

Family LIBELLULIDAE

Zygonyx sp., near *natalensis* (MARTIN) 43943 (median lobe of mask less pointed than in *natalensis*).
Zygonyx sp. ?, 10170.
2 Libellulids, 4758.5 (early instars).

SUMMARY

Included in this paper there is a list of species of *Odonata* from a collection submitted from Dundo by Dr. MACHADO and the description of two new species of the family *Gomphidae*. One of these, *Ictinogomphus dundoensis*, is distinct from other African members of its genus in venation as well as in other features. It is possibly subgenerically, but not generically distinct, because of the wider interpretation of Oriental members of the genus.

REFERENCES

- FRASER, F. C. (1949) — *Gomphidae* from the Belgian Congo. *Rev. Zool. Bot. afr.* 42: 101-138, ff.
KIMMINS, D. E. (1958) — New Species and Subspecies of Odonata, etc... *Bull. Brit. Mus.* 7 (7): 354-357, ff.
PINHEY, E. C. G. (1958) — Dragonflies from the Zambezi and Rhodesia. *Occ. Pap. Nat. Mus. S. Rhod.* 22B: 97-116, ff.
(1961) — A Survey of the Dragonflies of Eastern Africa. *British Museum (Nat. Hist.)*. 214 pp., pls., ff. (et ref. al.).
SCHOUTEDEN, H. (1934) — Cat. rais. Faune ent. Congo Belge. Odonates. *Ann. Mus. Congo belg. Zool. Sér.* 3(1): 1-84, ff.

1961

Some dragonflies (*Odonata*) from Angola;
and descriptions of three new species
of the family *Gomphidae*

BY

ELLIOT PINHEY

(BULAWAYO, SOUTHERN RHODESIA)

Some dragonflies (*Odonata*) from Angola; and descriptions of three new species of the family *Gomphidae*

The Author is greatly indebted to Dr. A. DE BARROS MACHADO for sending collections of *Odonata* from the Museu do Dundo for examination. Species of interest in the most recent consignment from Angola include *Pseudagrion monardi* LONGFIELD, *Ictinogomphus regisalberti* (SCHOUTEDEN), new species of *Microgomphus* SELYS and *Phyllogomphus* SELYS, and *Macromia unifasciata* FRASER, a species which FRASER described from the Congo. This last species has been taken in Northern Rhodesia (1960) and the range is now further extended into Angola.

A new species of *Microgomphus* from Rhodesia is also described in this paper and a tentative key is suggested for the known African members of this genus.

Microgomphus bivittatus n. sp.

(Fig. 1, a-c)

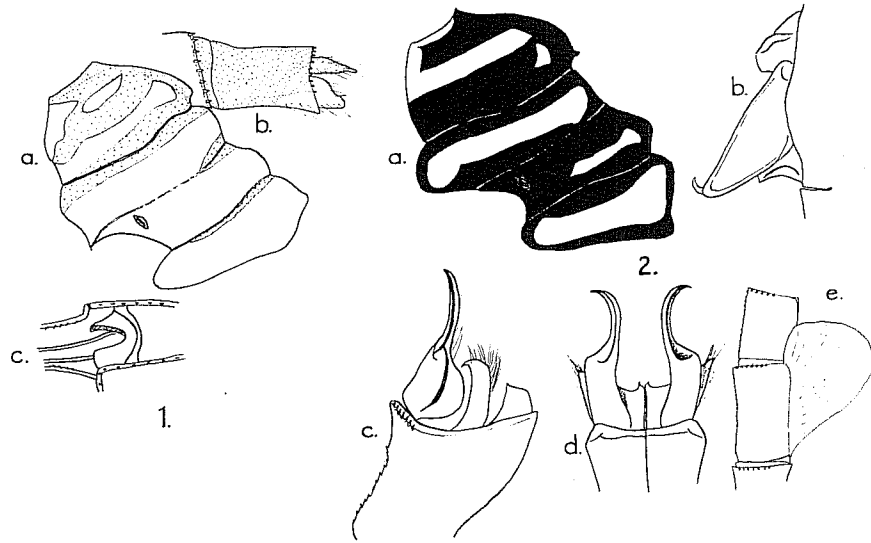
Although a female it seems distinct enough by its pale face, unmarked with black, and the two antehumeral stripes on the thorax to permit its use as a type of a new species of this genus of rare Gomphids.

Holotype female. Labium and the ocular lobes below deep yellow; face in front and the frons also above all olive green, except the genae and the outer edge of the labrum, which are deep yellow; frons above with mere trace of basal brown line. Head above ferruginous brown. Prothorax brown, paler laterally. Synthorax to a little below humeral suture brown, with green markings: a triangle at collar and two antehumeral stripes, one fusiform, the other elongate. Sides of synthorax green, shading to deep yellow below spiracle and on most of metepimeron. Traces of brown on the two lateral sutures. Bases of legs deep yellow, femora yellowish brown, darkening apically; tibiae and tarsi dark brown to blackish. Hindfemur 5 mm., reaching to middle of segment 2.

Wings hyaline, very slightly fumose, with amber basal suffusion to levels of triangles, and in subcosta continuing to nodus. Pterostigma yellowish brown, between black veins. Forewing with 12-13 Ax, first and fifth being primaries; 9-10 Px. 3 cross-veins between sectors of arculus before bifurcation of RS; discoidal field of 2 rows, expanding before nodus.

Abdomen brown, with yellowish marking: median yellow line on 1-2, and yellow lateral patches on these segments. 3-6 somewhat stained, but apparently mainly pale on 3-5, with blackish disto-dorsal dots and sublateral stripe. Segment 6 mainly brown; 7-9 blackish brown above, 7 with pale basal spot, these three segments deep yellow sublaterally; 10 mainly

black with disto-lateral yellow patch; cercus brown. Vulvar scales as in figure. Abdomen circa 26 mm., hindwing 24.5 mm., pterostigma 2.5 mm. Type ♀, Dundo label Ang. 12247, collected at Dundo, 7° 21' S, 20° 50' E, on the 19 September 1957; leg. E. LUNA DE CARVALHO; deposited in the Dundo Museum. The distinguishing characteristics are mentioned above.



Figs. 1, 2. — 1, *Microgomphus bivittatus* n. sp. ♀. a — Synthorax, from left; b — Segment 10, from left; c — Vulvar scale, from below; — 2, *Phyllogomphus latifasciae* n. sp. ♀. a — Synthorax, from left; b — Accessory genitalia, from left; c — Anal appendages, from left; d — Anal appendages, from above; e — Segments 8-9, from left.

Microgomphus witchwoodensis n. sp.

(Fig. 3, a-d)

Holotype male (mature). A darker species than *M. mozambicensis* PINHEY, but closely allied to this. Eye in life pale blue; pale markings on body green to yellowish green. Labium yellowish. Face and frons greenish yellow, with brown (not black) marking: narrow distal border and baso-lateral spot on labrum; a band across postclypeus and front of frons; a basal line on frons above. Head above dark brown, occipital plate somewhat concave posteriorly. Prothorax black, with green lateral dot. Synthorax black, with regular green collar and a single green, somewhat wedge-shaped antehumeral stripe; a minute green dash near upper half of humeral suture; two very broad, irregular green lateral stripes, confluent ventrally. Legs black; fore and mid-femora ferruginous on flexor surfaces; hindfemur 6 mm. long, reaching end of segment 2.

Wings slightly fumose; pterostigma pale brown, between black veins; forewing with 14 Ax, first and fifth primaries; 10-11 Px; 1 Ax in all wings; discoidal field of 2 rows, expanding before nodus; anal triangle of three cells; forewing with 5 cross-veins between sectors of arc before the bifurcation. Abdomen brown dorsally; yellowish green laterally on 1-2 and the

oreillets; 1 above with yellowish median line expanding distally; 2 with pale median stripe, swollen basally and in middle; 3 with yellow baso-lateral spot and distal mid-dorsal line; 4-7 with basal spot, that on 7 occupying one third of the segment; 8-10 blackish above. Superior appendage reddish brown, black at apices, widely splayed; inner branch broadened to a hood before the hooked apex; inferior normal. Hamules normal. Abdomen 27 mm., hindwing 24.5 mm., pterostigma 2.5 mm. One male was taken by the Author on 2 January 1960 in the Witchwood Valley near Umtali. It had settled on a stone in the rocky stream. Type in the National Museum, Bulawayo.

It is a blacker species than *mozambicensis* PINHEY, but not so dark as *schoutedeni* and *camerunensis*. The collar band on the thorax is rectangular. A short key to the known African species of the genus may help to show the relationships. The subspecies *corbeti* PINHEY of FRASER's *schoutedeni* is omitted from this key since its main difference from the nominotypical race is found in the superior appendages.

A KEY TO THIS GENUS

1. Thorax with 2 antehumeral stripes. Face entirely green. Side of thorax mainly green *bivittatus* n. sp.
- Thorax with single antehumeral stripe. Face with at least some black or brown marking 2.
2. Face mainly black. Side of thorax largely blackish 3.
- Face mainly green. Side of thorax green and brown, not blackish 4.
3. Side of thorax at least half green *camerunensis* LONGFIELD
- Side of thorax mainly black *schoutedeni* FRASER
4. Ground colour of thorax black; collar marking rectangular; sides of thorax more than half green *witchwoodensis* n. sp.
- Ground colour of thorax brown; collar marking more triangular; sides of thorax more than half brown *mozambicensis* PINHEY

It is not at present possible to be more clear-cut than this in such a key since two of the species, *camerunensis* and *bivittatus* are only known in the female sex.

Phyllogomphus latifasciae n. sp.

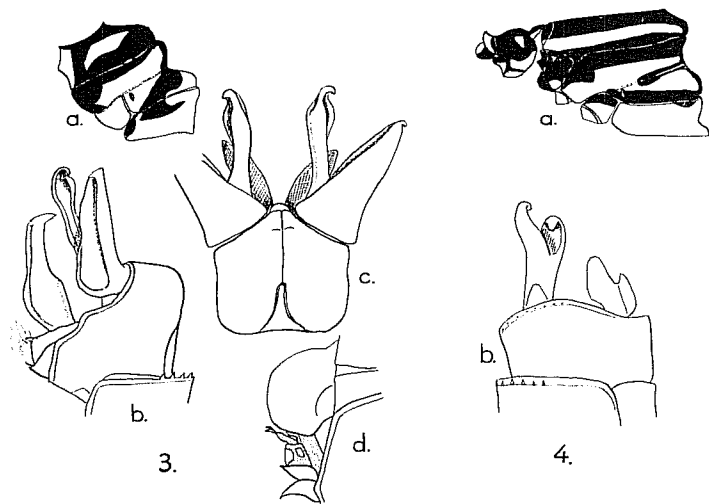
(Fig. 2, a-e)

Holotype male. Labium green, the lobes edged anteriorly with black; face and frons yellowish green; labrum surrounded by a black border, and with a small, centro-basal black dot; two brown dots on post-clypeus and a fine line separating this plate from the frons; frons above with narrow black basal band. Base of antenna black, the filament ferruginous distally. Vertex black with a green posterior trapezoid; occipital plate yellow, its posterior margin only slightly sinuous. Prothorax blackish. Synthorax black, with greenish yellow markings: a very broad, 7- shaped antehumeral, not severed nor constricted at the angle; in place of the outer antehumeral merely a small, triangular dorsal spot. Two broad lateral bands; also a short, faint, dagger-shaped green stripe on metepisternum. Bases of legs and femora blackish ferruginous; tibiae and tarsi black.

Wings fumose, pterostigma and venation black. Forewing with 16 Ax, first and fifth primaries; 11 Px. Discoidal field of 3 rows, expanding before nodal level. 1 Ac in all wings. Abdomen segment 1 dark ferruginous; 2 black, oreillets green with black edge; a yellow sub-lateral stripe; accessories black, elongate. 3-6 black, with yellow basal spot; 7 blackish ferruginous distally, yellow on basal two-thirds; 8-10 black dorsally, or mid-dorsally, otherwise

ferruginous. Flaps on 8 reaching halfway along segment 9; segment 8, in length, 5 mm. Superior appendage yellow-brown, with slender black apices; inferior brown. Abdomen (without appendages) 50 mm., hindwing 42 mm., pterostigma 4.5 mm. One male, Ang. 15630, Dundo, October 1960, leg. J. MARTINEZ. Type in Dundo Museum.

This species, with a single antehumeral, differs in this respect from *P. aethiops* SELYS, *P. moudi* FRASER and *P. occidentalis* FRASER. FROM FRASER'S *dundominusculus* and *schoutedeni* it is



Figs. 3, 4.—3, *Microgomphus wickwoodensis* n. sp. ♂. a—Synthorax, from left; b—Anal appendages, from right; c—Anal appendages, from above; d—Accessory genitalia, from right;—4, *Pseudogomphus monardi* ♂. a—Synthorax, from left; b—Anal appendages, from left.

distinguished by the 3 rows in the discoidal field, instead of 2; it is a smaller species than *selysi* SCHOUTEDEN and *coloratus* KIMMINS, and has broader antehumerals, continued without fracture on to the collar. In *orientalis* and *montanus*, of FRASER, the antehumeral is not joined to the collar stripe, and the hamule of the former is more slender. *P. dundomajoricus* FRASER has a similarly broad antehumeral, joined to collar, but it is a much larger insect, the face is very black, it has very broad hamules, and the flaps on segment 8 reach nearly to the end of segment 9. Of all these described species, and others considered in synonymy, it seems nearest to *orientalis*. The broad antehumerals suggest the name for this insect.

LIST OF SPECIES OF *ODONATA* SUBMITTED BY DR. MACHADO
FROM DUNDO IN 1961

Family PROTONEURIDAE

Elatoneura fremulata (HAGEN), Ang. 13546.4. Lóvuva, forêt-galerie, 15-XI-58. Leg. Luna de Carvalho.

Family COENAGRIIDAE

Ceriaqriion glabrum (BURMEISTER), Ang. 15511. 1 ♂ 1 ♀. Near Dundundo River, Dundo, October 1960. Leg. Machado.

Pseudogriion monardi LONGFIELD (1), Ang. 14959. 1 ♂ Luachimo Forest, Dundo, 15 May 1960. Leg. Machado (Fig. 4, a-b).

Agriocnemis exilis SELYS, Ang. 15511. 16 ♂♂ 22 ♀♀, Dundundo River, Dundo, October 1960. Leg. Machado.

Idem, Ang. 15271. 3 ♂♂ 2 ♀♀ Dundundo R., Dundo, 17 August 1960. Leg. Machado.

Idem, Ang. 15765. 2 ♀♀ Dundundo R., Dundo, September 1960. Leg. Machado.

Idem, Ang. 15766. 1 ♂ Dundundo R., Dundo, 4 Sept. 1960. Leg. Machado.

Agriocnemis forcipata LE ROI, Ang. 15511. 3 ♂♂ Dundundo R., Dundo, Oct. 1960. Leg. Machado.

Family CHLOROCYPHIDAE

Platycypha caligata (SELYS), Ang. 10019. 2 ♂♂ 1 ♀ Forest of the Luisavo Falls, Upper Zambezi, 23 February 1955. Leg. Luna de Carvalho.

Family AGRIIDAE

Phaon iridipennis (BURMEISTER), Ang. 14817. 1 ♂ 1 ♀ Gallery Forest, Camaconde River, Dundo, 15 February 1960. Leg. Machado.

Idem, Ang. 14821. 1 ♂ Dundo, 25 February 1960. Leg. Machado.

Family GOMPHIDAE

Itinogomphus regisalberti (SCHOUTEDEN), Ang. 13517. 1 ♂ Dundo, October 1958.

Idem, Ang. 13557. 1 ♀ Dundo, 28 Dec. 1958. Leg. Luna de Carvalho.

Idem, Ang. 14639. 1 ♀ Dundo, 19 Sept. 1959. Leg. Carlos Jorge.

Idem, Ang. 14640. 1 ♀ Dundo, Nov. 1959. African collector.

Idem, Ang. 14831. 1 ♂ Dundo, 31 January 1960. Leg. Machado.

Microgomphus bivittatus n. sp., Ang. 12247. 1 ♀ Dundo, 7° 21' S, 20° 50' E, 19 Sept. 1957. Leg. Luna de Carvalho.

Phyllogomphus latifasciae n. sp., Ang. 15630. 1 ♂ Dundo, Oct. 1960. Leg. J. Martinez

Family AESHNIDAE

Anax tristis HAGEN, Ang. 15763. Dundo, at light, 1 ♂, 20 April 1958. Leg. Luna de Carvalho.

Family CORDULIIDAE

Macromia unifasciata FRASER, Ang. 12260. 1 ♀ Dundo, 24 Sept. 1957. African collector.

(1) KIMMINS has recently found *monardi* to be a synonym of *angolense* SELYS (nec Auctt.) — Author.

Family LIBELLULIDAE

- Tetrathemis pollenii* (SELYS), Ang. 15033. 1 ♀ (teneral). Luachimo Forest, Dundo, 9 June 1960. Leg. Machado.
- Orthetrum austeni* (KIRBY), Ang. 15764. 1 ♀. Dundo, at light, 26 April 1958. Leg. Machado.
- Orthetrum falsum* LONGFIELD, Ang. 14846. 1 ♀ Gallery Forest, Dundo, 26 February 1960. Leg. Machado.
- Palpopleura lucia* (DRURY):
- f. *lucia* DRURY, Ang. 14831. 1 ♂ Dundo, 31 Jan. 1960. Leg. Machado.
- Idem*, Ang. 15033. 1 ♂ Luachimo Forest, Dundo, 15 May 1960. Leg. Machado.
- Idem*, Ang. 15093. 1 ♀ Dundo, 1 July 1960. Leg. Luna de Carvalho.
- f. *portia* DRURY, Ang. 14827. 1 ♀ Dundo, March 1960. Leg. Machado.
- Philonomon luminans* (KARSCHE), Ang. 14883. 1 ♀ Dundo, 14 Nov. 1959. Leg. Machado.
- Trithemis arteriosa* (BURMEISTER), Ang. 15057. 1 ♂ River Cuango, Cuango Poste, 29 May 1960. Leg. Passos. (With Native Names of this species).
- Olpogastri lugubris* KARSCHE, Ang. 14849. 1 ♀ Dundo, 30 Nov. 1959. Leg. Machado.
- Pantala flavescens* (FABRICIUS), Ang. 13545.1. 1 ♂ Calonda, 8° 23' S, 20° 33' E, December 1958. Leg. Dr. A. Serralheiro.
- Idem*, 14822. 1 ♂ Dundo, 28 Jan. 1960. Leg. Machado.
- Idem*, Ang. 14869. 1 ♂ Dundo, at light, 26 Oct. 1959. Leg. Machado.
- Trapezostigma basilaris* (BEAUV.), Ang. 14849. Dundo, 30 Nov. 1959. Leg. Machado.

SUMMARY

This paper gives a list of *Odonata* submitted for examination from the Museu do Dundo. Descriptions of three new species of *Gomphidae* are included as well as a comparative table for the African species of *Microgomphus* SELYS.

REFERENCES

- FRASER, F. C. (1934) — *Odonata*. In *Fauna Brit. India* 2: 351-352.
- (1949) — *Gomphidae* from the Belgian Congo. *Rev. Zool. Bot. afr.* 42: 101-138.
- (1954) — New species of *Macromia* from tropical Africa. *ibid.* 49: 41-76.
- (1957) — A Revision of the genus *Phyllagomphus* Selys. *ibid.* 56: 9-32.
- LONGFIELD, C. (1947) — The *Odonata* of South Angola. *Arch. Mus. Bocage* (1945). 16: 1-31.
- (1951) — A new African *Microgomphus*. *Ent. News* 62: 97-101.
- (1955) — *Odonata* of North Angola, 1. *Publ. cult. Co. Diam. Ang.* 27: 13-63.
- (1959) — *idem*, 2. *ibid.* 45: 15-42.
- PINHEY, E. C. G. (1959) — A new dragonfly from Southern Rhodesia. *Oec. Pap. nat. Mus. S. Rhod.* 23(18): 340-342.
- SCHOUTEDEN, H. (1934) — Cat. rais. Faune ent. Congo Belge. *Odonates*. *Ann. Mus. Congo belg. Zool. Sér.* 3(1): 1-84.
- SELYS LONGCHAMPS, E. DE (1854) — Synopsis de Gomphines. *Bull. Acad. Belg.* 21(2): 23-112.
- (1858) — Monogr. des Gomphines. *Mém. Soc. Sci. Liège* 11: 257-720.

The *Heteroceridae* of Angola

BY

REINHOLD CHARPENTIER

Zoological Institute of the University

(LUND), SWEDEN