

DRAGONFLIES COLLECTED ON AN EXPEDITION FROM
RHODESIA TO NIGERIA IN 1958

BY ELLIOT PINHEY

PART I

OBSERVATIONS ON THE JOURNEY AND THE NEW DISCOVERIES IN DRAGONFLIES

Accompanied by the museum taxidermist, Mr. T. Collin-Grey, who helped considerably in the collecting of insects, this overland expedition through the Congo, the French Equatorial African territories and the Cameroons as far as the Nigerian border, was undertaken by the author before these countries achieved their independence. At the time of writing, however, political spheres, although changed in status, have not so far suffered any significant alterations in their boundaries.

The destination chosen was a forest area near Ikom in Eastern Nigeria, close to the South (formerly British) Cameroon border. Situated on the Gulf of Guinea in the equatorial belt of Africa, this region appeared to the author to be one of the most suitable choices for a brief field survey of the West African Odonata fauna. Insects of all possible orders were collected but the emphasis was on dragonflies.

The journey was made with a Land Rover, heavily laden with collecting apparatus (for mammals, birds and insects), camping equipment, stores, and spare petrol and water tanks. This vehicle, cursed with weak shock absorbers, suffered fairly severe batterings on some of the roads, resulting in unanticipated damage to provisions, equipment and the extra tanks and there was periodical chaos in the back.

The route chosen was more or less the main road to the north as far as Fort Sibut, in the former French Equatorial Africa. From this point Kano and Sahara travellers continue to Fort Archambault and Fort Lamy in the north, whilst our diversion was in a more south-westerly direction. The distance each way from Bulawayo to Ikom was considered to be roughly 5,000 miles. Starting on January 21st, 1958, the journey to Nigeria took a month. Progress was slowed down mainly by the condition of some of the roads, the weight of paraphernalia, wash-aways and fallen bridges, ferries and frontier posts. Running out of petrol at one point it was necessary to cover about 65 miles on our paraffin supplies. Collecting on the journey was mostly confined to brief stops except on occasions when there was some unavoidable delay on the road. However, many useful data were obtained, particularly on the distribution and habitats of the dragonflies throughout the expedition.

From Bulawayo the route was at first north east, crossing the Zambezi River at Chirundu Bridge; then north through the Rhodesian 'Copper Belt' to the Belgian Congo border at Mokambo. Most of the hazards and delays on the outward journey were due to floods, storms and rivers in the Congo. But as far as Elizabethville, in the Katanga, the only setback was when a camp was set up in a heavy downpour just to the south of the town. This attempt was thwarted by 'Safari' (Army) ants and the gear was very rapidly loaded up into the truck again.

A tarmac road lasted as far as Jadotville and thence the route was via the small but attractive cascades of the Kuibo Falls, passing to the east of Upemba National Park and climbing over the Mitwaba escarpment (where a new Platycnemidid was found). The route continued on a narrow, winding one-way track where cars are held up until the beating of petrol drums sound the 'all clear'. After considerable delay at ferries on the Luvua River the expedition reached the picturesque town of Albertville, on the western shore of Lake Tanganyika. Skirting the lake shore the next place of interest was Uvira, where a profitable visit was paid to the Re-

on the beautiful Lake Kivu, travelling to the west of Ruanda Urundi. Passing scenes of volcanic activity in recent years we journeyed on through Rutshuru and the Ruindi Game Reserve and then climbed on to the high Kabasha escarpment. Descending at length at the other end of this range the route lay through Beni (with the 'Mountains of the Moon' visible on the east) and the Ituri Forest towards the northern Congo.

Here, apart from brief forest patches, it is mainly cotton and palm oil country. On the Uele River collecting was supplemented by eager but unskilled African volunteers. Beyond Buta, and at intervals later in the former French territories, there were large migrations of the Snout butterfly, *Libythea labdacca* Westwood. Also in these areas, and as far as the Nigerian border, one of the most conspicuous butterflies is the common *Danaus chrysippus* (L.), almost invariably as its semi-albinistic form *alcippus* Cramer. In south and central Africa typical *chrysippus* is dominant, whilst in East Africa the prevalent variety is *dorippus* Klug.

The Northern Belgian Congo frontier was crossed at Ndu by ferry to enter French Equatorial Africa at Bangassou. Despite being the dry season the Kembe falls on the La Kotto River were more or less in spate. After this fields of mushroom-shaped, 'pagoda' termite mounds became common. Further north near the Cameroons border, the soil itself was hard and knobby from termite activity. Near river banks clouds of butterflies were attracted to damp mud and often included large numbers of the beautiful violet *Asterope pechueli* (Dewitz).

After Fort Sibut the route was via Baoro, the windy Fort Leclerc and across the French Cameroons border to Bertoua. From here onwards there were patches of forest with Khaya mahogany and spiny Bombax amongst the dominant trees. Thence via Bafia to Bafoussam, where a broad trunk road comes in from Douala, and on to the South (formerly British) Cameroons border and the frontier post of Santa. Grassy hills led through the mountain range to the town of Bamenda. From there the route continued down a thick forested gorge (one-way traffic on alternate days) to Mamfe and finally to the destination in forest near Ikom on the Cross River and the village of Ajassor, over the Nigerian border. The greater part of the collecting was done here, in the jungle, partly with the somewhat unorthodox assistance of a village elder, Mr. George Ogan Njor.

Before leaving this area a visit was paid to Mr. H. Green's survey camp on the slopes of Ntaali ('Gorilla') Mountain, where the author was fortunate in collecting a series of the rare dragonfly, *Pentaplebia stahli* Foerster. In the forested gorge near Mamfe the Land Rover, travelling at 15 m.p.h., followed for some distance on one occasion a zig-zagging *Charaxes* butterfly and it seemed evident that the actual speed of the insect was in the region of 30 m.p.h., which is faster than some observers allow for insect flight. A brief visit was paid to the Fon of Bafut, a chieftain of some local renown.

The return route was via the coastal port of Douala in the French Cameroons; but insidious germs of various kinds had taken toll and a delay of a few weeks was occasioned at the hospitable American Presbyterian mission near Batouri. After recovery, due largely to the attention of Mr. and Mrs. Grout and Dr. Greig, the author had to return to Rhodesia by air from Bangui, on the Congo border, while Mr. Coffin-Grey returned by land, via Stanleyville and Bukavu, and eventually reached Rhodesia.

ODONATA

Results showed a marked paucity of Lestids; certain genera such as *Brachythemis* were absent, probably because most of the collecting was in forest. Some migrants, such as *Pantala flavescens* (F.) were ignored. Large numbers of *Pseudagrion* and *Chlorocypha* were collected. *Platycypha* were not seen north of the Ituri Forest; they appear to be mainly concentrated

in East, Southern and Central Africa, although the new species, *rustibia*, with its coloured tibiae, may represent a development towards *Platycypha*. It seems possible that the new group *Africocypha* may be a recent separation from *Chlorocypha* in the equatorial belt. Other apparently isolated groups in the Cameroons are the only known African Amphipterygid; and the single continental African Megapodagriine (the East African *Coryphagrion* will be placed in another subfamily), with its Malgassian connection. It is also interesting to find a race of Tetrathemines closely allied to a Madagascar insect.

Acknowledgements are due to Col. Fraser who kindly examined and commented on some of the material and Miss Longfield, who gave her opinion on certain *Umma*. And the author's gratitude is extended to all those who helped the expedition in one way or another. It would require a long list to acknowledge all the assistance personally.

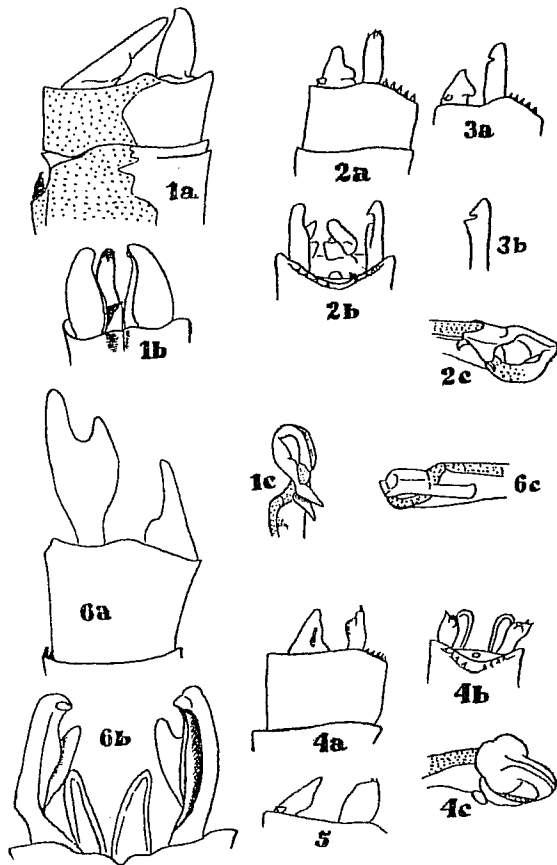


FIG. 1.—Coenagrionidae, males. 1, *Allocnemis mitwabae* n. sp.: a-c, terminalia from right and from above; penis. 2, *Pseudagrion pseudomassaicum doulae* n. ssp.: a-c, terminalia from right and from above; penis. 3, *Ps. pseudomassaicum pseudomassaicum*: a-b, appendages from right and superior from above. 4, *Ps. greigi* n. sp.: a-c, terminalia from right and from above; penis. 5, *Ps. whellani*: appendages from right. 6, *Ps. greeni* n. sp.: a-c, terminalia from left and from above; penis.

Allocnemis mitwabae n. sp. (fig. 1, 1)

? *Allocnemis* sp. Schouteden, 1934, *Ann. Mus. Congo Belg. Zool. ser. 3(2)(1):70.*

Africa. The species *pachystigma* Karsch is in a separate genus, *Stenocnemis*, a very different insect and much more robust. It is surprising that this new *Allocnemis* should be found in the Southern Congo, far from the southern haunts of *leucosticta*.

Adult holotype male.—Labium cream; labrum yellow with fine black basal line and a central basal dot; anterclypeus dark brown; postclypeus and frons dorsally black; frons in front and rest of face yellow, with black horizontal bar placed laterally to anterclypeus. Head above and antennae black, a yellow line at back of occipital plate. Prothorax black, with cream lateral patch; yellow anterior margin, a thin line on posterior edge and minute central dots on middle lobe also yellow. Synthorax black to first lateral suture, with narrow yellow antehumeral and a short bar on upper quarter of humeral suture; sides and ventral surface yellow, with black line on second lateral suture. Legs yellow, with black streak on outer surfaces of femora, tibiae and tarsi brown outwardly. Wings greenish yellow (hyaline in a general example—); venation dark brown; pterostigma brown, edged with pale brown; rhomboidal and only one cellule long. IR₃ rises distally to subnodus, anal vein leaves margin at Ac; the conditions of *Allocnemis*, not *Stenocnemis*. Forewing with 18-19 Px. Abdomen long and slender. 1 whitish, with bilobed black dorsal spot; 2 black above, with median white stripe, at sides whitish, posterior genital lobes black. 3-7 black, with incomplete white basal annuli; 8 black with fine yellow posterior edge; 9-10 orange yellow dorsally, black laterally. Superior appendage orange with black ventro-basal spine; inferior ochreous, black-tipped. Filament of penis spear-head in shape (long and thread-like in *leucosticta*). Abdomen 42 mm., hindwing 25 mm. In life: Eye blue, grey-brown below; pale markings on body greenish yellow; 9-10 vivid reddish orange.

Captured on a mountain stream at 6,000 feet on Mitwaba Escarpment (hence the name), January, 1959. No female was seen, but the males were flying with a species of *Chlorocnemis* and, in the field, they were mistaken for the same genus. The markings on face, thorax and abdomen are very similar to *leucosticta*. But in that species the abdomen is 37 mm. or less; the pterostigma is trapezoidal, swollen on posterior edge, 1½ cellules long; about 14 Px; superior appendage shorter than inferior, but also with ventral spine. Holotype of *mitwabae* in National Museum, Bulawayo, a paratype will go to the British Museum (Nat. Hist.).

Pseudagrion greigi n. sp. (fig. 1, 4)

A red headed species near *whellani* Pinhey.

Adult holotype male.—Labium pale ochreous; face and head above brick red, with scarcely any black markings except around the ocelli and on occiput surrounding the large ochreous postocular spots, which are connected by a pale line across occipital plate. Prothorax black, with ochreous on anterior and posterior lobes, central and lateral spots on median lobe. Synthorax black with metallic green sheen to a little below humeral suture; very broad orange antehumeral, more than three-quarters the width of the mesepisternum at lower end, but sharply constricted laterally at upper end. Sides ochreous with narrow black line on upper halves of first and second lateral suture. Sparse white pruinosity on ventral surface, interalar spaces and bases of legs. Femora blackish, tibiae and tarsi pale brown on outer (flexor) surfaces, black inwardly. Wings hyaline, faintly fumose; pterostigma maroon. Forewing with 12-13 Px; Ac forewing slightly distal to petiole, at end of it in hindwing. Abdomen 1 with black dorsal spot; pale yellow laterally. 2 with broad, dark metallic green band constricted at distal end; a faintly discernible, pale antero-central spot, sometimes pruinosed white. 3-7 broadly metallic to black, constricted by pale annuli at proximal ends; 8-10 and appendages black. Appendages short, the superior like *whellani*, but with apical spine. Abdomen 28 mm., hindwing 18 mm. Pale colour in life: head vermilion; eye in front vermilion, posteriorly black.

Collected on Dingila-Uele River, February, 1958. Named after Dr. Greig, of Batouri Presbyterian Mission, for his invaluable and unstinted assistance. The species is near *whellani* (fig. 1, 5), but not so dark on head or thorax. The inferior appendage lacks the outer basal tumour; the superior is less robust. The female was not seen. The holotype and a paratype are in the National Museum, Bulawayo, one paratype will go to the British Museum (Nat. Hist.).

Pseudagrion pseudomassaicum Pinhey (fig. 1, 3)

Pseudagrion pseudomassaicum Pinhey, 1951, *Transv. Mus. Mem. 5:93, ff.*

This species was taken on the Iufua River, January, 1958. A darker,

Pseudagrion pseudomassaicum doualae n. ssp. (fig. 1, 2)

Mature holotype male.—Face and head above as in *pseudomassaicum*, but darker, the black extending forward in line with anterior ocellus; no postocular spots. Pro- and synthorax almost entirely black, with no trace of antehumerals; white pruinosity on sides and below, also on femora, interalar spaces, and a trace on abdomen 1; a pale stripe on metepimeron only, masked by pruinosity. Femora black; tibiae and tarsi ochreous, the former with black line on inner (anterior) surfaces. Wings hyaline, with reddish brown pterostigma. Forewing with 11-12 Px; Ac on all wings distal to petiole. Abdomen and appendages black, this black constricted at distal ends of 3-5. Appendages only differ slightly from the typical race, as shown in diagram. Abdomen 26.5 mm., hindwing 18.5 mm.

Collected halfway along the Nkongsamba—Douala Road and also 40 miles east of Douala, March, 1958. A much darker insect than true *pseudomassaicum* and, except for the similarity of appendages, might be considered a separate species. Female not taken. Holotype and paratypes in National Museum, Bulawayo, a paratype will go to the British Museum (Nat. Hist.).

Pseudagrion greeni n. sp. (fig. 1, 6)

Mature holotype male.—Labium pale ochreous, labrum and genae deeper ochreous, anteclypeus brown; head above black, without postocular spots, antennae black, the basal segment brown. Prothorax all black above, paler laterally; with thin white latero-ventral pruinosity. Synthorax black to second lateral suture, with traces of white latero-ventral pruinosity, and yellowish markings: very thin but complete antehumeral; narrow stripes above and below first lateral suture, these stripes joined ventrally; metepimeron and all lower sides of thorax and bases of legs ochreous. Femora, tibiae and tarsi reddish ochre, with black external stripes on femora and tibiae. Pterostigma purplish black, slightly swollen on distal edge; forewing with 15 Px. Anal vein leaves margin of hindwing at Ac, of forewing less than the length of Ac distally to this cross-vein. Abdomen above and appendages black; on 2-3 a metallic green sheen, on 3-4 a purplish sheen. Appendages very large and robust, the superiors forked, their upper branches the longer; the upper branch of the superior slightly excavate ventro-internally. Abdomen 32.5 mm., hindwing 22 mm. Colours in life: Eye yellowish green, brown above; pale areas of face chrome yellow.

Female.—Labrum greenish, epistome brown, frons dull reddish; top of head black, with pyriform postocular spots linked across occiput; top of head and frons sparsely dusted with white pruinosity. Prothorax black above, pale at sides; stylets vestigial. Synthorax black to just below humeral suture, sides ochreous with black dot at upper end of each lateral suture; antehumeral continuous, broader than half the mesepisternum, dull reddish violet; the whole thorax thinly coated with white pruinosity. Legs ochreous, with black external lines. Pterostigma yellowish brown. Forewing with 14 Px; anal vein leaves margin at Ac. Abdomen black above. Cerci blackish above, long and tapering. Abdomen 33 mm., hindwing 24 mm.

Collected 30 miles south of Ndola, January, 1958. Named after Mr. R. A. G. Green, of Ndola, who has collected other interesting Odonata for the author. Of continental African species it seems closest to *monardi* Longfield, but it is darker, with narrower antehumerals than in that species; and the appendages, especially the superiors, are very distinct. In these large appendages it is rather like some of the malgassian species; but the longer upper branch of the superior distinguishes it straight away from *malgassicum* Schmidt, *approximatum* Schmidt and *alicorne* Foerster, the species it most closely resembles. The holotype is in the National Museum, Bulawayo. An insect which appears to be the female of this species was also collected at the same time, but not in copula, so that it will not be designated as an allotype.

Pseudagrion rufostigma Longfield

Pseudagrion rufostigma Longfield, 1945, *Arch. Mus. Bocage*, 16:11, 28.

A series taken 30 miles south of Ndola, January. The type male was described from Angola.

Ne-allotype female.—Head similar to male but the reddish areas paler. Prothorax black above, pale at sides, with pale central spot, and short orange stylets, reaching about a quarter the distance across median lobe. Synthorax black to just below humeral suture.

then pale; antehumeral orange-brown, rather more than half as wide as each side of mesepisternum, continuous. Legs ochreous with short black external streaks. Pterostigma pale yellowish brown. Forewing with 12-13 Px; Anal vein leaves margin at Ac or less than the length of Ac before this cross-vein. Abdomen blackish green above, the band constricted at distal ends of segments. Cerci orange-brown, short, triangular. Abdomen 26 mm., hindwing 20 mm.

Ne-allotype, taken in copula, will go to the British Museum (Nat. Hist.), a paratype female remaining in the National Museum, Bulawayo.

Chlorocypha Fraser

Chlorocypha Fraser, 1928, *J. Bomb. nat. Hist. Soc.*, 52:684.

The present author has examined most of the known species of *Chlorocypha* and all species of *Platycypha* Fraser, the latter with tibial expansions, and finds very little difference in the formation of the anal appendages of the male. In *Platycypha amboniensis* (Martin) (*vide* Pinhey, 1958, *Occas. Papers Nat. Mus.*, 22b:105) and less so in *P. fitzsimonsi* (Pinhey) the inferior appendages are longer than in other African *Chlorocyphidae* examined; but otherwise not markedly different. In the British Cameroons two new species were captured in which these appendages are decidedly longer and the superiors are also abnormal. They do not seem to warrant, at present, more than subgeneric rank, although the distinction is, perhaps, as significant as the tibial expansions of *Platycypha*, which, in the species *amboniensis* from the Kenya mountains, shows these as only very narrow flanges to the tibiae, unlike other *Platycypha*; thus forming a link with *Chlorocypha*.

Africocypha n. subg.

This group differs from all other African *Chlorocyphids* examined by the author in the development of the anal appendages (fig. 2). The superior has an interior flange on the outer half and the apex is grooved on the underside; in the other *Chlorocyphids* in question there is only a very short subapical interior flange; and the apical zone is solid, not folded or grooved below. The inferior is very broad at the base, tapering abruptly, and reaching nearly as far as the superior. In the other species the inferior is short and thick throughout, strongly incurved; barely half as long as the superior, but a little longer in the two species of *Platycypha* mentioned above. In lateral view it is also seen that the ventral portion of the 9th segment of the abdomen differs somewhat from the normal condition (*vide* figure).

Type species: *Chlorocypha (Africocypha) greyi* n. sp.

Chlorocypha greyi n. sp. (fig. 2, 1)

In markings as well as appendages this is a very distinctive species.

Mature holotype male (from Widdicombe).—Labium and head above black; labrum, epistome and rest of face bright yellow, with black sutural lines. Yellow markings on head above: a yellow stripe against anterior edge of eye; two triangles in front of ocelli; very small lunar spot laterally to ocelli, and a minute dot post-laterally on occiput. Thorax and legs black. A yellow triangular spot on each side of middle lobe of prothorax. A green, unbranched and hookless antehumeral close to humeral suture. An abnormally distinct, narrowish, lateral yellow stripe on metepisternum, and another on metepimeron. Traces of yellow spots ventrally and at bases of second and third legs; slight white ventral pruinosity. Wings fumose, pterostigma black. Quadrilaterals in forewings with two cross-veins, in hindwings with three. Abdomen moderately narrow, tapering. 1-3 black, with lateral yellow marking: a triangle on 1; a constricted lateral stripe and a ventral stripe on 2; a lateral and ventral line on 3. 4-8 above red, with black distal band, but 6 entirely coated with white pruinosity in life; these segments black below, and the black partly visible dorsally on 4. 9-10 and appendages black. Appendages described above. Abdomen 23.5 mm., hindwing 25.5 mm., pterostigma 2.25 mm.

This insect is named after Mr. Terence Coffin-Grey, who took a keen interest in helping in the collecting of dragonflies, particularly *Chlorocyphids*. The type was collected by the author on a forest stream at Widdicombe.

type, was taken on Gorilla (Ntaali) Mountain, at 1,700 ft., flying rapidly and erratically over a very small rock pool. Unfortunately, this paratype was preserved in alcohol and became badly damaged in transit. In this example the hindwing is 24 mm., pterostigma 2.25 mm. The right hindwing has only two cross-veins in the quadrilateral, unlike the holotype. Pale colours noted in life: antehumeral green, other thoracic markings yellow; abdomen 4-5, 7-8 scarlet, 6 characteristically white.

The markings on the head are slightly reminiscent of *C. molindica* Fraser, but in *greyi* the yellow ante-ocellar markings are discontinuous; *molindica* has a narrow antehumeral on the thorax, but it is hooked outwardly at both ends; the abdominal markings are very different except that 1 is the same; 2 is also black at sides, but with one yellow stripe and the dorsum has the red spear-head mark; also, the abdomen is more slender in *molindica*. The face in nearly all African Chlorocyphids is darker, in the male, than in *greyi*.

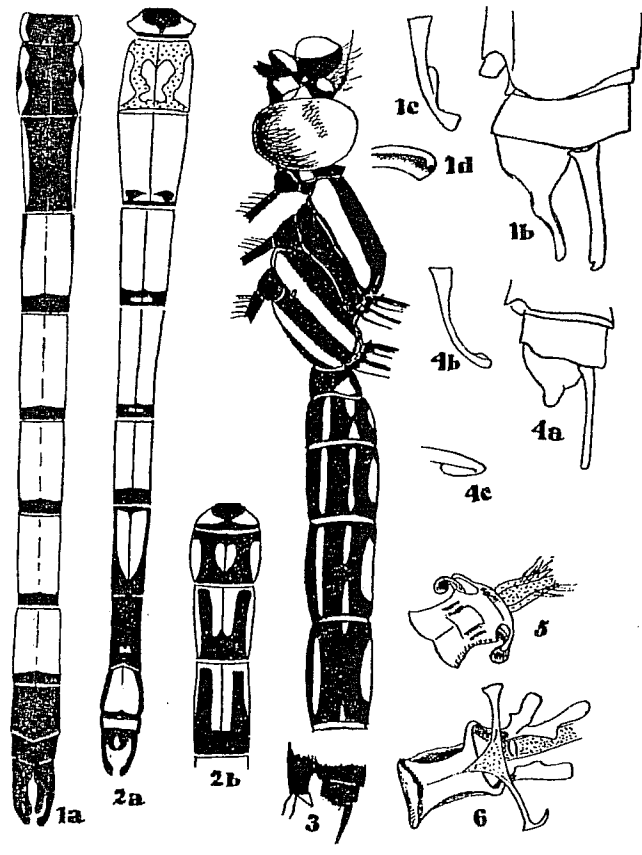


FIG. 2.—Chlorocyphidae and Agriidae. 1, *Chlorocypha (Africocypha) greyi* n. sp.: a-d, male, abdomen, terminalia from left, left superior appendage from above and its apex from below. 2, *Ch. (Chlorocypha) rufitibia* n. sp.: a-b, abdomen, male, female. 3, *Ch. (Africocypha) ntaali* n. sp.: female from left. 4, *Ch. (Chlorocypha) luminosa*: a-c, male, terminalia from left, superior appendage from above and its apex. 5, *Umma purpurea* n. sp.: penis. 6, *U. puella*: penis.

The female was not seen. The holotype is in the National Museum, Bulawayo. The damaged paratype will be sent to the British Museum (Nat. Hist.).

Chlorocypha (Africocypha) ntaali n. sp. (fig. 2, 3)

Holotype female (from Widdicombe).—Labium, epistome and frons black; labrum yellowish green with black medio-basal dot; genae yellow; Antennae and head black; with green markings: two joined pairs of spots anterior to ocelli, a streak down edge of eye in front. Prothorax black with yellowish green lateral spot; Synthorax black with broad green, unbranched antehumeral; two yellow-green lateral stripes as in *greyi*. Legs black. Wings long, faintly tinged (less so in another specimen) with greenish. Pterostigma black; all quadrilaterals with two cross-veins. Abdomen and cerci black; 1 with blue mid-dorsal and green lateral spot; 2-7 with paired blue mid-dorsal spot; two green lateral spots on 2, these becoming lines on 3-4, diminishing to two spots again on 5-7; and yellow ventro-lateral line on 2-7, diminishing on posterior segments; 8-10 all black. Cerci normal; ovipositor reaching end of 10 (normally ending before end of 10 in *Chlorocypha*). Abdomen 19 mm., hindwing 28 mm., pterostigma 2.7 mm. Female in life: sky blue face, thoracic stripes, dorsal spots on abdomen; head-green on lateral markings on abdomen.

Allotype male (badly stained).—Head evidently marked as in *greyi*; labrum and epistome greenish. Thorax, legs and wings similar to *greyi*; traces of amber at wing bases; all quadrilaterals with two cross-veins. Abdomen 1-3 black, marked laterally (not dorsally) with greenish-yellow as in female; 4-7 (stained) blue, with black markings as in *greyi*; 9-10 and appendages black. The appendages as in *greyi*. Abdomen too twisted for measurement; hindwing 24.5 mm., pterostigma just over 2 mm. In life, face in front blue-green; pale markings on thorax and sides of basal segments of abdomen greenish; 4-7 sky blue.

The male was taken on the Kumba-Mamfe cross roads. Named after N'Ta Ali, the 'Gorilla' Mountain. The male is very close to *greyi*, but it would appear to be a distinct species, not a remarkable colour variation. Owing to the present condition of the male, one of the females is chosen as holotype. Of known species the male is, perhaps, near *croceus* Longfield, but much more heavily marked with black. The thoracic stripes are undivided and much more regular than in *croceus*. They were collected on rocky streams at Mamfe, Widdicombe, Kumba-Mamfe cross-roads and, the first two females, at the foot of Gorilla Mountain. Holotype and allotype in National Museum, Bulawayo, a paratype female will go to the British Museum (Nat. Hist.).

Chlorocypha (Chlorocypha) rufitibia n. sp. (fig. 2, 2)

A distinctive red and blue species, with red tibiae.

Adult holotype male.—Head black, labrum, epistome and eyes with purplish lustre; antennae black; the only pale markings on dorsum being an orange spot on occipital plate, with two short arms projecting forwards, and minute orange postocular dots. Thorax black. Prothorax with orange medial and lateral spots on middle lobe, and a yellow posterior margin on posterior lobe. Synthorax with fine yellow median line and orange-red markings: antehumeral fish-hook marking (as in many other species); a broad band covering most of metepisternum and overlapping on mesepimeron; a stripe on metepimeron and ventral spots. Femora and tarsi black; tibiae outwardly deep orange-red, with black at each end and black spines; tibiae inwardly creamy white: the condition found in *Platycypha* but without the flanges. Wings hyaline, pale amber from base to beyond arculus; pterostigma black. All quadrilaterals with one cross-vein. Abdomen of moderate width. 1-7 red with black markings: on 1 a basal patch; on 2 a variable amount of diffuse blackish but leaving the centre red; 3-6 black posteriorly, also 7 but diffusely more so; 8 black with a blue distal spot; 9-10 sky blue with black edging; appendages black; 8-10 all black ventrally. Penis typical of *Chlorocypha*. Abdomen 20 mm., hindwing 19.5 mm., pterostigma 1.75 mm. In life the eye was violet-blue to purple; pale colour of thorax and abdomen deep orange-red to vermilion; 9-10 cobalt blue.

The type was captured at Widdicombe. Paratypes were taken 40 miles east of Mamfe and elsewhere on the Mamfe-Bamenda Road.

Allotype female (fig. 2, 2b).—Labium whitish-yellow, laterally and anteriorly black; face in front deep violet to blue-violet; frons and epistome above with three large pale spots; two long orange horns from occipital plate run to the sides of the ocelli; two pale dots anterior to ocelli, bases of antennae yellow. Prothorax with pair of yellowish spots on anterior lobe, another on middle lobe, a stripe and lateral spot on posterior lobe. Synthorax marked as in male but the pale areas ochreous. Legs black. Wings fumose, trace of amber at extreme base; pterostigma with pale brown centre. Abdomen and appendages black; with pale areas: 1 with pale lateral patch; 2 with central spot, lateral and ventral stripes; 3-7 with pale central band, incomplete; lateral stripe, severed and diminishing on posterior segments; and a diminishing ventral stripe. 8 and 10 all black 9 with short posterior yellow band. Abdomen 17.5 mm., hindwing 23 mm.

The allotype came from Widdicombe, a paratype 40 miles east of Mamfe.

This species is distinct from all true *Chlorocypha* by the red and cream tibiae, which, however, are not expanded as in *Platycypha*. In thoracic markings it is nearest to *rubida* and *selysi*, but quite different on the abdomen. It is a much darker species than *curta*, which also has a red abdomen with the end segments blue. All examples of *rufitibia* were collected between Mamfe and Bamenda in the British Cameroons. Holotype and allotype in National Museum, Bulawayo; a paratype of each sex will go to the British Museum (Nat. Hist.).

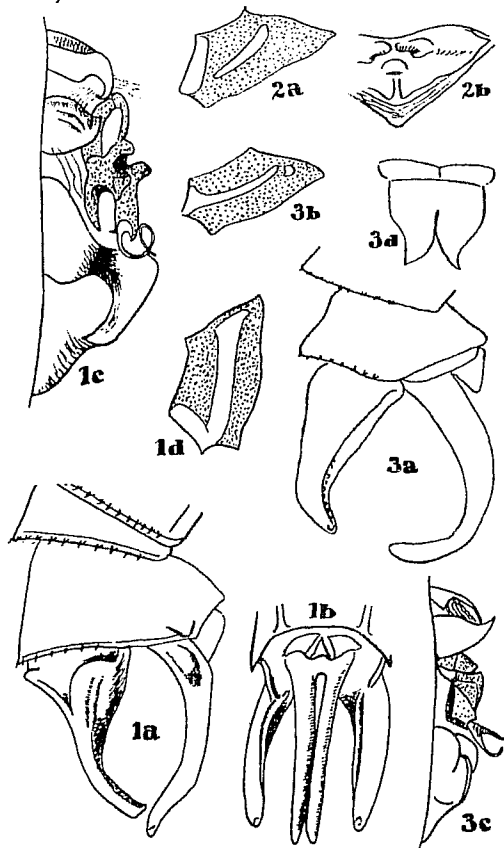


FIG. 3.—*Tragogomphus*. 1, *T.?* *aurivillii*, male: a-d, appendages from right and from below, accessory genitalia, left mesepisternum. 2, *T.?* *tenaculatus*, female: a-b, left mesepisternum, vulvar scale. 3, *T. mamfei* n. sp.: a-c, male, appendages from right, left mesepisternum, accessory genitalia; d, female, vulvar scale.

Umma purpurea n. sp. (fig. 2, 5)

A distinctive and beautiful species, near *declivium* Foerster but with a long pterostigma; and without the broad black thoracic stripes of that species.

Holotype male.—Labium black, this and ventral surface of thorax and bases of legs thinly dusted with white pruinosity. Face and head above deep purple; a yellow spot on gena and a black ocellar patch on vertex. Prothorax metallic emerald, with purple lines edging the lobes and tumours. Synthorax purple on mesepisternum, metallic green laterally, with narrow black sutural lines. Legs black. Venation black; pterostigma purplish black; the wings slightly fumose at apex and posterior margin. Abdomen purple above, green laterally; anal appendages black. Ventral lobes of penis narrow, elongate.

Head details.—Abdomen 19 mm., hindwing 22 mm., pterostigma 2.5 mm.

Collected at Widdicombe and Mamfe, British Cameroons, in February. No female was taken. Holotype and a paratype male in National Museum Bulawayo; one paratype will go to the British Museum (Nat. Hist.).

Tragogomphus mamfei n. sp. (fig. 3, 3)

Only a general specimen of each sex was collected.

General holotype male.—Face light ferruginous, head above darker; frons with yellow dorsal stripe. Thorax ferruginous, paler ventrally, with yellow stripes: antehumeral, severed at upper end, joined to a short bar on collar at lower end; narrow yellow lateral stripe on mesepimeron, another below first lateral suture and a third on metepimeron. Femora ferruginous, tibiae and tarsi black. Wings amber at bases to beyond triangles, and along costal-subcostal zones; pterostigma very pale, between brown veins, but certainly darker at maturity. Forewing with 15 Ax; discoidal field expanding at subnodus; anal triangle of 4 cells. Abdomen ferruginous; yellowish lateral spots and mid-dorsal stripe on 1-2, narrower dorsal stripe on 3; basal yellow annuli on 4-6, 7 yellow in basal half. Superior appendage rather conical; inferior as in other species of *Tragogomphus*. Abdomen 25 mm., hindwing 23 mm., pterostigma 2.5 mm.

Collected on Gorilla Mountain, Mamfe, at 1,700 ft., February.

General allotype female.—Head and body marked as in male, although segment 7 apparently with smaller basal yellow patch. Wings brownish-amber to beyond triangles. Forewing with 13-14 Ax, 1st and 5th-6th thickened (5th in both forewings in male). Otherwise as in male. Vulvar scale moderately well developed; cerci very short and thick. Abdomen 31 mm., hindwing 26 mm., pterostigma 2.5 mm.

Widdicombe, Mamfe, 2,500 ft., February.

Much smaller than the other known *Tragogomphus* (*T. seydeli* Schouteden evidently does not belong to this genus); also differing in the shape of the antehumeral and in the genitalia. This species has a remarkable superficial resemblance to a Uganda species of Gomphid, now under publication as an aberrant *Onychogomphus*, a Gomphine by venation; yet *mamfei* is Epigomphine in venation, but there is a strong similarity in size, most of the markings and the appendages. By coincidence only, a general pair were taken of this *Onychogomphus* also. Types of *mamfei* in Nat. Mus., Bulawayo.

Onychogomphus kitchingmani n. sp. (fig. 4, 8)

A small *Onychogomphus* from Northern Rhodesia is included here although it was not collected on the expedition.

Old holotype male.—Lips, face, frons and occipital plate very pale olivaceous, anteclypeus and genae yellower; the mandibles, a broad basal band on frons and the vertex black; a minute pale dot on transverse ridge behind anterior ocellus; occipital plate simple except for a small median notch on posterior edge. Prothorax black, pale laterally and at anterior and posterior borders. Mesepisternum black, with pale olivaceous markings: most of median carina and of mesothoracic collar pale; and two antehumerals, both long and broad; the inner one terminating obliquely at each end (not reaching quite to collar), almost like an elongate parallelogram; the outer a band just above humeral suture, extending on to the green mesinfraepisternum. Sides and ventral surfaces of synthorax pale green; a narrow black stripe below humeral suture and broken traces on first lateral suture and below second suture. Femora greenish, blackening distally; tibiae and tarsi black. Wings fumose, especially in costal-subcostal zones; pterostigma light brown, between black veins; venation brown, costal and subcostal cross-veins yellow. Sectors of arculus widely separated at origin; forewing with 12 Ax, first and fifth primaries. Abdomen 1-2 brown above, pale green laterally (including genitalia and the rounded oreillets), with olivaceous mid-dorsal stripe; 3-4 pale olivaceous on basal two-thirds, black distally; 5-7 pale on basal third; 8-9 black, green ventro-laterally, and the narrow foliations green with black margins; dorsally a narrow yellow distal triangle on 8-9; 10 pale olivaceous, black at base. Appendages pale olivaceous to yellow; typical of the genus. Superiors broad, straight but slightly incurved at apex: the apex with black-tipped tooth, a similar subapical tooth and a few small spines. Inferior robust, with the usual median vertical branch; the curved branches ending in fine points. Abdomen (without appendages) 28 mm., hindwing 25 mm., pterostigma 3 mm.

Named after Mr. R. M. Kitchingman who sent it, with many other dragonflies, from Mwinilunga (May, 1957). It is nearest to *supinus* Selys, but distinctly smaller; differing in coloration; longer antehumerals; the robust superior appendages and their teeth. The single type specimen is in the National Museum, Bulawayo.

Paragomphus zambeziensis n. sp. (fig. 4, 1)

Mature holotype male.—Labium and underside of occiput yellow; face and frons greenish-yellow with dark brown marking: narrow margin all around labrum and a broad basal band on this lip; a band along lower edge of postclypeus, severed in middle; broad basal band on frons above and faint diffuse stripe just below the crest. Top of head dark brown. Prothorax blackish with greenish posterior lobe. *Synthorax* blackish-brown to below humeral suture, with yellow-green marking: traces on median carina and antearlar spaces, and interalar spots; stripe along collar joined to long inner antehumeral to form a '7' mark (or reverse): outer antehumeral just above the suture but severed at upper quarter. Rest of thoracic sides yellowish-green; with black stripe on ventral half of first lateral suture and trace at upper end of this suture; stripe on second lateral suture and trace on post-ventral edge of metepimeron. First and second legs ferruginous, yellowish-green internally; hind femur ferruginous, yellow at 'knee'; hind tibiae and tarsi blackish. Wings hyaline, venation black, but costa yellow; pterostigma brown between black veins. Forewing with 13 Ax, first and fifth thickened; anal triangle of 4-5 cellules. Abdomen 1-2 mainly brown dorsally, greenish-yellow laterally but brown at base; 2 with dorso-posterior greenish patch; 3-6 brown with broad yellowish band in basal half, intersected by brown carinae; 7 brown, yellow in basal half; 8-9 brown with large foliations, that on 8 three-quarters as wide as the segment; 10 pale ferruginous with blackish dorso-basal spot. Appendages yellow-brown, blackish apically; superior as long as 9-10, tapering to fine divergent points; a short transverse ridge halfway along inner surface. Inferior barely extending half as far as superior, the apex with lateral conical tubercle. Accessory genitalia as shown. Abdomen 29 mm., hindwing 24 mm., pterostigma 2.5 mm.

Chirundu Bridge, Zambezi River, January, 1958. In its small size this species differs from other African *Paragomphus* having finely tapering appendages. In the *hageni* group the facial and body markings are paler and the tips of the appendages thicker. Of those with similarly tapering superiors it appears to be nearest *longiventris* Fraser, but the abdomen there is 37 mm., the pterostigma at least 4 mm.; in *abnormis* (Karsch) the appendages are not divergent: this applies also in the larger species, *acuminatus* Fraser and *sabicus* Pinhey; *maynei* (Schouteden) has tapering, slightly divergent superiors, but the abdomen is 37 mm. The single male type of *zambeziensis* is in the Nat. Mus., Bulawayo.

Malgassophlebia bispina Fraser

A male and female collected on the expedition near Ikom, in Nigeria, appear to represent a race of *bispina*. They have a well developed prothoracic hind lobe, rather more like *Calophlebia*, but otherwise they are very close to *M. bispina*. Yet it is peculiar that this species should be found in West Africa, whilst the only other known member of the genus is the type-species, *M. mayanga* (Ris) of Madagascar.

Malgassophlebia bispina nigeriae n. ssp. (fig. 5, 3)

Holotype male, adult.—Face as in the nominotypical race but with yellow dots on apices of frontal cones. *Synthorax* black, with bronze reflection (instead of being dark chocolate), almost to first lateral suture; with yellow antehumeral stripe. Sides yellow, with broader bronze-black band on second suture. Discoidal field in forewing expanding at subnodus, instead of near margin. Hindwing with 1 Ac (2 in *bispina*). Abdomen blacker than *bispina*, with yellow markings: 1 mainly black above, with yellow post-lateral spots; 2 yellowish with black posterior spots and the accessory genitalia black; 3 black, with yellow basal triangle and distal stripe; 4-8 black with yellowish basal patch; 9-10 and appendages black. Superior appendages with short dorsal ridge at base and a further ridge ending in a dorsal tooth slightly over halfway along the appendage (not so near apex as in *bispina*); a ventral flange; apex with a slight tumour. Inferior as long, very slightly notched at apex. Accessories as in *bispina*. Abdomen 25 mm., hindwing 28 mm., pterostigma 2.5 mm.

Allotype female, adult.—Marked as in male. Abdomen less slender, but also constricted on 3. Cerci short, slender; vulvar scales as in diagram. Abdomen 23 mm., hindwing 29 mm., pterostigma 2.5 mm.

The type of *bispina* came from the Congo. The race described here was collected at Ajassor, Ikom, Eastern Nigeria, February, 1958. The two types are in the National Museum, Bulawayo.

Neodythemis gorillae n. sp. (fig. 5, 2)

A typical member of this genus.

Mature holotype male.—Labium black, with broad yellow lateral crescent; labrum black, epistome greenish-yellow; frons and vesicle steely blue, the frons rounded; occiput black, Prothorax black, posterior lobe greenish. *Synthorax* black, with the pale marking greenish on dorsum, yellowish laterally and ventrally; narrow stripe each side of median carina; moderately broad antehumeral, touching humeral suture; broad lateral stripe on first lateral suture, tapering ventrally; another short stripe above lower end of the second suture and a dot above upper end of this suture; a broad curved stripe on metepimeron. Legs black. Wings hyaline with mere traces of faint basal amber on both wings; venation and pterostigma black; pterostigma strongly curved at outer end of costal edge, so that the apical margin of the wing appears to be very slightly indented at

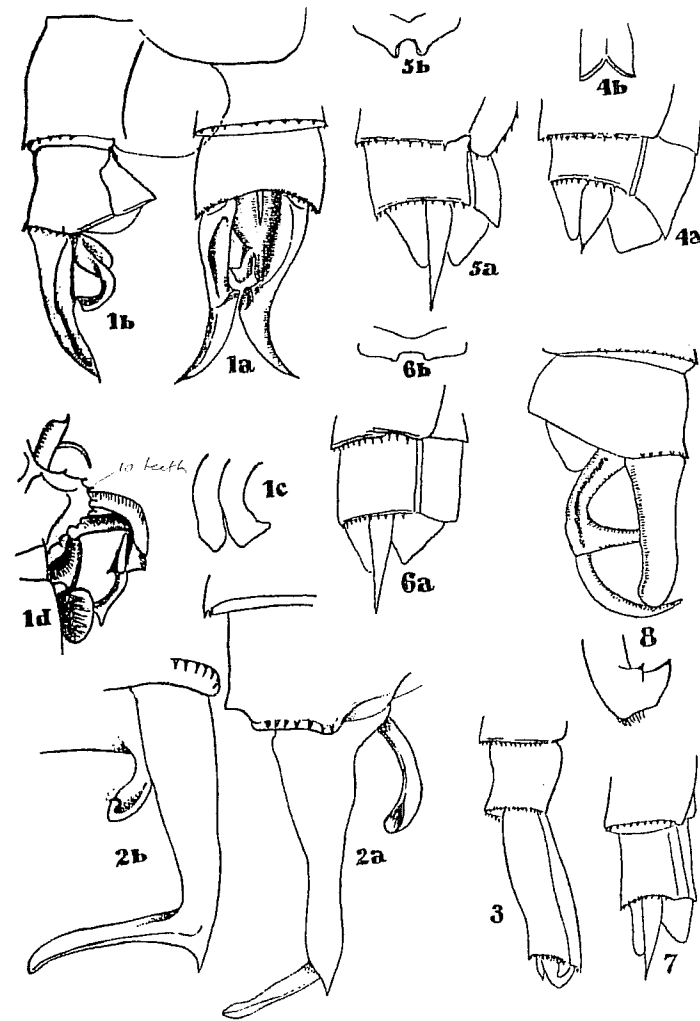


FIG. 4.—Gomphidae. 1, *Paragomphus zambeziensis* n. sp.: male; a-d, terminalia from below and from right, tips of inferior appendage from below, accessory genitalia. 2, *Diastomma tricolor*, male: a-b, appendages from right, right superior and inferior from above. 3, *Lestingiomphus africanus*, female (Victoria Falls): terminalia from right. 4, *Crenigomphus* sp. indet., female (Gorilla Mt.): a-b, terminalia from right and vulvar scale. 5, *C. hartmanni*, female: terminalia from right, vulvar scale. 6, *C. cornutus*, female: terminalia from right, vulvar scale. 7, *C. renei*, female: terminalia from right. 8, *Onychogomphus kitchingmani* n. sp., male: appendages from left and apex of superior

this point. Forewing with 13-14 Ax; discoidal field of one row, expanding before subnodus, but in left forewing with 2 (instead of 1) cellule against triangle. Triangle in hindwing and all hypertriangles crossed. 1 Cuq in forewing, 2 in hindwing. Abdomen and appendages black; with pale markings: dorsal and broad lateral stripes on 1-2; 3 with lateral and ventral stripes in basal half; dwindling traces of these at bases of 4-5; large rounded dorsal spot near base of 7. Appendages normal, without protuberances. Hamule robust, of form shown in related species and in *Allorhizucha* Karsch. Abdomen 20 mm., hindwing 2.5 mm., pterostigma 2 mm.

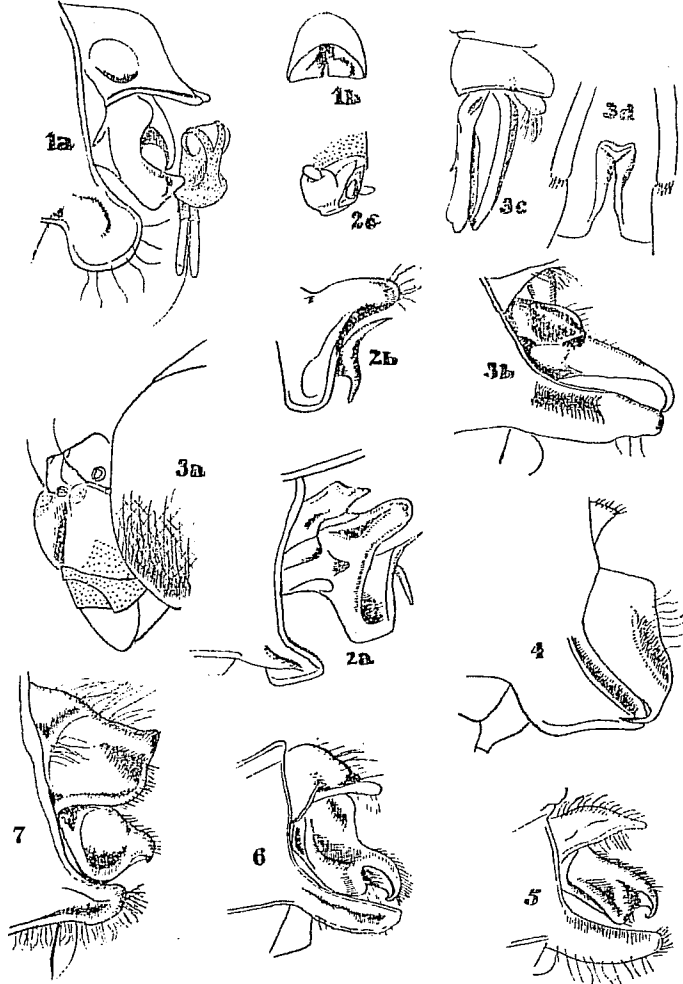


FIG. 5.—Corduliidae and Libellulidae. 1, *Orthetrum rhodesiae* n. sp.: a-b, accessory genitalia of male and vulvar scale of female. 2, *Neodythemis gorillae* n. sp.: a-c, male, accessory genitalia, hamule seen more ventrally and penis latero-ventrally. 3, *Malgasophlebia bispina nigeriae* n. ssp.: a-d, male, head from left (yellow areas dotted), accessory genitalia, anal appendages from right; female vulvar scale. 4, *Macromia aeneothorax*, female: vulvar scale. 5, *Trithemis aenea* n. sp., male: accessory genitalia. 6, *Zygonyx ikomae* n. sp., male: accessory genitalia. 7, *Zygonyx ikomae* n. sp., male: accessory genitalia.

One male collected on Gorilla Mountain, February. This species is neither as black on thoracic sides as in Fraser's *arnoulti* and *pauliani*, nor as broadly yellow on the side as in *africana* of the same author. The pale stripes are much more regular than in *hildebrandti* Karsch. *N. trinervulata* (Martin) is of the same small dimensions, but it lacks the antehumeral stripe. Holotype in National Museum, Bulawayo.

Orthetrum rhodesiae n. sp. (fig. 5, 1)

A pruinosed blue species, shaped as in *abbotti* Calvert, but the size of *taeniolum* (Schneider).

Holotype male.—Lips pale ochreous, epistome pale olivaceous, entire frons dark olivaceous except for a fine pale basal line; vesicle and occiput black. Thorax dark, entirely coated with blue pruinosity. Legs blackish, femora slightly pruinose. Wings very faintly fumose, venation brown, in subcostal region yellowish. Pterostigma yellowish-brown, its anterior and posterior veins black. Membranule light brown, edged with whitish; mere trace of amber at all wing bases. Forewing with 11 Ax, the last complete; discoidal field of two rows (three cellules at triangle), expanding before nodus; R₃ sinuous, Cu₂ strongly curved (as in smaller examples of other *Orthetrum*); one row RSpl. Abdomen and appendages black, with whitish blue pruinosity on basal segments. Hamule robust, the hook large and claw-like. Penis typical of the genus. In life the eye was grey-blue, brown on top. Abdomen 22.5 mm., hindwing 25.5 mm., pterostigma 2.5 mm.

Old female allotype.—Frons paler olive. Thorax and abdomen with very thin whitish pruinosity but the body darkened below this, the markings obscure: only a narrow black line on mesepisternum readily discernible. Wings more strongly fumose than male. Vulvar scale narrowly excised. Abdomen 24 mm., hindwing 25 mm., pterostigma 2.5 mm.

Series collected at Kapiri M'Poshi and 35 miles north of there; and 30 miles south of Ndola; all in Northern Rhodesia (hence the name), in January.

In some ways this species is rather like an *Aethiothemis*, but the accessory genitalia are more *Orthetrum*-like. The vertex is rounded, the clypeus slightly broader than the frons: these characters suggesting *Nesciothemis*. But the penis is of the *Orthetrum*-form, with alae and flagellum. It seems to be one of the links that are sometimes found to cause generic confusion. The long hamular hook and the small size of the insect distinguish it from other *Orthetrum*. Holotype and allotype (*in copula*) and paratype males are in the National Museum, Bulawayo; paratype male and female (*in copula*) will go to the British Museum (Nat. Hist.).

Trithemis grouti n. sp. (fig. 5, 6)

A large black *Trithemis*.

Mature holotype male.—Lips and face dark brown to black, slightly paler on anteclypeus; frons and vesicle above reddish violet, occiput violet-black. Thorax, legs and abdomen entirely blackish; abdomen constricted on 3, then moderately slender, as in the *stictica* group. Wings hyaline, faintly brown at apical margin; only the merest trace of basal amber on hindwing, none on forewing. Venation black, pterostigma very dark brown, between black veins. Membranule dark grey-brown. Forewing with 11½-12½ Ax. Abdomen, without appendages, 26 mm., hindwing 30 mm., pterostigma 3.5 mm. In accessory genitalia the hook on the hamule is larger than in the closely allied *nuptialis* Karsch, in proportion to the size of the hamule; the anterior lamina is similar to that species.

In other individuals the forewing generally has 12½ Ax.

Mature allotype female.—Labium black with large yellow lateral spots. Labrum and postclypeus brown, rest of face yellow, tinged with brown; frons and vesticle above all metallic blue-green, the reflection from vesicle bluer. Occiput violet-black. Thorax greenish-yellow and dark brown, with the pattern of the *stictica* group, the pale markings as follows: small spot in each antehumeral sinus, another in front of these on mesepisternum; two pairs of rather elliptical antehumerals, tapering acutely dorsal-wards, the outer one joining, at humeral suture, with a sinuous yellow band below the wings; a short, narrow stripe on lower half of mesepimeron, a broader one on metepisternum and a large band on metepimeron; yellow spot at bases of second and third legs. Legs black. Wings as in male, with more brown at apices and postnodally a pale amber streak along costal edge, fading gradually posteriorly; very faintly amber at base of forewing; a distinct amber patch on base of hindwing in cubital and anal spaces. Membranule as in male. Forewing with 11½-12½ Ax. Abdomen of moderate girth; black, marked with two series of lateral yellow spots or streaks on 1-5; 6-8 with traces of the more dorsal series; 9-10 and cerci all black. Ventral surface of abdomen with a further row of streaks. Abdomen 25 mm., hindwing 30 mm., pterostigma 3.5 mm. Vulvar scale as in *stictica* (Burmeister).

The types were collected half-way between Douala and Nkongsamba. *Ecochilus Comptosius* March 1952. Further specimens are deposited in the British Museum.

oons (Mamfe) and Nigeria (a specimen sent by R. M. Gambles). This insect is named after Mr. and Mrs. Grout, who so kindly extended their hospitality when the author was incapacitated during the expedition.

This species is distinctly larger than two other very black species: *dichroa* Karsch, with broader abdomen, frons all black; and a more slender species (description appearing in another paper), with purple frons. It is closely allied to the species *nuptialis* Karsch and *stictica* (Burmeister), the mature males of which are dark blue and light blue, respectively. The forewing in *nuptialis* has $10\frac{1}{2}$ - $11\frac{1}{2}$ Ax, in *stictica* normally $10\frac{1}{2}$ Ax. The face, in *stictica*, is much paler and the frons is steely blue. The genitalia also show differences. In the female of *nuptialis* the frons above is yellow, with only a metallic blue basal band.

A paratype male will be presented to the British Museum, the holotype, allotype and another paratype male remaining in the National Museum, Bulawayo.

Trithemis aenea n. sp. (fig. 5, 5)

A large species in *stictica* group, without pruinosity, but coloured like *anomala* Pinhey.

Holotype male.—Labium black with broad yellow lateral patch; labrum and postclypeus dark brown, rest of face dull yellow. Frons and vesicle bronze, occiput blackish-brown. Thorax bronze-brown; traces of yellowish marking, *stictica* pattern, latero-ventrally. Legs and venation black. Wings slightly brown at apices; traces of amber only at extreme base of hindwing. Pterostigma dark brown between black veins. Membranule grey-brown. Forewing with $12\frac{1}{2}$ - $13\frac{1}{2}$ Ax. Abdomen constricted on 3, very slightly inflated on remainder; blackish, with two series of dull yellow spots or streaks on each side of 1-7, diminishing distally; only a dorso-lateral streak on 8; 9-10 and appendages all black. Ventral surface broadly yellowish. Abdomen 27-28 mm., hindwing 32 mm., pterostigma 3.5 mm. In accessory genitalia the posterior lobe and hamuli are nearer *nuptialis* Karsch and *parastictica* Pinhey than *anomala* Pinhey; but the hook of the hamule is more like *stictica* (Burmeister), yet not so long.

No female was captured. The males were taken at Buta, in the Northern Belgian Congo, February, 1958. It is named from its bronze coloration. In appearance it is nearest the smaller species, *anomala* Pinhey (abdomen 25 mm., hindwing 30 mm.), but it is readily distinguished by the genitalia. Also, in *anomala* there is a narrow blackish basal band on the frons; the inferior anal appendage is yellow and black. Forewing with only $9\frac{1}{2}$ - $10\frac{1}{2}$ Ax.

A paratype male will be sent to the British Museum, two other paratypes and the holotype remaining in the National Museum, Bulawayo.

Zygonyx ikomae n. sp. (fig. 5, 7)

A dark relative of *Z. natalensis* (Martin).

Mature holotype male.—Labium black, lateral third yellow; labrum black with yellow basal band constricted in middle. Rest of face yellowish; frons above all metallic blue; vertex metallic blue in front, red to reddish-violet posteriorly. Synthorax steely blue, interspersed diffusely with light brown, particularly near sutures. Legs black, back of femora brown. Wings hyaline, faintly fumose; venation black, antenodal cross-veins brown. Pterostigma blackish-brown, membranule grey-brown, edged with white at base. Forewing with $11\frac{1}{2}$ Ax; triangle forewing crossed. Anal field of hindwing starts three rows. Abdomen and anal appendages black, without pruinosity; segment 2 with three lateral pale spots, 3 with two such spots. Accessory genitalia as in the *natalensis* group, but very robust. Abdomen 38.5 mm., hindwing 41 mm., pterostigma 2.5 mm.

Two males were captured at a waterfall at the cocoa estates, about 20 miles east of Ikom, Eastern Nigeria. It is slightly larger than *natalensis* (Martin) and lacks the pruinosity always present in adult males of that species. The lips are more extensively black; the accessory and anal appendages more robust, than in *natalensis*. Two Madagascar species are closely allied: *viridescens* (Martin) also lacks pruinosity, but its abdomen is metallic green; *hova* (Rambur) has a black abdomen but the thorax is pruinosed. This new *Zygonyx* was flying over the waterfall in company with *natalensis*.

wayo; the paratype male will be deposited in the British Museum (Nat. Hist.).

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National Museum, Bulawayo, Southern Rhodesia.

November 26th, 1960.

A new capture of *Cryptocephalus 10-maculatus* L. (Col., Chrysomelidae) in Scotland.—The late Mr. B. D. Cooke (formerly of Stockport), of whose untimely death in Singapore I heard only recently, told me at the 'Verrall Supper' last year that he had in the preceding summer taken the rare and excessively local beetle *Cryptocephalus decemmaculatus* L. in a new Scottish locality; and I feel that had he lived he would undoubtedly have wished to publish this highly interesting discovery. Unfortunately—in the natural expectation of his doing so—I omitted to secure precise details; but understand that on example only was taken, in June, by sweeping amongst dwarf sallow and birch, and that the locality was in Deeside, not far from Braemar (Aberdeenshire). It being the last day of his holiday, Mr. Cooke was unable to work for further specimens.

Up to 1929, our knowledge of this as a British insect could be summed up in the words of the late C. E. Stoll (1929, *Ent. mon. Mag.*, 65:268): 'Since the days when *Cryptocephalus decemmaculatus* was taken by Dr. Sharp, E. C. Rye, and R. Hislop on dwarf sallow at Camachgowran, Lock Rannoch (E.M.M., Vol. II, p. 52), and by Messrs. Harris and Garneys on birch at Chartley Moss in Staffordshire (E.M.M., Vol. III, p. 67), during the years 1864-5, and subsequently by Messrs. J. Kidson Taylor and J. Ray Hardy on dwarf sallow in the Burnt Woods, Staffs., in 1870 (E.M.M., Vol. VII, p. 80), this very rare species appears to have been entirely lost sight of as a British species, and I believe has not been taken by any of the present generation of Coleopterists in this country.' In that year, however, after many fruitless journeys in search of it, it was recaptured in small numbers in a very restricted area at Chartley Moss by Stoll and Harwood; and continued to be taken there, possibly also by others, during the next few years but not, to my knowledge, since. Several collectors have tried in vain for it at the Perthshire locality at intervals since its discovery there. The odd distribution of the beetle, with two such widely separated centres, is of much interest; and added to its invariable rarity and extreme localization, points to a species of great antiquity in our fauna.—A. A. ALLEN 63 Blackheath Park, S.E.3: November 27th, 1960.

Precocious abundance of Orthotylus ochrotichus Fieb. (Hem., Miridae).—This bug occurred in great profusion in a shady spinney near here by sweeping low vegetation (nettles, etc.), and to a lesser extent on shrubs and trees, as early as June 26th; to judge by the great numbers present they had probably been some time in the adult state. By the end of July only two or three specimens were to be found where previously there had been thousands. Outside the area occupied by this very large colony, the incidence was much lower and apparently about average for the species. It is, of course, a fairly common one, and the object of this note is to call attention more to the abnormally early time of appearance and disappearance, in a summer not notable for precocious emergences, than the abundance of the insects—exceptional though I believe that to be. Southwood and Leston (1959, *Land and Water Bugs of the British Isles*: 262) give mid-July to late August as the period of adult life, i.e. roughly a month later. In my garden, where the first specimens of the year were noticed about the third week of June, *O. ochrotichus* shows a decided preference for apple trees, on which it occurs in fair numbers; but these are absent from the spinney in which the bug was so plentiful, where about the commonest trees are elm and streamers. The species was confined to a small area of the spinney.