PLATE LXXVIII.

Cast heads of Charaxes and Euxanthe larvae.

Fig. 1.	Cast 1	read o		ie ansellica (Jinja).
2.	,,	11	Charaxes	varanes vologeses (Jinja).
3.	"	,,	,,	etesipe etesipe (Jinja).
4.	"	"	,,	castor castor (Jinja).
5.	,,	,,	,,	fulvescens monitor (Jinja).
6.	,,	,,	,,	varanes (Nairobi).
7.	,,	"	"	pollux pollux (Jinja).
8.	,,	21	"	brutus brutus (Jinja).
9.	,,	,,	27	fulvescens? acuminatus (Kikuyu Escarpment).
10.	,,	11	,,	22 22 22
11-13.	,,	21	,,	ansorgei (Kikuyu Escarpment).
14-17.	,,	,,	,,	varanes (Nairobi).
18.	"	,,	,,	jasius epijasius (Jinja).
19.	,,	,,	,,	paphianus subpallida (Jinja).
20.	,,	,,	**	tiridates tiridates (Jinja).
21.	,,	,,	,,	candiope candiope (Nairobi).
22-23.	,,	,,	,,	cithaeron (Nairobi).
24.	,,	,,	,,	etheocles etheocles (Nairobi).
25.	,,	,,	37	baumanni (Nairobi).
26.	,,	"	,,	numenes numenes (Jinja).
27.				anticlea adusta (Jinia).

PLATE LXXIX.

Larvae and pupae of Charaxes.

Fig. 1. Charax	es brutus brutus :		
2. ,,	castor castor :	2, larva; 2a,	head; 2b, pupa (Jinja).
3. ,,	haumanni: 3	larva: 3a, h	ead; 3b, pupa (Nairobi).

4. ,, varanes vologeses: 4, larva; 4a, head (Jinja).

 jasius epijasius: 5, larva; 5a, pupa; 5b, anal extremity (Jinja).

6. , numenes numenes: 6, larva; 6a, pupa; 6b, anal extremity (Jinja).

PLATE LXXX.

Larvae and pupae of Charaxes, Palla, and Euxanthe.

- Fig. 1. Palla ussheri interposita: 1 and 1a, larva; 1b, head; 1c, 1d and 1c, pupa (Jinja).
 - , etesipe etesipe: 2, larva; 2a, larva, preparation to pupation;
 2b, head; 2c, 2d and 2e, pupa (Jinja).
 - 3. Charaxes pollux pollux: 3, larva; 3a, head (Nairobi).
 4. ,, cithaeron: 4, larva; 4a, pupa (Nairobi).
 - 5. , fulvescens monitor: 5, larva; 5a, pupae (Jinja).
 - N.B.—In figure 5 the dorsal spots should be on segments 6, 8 and 10, and not as depicted.
 - 6. Euxanthe ansellica: 6, larva, immature; 6a, 6b, pupa (Jinja).

TWO NEW DRAGONFLIES (ORDER ODONATA)

By LT.-Col. F. C. Fraser, I.M.S.

[Read June 2nd, 1926.]

WITH THREE TEXT-FIGURES.

Amongst a large amount of unnamed material from Africa in the British Museum, I have found a single incomplete specimen of a very remarkable dragonfly. The base of the hind-wing is not only simple and archaic in nature, but bears along its basal margin a series of spines, terminating in a comparatively-robust one on the angular point of the termen. The anal triangle is also entirely absent, both this feature and the presence of wing appendages being unique, the first in the family Gomphidae, and the second in the whole of the order Odonata.

A second species in my own collection, also from Africa, is remarkable on account of its close resemblance in general facies, size, markings and ana appendages to Lancellogomphus biforceps (Selys), and also by the 9th abdominal segment being shorter than the 10th, a character shared only by Crenigomphus, another African genus of the Gomphide. The new species does not, however, belong to this genus, as in all other respects it differs widely, so much so, that it is difficult to discover even a close relationship.

I propose to erect two new genera to accommodate these species, *Echinopterogomphus* and *Libyogomphus* respectively. For the opportunity of examining the former, I have to thank the authorities of the British Museum. The two photos accompanying this paper, were taken for me by Mr. Herring of the same institution.

Genus ECHINOPTEROGOMPHUS, gen. nov.

Small species of Gomphines not clearly related to any other known genera, coloured black with yellow markings. Head comparatively large, especially the eyes; thorax small; legs moderately long, hind femora extending to middle of 2nd segment and armed with a row of very small, very closely-set spines; abdomen slender, tumid at base (incomplete, the last seven segments missing); wings long and narrow, the hind not markedly broader than the fore, especially at the base. which in the hind-wings is very oblique and without any vestige of anal triangle, slightly concave and with tornus nearly right-angled, a row of five small spines near middle of wing base and a much more robust one situated at the tornus. A single row of postanal cells in fore-wings, two to three rows in the hind, the first postanal cell entire. All trigones, hypertrigones and subtrigones entire, trigone of fore-wing with distal and basal sides slightly longer than costal, that of hind-wing subequilateral; basal subcostal nervures absent in all wings; two rows of discoidal cells in fore-wing to level of node; three nervures between Mi-iii and Miv in fore-wing, only one in the hind; sectors of arc approximated and nearly fused immediately after origin for a long distance; Cu i in fore-wing flat, Cu ii not pectinate, only a single row of cells between it and border of wing, Cu i and Cu ii in hind-wing parallel to one cell's distance from border of wing; a single row of cells between Mi and Mia; forking of Mi-ii and Miii symmetrical in both wings; pterostigma moderately large, equal to nearly one-third the distance from node to distal end of pterostigma. strongly braced in all wings; membrane absent; reticulation rather close. TRANS. ENT. SOC. LOND. 1926.—PART II. (DEC.)

Lt.-Col. F. C. Fraser on Two New Dragonflies.

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Genitalia.—Anterior hamules long, narrow, sloping steeply back; posterior hamules short and broad; lobe broad, prominent, spout-shaped (anal appendages missing).

Distribution .- Africa.

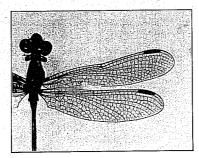


Fig. 1.—Echinopterogomphus africanus, sp. nov. of (× 3.8).

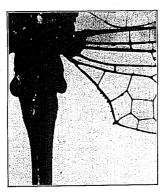


Fig. 2.—Base of hind-wing of Echinopterogomphus africanus, showing marginal and tornal spines.

Echinopterogomphus africanus, sp. nov.

Male.—Abdomen 22 mm. (three distal segments 6 mm.). Hind-wing 19 mm. Head: labium dirty brown; labrum dark olivaceous bordered with brown; face dark brown with a transverse bluish-green stripe across clypeus and a second better-defined stripe on crest of frons; vertex and occiput dark brown, a pale bluish-green spot in centre of latter, its hinder border divided by a small notch into two

small lobes. Prothorax pale brown. Thorax olivaceous on dorsum in front enclosing a broad fusiform spot on either side, converging above, divergent below so as to enclose a triangle of the ground-colouring. Laterally greenish marked with a broad posthumeral dark brown stripe and a second narrower stripe on the second lateral suture. Wings hyaline; pterostigma warm brown between darker nervures. Legs yellowish, tibiae and distal ends of femora dark drown. Abdomen dark brown, the second segment with a broad transverse stripe of paler colour (probably yellow) on its basal third. Apical suture of 2nd segment black, 3rd segment with pale basal and subspical indistinct markings.

The single specimen is teneral, the adult ground-colour being probably black, and the markings greenish-yellow.

Distribution.—Port Lokko, Africa, 1.v.1912. Type in B.M.

Genus LIBYOGOMPHUS, gen. nov.

Large species of Gomphines coloured black, marked with bright citron yellow. Head large, frons pronounced, angulate; occiput flattened, slightly concave along the hinder border and fringed with long black hairs. Thorax robust. Legs moderately long, hind femora extending to base of 2nd abdominal segment and densely clothed with short robust spines beneath. Abdomen tumid at base and anal end, narrow and cylindrical from segment 3 to 7, segments 8 and 9 with lateral borders markedly produced, but not winged, segment 10 of even greater depth than 8 and 9. Segments 8 and 10 equal to about two-thirds the length of 7, segment 9 considerably shorter than 10. Dorsum of segment 10 raised into a prominent rounded hump. Anal appendages strongly curved, enormously elongate and forming a pincer-like group by apposition of their apices, the inferior appendage split completely to base into two closely apposed parallel laterally compressed branches. Wings rather long and broad, reticulation close; all trigones, hypertrigones and subtrigones entire; trigone of fore-wing with costal and proximal sides subequal and longer than basal, proximal side slightly angulate; trigone of hind-wing longer, its costal and basal sides meeting at a right angle, costal side longer than basal but shorter than proximal; basal subcostal nervure absent in all wings; two rows of discoidal cells in fore-wing to beyond level of node; four nervures between Mi-iii and Miv in fore-wing, only two in the hind; sectors of arc separate at origin and divergent thereafter; Cu ii in fore-wing markedly pectinate, Cui and Cui in hind-wing divaricate at termen; two rows of cells between Mi and Mia; forking of Mi-ii and Miii symmetrical in all wings; pterostigma small, equal to about one-fourth the distance from node to distal end of pterostigma, unbraced; membrane obsolete; base of hind-wing deeply excavate, tornus pointed. Fore-wing with one to two rows of postanal cells, hind-wing with four rows, the first postanal cell in the latter entire, extending only about halfway along subtrigone, as in genus Gomphus.

Genitalia.—Anterior hamules long, slender, strongly curved analward; posterior hamules robust, projecting perpendicularly from ventrum, broad at base, tapering gradually to apex, which is curved slightly forward; lobe broad, short, spout-like.

The relative length of segments 8, 9 and 10 suggests affinity to the genus Crenigomphus, this affinity being accentuated by the fact that both genera are restricted to the African continent. The venation, especially that of the base of hind-wing, resembles that of genus Gomphus, the anal appendage resemble closely those of the genera Onychogomphus and Lamellogomphus. These comparisons show how difficult or impossible it is to fix any definite relationship with any of the genera mentioned.

Distribution .- Africa.

Libyogomphus tenaculatus, sp. nov.

Male.—Abdomen (with appendages) 40 mm. Hind-wing 34 mm. Head: labium bright yellow clouded with brown along its free border, labrum warm reddish-brown marked with two large triangular greenish-yellow spots; bases of mandibles and clypeus citron yellow. Face brown, from greenish-yellow above and along crest; occiput and vertex brown, free border of former thickened, dark brown.

Prothorax reddish-brown, the anterior border yellow. Thorax dark reddish-brown, almost black, marked with bright citron yellow as follows:—a mesothoracic collar slightly interrupted at the middle, oblique narrow ante-humeral stripes barely confluent with the mesothoracic collar. Laterally a narrow complete post-humeral stripe, a median stripe interrupted above and below so as to form three spots, and finally a narrow stripe on the middle of the metepimeron, its upper end curving forward as far as the 2nd lateral suture. Legs dark reddish-brown, tibiae and tarsi black. Wings hyaline; pterostigma dark reddish-brown between black norvures,

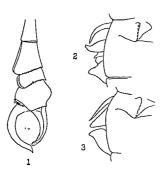


Fig. 3.—1. Last four abdominal segments of Libyogomphus tenaculatus, sp. nov., showing relative lengths of segments and anal appendages. 2. Genitalia of same seen in profile. 3. Genitalia of Echinopterogomphus africanus.

a little dilated, over about seven cells, unbraced; nodal index $\frac{11-15}{3-12} \left| \frac{17-12}{11-12} \right|$ Abdomen black marked with yellow as follows:—segment 1 with the sides greenishyellow, 2 entirely yellow save for a narrow diffuse brownish annule bordering the hinder part of the jugal suture. Oreillets robust, yellow, with about seven closely-set spines along the free border. Segments 3 to 6 unmarked save for a ventro-basal streak of yellow on 3 and an apical ventral spot on 6; segment 7 bright citron yellow for its basal half; segments 8 to 10 dark reddish-yellow laterally, dark

brownish-black above.

Anal appendages. Superiors with the basal half yellow, apical half dark brown, equal to nearly twice the length of segment 10, widely separated at base, converging as far as the apices, where they meet, bases broadened from above down, tapering rapidly to an obtuse point, laterally compressed, keeled along the dorsum and again on the outer side. Below the latter keel, along the apical half of appendage, a row of five closely-set spines, and beneath apex, another row of five minute, closely-set spines. Inferior appendage directed downward for rather less than its basal fourth, then rather squarely back and finally in a regular curve upward to meet

the downwardly curved apices of superiors. Thick at base, of even width thereafter and narrower, laterally compressed, the apex strongly bevelled above and ending in a fine point. The two branches closely apposed and separated right up to their origin from segment 10.

Genitalia as for genus.

Distribution.—Cameroons, Africa, October 1918. A single male in my own collection. (Female unknown.)