

ridge on its basal side (in *selysi* this ridge is replaced by a small hairy wart, separated from the tooth). In dorsal aspect the claspers are divergent, stout as far as the tooth, then narrow and slightly incurved to their apices, which bear five or six short black spines. (In *selysi* the claspers are stout for the greater part of their length, only the apices being narrow; ventral tooth not, or scarcely, visible from above.) Cerci short, slightly dilated apically (tapering in *selysi*). Gonopods much as in *selysi*.

Length of anterior wing 24 mm.; of posterior wing 21.5 mm.

Type ♂, Cape Colony, East London, Chuda River, 4. xi. 23 (*H. K. Monro*), ser. no. 1391. Presented to the British Museum by the Imperial Institute of Entomology, 1928.

XXXIV.—*New African Species of Elatoneura (Odonata).*

By D. E. KIMMINS, Department of Entomology, British Museum (Natural History).

*Elatoneura pruinosa* (Selys). (Figs. 1 & 2.)

*Disparoneura pruinosa* Selys, 1886 (partim), Mem. Cour. xxxviii. pp. 166-7.

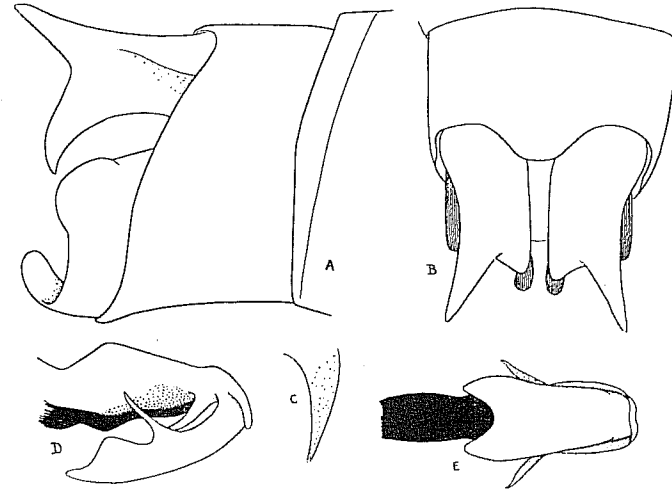
*Elatoneura pruinosa* Cowley, 1936, Ann. & Mag. Nat. Hist. (10) xvii. p. 518.

Whilst preparing to incorporate a series of this species taken in S. Cameroons, it appeared to me that the examples already in the National Collection (from Sierra Leone) had a slightly different facies, and out of curiosity I made a careful comparison of them with the S. Cameroons examples. Differences in the anal appendages were revealed, and, as Selys' description agreed reasonably with both forms, I sent sketches of them to Monsieur A. Ball, of the Brussels Museum, asking him to compare them with the type, and whether both forms were present in Selys' series. He replied that *D. pruinosa* Selys was represented by two males, and that the example bearing the author's label had the down-turned tooth of the superior appendage simple and acute at its apex (as in our S. Cameroons specimens), and that its locality was Cameroons. The other example (labelled "Camur. Ruth.") had this tooth

bifid at its apex, and agreed with our specimens from Sierra Leone.

At his suggestion, therefore, I am selecting as holotype of *Disparoneura pruinosa* Selys the male with the author's

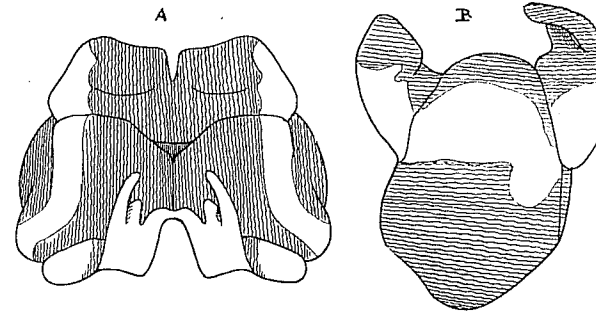
Fig. 1.



*Elatoneura pruinosa* (Selys), ♂.

A, apex of abdomen from side; B, the same from above; C, apex of ventral tooth of superior appendage from behind; D, penis, lateral; E, penis, ventral.

Fig. 2.



*Elatoneura pruinosa* (Selys), ♀.

A, prothorax from above; B, the same, left lateral.

determination label, and bearing a Cameroons locality label, written on blue paper. The remainder of the

type-series, including the female, of *D. pruinosa* Selys are presumably in the McLachlan collection, and their identity must for the present remain uncertain.

It appears probable, however, that the female described by Selys really pertains to the following species (*E. balli*, sp. n.), as amongst a long series of male *E. pruinosa* from Camerouns (in the collection of Mr. J. Cowley) there is a single female which differs decidedly in form of the posterior lobe of the prothorax from that described by Selys. The margin of this lobe (fig. 2) is curved upwards and produced in two paired black fingers, the outer and longer directed towards the head, and the inner obliquely upwards and inwards. The anterior margin of the prothorax has at its centre a deep narrow excision. Prothorax black, with a pair of yellow lateral stripes.

*Elattonaura balli*, sp. n. (Fig. 3.)

*Disparoneura pruinosa* Selys, 1886 (partim), Mem. Cour. xxxviii. pp. 166-7 ("Camur. Ruthh.").

♂.—Very similar in general appearance to *E. pruinosa* (Selys), and scarcely to be distinguished from it by Selys' description. The differences are:—Apices of wings slightly more pointed; dorsum of abdominal segment 2 with a fine longitudinal pale line; base of segment 3 sometimes with a pale yellow rounded spot on each side; downcurved tooth arising from the inner margin of superior appendage bifid at its apex (simple and acute in *pruinosa*). The most striking difference, however, is in the form of the penis, which will be better appreciated by reference to the comparative figures of the two species.

Length of anterior wing 23 mm.; of posterior wing 21 mm.; of abdomen 34 mm.

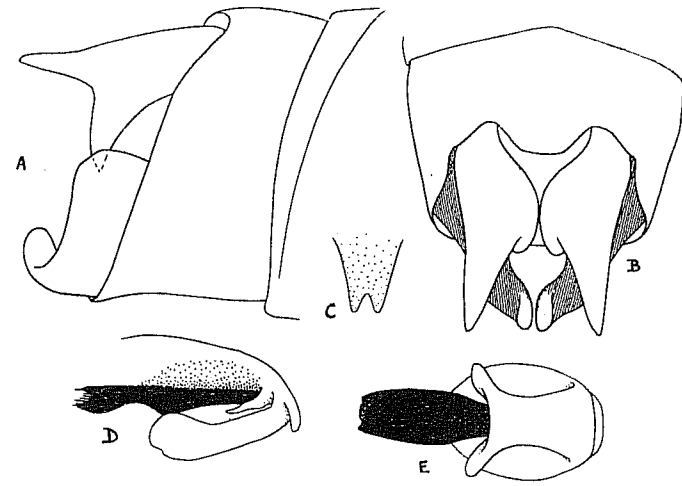
Type ♂, Sierra Leone, Bafodea, 13. iv. 1912 (*Jas. J. Simpson*). Presented by Imperial Bureau of Entomology, 1921. Paratype ♂, Sierra Leone, 1835 (*Morgan*), in the British Museum.

Paratype ♂, "Camur. Ruthh.," in the Selys Collection, Musée Royal d'Histoire Naturelle, Brussels.

It is with pleasure that I name this species after Monsieur Antoine Ball, in recognition of the assistance he has given me on many occasions in elucidating difficult points in connection with the Selysian types of Odonata.

There is also in the British Museum a female *Elattonaura* from Sierra Leone which may possibly belong here. The posterior lobe of the prothorax conforms reasonably with that described by Selys as the female of *pruinosa*, which I have already suggested is the female of *E. balli*. In the absence of positive evidence of their specific identity I am labelling the Sierra Leone example *Elattonaura* ? *balli*, ♀.

Fig. 3.



*Elattonaura balli*, sp. n., ♂.

A, apex of abdomen, right lateral; B, the same, dorsal; C, apex of tooth of superior appendage from behind; D, penis, lateral; E, penis, ventral.

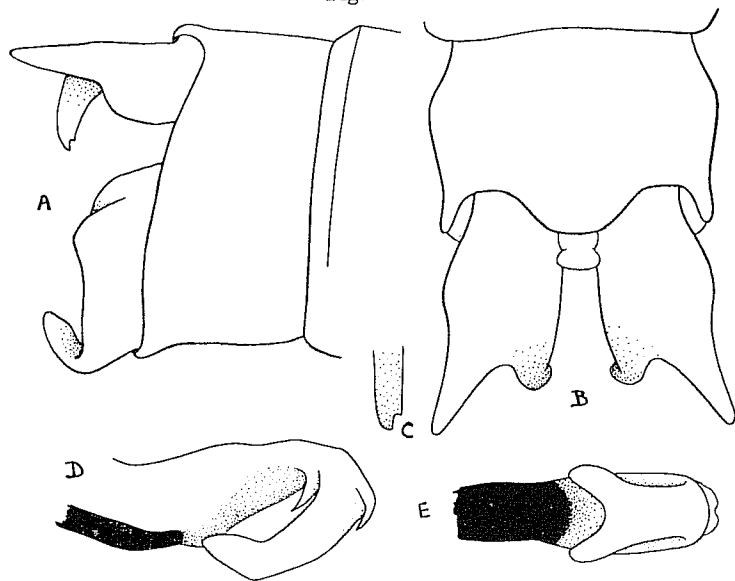
*Elattonaura nigra*, sp. n. (Fig. 4.)

*Disparoneura fremulata* Ris (nec Hagen), 1912, Sitzb. Akad. Wiss. Wien, cxxi. (1) pp. 160-162, figs. 8-9.

♂.—General colour black, slightly pruinosed. Labrum and genæ shiny, remainder of head mat black, before the ocelli somewhat pruinose. Occiput with an obscure narrow pale streak. Prothorax mat black, slightly pruinose. Pterothorax with a pair of narrow pruinose antehumeral stripes, slightly narrower than their distance from the median carina. Small pale streaks on the metathoracic episterna and epimera. Anterior legs

black, pruinosed, with black setæ. Median and posterior legs missing. Abdomen with obscure yellowish markings on the sides of segments 1-2; segments 3-6 with a fine median dorsal pale line, a pair of basal lateral bluish spots and a pair of subapical pale spots. 7 with basal spots only, 8-10 without spots. Superior appendage from the side, broad at its base, abruptly narrowed about midway, and tapering to an acute apex. Inner margin produced downward in a slender tooth, whose apex is

Fig. 4.

*Elattonneura nigra*, sp. n., ♂.

A, apex of abdomen, right lateral; B, the same, dorsal; C, apex of tooth of superior appendage from behind; D, penis, lateral; E, penis, ventral.

bifid or notched. Inferior appendage of the usual pattern. Penis with internal and terminal folds present; segment 3 bilobed at its apex, the lobes divergent, and separated by a deep rounded excision.

Wings slender, postnodals 12 in anterior and 10 in posterior. Superior sector of triangle terminating between the second and third cross-veins beyond the

nodus in both wings. Pterostigma black, posterior margin slightly shorter than the cell beneath it.

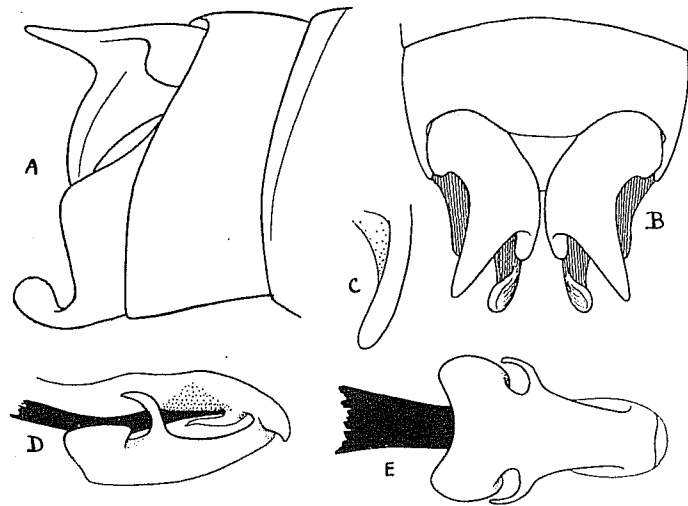
Length of anterior wing 17 mm.; of posterior wing 16 mm.; of abdomen 26 mm.

Type ♂, S. Nigeria, Ibadan, 11. iii. 19; paratype ♂, Kamerun, Buar, 10-29. v. 14; in the collection of the British Museum. Paratype ♂, Uganda, Mongalla, 9. iii. 05 (Dr. F. Werner Exp.), in the collection of the Vienna Mus., *Disparoneura frenulata* Hag. det. Dr. F. Ris.

The form of the appendages and penis of this species appear to indicate a relationship with *E. balli* m.

I am indebted to Dr. H. Zerny and Dr. Douglas St. Quentin, of Vienna, for the opportunity of examining the example from Uganda collected by the Werner Expedition.

Fig. 5.

*Elattonneura dorsalis*, sp. n., ♂.

A, apex of abdomen, right lateral; B, the same, dorsal; C, tooth of superior appendage from behind; D, penis, lateral; E, penis, ventral.

*Elattonneura dorsalis*, sp. n. (Fig. 5.)

♂.—Head black, with a pale yellow transverse band on each side between the eyes and the epistoma; a brownish spot outside each lateral ocellus. Prothorax black, with

a narrow yellowish longitudinal band on each side. Posterior lobe broadly rounded. Pterothorax black, dorsally with a pair of pale yellowish spots covering the anterior two-thirds, from the humeral suture to the black median carina. Sides yellowish, with a black band covering the anterior half of the mesepimerum and its infraepisternum, and another along the second lateral suture. Legs blackish brown. Abdomen blackish, moderately slender, sides of segments 1-2 and base of 3 yellowish. Appendages black. Superiors rather longer than tenth segment, apices divergent and pointed, outer margins deeply excised, inner produced downward in a strong tooth, apex not bifid. Inferiors from the side short and broad, lower angles produced in short, upcurved, slightly dilated fingers. Penis with internal and terminal folds present, the latter short; segment 3 four-lobed, terminal pair divergent, broad, rounded, basal pair slender, curved.

Wings slender. Fourteen postnodals in anterior and twelve in posterior wings. Superior sector of the triangle terminating between the first and second cross-veins after the nodus in anterior wing, beyond the second cross-vein in posterior. Inferior sector of triangle arising from hind margin at a greater distance from the basal postcostal than the length of this cross-vein. Pterostigma reddish black, rhomboidal, small, surmounting one cell. Length of anterior wing 20 mm.; of posterior wing 19 mm.; of abdomen 30 mm.

Type ♂, Sierra Leone, Yana, 30. iii. 1912 (*Jas. J. Simpson*). Paratype ♂, Sierra Leone, Kamakoni, 21. iv. 1912 (*Jas. J. Simpson*); in the British Museum, presented by the Imperial Bureau of Entomology, 1921.

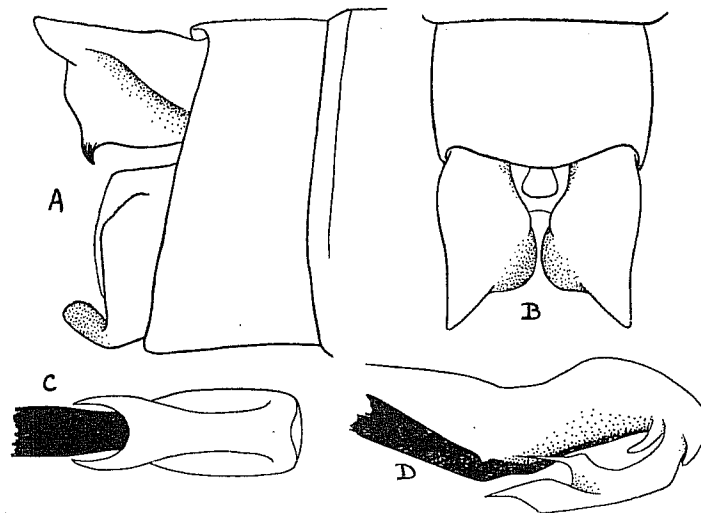
*Elattonneura acuta*, sp. n. (Fig. 6.)

Resembling *E. frenulata* Hagen, but differing in the form of the penis and anal appendages.

♂ (teneral).—Head dark brown, with the labrum, clypeus, genæ, a transverse band between the eyes, embracing the median ocellus, yellow-brown. Prothorax brown, with yellowish median and lateral bands. Thorax brown above as far as the first lateral suture, with a pair of yellowish antehumeral bands. Sides yellowish, with a brown band along the second lateral suture.

Legs yellowish, with dark brown setæ. Abdomen brown, marked with yellowish as follows:—Segment 2, a median dorsal patch; 3-7, a fine median dorsal line, a narrow basal and a wider subapical ring; 9 with a small dorsal subapical spot; apical portion of 10, above. Superior appendages pale, pointed, the inner margin of each produced downwards in a broad flap, the lower apical angle of which terminates in a small blackish hook. From above the appendages are stout, with rather divergent apices. Inferior appendages of the usual *Elattonneura* pattern, pale, with brownish apices. (In the type

Fig. 6.



*Elattonneura acuta*, sp. n., ♂.

A, apex of abdomen, right lateral; B, the same, dorsal; C, penis, lateral; D, penis, ventral.

the appendages had become rather distorted in drying, and I therefore removed the apex of the abdomen and treated it with KOH. The figures and description have been drawn up from the preparation in fluid before mounting in Canada balsam.) Penis very similar to that of *E. frenulata* (Hagen), but the lobes of the terminal segment are more slender and acute,

Wings slender, fourteen postnodals in anterior and thirteen in posterior wings. Superior sector of the triangle terminating just beyond the second cell after the nodus in the anterior wing, and beyond the third cell in the hind wing. Pterostigma brownish, finely encircled with pale yellow-brown.

Length of anterior wing 19 mm.; of posterior wing 18 mm.; of abdomen 30 mm.

Type ♂, Nigeria, Lagos (*G. Strachan*) in the collection of the British Museum.

This species differs from *E. mutata* (Selys) in the form of the penis and in the presence of only one tooth on the downturned margin of the superior appendage.

From *E. frenulata* (Hagen) it differs in the form of the penis (as detailed above) and in the much less pronounced tooth of the superior appendage, seen from the side. Teneral examples of both *mutata* and *frenulata* appear to have a much greater extent of pale colouring on the abdominal segments, of which 3-6 have only the apices dark brown.

XXXV.—*A new Moroccan Ephemeropteran*. By D. E. KIMMINS, Department of Entomology, British Museum (Natural History).

[Plate X.]

*Baëlis maurus*, sp. n.

Adult ♂ (preserved in formalin).—Turbinate eyes light yellowish red; lower eyes dark greenish black. Antennæ olivaceous. Notum of thorax shining piceous. Dorsum of abdominal segments 2-8 fuscous, with a pair of obscure, darker, rounded spots on each side of the median line in the basal half of each segment. Apical pleural angles pale. Ventrally fuscous, with a paler median line running the length of segments 2-8. Basal margin of each segment darker, and in the basal half, on each side of the pale line, an oblique divergent streak and a rounded spot of darker fuscous (Pl. X. fig. B). These markings become progressively smaller from base to apex of abdomen, and vary in their distinctness in different individuals. Tergite 9 fuscous, with a large, rounded, pale, median area; tergite 10 dark fuscous. Sternite 9 dark fuscous, with a

quadrate pale area at the centre of its apical margin. Basal segment of forceps yellowish, with a dark fuscous spot at its base and somewhat olivaceous at its apex; remainder of forceps pale olivaceous, shading to smoky white at the tip (Pl. X. fig. C). Setæ dark fuscous, becoming paler apically. Anterior legs dark olivaceous, femora paler above; median and posterior legs whitish, with faint olivaceous markings.

Wings hyaline, venation dark olivaceous, except at base of anterior wing, where it is whitish. Three longitudinal veins in hind wing, costal projection acute (Pl. X. fig. A).

Length of anterior wing 10 mm.

Adult ♀ (in formalin).—Notum castaneous, abdomen dark fuscous above, distal pleural angles pale. Dorsal markings as in ♂. Median area of tergite 9 pale. Ventrally the abdomen is very pale fuscous, with dark markings as in ♂, basal pleural angles with a rounded fuscous spot. Setæ dark fuscous. Legs coloured as in ♂. Wings hyaline, with a distinct smoky brown tinge, venation fuscous.

Subimago ♂ (in formalin).—Turbinate eyes light yellowish red, lower eyes fuscous. Notum yellowish brown, with fuscous and piceous markings. Abdomen smoky yellow-brown, apical margins of tergites with a transverse fuscous streak on each side. These streaks become more triangular on the apical segments. The dark spots of the adult are represented by pale areas. Ventrally the abdomen is pale smoky yellow, basal pleural angles fuscous. Dark spots of the adult again represented by pale areas. Setæ and apices of forceps smoky grey. Anterior femur pale smoky yellow, marked towards the apex with fuscous, as follows:—Anterior surface, a lunate spot; posterior surface, a streak about one-third of the length of the femur. Tibia and tarsus smoky grey. Median and posterior femora as in anterior. Tibiæ and tarsi paler. Wings smoky grey.

♀ subimago somewhat paler than ♂.

MOROCCO: Atlas Mountains, R. Amengous (an upper branch of the Oumer Rebia), v. 1937 (*A. H. Batten-Pooll*).

Type ♂, paratypes ♂ and ♀, and subimagines in the British Museum (Nat. Hist.) collection, presented by Mr. Batten-Pooll.