

1775

1976

# ARNOLDIA

RHODESIA

SERIES OF MISCELLANEOUS PUBLICATIONS

THE NATIONAL MUSEUMS AND MONUMENTS OF RHODESIA

No. 23

Volume 7

18th July, 1975

## A COLLECTION OF ODONATA FROM ANGOLA

by  
ELLIOT PINHEY  
*National Museum, Bulawayo*

### SUMMARY

This is a record of the species of Odonata comprising a small but interesting collection made by Ivan Bampton in Angola in 1973. Bampton was essentially collecting lepidopterous larvae and adults and the Odonata were incidental captures.

Additional records are given for species collected by Bampton but no attempt is made here to list all the known Angolan species. However, a new Angolan species of *Chlorocypha* Fraser, collected in East Angola by Christopher Green, is included because of its close affinity to *C. croceus* Longfield, an Angolan endemic. A brief note at the end of this paper refers to the possible identity of a species of *Zygonyx* Hagen from the island of Annobon.

The following new taxa are described here:

- Pseudagrion angolense* Selys, metalotype ♀
- Umma femina* Longfield, metalotype ♂
- Chlorocypha croceus bamptoni* subsp. nov.
- Chlorocypha rubriventris* spec. nov.

### SPECIES AND TAXONOMY

The first paper devoted to Angolan species was that of Dr. F. Ris (1931) but this did not deal with any of the species collected by Bampton. For the first general paper on Odonata we are indebted to Miss C. Longfield (1945) who, like Ris, recorded species collected by Dr. Albert Monard during Swiss expeditions to Angola. A short gazeteer is included near the end of this paper.

#### *Elattoneura frenulata* (Hagen)

*Disparoneura frenulata* Hagen, 1860. In Selys, *Bull. Acad. r. Belg. Cl. Sci.* (10) 2: 444.

This species has hitherto been only correctly known from the Cape Province. All specimens I have seen from other parts of Africa and formerly identified as *frenulata* are *E. tropicalis* Pinhey (1974).

Received: 24th May, 1975  
*Arnoldia Rhod.* 7 (23): 1-16

It is, therefore, of some significance that Bampton collected 1 ♂ and 1 ♀ at Serra de Chela, Tunda Vala, in South West Angola in October 1973. These records suggest that *frenulata* probably occurs in South West Africa between its topotypical Western Cape and South West Angola populations.

The two examples are fully mature and agree well both in male appendages and female prothoracic stylets with those figured for *frenulata* by Pinhey (1974: 2). The male is the same size as Cape specimens. The thorax is black with slender blue antehumeral and juxta-dorsal carinal stripes; with some white pruinosity on frons and postclypeus.

*Distribution.* Western Cape Province and S.W. Angola.

***Pseudagrion angolense* Selys fig. 1**

Selys, 1876, *Bull. Acad. r. Belg. Cl. Sci.* (2) 42: 493; Ris, 1936 (pars): 13, 39; Kimmins, 1962: 331, 332 figs 1-4; Pinhey, 1964b: 49.

*Pseudagrion monardi* Longfield, 1945: 12 fig. 5.

Kimmins (1962) showed that two taxa had been involved in most of the earlier references in literature to *angolense* and he resurrected *hageni* Karsch (1893) as the more generally and widely known species. True *angolense* was for many years only known from two syntype males, one in the McLachlan collection in the British Museum (Nat. Hist.), the other, which Kimmins later erected as a lectotype, in the de Selys Collection of the Institut Royal des Sciences Naturelles in Bruxelles. Then in 1945, Longfield described a series of both sexes under the name *monardi*, which Kimmins synonymized with *angolense*. This series was recorded from Sangévé, Kuandu and Kalukembé.

A stained and damaged male from the Dundo District of N.E. Angola, at first thought to be *angolense* and described as this species (Pinhey, 1964b: 49, 50) has, on closer examination, proved to be *hageni tropicanum* Pinhey (1966: 290). Typical *hageni hageni* is evidently confined to the Cape Province, with subspecies *tropicanum* having green antehumeral stripes instead of orange, extending the range from Natal to equatorial Africa, including Angola.

The fact that Bampton collected three males of true *angolense*, and a possible female, at Hungueria is, therefore, of some significance.

The differences between the males of *angolense* and *hageni* are clearly set out by Kimmins (1962), illustrated by excellent figures, although in saying the antehumeral stripes of *hageni* are more greenish he was referring to the widespread subspecies *hageni tropicanum*, not to nominotypical *hageni*.

The antehumeral stripe in *angolense* is bright orange, like the head and facial markings of this species and the head and thorax of *hageni hageni* of the Cape Province, but this stripe is approximately twice as broad as in *hageni*; in *hageni tropicanum* the stripe is, again, narrow and bright green in life. The differences in the black stripes on the lateral sutures is inconstant in the two species. The black band on the first lateral suture (between mesepimeron and metepisternum) is quite free from the band on the lower or second lateral suture in specimens examined of *angolense*; in *hageni* the two bands tend to coalesce ventrally but this is frequently not the case.

The shapes of the superior appendages in the two species is quite distinct. In *angolense* (fig. 1a-b) the upper branch extends further than the lower and the lower is horizontal or slightly upturned apically; the inner flange is short and curled. In *hageni* (and *h. tropicanum*) (fig. 1c-d) the upper branch does not extend further than the lower one which is very thick and robust and turned downwards, away from the

upper one; the inner flange is very large, not curled, and extends right to the base of the appendage where it subtends a prominent tooth. The funnels of the branches of the prophallus terminate more obliquely in *hageni* than in *angolense*.

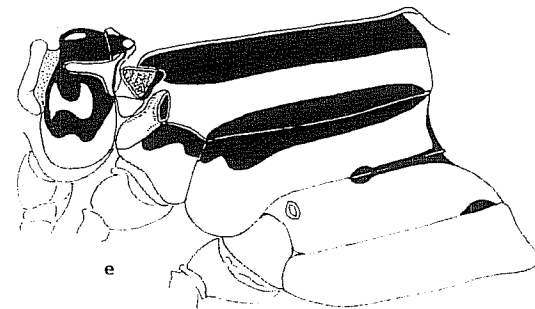
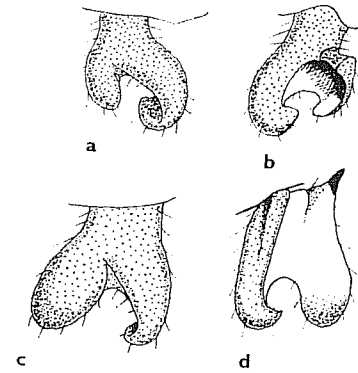


Figure 1: *Pseudagrion angolense* and *P. hageni*

a-b. *P. angolense* ♂ (Hungueria), left superior appendage, from left and from inner aspects; c-d. *P. hageni hageni* ♂ (Van Stadens, Cape Prov.), left superior appendage, the same; e. *P. angolense* allotype ♀, thoracic pattern showing prothoracic stylets, mesostigmal lamina and the prominent epaulette.

In size, *angolense* is a large species, slightly more robust than *hageni*. In Bampton's males the abdomen is 35-36 mm, the hindwing 25-25,5 mm. Longfield gives abdomen 35 mm, hindwing 25 mm for the type of *monardi*.

The size in *hageni* is much more variable and can be greater than these measurements or much less.

The female described as an allotype of *monardi* and collected at Ebanga, seems to me to be dubiously connected with this species. In size it is small, the abdomen 31,5 mm, hindwing 12 mm (Longfield). Remeasurement gives abdomen 27 mm, hindwing 22 mm. It has no prothoracic stylets, only slight kinks on the posterior edge of the hindlobe and there are no true epaulettes. It is rather teneral.

I believe that *angolense* is more closely allied to *hageni*, *epiphonematicum* Karsch and several other species than this allotype would allow. This would mean that there should be well developed prothoracic stylets and epaulettes should not only be present but strongly tilted outwards. These points, as well as a robust, larger size, are illustrated in the single female collected by Bampton at the same time and in the same locality as the males of *angolense*.

**Metallotype Female** *angolense* (Hungueria). Head much more like the male than the Ebanga allotype of *monardi*. Labium ochraceous white. Labrum, genae, anteclypeus and orbits ventrally greenish yellow, with depressed black basal points on the labrum; postclypeus black; frons, orbits in front and the basal segments of the antennae yellow-brown; head above black, with elongate greenish yellow postocular spots narrowly linked across the back of the occiput.

Prothorax black with greenish yellow collar and lateral margins; an angular yellow lateral macula and yellow central twin spots; posterior lobe yellow, black centrally, enclosing a yellow spot, and with well developed yellow stylets extending just over halfway across the middle lobe. Mesostigmal lamina depressed, with a ridge on the posterior border; epaulette at a right angle to the thorax on a swollen base, the upper end free. Synthorax bronze-black to below the humeral suture as in the male, but with a yellow dorsal carina and a broader yellow antehumeral stripe. Sides greenish yellow to yellow; a black striga on the upper half of the first lateral suture and a dorsal spot above the second suture. Legs brownish yellow with a black postlateral stripe on each femur, less developed on the hind femur.

Venation blackish brown. Pterostigmata brown, framed in black veins. Forewings with 15 Px, hindwings with 13 Px.

Abdomen with a continuous, broad bronze-black band on segments 1-8; segments 9-10 grey-blue dorsally (probably bright blue in life), paler laterally, with lateral black basal triangles on segment 9. Cerci black, barely half as long as the length of segment 10. Abdomen 36.5 mm, hindwing 26.5 mm.

Material examined: = Waterfall 40 km S of Lubango

3♂, neallotype ♀ Hungueria, 100 km S. of Sa da Bandeira, 24th November 1973 (I. Bampton).

The neallotype is in the National Museum, Bulawayo.

*Distribution.* The species is only known from South and West Angola.

#### *Pseudagrion salisburyense* Ris

Ris, 1921, *Ann. S. Afr. Mus.* **18**: 306, fig.; Longfield, 1945: 28; Pinhey, 1961a: 76 (Dundo Museum); Pinhey, 1965: 161 (Lucala River).

Longfield (1945) recorded this species at Ebanga, Kuvangu, Kalukembé, Osi and Kului. In Bampton's collection it is from Catanda.

*Distribution.* Common in most of Southern, South Central and Eastern Africa.

#### *Pseudagrion kersteni* (Gerstaecker)

*Agrion kersteni* Gerstaecker, 1869, *Arch. Nat.* **1** (35): 222.

*Pseudagrion kersteni* Longfield, 1945: 28; Longfield, 1959: 24; Pinhey, 1961a: 76 (Dundo Museum); Pinhey, 1965: 160 (Lucala).

Longfield (1945) recorded this abundant species from Elendé and Kalukembé. Bampton collected it at Hungueria, Serra de Chela, Nova Lisboa and the Duque de Braganza Falls.

*Distribution.* Most of Continental Ethiopian Africa.

#### *Pseudagrion glaucescens* Selys

Selys, 1876, *Bull. Acad. r. Belg. Cl. Sci.* (2) **42**: 498; Pinhey, 1965: 160 (Lucala River, etc.).

Pinhey (1965) recorded this species from Catete, near Luanda, and eastwards to the Duque de Braganza Falls, where Bampton found it.

*Distribution.* Rhodesia and Mozambique northwards to equatorial Africa.

#### *Ceriagrion glabrum* (Burmeister)

*Agrion glabrum* Burmeister, 1839, *Handb. Ent.* **2**: 281.

*Ceriagrion glabrum* Longfield, 1945: 28; Longfield, 1959: 25; Pinhey, 1961b: 85 (Dundo); Pinhey, 1965: 160 (Catete eastwards to Lucala).

Longfield (1945) recorded this common species from Kuandu, Lunda and Kuvangu. Bampton collected it at Catanda and Pungo Andongo.

*Distribution.* Abundant in most parts of Africa and neighbouring islands.

#### *Ischnura senegalensis* (Rambur)

*Agrion senegalense* Rambur, 1842, *Ins. Névr.*: 276, fig.

*Ischnura senegalensis* Longfield, 1945: 29; Pinhey, 1965: 161 (Catete swamps).

Longfield (1945) recorded this ubiquitous species only from Mupa and Bampton from Catanda.

*Distribution.* Almost cosmopolitan; abundant in Africa and Asia.

#### *Phaon iridipennis* (Burmeister)

*Calopteryx iridipennis* Burmeister, 1839, *Handb. Ent.* **2**: 827.

*Phaon iridipennis* Longfield, 1945: 29; Longfield, 1959: 30; Pinhey, 1961a: 76 (Dundo Museum); Pinhey, 1961b: 85 (Dundo); Pinhey, 1965: 161 (Lucala River).

Longfield (1945) recorded Kapelongo and Bampton found it at Rio Cuvo. C. A. Green found it at Texeira de Sousa and Pinhey collected it at the Lutchigena River, Caianda.

*Distribution.* Locally common in subtropical and tropical Africa.

#### *Umma femina* Longfield fig. 2

Longfield, 1945. *Archos Mus. Bocage* **16**: 20; Pinhey, 1969: 5.

The holotype, a ♀, and one paratype ♀ are in the British Museum (Nat. Hist.). The wings of these have a yellowish green tinge. The holotype was collected at Sangévé, Febr. 1933, the paratype at Bimbi, Oct. 1932. The pale blue pterostigma measured less than 1 mm in length. Abdomen 28-29 mm, hindwing 25-26.5 mm.

A ♀ in the National Museum, Bulawayo, collected to the North of Cuché, Angola Nov. 1951 (Fr. Eduardo), has the wings faintly yellowish particularly near the bases. Pterostigma less than 1 mm, abdomen 28.5 mm, hindwing 26.5 mm.

Bampton collected 3 ♂, 2 ♀ on the Serra de Chela at 6 500 ft. (167 m). One ♀ is teneral and has the wings rather strongly greenish yellow, yellower at bases. The other is mature and has lost most of the tint except at base and along the antenodal regions of all wings. Both are very slightly larger than the type specimens, the teneral ♂, abdomen 29 mm, hindwing 27.5 mm, the mature ♀, abdomen 32 mm, hindwing 29 mm.

It seems evident that the type ♀ was not mature.

**Metallotype** ♂. Labium blackish grey, the post-lateral margins pale ochraceous; dusted with white pruinosity. Genae pale ochraceous; labrum dark metallic green,

tinted centrally with purple; anteclypeus ochraceous centrally, metallic green laterally. Postclypeus pale metallic green in the basal groove; green and gold with coppery tints, the outer marginal zone purple. Orbits below metallic green with golden and pinkish coppery tints. Frons and vertex pale metallic green. Base of antenna metallic green with traces of copper, shaft of antenna blackish brown with green tints on the first flagellar segment.

Prothorax bright metallic emerald, the hindlobe purple post-laterally. Synthorax bright metallic green laterally, the mesepisternum mainly purplish red, the mid-dorsal carina purple. Sclerites at the wing-bases metallic green with traces of purple. Metasternite grey-black with traces of green and copper and slight pruinosity. Basal segments of legs and the femora metallic green, the tibiae and tarsi darker, almost black.

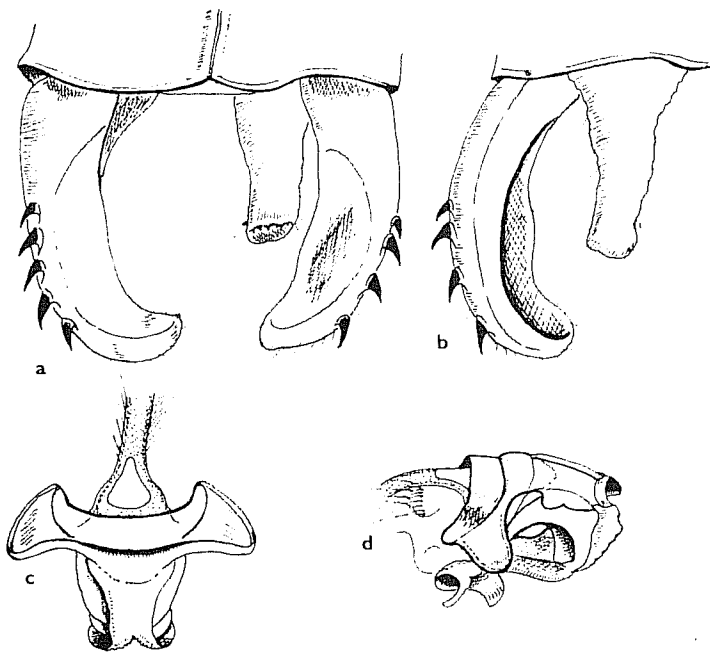


Figure 2: *Umma femina*, ♂ paratype  
a. anal appendages, dorsal view (the left inferior hidden); b. right inferior and superior appendages, ventral view; c-d. prophallus, in full and in lateral aspects.

Wings hyaline; pale greenish yellow in the median space and in the antenodal and postnodal zones. Venation metallic green to blue-green. Pterostigmata glossy grey-green, the proximal edge oblique, the distal almost straight; slightly longer on the hindwing than on the forewing; surmounting one complete cell and two partial ones. Forewing with 16-17 Ax, 25-26 Px. Discoidal cell in forewing with 4 cells on left, 5 cells on the right wing; hindwing the same. Pterostigma in forewing less than 1 mm long.

Abdominal segments 1-2 metallic green; segments 3-10 reddish purple, with basal metallic green annuli on most of these, lessening distally. Superior appendage (fig. 2a-b) massive, incurved apically, with an inner keel or flange which is more evident ventrally; with 4-5 stout lateral spines. Inferior appendage also robust, the apex slightly upturned to a small denticular ridge.

Prophallus (fig. 2c-d) with well developed oblique setae on the stem, as in other species of *Umma*. Inner branch of the head of the prophallus broadened outwardly, its base continued as a strong ridge across to the corresponding inner branch on the other side; outer branch longer, slender, expanded apically to a complex folded structure having a slender extension. These branches are rather like *distincta* Longfield which, however, lacks this finger-like extension on the outer branch.

Abdomen (without appendages) 30,5 mm, hindwing 27 mm.

Parametallotypes more teneral but essentially similar, the hindwing 26 mm in one, 28 mm in the other.

This species is nearest to *distincta* Longfield which is a larger species but very variable in size. The outer branch of the prophallus and the much smaller pterostigma of *femina* readily distinguish them.

The series was collected by Bampton at Serra de Chela between the 19th and 21st October 1973, the metallotype on the 21st. The metallotype and one parametallotype are in the National Museum, Bulawayo and one parametallotype ♂ will be sent to the British Museum (Nat. Hist.).

*Distribution.* South West to equatorial West Angola.

#### *Chlorocypha croceus* Longfield fig. 3

Longfield, 1945. *Archos Mus. Bocage* (1947) 16: 17 fig. 7; Pinhey, 1961a: 76; Pinhey, 1967: 192.

This is a small species, of which Longfield recorded a long series from Bimbi, to the North of Nova Lisboa in October 1932. The male is characterized by the bright blue abdomen, segments 1-2 being all black dorsally, yellow laterally; the ventral surface glossy black.

In the National Museum, Bulawayo, there is a pair, 1 ♂, 1 ♀ collected near Cuché, November 1951 (Fr. Eduardo). The male is evidently older than those of the type series since the entire head and thorax are completely black.

Bampton's collection includes three males of a new subspecies from the South West of Angola.

#### *Chlorocypha croceus bamptoni* subsp. nov. fig. 3

This is a larger subspecies, with a posterior blue rectangle or transverse blue band on abdominal segment 2. The tibiae are whitish yellow anteriorly with white pruinosity.

**Holotype** ♂ (very mature). Labium black; ochraceous on posterior edge. Face, head above and orbits below black; anteclypeus red post-laterally, as in typical *croceus* but this colour faint; small faint yellow-brown spots in front, to the sides and behind the ocelli and small triangular postocular spots.

Prothorax black with yellowish brown on the collar, the small central twin spots and a dorso-lateral band extending on to the outer angle of the posterior lobe. Synthorax black dorsally and laterally to below the first lateral suture, with the usual yellow-brown "fish hook" and traces on the mesepimeron. Metathorax yellow-brown, faintly greenish on ventral surface, with a diffuse black fascia below the spiracle, a black band on second lateral suture, joined antero-ventrally to a broad band along the lower part of the metepimeron. Middle and hind tibiae yellowish white coated with white pruinosity.

Wings hyaline, faintly yellow at bases. Pterostigma dark brown. Discoidal cells in forewing with two cross veins on the left, one on the right, hindwings with two cross veins.

Abdomen shaped as in typical *croceus*. Segments 1-2 black, greenish yellow laterally and with a post-dorsal trapezoidal blue macula; also a ventro-lateral yellow stripe. Segments 3-10 pale blue with posterior twin black dots; segment 10 encircled with black; ventral surface black as in nominotypical *croceus*. Anal appendages normal.

Prophallus. Both branches of alae long and slender as in typical *croceus* (fig. 3e). Abdomen (without appendages) 20,0 mm, hindwing 24 mm.

Paratypes: similar but in both specimens the blue posterior macula on abdominal segment 2 extends laterally to join the yellow or greenish yellow lateral band. It is possible that the holotype is a slightly older example. Abdomen 19 mm, hindwing 23 to 23,5 mm.

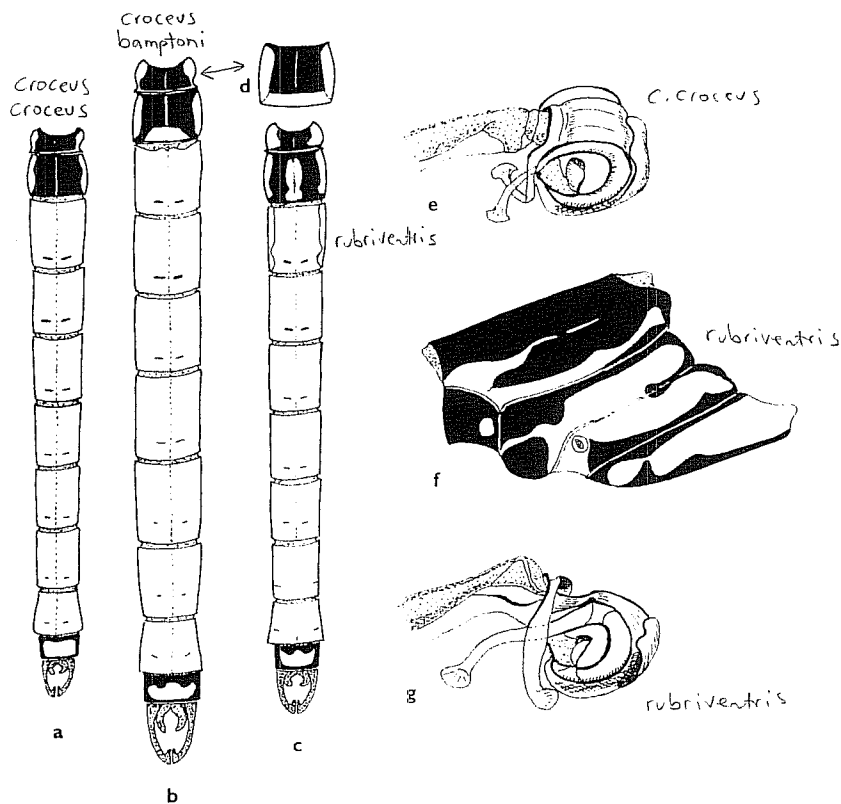


Figure 3: *Chlorocypha croceus* and *C. rubriventris*, ♂  
a. *C. croceus croceus* (Cuché), abdomen from above;  
b. *C. croceus bamptoni*, holotype, abdomen from above;  
c. *C. rubriventris*, holotype, abdomen from above;  
d. *C. croceus bamptoni*, paratype, segment 2;  
e. *C. croceus croceus* (Cuché), prophallus;  
f-g. *C. rubriventris*, synthorax of holotype and prophallus of paratype.

In *croceus croceus* from Cuché the abdomen is 17 mm, hindwing 19 mm. In the holotype *croceus* (Longfield) the measurements recorded are abdomen 16,5 mm, hindwing 20 mm.

*Material examined*

Holotype and two paratype ♂ Serra de Chela, 6 500 ft., Tunda Vala, 32 km N.W. of Sa da Bandeira, 20 Oct. 1973 (I. Bampton). The holotype and one paratype are in the National Museum, Bulawayo; one paratype male will be presented to the British Museum (Nat. Hist.).

I take pleasure in naming this subspecies after Ivan Bampton who has extended his interests from ornithology to collect the early stages of many Lepidoptera and has also added some interesting Odonata and Heterocera to our collections.

*Distribution.* The nominotypical subspecies is found in West Central Angola and *bamptoni* in the South West of this territory.

*Chlorocypha rubriventris* spec. nov. fig. 3

This is a small species very close to *croceus*, collected by Christopher Green in N.E. Angola in 1965. The mature male differs from *croceus* in having black transverse bands on the metasternites; the mid- and hind-tibiae are more strongly whitened anteriorly than either races of *croceus*; segment 2 has a pronounced blue central dorsal band and the abdominal segments are bright red ventrally, not glossy black.

**Holotype** ♂ (mature). Labium brownish ochreous, black apically on the appendages. Labrum black with two large red triangular spots; anteclypeus black with a centro-lateral red spot on each side; postclypeus and frons black with suffused red spots (probably brightly coloured in juvenile specimens). Vertex black with diffuse reddish yellow spots anterior to the ocelli, reddish yellow lateral maculae, and a curved posterior band on the occiput; orbits black ventrally.

Prothorax black with diffuse reddish yellow collar, yellow central dashes forming a V, triangular fasciae on middle lobe and the posterior lobe reddish yellow at lateral ends. Synthorax black to just below humeral suture, but extending broadly black at ventral end of mesepimeron; with the usual greenish yellow "fish hook" almost severed at the ventral end (probably through extension of the black pigment). Sides greenish yellow with red suffusion; a black stripe on mesepimeron and a short dorsal one on the first lateral suture; mesinfraepisternum black with a yellow spot; a black stripe on second lateral suture and an irregular black band on the lower margin of the metepimeron. Sternites greenish yellow, tinged with red, with black transverse stripes. Legs black, the mid- and hind-tibiae strongly whitened.

Wings hyaline, tinged with yellow at bases. Pterostigmata dark brown, margined with black. Discal cells of forewings with two cross veins, of hindwings with two cross veins on the left and three on the right.

Abdomen (fig. 3c) shaped as in *croceus*. Segments 1-2 black with bright red lateral stripe; segment two with a blue central band constricted before the posterior end. Segments 3-10 pale blue above with posterior black dashes as in *croceus* but on segments 8-9 these are more lateral; segment 3 bright red at the sides, segment 10 encircled with black. Ventral surface of abdomen bright red, posteriorly becoming more yellowish brown. Anal appendages typical of the genus.

Prophallus (3g). Inner branch thicker than in *croceus*, at its base forming a hood; outer branch longer and more slender.

Abdomen 18 mm, hindwing 21 mm.

Paratype ♂ essentially similar but the blackening of the face and head has almost totally obscured the pale markings. Abdomen 17,5 mm. hindwing 20,5 mm.

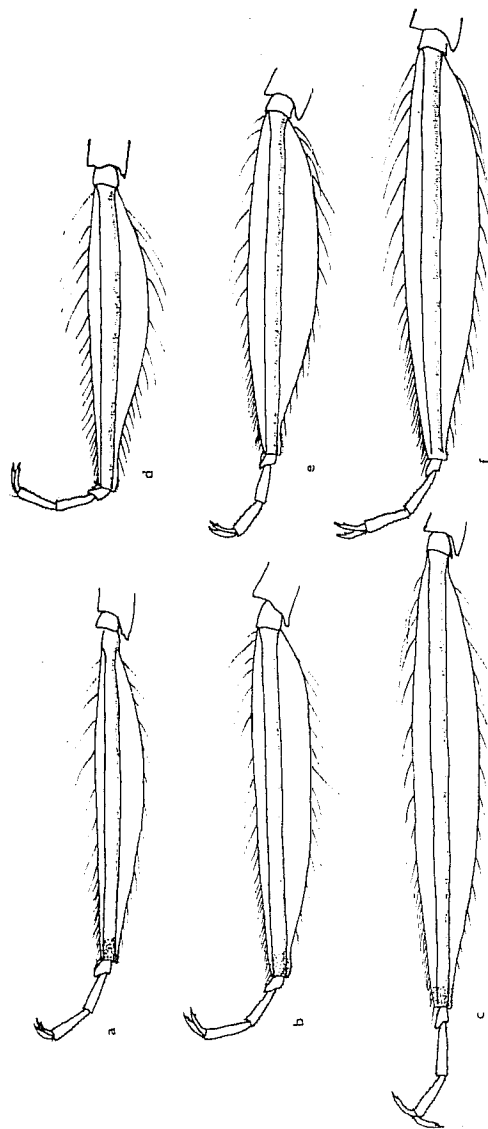


Figure 4: *Platycypha caligata caligata* and *P. caligata angolensis*, ♂  
 a-c. ssp. *caligata* (Nkandhla, Natal), posterior surfaces of tibiae 1, 2 and 3;  
 d-f. ssp. *angolensis* (Hungueria), the same.

*Material examined*

Holotype and one paratype ♂ Teixeira de Sousa, E. Angola, Febr. 1965 (C. A. Green). These two specimens are in the National Museum, Bulawayo.

*Distribution.* Only known from tropical East Angola.

***Platycypha caligata angolensis* Longfield fig. 4, 5**

Longfield, 1959. *Publicões cult. Co. Diam. Angola* 45: 27 (*angolense*); Pinhey, 1965: 161; Pinhey, 1967: 171.

Longfield described this taxon from a single mature ♂ collected in the region of Sa da Bandeira, S. W. Angola, 25th Sept. 1949. Typical *caligata* also occurs in Angola. Bampton secured a series of both sexes at Hungueria, to the South of Sa da Bandeira. Pinhey collected a short series of teneral examples of both sexes in 1964 far to the North at the Duque de Braganza Falls and Dr. D. Estes found mature examples on the Zuimbango River, both near Malanje. The most obvious difference from *caligata* is in the redder facial markings, particularly the sides of the epistome which are bright red, although in Bampton's series the red fasciae are only faintly discernible in the older males due to the increase in black pigment.

The tibial expansions are distinctly wider in *angolensis* than in *caligata* (fig. 4). The distal ends of the tibiae are red in *angolensis* whereas in subsp. *caligata* there is a strong tendency to blackening at the outer ends and this is also a useful guide to separation of the two taxa although not an exact criterion. Juvenile *caligata* in which the tibiae are yellow, orange or bicoloured red and yellow, also tend to have the blackened apices of the tibiae. The extent of this apical blackening in *caligata* is variable and occasionally almost absent but it tends to be present on the foretibia if not on the others. Even the very teneral pale yellow tibiae will exhibit this darkening as a grey tinge.

The prophalli of *angolensis* (fig. 5) and *caligata* seem to show no clear differences. Specimens have been compared with *caligata* from Natal (topotypical), Mozambique and Malawi. The alae are equally developed in both taxa.

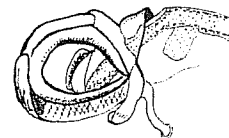


Figure 5: *Platycypha caligata angolensis*, ♂ prophallus (Hungueria).

Specimens from Lucala River are smaller than those from S. W. Angola.

Female. In the small selection of females available there seems to be no constant difference in patterns on head, thorax or abdomen which could be used to differentiate these from nominotypical *caligata* which, itself, shows variation in size and in pattern, chiefly ageing criteria.

*Material examined*

Several ♂ ♀ 10 km E. of Lucala and 15 km W. of Lucala, 6 Oct. 1964 (E. Pinhey); several ♂ ♀ Duque de Braganza Falls on Lucala River 7 Oct. 1964 (E. Pinhey); ♂ Zuimbango River, Malange, 14 Febr. 1970 (D. Estes); ♂ Congolo River, Quimbango, Malange, 20 March 1970 (D. Estes); series of both sexes, Hungueria 24 Nov. 1973 (I. Bampton).

*Distribution.* From South West Angola northwards to the Lucala River. In East and North East Angola it is evidently displaced by nominotypical *caligata* which is common and widespread in Southern, Central and East Africa.

*Anax speratus* Hagen

Hagen, 1867, *Verh. zool.-bot. Ges. Wien* 17: 46; Longfield, 1945: 29; Longfield, 1959: 30 (Dundo); Pinhey, 1961a: 77 (Dundo Museum)

Longfield (1945) recorded *speratus* from Bimbi and Kalukembé; Bampton, from Serra de Chela. Dr. Estes collected it on the Congolo River, Quimbango. It is also common in West Zambia, close to the East Angola border.

*Distribution.* Common in most parts of Continental Ethiopian Africa.

*Hemianax ephippiger* (Burmeister)

*Aeschna ephippigera* Burmeister, 1839, *Handb. Ent.* 2: 840 (Madras).

*Hemianax ephippiger* Longfield, 1945: 29; Longfield, 1959: 30 (Dundo).

Longfield (1945) recorded this migrant at Ebanga. Bampton took it at Catanda and Pungo Andongo.

*Distribution.* Most of Africa, southern Europe and parts of Asia.

*Aeshna rileyi* (Calvert)

*Aeschna rileyi* Calvert, 1892, *Trans. Amer. ent. Soc.* 19: 164.

This montane forest species had not, I believe, been previously recorded from Angola until Bampton collected it at Serra de Chela: 1 ♀ Serra de Chela, 6 500 ft., Tunda Vala, 19 October 1973 (I. Bampton). I have taken this species at Ikelenge, Mwinilunga, N.W. Zambia, close to the Eastern border of Angola at Caianda.

*Distribution.* Widespread in suitable localities in most parts of Continental Ethiopian Africa.

*Orthetrum abbotti* Calvert

Calvert, 1892, *Trans. Amer. ent. Soc.* 19: 162; Longfield, 1945: 30; Pinhey, 1961a: 77 (Museu do Dundo).

Longfield (1945) recorded this from Ebanga (S. Angola). Bampton collected this widespread species at Hungueria and Nova Lisboa. Pinhey found it on the Lutchigena River, Caianda.

*Distribution.* Most of the Ethiopian region.

*Orthetrum julia falsum* Longfield

*Orthetrum capense falsum* Longfield, 1955, *Publicões cult. Co. Diam. Angola* 27: 26; *Orthetrum falsum* Pinhey, 1961b: 86 (forest near Dundo).

This common taxon was collected by Bampton at Serra de Chela. Pinhey recorded it on the Lucala River (1964).

*Distribution.* Most of the Continental Ethiopian region.

*Orthetrum macrostigma* Longfield

Longfield, 1945, *Archos Mus. Bocage* (1947) 16: 25, 30; Longfield, 1955: 44; Pinhey, 1970: 284.

A very local species first recorded by Longfield from three localities, Lunda (holotype), Bimbi and Sangévé (Monard). A series of both sexes has been taken in the Ikelenge District of Mwinilunga Province of N.W. Zambia, close to the East Angola border at Caianda. Bampton collected this species at Serra de Chela, 6 500 ft., Tunda Vala, 32 km N.W. of Sa da Bandeira, 21 October 1973.

*Distribution.* Angola, N.W. Zambia, Shaba (Katanga) and Kambole (Tanzania).

*Nesciothemis farinosum* (Förster)

*Orthetrum farinosum* Förster, 1898, *Ent. Nachr.* 24: 169; Longfield, 1945: 30;

Pinhey, 1965: 162 (Lucala River).

Longfield (1945) recorded this widespread species from several localities, Chimporo, Kuvangu, Kalukembé and Sangévé. Pinhey (1965) found it to be common near the Lucala River, East of Luanda. Bampton collected it at Pungo Andongo.

*Distribution.* Widespread in Continental Africa.

*Palpopleura lucia* (Drury)

*Libellula lucia* Drury, 1773, *Illustr. Exot. Ins.* 2: 82, pl.

*Palpopleura lucia* and f. *portia* (Drury, 1773) Longfield, 1945: 30; Longfield, 1959: 41 (Dundo); Pinhey, 1961a: 77 (Dundo Museum); Pinhey, 1961b: 86 (Dundo).

Longfield (1945) recorded f. *lucia* from Chimporo and f. *portia* from Kalukembé. Bampton collected *lucia* at Pungo Andongo and Silva Porto; *portia* at Nova Lisboa. Estes collected f. *lucia* on the Congolo River and H. D. Brown took f. *portia* at Sa da Bandeira.

*Distribution.* Locally abundant in the Continental Ethiopian Region, in both its forms, but in the higher altitudes f. *portia* is the more usual form.

*Palpopleura jucunda* Rambur

Rambur, 1842, *Ins. Névr.*: 134; Longfield, 1945: 30; Pinhey, 1961a: 77 (Dundo Museum).

Longfield (1945) recorded this from Kalukembé; Bampton, at Serra de Chela. It occurs in Zambia close to the Angolan border at Caianda.

*Distribution.* Locally common in many parts of the Continental Ethiopian region.

*Porpax risi* Pinhey

Pinhey, 1958, *Occ. Pap. natn, Mus. S. Rhod.* 22(B): 115, fig.

A very local species indeed, of which Bampton collected 1 ♀, Serra de Chela, 6 500 ft., Tunda Vala, 32 km N.W. of Sa da Bandeira 20 October 1973 (I. Bampton).

This is probably the first Angola record, but Longfield (1945: 30) recorded one male specimen (without data), identified as *P. asperipes* Karsch from Angola. This may have been the later described *risi* or it could have been *asperipes*. Both these have been taken by Pinhey in Zambia, close to the Angolan border at Caianda.

*Distribution.* Rhodesia, Mozambique, Zambia and Angola.

*Crocothemis sanguinolenta* (Burmeister)

*Libellula sanguinolenta* Burmeister, 1839, *Handb. Ent.* 2: 859.

*Crocothemis sanguinolenta* Longfield, 1945: 30; Longfield, 1959: 40 (Dundo); Pinhey, 1961a: 77 (Dundo Museum).

Longfield (1945) recorded Kuandu, Kuvangu, Mukoti, Bimbi, Elendé and Ebanga as localities. Bampton took it at Serra de Chela.

*Distribution.* Found in most parts of the African Continent.

*Brachythemis leucosticta* (Burmeister)

*Libellula leucosticta* Burmeister, 1839, *Handb. Ent.* 2: 849.

*Brachythemis leucosticta* Longfield, 1945: 30; Longfield, 1959: 34 (S.W. Angola); Pinhey, 1961a: 77 (Dundo Museum); Pinhey, 1965: 163 (Catete swamp).

Longfield (1945) recorded this locally abundant insect from Tyitunda, Kuvélai, Kuandu and Kapelongo; Bampton, from Catanda and Bom Jesus. Estes collected it at Quimbango.

*Distribution.* Nearly all Continental Africa; southern Europe and parts of W. Asia.

*Trithemis annulata* (Beauvois)

*Libellula annulata* Beauvois, 1805, *Ins. Afr. Amér.*: 69, fig.

*Trithemis annulata* Pinhey, 1965: 163.

This common species does not seem to have been recorded from Angola prior to Pinhey (1965), at Catete and other localities close to Luanda. Pinhey has also collected it at Catambela River, Lobito Bay April 1971. Bampton found it at Pediva, 1 500 ft., S.E. of Moçamedes.

*Distribution.* Throughout Africa; parts of southern Europe and W. Asia.

*Trithemis dorsalis* (Rambur)

*Libellula dorsalis* Rambur, 1842, *Ins. Névr.*: 89.

*Helothemis dorsalis* Longfield, 1945: 30.

Longfield (1945) recorded many localities, Ebanga, Kapelongo, Kuandu, Kuvangu Mukoti, Ndongo and Sangévé. It is common in N.W. Zambia near the East Angola border-town of Caianda. Bampton collected it at Serra de Chela.

*Distribution.* South to Central and East Africa.

*Trithemis furva* Karsch

Karsch, 1899, *Ent. Nachr.* 25: 370.

*Trithemis risi* Longfield, 1945: 31; Longfield, 1959: 40.

For the above synonymy vide Pinhey (1970a: 95).

Longfield (1945) recorded *risi* from Chimporo. Ebanga, Kalukembé, Kuandu, Mukoti and Tyitunda; and, in 1959, very common at Dundo. It is also common in N.W. Zambia over the border from Caianda (Pinhey). D. Estes collected examples near Malange on the Congolo and Zuimbango Rivers. Bampton took a specimen on the Serra de Chela.

*Distribution.* Common in most parts of the Ethiopian Region.

*Trithemis kirbyi ardens* Gerstaecker

Gerstaecker, 1891, *Jb. hamb. wiss. Anst.* 9: 5, 9, 187; Longfield, 1945: 31.

Longfield (1945) only recorded Kuvangu. Bampton collected this species, which favours rocky or sandy streams, at Serra de Chela. Quilengues and Pungo Andongo.

*Distribution.* Most of Ethiopian Africa; with the nominotypical subspecies in Asia.

*Trithemis weneri* Ris

Ris, 1912, *Cat. Coll. Zool., Selys* 14: 765.

Although species not collected by Bampton are excluded here, it may be worth mentioning the capture of this uncommon one:

Catambele River, Lobito Bay, 8 May 1971 (E. Pinhey).

*Distribution.* Local between the Limpopo River and Southern Sudan.

*Zygonyx flavicosta* (Sjöstedt)

*Schizothemis flavicosta* Sjöstedt, 1899, *Bih. svenska Vetensk Akad. Handl.* 25: 24.

*Pseudomacromia flavicosta* Longfield, 1945: 31.

*Zygonyx flavicosta* Longfield, 1959: 41 (Dundo).

Longfield (1945) recorded 1 ♂ Bimbi October 1932 (A. Monard). Bampton also collected 1 ♂ Rio Cuvo, 2 000 ft., 30 km South of Gabela, 26 October 1973.

The subspecies *mwiniungae* Pinhey (1961c) has been taken in East Angola: Lutchigena River, Caianda, 10 May 1963 (E. Pinhey).

In July 1974 I briefly examined the unnamed female *Zygonyx* (*Pseudomacromia*) spec., collected on the island of Annobon, 16 February 1933 (W. H. T. Tams) (Longfield, 1936: 496). It appears to be *flavicosta*.

*Distribution.* Zambia, Angola and Zaire to equatorial W. Africa.

## GAZETTEER

(partly after Longfield, 1945)

Bandeira, Sa da 14°55'S., 13°30'E.

Bimbi, 125 km N. of Nova Lisboa, on plateau at 3 900 ft. 11°48'S., 15°52'E.

Bom Jesus, on Cuanza River, South of Luanda 9°10'S., 13°32'E.

Caianda, Lutchigena River, 20 km E. of Caianda 11°00'S., 23°30'E.

Catambela River, 9 km S. of Lobito Bay 12°25'S., 13°34'E.

Catanda, approx. 80 km W. of Nova Lisboa 12°40'S., 15°05'E.

Catete swamps, 25 km E. of Luanda 9°06'S., 13°43'E.

Chimporo River, stagnant stream W. of Kuvangu (Cubango) River 17°20'S., 17°17'E.

Congolo River, Quimbango, near Malanje (q.v.)

Cuché, Cuchi, approx. 80 km W. of Serpa Pinto 14°35'S., 16°55'E.

Cuvo River, Rio Cuvo, 30 km S. of Gabela (q.v.)

Dundo, Lunda Province, N.E. Angola: now Henrique de Carvalho? 7°21'S., 20°50'E.

Duque de Braganza Falls, on Lucala River, 50 km N.W. of Malanje 9°04'S., 15°58'E.

Ebanga, about 100 km W. of Nova Lisboa, near Catumbela River 12°45'S., 14°45'E.

Elendé, 55 km E. of Ebanga 12°43'S., 15°07'E.

Gabela 10°45'S., 14°25'E.

Hungueria, c. 80 km S. of Sa da Bandeira 15°18'S., 13°30'E.

Kalukembé (Caluquembé), about 200 km S.W. of Nova Lisboa, on plateau at 5 100 ft. 13°46'S., 14°42'E.

Kapelongo (Capelongo), on Kunené River, S.E. of Sa da Bandeira 14°54'S., 15°08'E.

Kuandu (Cuandu), on plateau 23 km S.E. of Nova Lisboa (q.v.).

Kului (Cului) River, tributary of Kunene River

Kuvangu (Cubango) River, south of Serpa Pinto, on plateau at about 4 500 ft. Serpa Pinto: 14°41'S., 17°42'E.

Kuvelai (Cuvelai) River, about 200 km W.S.W. of Serpa Pinto 15°12'S., 16°26'E.

Luanda, capital of Angola, 8°48'S., 13°14'E.

Lucala, 50 km E. of Salazar 9°14'S., 15°15'E.

Lucala River, various localities between Duque de Bragança Falls and its confluence with Cuanza River, S.E. of Luanda.

Lunda Province, N.E. Angola.

Malanje 9°35'S., 16°25'E.

Mukoti Mountains, 55 km N.W. of Vila da Ponte, W. of Cunene River.

Mupa, on Kuvelai River 16°05'S., 15°55'E.

Ndongo, 66 km W. of Vila da Ponte, above Kului River 13°30'S., 14°45'E.

Nova Lisboa 12°44'S., 15°47'E.

Osi River, a small tributary of the Cunene River.

Pediva, approx. 200 km S.E. of Moçamedes 16°15'S., 12°32'E.

Pungo Andongo, 60 km W. of Malanje 9°40'S., 15°35'E.

Quilengues, 70 km N.E. of Sa da Bandeira 14°05'S., 14°04'E.

Quimbango, 180 km S.E. of Malanje.



Rio Cuvo — See Cuvo River.

Sangévé, a Catholic Mission of Galanga, c. 100 km N.W. of Nova Lisboa 12°03'S, 15°09'E.

Serra de Chela, Tunda Vala, 32 km N.W. of Sa da Bandeira 15°00'S., 13°10'E.

Silva Porto 12°22'S., 16°56'E.

Vila Teixeira de Sousa 10°42'S., 22°12'E.

Tytunda, near Kuvangu River.

Zuimbango River, near Malange (q.v.)

#### Literature Cited

- KIMMINS, D. E. 1962. The identity of *Pseudagrion angolense* Selys, 1876 (Odon: Coenagr.) *Ann. Mag. nat. Hist.* (13) 5: 331-336, 11 figs.
- LONGFIELD, C. 1936. Studies on African Odonata, with synonymy and descriptions of new species and subspecies. *Trans. R. ent. Soc. Lond.* 85 (20): 467-498, 10 figs.
- 1945. The Odonata of South Angola. *Archos Mus. Bocage* (1947) 16: 1-31, 11 figs.
- 1955. The Odonata of North Angola. Part 1. *Publicões cult. Co. Diam. Angola* 27: 11-63, 10 figs.
- 1959. Idem. Part 2. *Ibidem* 45: 13-42, 6 figs.
- PINHEY, E. C. G. 1961a. A collection of Odonata from Dundo, Angola. With the descriptions of two new species of Gomphids. *Publicões cult. Co. Diam. Angola* 56: 71-78, 2 figs.
- 1961b. Some dragonflies (Odonata) from Angola; and descriptions of three new species of the family Gomphidae. *Ibidem* 56: 79-86, 4 figs.
- 1961c. Dragonflies (Odonata) of Central Africa. *Occ. Pap. Rhodes-Livingstone Mus.* 14: 97 pp.
- 1962. A Descriptive Catalogue of the Odonata of the African Continent (up to Dec. 1959). *Ibidem* 59: 1-322, pls.
- 1964a. Dragonflies of the Angola-Congo borders of Rhodesia. *Ibidem* 63: 97-129, figs, pls.
- 1964b. A revision of the African members of the genus *Pseudagrion* Selys (Odonata). *Revta Ent. Moçamb.* 7 (1): 1-196, 19 pls.
- 1965. Odonata from Luanda and the Lucala River, Angola. *Revta Biol.* 5 (1-2): 159-164.
- 1966. Notes on African Odonata, particularly type material. *Revue Zool. Bot. afr.* 73 (3-4): 283-308.
- 1967. African Chlorocyphidae (Odonata). *J. ent. Soc. sth. Afr.* 29: 161-197, 67 figs.
- 1969. On the genus *Umma* Kirby (Odonata). *Arnoldia Rhod.* 4 (17): 1-11, 11 figs.
- 1970a. Monographic study of the genus *Trithemis* Brauer (Odon: Libell.). *Mem. ent. Soc. sth. Afr.* 11: 1-159, 56 figs.
- 1970b. A new approach to African *Orthetrum* (Odon.). *Occ. Pap. natn. Mus. Rhod.* 4 (B) (30): 260-321, 28 figs.
- 1974. Three undescribed Odonata taxa from Africa. *Arnoldia Rhod.* 7 (2): 1-6, 2 figs.
- RIS, F. 1931. Odonata aus Süd Angola. *Revue suisse Zool.* 38: 97-112, 5 figs.
- RIS, F. and SCHMIDT, E. 1936. Die *Pseudagrion* --- Arten des Kontinental Afrika. *Abh. senckenberg. Naturf. Ges.* 433: 1-68, 38 figs.

8 APR 1975

# ARNOLDIA

RHODESIA

SERIES OF MISCELLANEOUS PUBLICATIONS

THE NATIONAL MUSEUMS AND MONUMENTS OF RHODESIA

No. 24

Volume 7

15th August, 1975

## THE LIVING SITE OF ADAM RENDER

by

L. E. HODGES

*National Museums and Monuments of Rhodesia*

Until the journals of Carl Mauch were translated by Mr. F. O. Bernhard and his wife, the late Mrs. Elizabeth Bernhard, little was known about Adam Render or Mauch (Burke, 1969). In the years between 1860 and 1870 a number of adventurous men were exploring north of the Limpopo River. Adam Render and Carl Mauch were two who made journeys during this period. They did not meet until 1871, when Render rescued Mauch from a hostile African Chief who lived near Zimbabwe.

It is believed Render was born in Germany and probably went with his parents to America when he was a small boy. He was, however, able to converse with Mauch in his native tongue. It is not certain when or how he reached Africa, but it is known he was a hunter and trader in the Victoria District as early as 1867.

Carl Mauch was the son of a carpenter in Stetten, a village near Stuttgart, Germany. He was trained to be a teacher. After spending a short time in Durban and the Transvaal, he realised his childhood ambition to explore little known parts of Africa. In 1866 he travelled with Henry Hartley on two elephant hunting expeditions. Mauch's knowledge of geology and the information given to him by Hartley resulted in the discovery of gold in Rhodesia. On his return trip to South Africa he also discovered the precious metal on the Tati River.

Render and Mauch met in August 1871 when the latter, deserted and robbed by his carriers, sent a message to Render for help. The two men lived together for nine months at Pika's Kraal on Chigaramboni Hill and Render led Mauch to the Zimbabwe Ruins on a number of occasions.

In May 1872 the two of them started their journey on foot towards the coast. From Quelimane Mauch sailed on 5th October, 1872 for Germany, and Render returned to his life in the African veld to carry on with his trading. He died in the area a few years later, but the exact place of his burial has not been located.

Carl Mauch's achievements were considerable, and some of his maps are of lasting and outstanding value. He died on the 14th April, 1875, at the age of 38, never having set foot in Africa after 1872.