

Of the Oriental genera perhaps the nearest is *Coelicia* Kirby, 1890, but this differs in many ways. The discoidal cell, for instance, is far less acute, the pterostigma is more rhomboidal and the inferior anal appendage is longer than the superior.

OREOCNEMIS PHOENIX spec. nov.

Holotype, mature ♂. General colouring reddish-brown, the abdomen brighter red. Labium ochreous-brown, face and frons reddish-brown, genae orange-brown; frons

broadly black at base. Antenna red on basal segments, black on filament. Vertex black with the following red markings: a narrow triangle outside each posterior ocellus extending inwards to touch the anterior ocellus on either side; and the occiput has a red posterior margin. No postocular spots. Orbits cream on ventral surface.

Prothorax reddish brown, broadly black mid-dorsally and with a diffuse lateral black suffusion (as indicated in the illustration of the female thorax). Posterior lobe moderate, evenly and weakly curved. Synthorax reddish-brown, yellower latero-ventrally. Mesepisterna with very broad black median bands on each side of the red median carina and at the dorsal end this black is expanded to coalesce with the dorsal black spot on the humeral suture. Mesepimeron with an oblique black band which invades the metepisternum at the dorsal end. A dorsal spot on the second lateral suture. Metasternum suffused with pale brown. Legs entirely red-brown, with black setae. Claws reddish to dark brown, with the claw-hook close to the apex.

Wings hyaline, faintly fumose. Pterostigma a rather long narrow parallelogram, ferruginous in colour, longer than one subpterostigmatal cell and more or less equal in size in all wings. Venation dark brown. Forewing with 15-16 Px, hindwing with 13-14 Px.

Abdomen vermilion on most segments, without prominent markings; segments 7-10 and the anal appendages reddish-brown. Superior appendage about as long as segment 10, forcipate; with an inner flange and an apical tooth. Inferior appendage slightly over half as long as the superior, directed obliquely upwards, ending in a slightly curved black apical hook. Prophallus with sub-dorsal setae near outer end of stem; glans extensive; no flagellum.

Abdomen (without appendages) 34 mm, hindwing 25 mm.

Paratype ♂♂ very similar. The basal black on the frons often sends a short median tongue anteriorly to the crest. The length of the pterostigma in relation to the cells below it is variable, 1.25 to 1.5, entirely depending, however, on the variability of these cells. Occasionally one subpterostigmatal cell is as long as the pterostigma: this is so in all wings of one paratype ♂ and in one wing of the two other specimens.

Allotype, mature ♀. Labrum and genae orange-brown; labrum black at base; post-clypeus all black above except at side; frons all black above. The head is consequently darker than in the ♂.

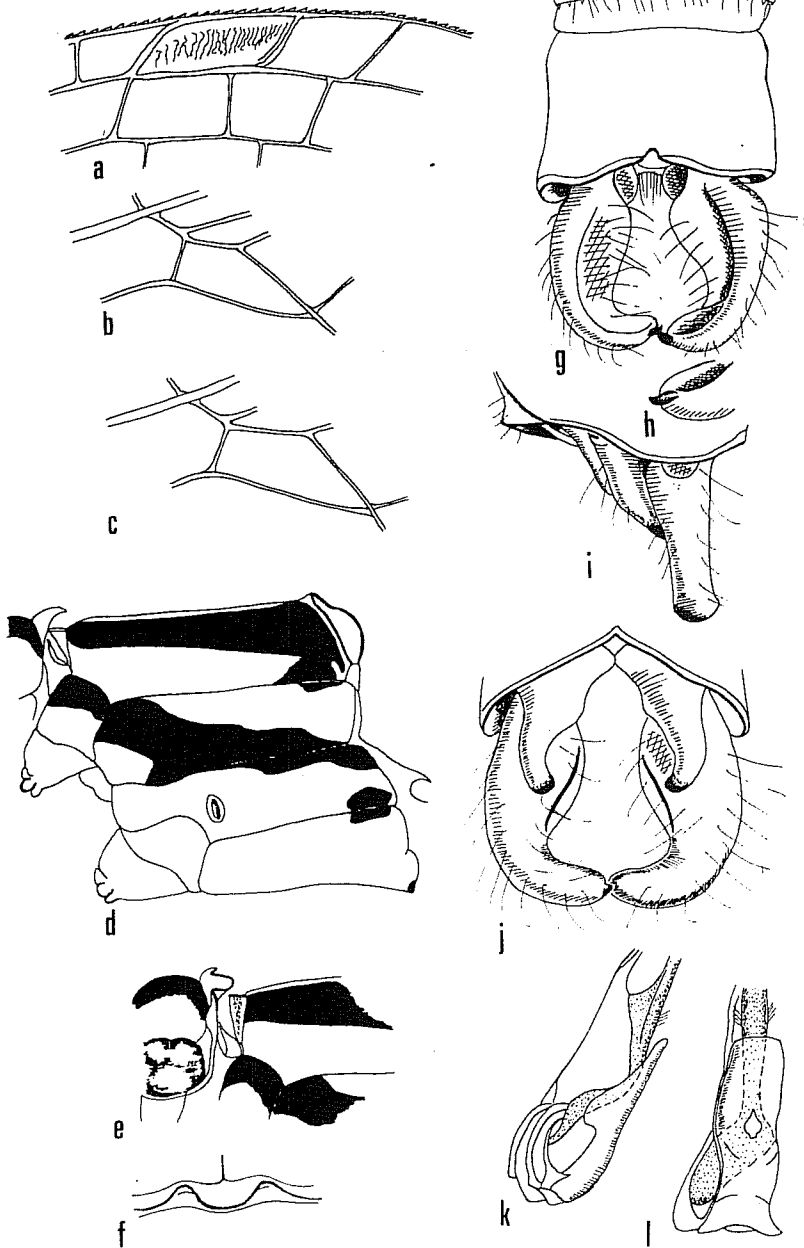
Prothorax as in ♂ except the hindlobe which is black and projects medially but is short and arched laterally. Synthorax as in ♂. Each femur with a black external stripe.

Pterostigma darker ferruginous than in ♂. Forewing with 15 Px, hindwing with 13 Px.

Abdomen with some black marking, unlike the ♂: segment 1 with two hyphens and segment 2 with two elliptical spots near distal ends; segments 3-5 bronze-brown dorsally, ending in an expanded black macula; segments 6-10 all black dorsally. Cerci short and black.

Abdomen 32 mm, hindwing 25 mm.

The paratype ♀ has, on the mesepisternum, irregular black streaks below the broad black band, but since these streaks are very different in composition on the two mesepisterna it seems very probable to me that they are post-mortem changes. It is slightly larger than the allotype, the hindwing 26 mm.



Oreocnemis phoenix spec. nov.

1. a. Pterostigma of right forewing; b-c. arculus and discoidal cell of forewing and hindwing respectively; d. thorax of holotype ♂ from left; e. part of thorax of allotype ♀ from left; f. posterior lobe of ♀ prothorax from above; g-h. superior appendages of ♂ from above and apex of one superior appendage more enlarged; i-j. anal appendages from left and ventrally, respectively; k-l. prophallus of paratype ♂ from right and from below, respectively.

Biological Notes

I am informed that the species was collected in swamps, small mountain streams or on swampy ground. At rest the wings are closed as in most Zygoptera. The upward curvature of the lateral ends of the prothoracic hindlobe in the ♀ is evidently to form receptacles for the superior appendages of the ♂ during tandem linkage.

No further examples could be found a month later when David Killick revisited Mlanje in January, 1971. Its flight may perhaps be restricted to the last months of the year.

Material Examined (all from Mount Mlanje, Malawi) Lujeri Village, 10th December, 1970, 1♂; Sombani Plateau, 9th-10th December, 1970, 3♂♂, 1♀; Little Ruo path, 14th-15th December, 1970, 3♂♂; Ruo Basin, 14th December, 1970, 1♀.

Holotype, allotype and 4 paratype ♂♂ are in the National Museum, Bulawayo. 1 paratype ♂, 1 paratype ♀ will be in the British Museum (Natural History) and 1 paratype ♂ in the Transvaal Museum, Pretoria.

SUMMARY

A new genus and species of the family Platycnemididae is described from Mount Mlanje. Its closest relative is the genus *Leptocnemis* Selys of the Seychelles.

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