

Cambridge, many years ago, using gum tragacanth to which thymol had been added in order to keep it free from micro-organisms. In the course of years the thymol has sublimed in innumerable droplets on the lower surface of the cover-glasses. It is impossible to examine most of these specimens satisfactorily without removing the covers—a proceeding which not only takes time but generally involves some injury to the writing on the original labels.

Mr. E. Heron-Allen, F.R.S., has invented an ingenious form of sheath which avoids these troubles, and has used it for the protection of his fine collection of Foraminifera, now in the British Museum (Natural History). The method is admirably adapted for its purpose, and, although rather expensive, it can be used without trouble if all the specimens can be mounted on slides of only one or two standard sizes. The Polyzoa do not satisfy this requirement, and it is not only expensive to keep a sufficient stock of sizes of the sheath, but it involves waste of time in finding one which fits a particular slide.

The new method I have to suggest is the use of a bandage of "cellophane," slightly wider than the hole in the slide and of such a length that its two ends overlap on the back of the slide, where they are held in position by a slip of a gummed label. It is a simple modification of the use of this material in shops for the protection of objects from dust or handling. The method is applicable to slides of any width or thickness, the cellophane, which is strong and not easily torn, costing next to nothing and taking little time to place in position. When there it is so transparent (even if slightly crumpled) that the object can be studied through it in the great majority of cases. If the specimen requires an unobstructed view, or is found to require further cleaning or other treatment, the bandage may be slipped along the slide to either end and be brought back to its original position without injury; or, if necessary, it can be replaced by a new bandage, which costs no appreciable amount of money or time.

Dr. Alexander Scott, F.R.S., Director of the Research Laboratory in the British Museum (Bloomsbury), has kindly informed me that cellophane is practically regenerated cellulose, not of the "celluloid" type and containing no "nitro-" group, and that it can therefore be expected to remain unaltered, without losing its transparency, for a reasonably long time. I may add that I have shown my method to several experienced curators, all of whom have expressed favourable opinions with regard to its use for the purpose indicated.

July 13, 1934.

## THE ANNALS

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[TENTH SERIES.]

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XXIX.—*The Percy Sladen and Godman Trusts Expedition to the Islands in the Gulf of Guinea, October 1932–March 1933.*—II. *Diptera Nematocera.* By F. W. EDWARDS, M.A., Sc.D.

THE Dipterous fauna of the islands of the Gulf of Guinea has remained until now almost unknown. Among the Nematocera, so far as I am aware, only one species (*Obliogaster flavicoxa* Edw.) has been recorded in print as occurring on the island of São Thomé, although a few additional records are to be found in the files of the Imperial Institute of Entomology, based on small collections made by Messrs. H. J. Snell, H. P. Thomasset, and F. W. Urich. The collection of Diptera made by Mr. Tams, though far from complete, is therefore of great interest. As a result of the study of this material, the following points appear to be brought out:—

1. The fauna is of purely Ethiopian type, without any admixture of Neotropical forms.

2. Although the species are very similar to those of the adjoining African mainland, many if not most of them show an appreciable degree of differentiation, especially those occurring at the higher altitudes.

3. The occurrence of two species of *Conosia*, one on Principe and one on São Thomé, indicates that some  
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degree of "island endemicity" may occur, but the material is too scanty for the formation of a definite conclusion on this point.

4. There are several cases in which the species of these islands appear to be more closely allied to those occurring on the islands of the Indian Ocean than to any yet known on the African mainland.

#### Mycetophilidæ.

##### *Macrocera puncticosta*, sp. n.

♂.—*Head* ochreous, with the usual dark ocellar spot. *Antennæ* over three times as long as body, first five or six segments uniformly pale, rest gradually darkened. *Palpi* dark. *Thorax* ochreous; mesonotum without definite markings except for a small blackish spot above root of each wing; lower part of sternopleura and posterior part of pleurotergite dark. *Abdomen* mainly ochreous, with narrow dark apical bands on segments 2-4. *Legs* with coxæ uniformly ochreous; femora and tibiæ narrowly dark at tips. *Wings* broad, mainly clear, costal and marginal cells rather bright yellow; a narrow blackish band at base, chiefly formed by short streaks on the veins and folds; four blackish marks on costa, situated at tips of veins *Sc*, *R* 1, *R* 4, and *R* 5, the fourth much the largest; a brown patch, bordered with darker, fills base of cell *M* 3 and is more or less connected above with the first two costal spots, also extends downwards across cell *Cu* 2 near its base. Membrane without macrotrichia. Vein *Sc* ending above outer end of basal cell; *R* 1 somewhat thickened at tip; *R* 4 very oblique. Halteres with blackish knob. Wing-length 6 mm.

São Thomé, 1 ♂.

This is related to the Oriental *M. alternata* Brun. and *M. ephemeraformis* Alex., which have very similar wing-markings, but differ in the ringed antennæ and much longer subcostal vein. Single female specimens of *M. puncticosta* or of closely related species are in the British Museum from Sierra Leone, Gold Coast, and Nyasaland.

In *M. puncticosta*, as well as in many other species of *Macrocera* (though not in *M. alternata* or *M. ephemeraformis*), there is a dark streak in the marginal cell (cell *R* 1) arising from a little beyond the middle of *Rs* and extending longitudinally for a variable distance, in some species

almost reaching the costa slightly beyond the tip of *R* 1. If my interpretation of the radial venation of the Mycetophilidæ is correct, this streak lies along the course formerly occupied by the lost vein *R* 2+3, and may therefore, perhaps, be regarded as a vestige of that vein, such as one might expect to find in one of the more primitive genera of the family.

##### *Mycomyia* sp.

São Thomé, 1 ♀.

A rather distinct species, with vein *Sc* ending in *R*, costa ending abruptly at tip of *R* 5, a dark cloud over the small cell, whole wing-tip faintly darkened, and knob of halteres blackish. Very similar specimens (also ♀) are in the British Museum from Belgian Congo and Cape Province, S. Africa; as the structure of the ♂ hypopygium is of such importance in this genus, it is not advisable to name the species from the ♀ alone.

##### *Leia thomensis*, sp. n.

♀.—*Head* mostly blackish above, face ochreous. *Antennæ* with scape ochreous, flagellum blackish except on underside of first few segments. *Palpi* yellow. *Thorax* with mesonotum shining black except on anterior fourth, which is yellow; scutellum yellow; postnotum and pleurotergites black; pleuræ mostly yellowish, with upper part of pteropleura black, covered (except on lower part of sternopleura) with silvery dusting, most noticeable when seen from above. Four long scutellar bristles. Posterior half of mesonotum largely bare, but with a pair of very long prescutellar bristles. *Abdomen* black above, yellow beneath; ovipositor white. *Legs* with all coxæ pale yellowish, femora and tibiæ brownish yellow, with black bristles and dark spurs; middle and hind femora with a dark streak above (not beneath) on basal half or more; hind femora with tip only very narrowly dark. Front tibia with a ventral bristle before middle. *Wings* greyish, with distal third darker, but not conspicuously so; no other markings. Branches of median fork parallel; *Cu* 1 very narrowly interrupted at base and ending well before wing-margin. Halteres yellow. Wing-length 4 mm.

São Thomé, 4 ♀♀.

This species belongs to the same group as *L. notabilis* Edw., which includes several African species. The colouring of the thorax of *L. thome* is *nsis* distinctive.

*Exechia silhouttensis* Edw., var. ?

São Thomé, 1 ♀.

A species with a conspicuous silvery margin to the mesonotum, first recorded from the Seychelles Is., but since found in Uganda. Only females are known.

*Mycetophila lineola* Mg., var. ?

São Thomé, 1 ♂, 1 ♀.

A very widely-distributed species in Europe, Africa, and Asia.

### Rhyphidæ.

*Anisopus dibaphus*, sp. n.

Closely related to *A. annulicornis* Edw. of Africa, which it resembles in wing-markings and in having segments 5, 6, 9, and 10 of the antennal flagellum pale yellow, 15 white, 4, 7, 8, and 11-14 black. Differs from *A. annulicornis* as follows:—Segments 2 and 3 of antennal flagellum all black (instead of brownish on upper side only), 1 black above. Front coxæ each with a round, dark brown spot in front near base (absent in *A. annulicornis*). Hind legs differently coloured in the two sexes: in ♂ femur largely black, narrowly yellow at base and with a yellow subterminal ring, tibiæ similarly coloured but yellow subterminal ring obsolete, first tarsal segment narrowly yellow at base only; in ♀ (as in both sexes of *A. annulicornis*) femur, tibia, and first tarsal segment each yellowish with only the tip blackened. Wings much less hairy, with macrotrichia more or less confined to distal half, especially in ♂ (in *A. annulicornis* the whole membrane is hairy in both sexes). Hypopygium of ♂ showing small specific differences.

São Thomé, 3 ♂♂, 20 ♀♀, mostly taken around latrine.

The sexual difference in the colour of the hind legs is surprising, as it is not found in any of the other species of this group; in the Oriental region species are found with one or other type of colouring in both sexes. Males of *Anisopus* are, however, commonly darker than females,

and in *A. annulicornis*, as in *A. dibaphus*, the halteres are blackish in the male, yellow in the female.

When describing *A. annulicornis* I stated that the upper facets of the eyes of the ♂ are not enlarged. A re-examination of a paratype ♂ in the British Museum shows that this is not strictly correct; the upper facets, though much less enlarged than in *A. pulchricornis*, are still slightly larger than the lower ones. This is also the case in *R. dibaphus*.

*Olbiogaster flavicoxa* Edw.

This species, described from a single male collected by Mr. H. J. Snell in 1919-21, was not found again by Mr. Tams.

### Psychodidæ.

*Telmatoscopus* sp. ?

São Thomé, 1 ♂ (antennæ broken).

*Telmatoscopus albipunctatus* Will.

Principé, 16 ♂♀.

### Culicidæ.

*DIXINÆ.*

*Dixa varipes*, sp. n.

♂.—*Head* dark brown above; clypeus short and black; palpi black. Antennæ with scape and base of first flagellar segment yellow, latter segment distinctly thickened, remainder all slender. *Thorax* with yellowish ground-colour; mesonotum with three separate brownish stripes, median stripe continued backwards as a thin dark line which crosses the scutellum. Pleuræ with indefinite dark mottling; no sternopleural hairs. *Abdomen* dark brown. *Legs* with front coxæ darkened, posterior coxæ pale; front and middle femora yellowish, with black tip and with a broad dark area beyond middle; hind femora yellowish, with only the tip blackish; front and middle tibiæ dark, narrowly yellowish at base; hind tibiæ yellowish with the tip dark and a broad dark area before middle; front and middle tarsi with first segment yellowish; hind tarsi almost all dark, first segment without long hairs at base beneath. *Wings*

nearly clear, with a slight dark cloud over cross-veins, continued faintly along vein *Cu* 2; costal and subcostal veins yellowish. Fork-cells short, distinctly shorter than thin stems. Vein *Sc* ending well before base of *Rs*; *M* with macrotrichia for the greater part of its length. Wing-length about 3 mm.

São Thomé, 1 ♂.

This is quite distinct from any described African species, the colouring of the legs and scutellum being unusual.

*CULICINÆ.*

A small collection of mosquitos was made on São Thomé by Messrs. Snell and Thomasset in 1919-21, and included the following species:—*Anopheles gambiæ* Giles, *Culex fatigans* Wied., *C. thalassius* Theo., *C. decens* Theo., *C. nebulosus* Theo.

Mr. Tams's collection includes the following:—

*Anopheles gambiæ* Giles.

São Thomé, in house at Cable station at night.

*Uranotænia micromeles*, sp. n.

A dark species with no obvious ornamentation; rather large for a member of this genus, wing-length 2.7-3 mm.

*Head* clothed with flat black scales, with a narrow border of white round eyes; numerous black upright scales on dorsal surface. Palpi and proboscis blackish. *Thorax* with integument mainly dark brown, including most of pleuræ, but pleural sutures, meron, and lower part of sternopleuræ lighter; a small blackish area immediately above and in front of wing-root. Mesonotum with numerous long dark bristles, and narrow dark scales; a few narrow whitish scales on lateral margin immediately in front of the pre-alar black patch. Sternopleura with a small patch of dull whitish scales in middle; pleural chætotaxy normal, lower mesepimeral bristle rather strong and dark; about four upper sternopleuræ. *Abdomen* dark above, rather lighter beneath. *Legs* dark, including tarsi; no unusual features in ♂. *Wings* with normal venation; scales all dark, moderately broad.

São Thomé, 15-21. xi. 32, 5 ♂♂, 19 ♀♀, reared from pupæ found in shaded stone trough fed by a small spring at 4000 ft., bottom of water with layer of dead leaves.

Differs from *U. inornata* Theo. in the presence of a blackish spot in front of wing-root, and of whitish scales in front of this spot; from *U. mashonaensis* Theo. in the general darker colour (especially of the pleuræ), and in having the black prealar spot smaller and less sharply defined.

*Aedes (Stegomyia) ægypti* Linn.

Principé: Anno Bon.

*Aedes (Aëdimorphus) nigricephalus* Theo.

São Thomé, caught in house at Cable station at night.

*Eretmopodites chrysogaster* Graham.

Principé.

*Culex fatigans* Wied.

São Thomé, in house at Cable Station at night.

*Culex tamsi*, sp. n.

A species of the *pipiens* group, closely resembling several others occurring in East Africa (*trifilatus*, *andersoni*, *vansomereni*, etc.), and agreeing with these species in having the proboscis entirely black, thorax dark, abdominal tergites with creamy-white basal bands, sternites with black apical bands which are produced towards the base in the middle, and tibiæ with conspicuous creamy spots at the tips.

Palpi of ♂ scarcely longer than proboscis and almost bare, with few or no long hairs on the last two segments; a narrow white ring in middle of long segment. Thorax (♂♀) with the light scales rather bright golden in tint, not forming a very definite pattern, but aggregated in lateral and median areas in front and in a pair of ill-defined spots in middle (much as in *C. vansomereni* Edw.). Hind femora (as in *C. andersoni*) almost entirely black-scaled on anterior surface, with a short pale area at base beneath and on posterior surface. *Hypopygium* of ♂ with basal parts (phallosome and paraprocts) almost exactly as in *C. trifilatus* Edw., but differing in the form of the bristles on the subapical lobe of the coxite; in both species these are in two groups of three, but whereas in *C. trifilatus* two in one group and one in the other are thickened

and hooked at the tip, in *C. tamsi* all six are slender and simple.

São Thomé, 15–21. xi. 32, 40 ♂♂, 7 ♀♀, reared from larvæ and pupæ found in company with those of *Chano-tænia micromelas*.

Several larvæ were preserved; they closely resemble *C. pipiens* and *C. andersoni*.

#### Ceratopogonidæ.

The following determinations have been made by Dr. J. W. S. Macfie.

##### *Forcipomyia ingrami* Carter.

São Thomé, 1 ♂, 1 ♀.

##### *Forcipomyia inornatipennis* (Aust.) var. *ornaticrus* I. & M.

São Thomé, 2 ♀♀.

##### *Atrichopogon* ? *africanus* I. & M.

São Thomé, 1 ♀.

##### *Culicoides austeni* C. I. & M.

São Thomé, 1 ♂, 1 ♀. This is apparently the species regarded by Gil Collado as *C. hostilissimus* (Pittaluga) and described from specimens from Fernando Po in Bull. Soc. Path. Exot. xxiv. pp. 672–677.

##### *Culicoides distinctipennis* Austen.

São Thomé, 1 ♀.

##### *Culicoides citroneus* C. I. & M.

São Thomé, 23 ♀♀.

##### *Culicoides grahami* Austen.

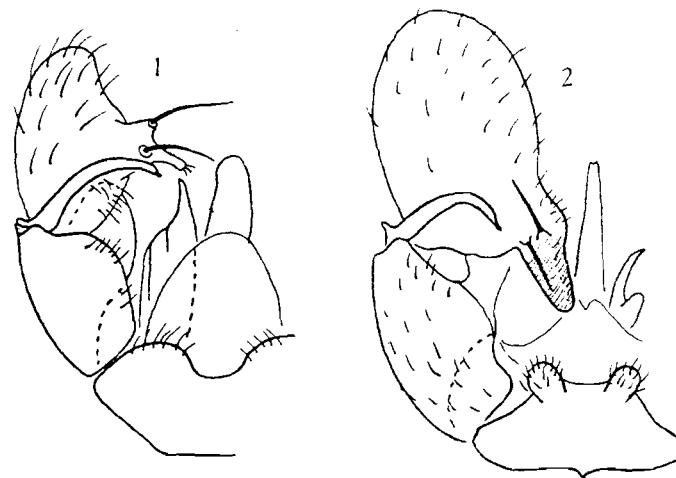
São Thomé, 1 ♂.

#### Tipulidæ.

##### *Limonia (Dicranomyia) tamsi*, sp. n.

Belongs to the same group as *D. tipulipes* Karsch and related species, but rather well distinguished by the two dark dots in the second anal cell.

Head dark greyish, including antennæ and mouth-parts. Front narrow, scarcely as wide as two facets. Segments of antennal flagellum rather shortly oval, last segment scarcely longer than the rest, verticils short. Palpi well developed. Thorax dark greyish brown, rather heavily pruinose, mesonotum without distinct stripes; pleuræ with a rather broad but indefinite darker median longitudinal stripe. Sternopleura with numerous short hairs. Pronotum small. Abdomen blackish, genital segments of both sexes light brownish. Hypopygium of ♂ with two long spines on rostrum, placed rather far apart (fig. 1). Legs slender, brownish, femora with a narrow



Hypopygium of ♂, dorsal view, of *Limonia (Dicranomyia) tamsi*, sp. n. (1), and *L. (D.) snelli*, sp. n. (2).

and ill-defined pre-apical ring. Claws with basal tooth. Wings greyish brown, with small but distinct dark grey clouds at base and tip of *Rs* (that at base of *Rs* including tip of *Sc*) and at stigma; dark grey seams over cross-veins, along middle third of vein *R* 1, and at tips of *R* 2+3 and *Cu*; two rather conspicuous dark grey spots in second anal cell, one near the base (at the point where *Ax* diverges from *An*), the other close before tip of *Ax* and in contact with this vein; the second spot sometimes includes traces of a stump-vein. Venation:

*Sc* extending almost to level of middle of *Rs*, but latter short, very little longer than basal section of *R* 4+5; discal cell rather long and narrow; *m-cu* at its base; *r-m* short.

São Thomé, x.-xi. 1932, 19 ♂♂, 15 ♀♀.

This species is quite distinct from any known to me by specimens or description from the mainland of Africa, but a male in the British Museum from Mauritius is very similar indeed, and is either conspecific or belongs to a representative species.

*Limonia (Dicranomyia) snelli*, sp. n.

Belongs to the same group as *L. tamsi*; distinguished by wing-markings and structure of ♂ hypopygium.

*Head* much as in *L. tamsi*, but flagellar segments more rounded. *Thorax* darker than in *L. tamsi*; mesonotum as seen from in front with three blackish-brown stripes, median stripe broad and conspicuous. Pleuræ almost uniformly dark. *Abdomen* with hind margins of segments narrowly pale. Hypopygium of ♂ (fig. 2) with tergite of rather peculiar form; rostrum thick and dark, the two spines at its base pointing in opposite directions, one lying in close contact with rostrum (in all 4 ♂♂ examined). *Legs* stouter than in *L. tamsi*. *Wings* with four rather large dark brown spots on costal border, one at base, one over middle of *R*, one over base of *Rs* and including tip of *Sc*, the fourth forming the stigma; no spots in second anal cell; slight dark clouds over cross-veins and tips of veins *R* 2+3 and *Ax*; veins dark, except that *C*, *Sc*, and *R* 1 are yellow between the dark spots. Venation: *Sc* ending opposite or slightly beyond middle of *Rs*, which is of moderate length and almost straight, nearly twice as long as basal section of *R* 4+5. Discal cell smaller than in *L. tamsi*, but still rather narrow; *m-cu* at its base.

São Thomé, x.-xi. 1932, 2 ♂♂, 2 ♀♀; also 1919-21, 3 ♂♂ (*H. J. Snell*).

The specimens collected by Mr. Snell were placed in the British Museum Collection among the series of *L. tipulipes*, but this determination was certainly incorrect.

*Limonia (Arhipidia) pallidipes* Alex. ?  
(*miosema* Speiser ?).

São Thomé, 1 ♀.

*Limonia (Thrypticomyia) seychellarum* Edw.

São Thomé, 2 ♂♂, 3 ♀♀.

Specimens apparently referable to this species (rather than to *nigeriensis* Alex.) have recently been received from Sierra Leone (*D. J. Lewis*); the species is evidently very widely distributed, though at present no other records are available from the African mainland.

The São Thomé specimens differ slightly from those from the Seychelles Is. in the rather less extensively white-tipped tarsi, having fully the basal half, instead of only about the basal fifth, of the first tarsal segment dark; even the Seychelles specimens, however, exhibit variation in this respect, and there is no doubt the species is the same, the male hypopygium being identical and distinctive (the various representative forms occurring in the Oriental and Australasian regions differ very obviously in the structure of this organ).

Mr. Tams's notes confirm what was already known of the habits of this species. He writes:—"The tight-rope dancer! Tipulid remarkable for its habit of dancing on a line (web) sometimes 4 abreast. At this date have not discovered origin of line."

*Limonia (Limonia) rhizosema* Speiser, var. ?

São Thomé, 4 ♂♂, 4 ♀♀.

These specimens agree with examples in the British Museum from the Seychelles Is. in having the antennal flagellum all black and a subterminal black ring on the femora; they differ chiefly in having the dark markings of the thorax less extensive, the scutellum being entirely or almost entirely yellowish. The South African *L. subapicalis* Alex. (*capensis* Alex.) differs rather more noticeably in having the antennal flagellum mainly yellowish, black only at the base and tip. In both these species the ♂ hypopygium has a very similar structure, resembling that of many species of the Oriental subgenus *Libnotes*.

*Limonia (Limonia) mahensis* Edw. ?

São Thomé, 1 ♀.

The specimen does not differ obviously from the types from the Seychelles, but in the absence of a ♂ the determination is uncertain. I am not acquainted with a

continental African species which this specimen resembles so closely as it does *L. mahensis*.

*Styringomyia annulipes* Edw., var.

São Thomé, 1 ♂.

This is not the West African var. *occidentalis* Edw. (which is perhaps more properly regarded as a distinct species from *S. annulipes*), but is much more like typical specimens of *S. annulipes* in the British Museum from the Seychelles Is. It differs from these latter in having the black dots on the wing fainter, and very slightly in the form of the inner appendages of the hypopygium.

*Trentepohlia (Trentepohlia) speiseri* Edw.

Principé, 2 ♀♀.

*Trentepohlia (Trentepohlia) tripunctata*, sp. n.

Head dark above; proboscis and palpi yellow; antennæ blackish, base of flagellum more brownish. Thorax and abdomen wholly light yellow. Legs yellow; tips of femora narrowly but conspicuously blackened; tips of tibiæ and the whole tarsi darkened. No femoral spines (front legs missing). Wings nearly clear, veins nearly all yellow; a black spot over *R* 2, another over fork of *Rs*, and a third near base of vein *Ax*; cross-veins also narrowly bordered with black. Halteres yellow. Wing-length 7 mm.

São Thomé, 1 ♀.

A distinctively-coloured species, which has more resemblance to the Oriental *T. mcgregori* Alex. than to any other described species, but is quite distinct.

*Ceratocheilus seychellarum* Edw., var. ?

São Thomé, Lagoa Amelia, 18. xi. 32, 1 ♂.

The specimen is darker than the types from the Seychelles Is., and has vein *R* 2 rather longer, but is otherwise extremely similar. The species differs from other known Ethiopian forms in having the dark markings of the wings confined to a cloud over the base of vein *R* 2 and a seam over the cross-veins—no darkening at tips of veins or at the bend of vein *An*. Although not hitherto recorded from continental Africa, some specimens in the British Museum from Elisabethville, Belgian Congo, are probably conspecific.

*Ceratocheilus gilesi* Edw.

Principé, 1 ♂.

A widely distributed West African species.

*Ceratocheilus cornigerum* Speiser.

Fernando Po, Mioko, near Moka, 1. ii. 33, one damaged specimen, rather larger than usual, with more strongly-marked wings.

*Conosia principalis*, sp. n.

♂.—Head dull yellowish brown; antennæ with the scape and basal flagellar segment blackish, remainder light brown. Thorax light yellowish brown, with a few dark dots faintly indicated on the præscutal interspaces, otherwise unmarked; form of mesonotum as usual in this genus. Abdomen light yellowish brown, unmarked. Legs wholly yellowish (but front pair missing). Wings with pale yellowish ground-colour, with numerous tiny dark dots rather regularly placed along all the veins, but practically none in the cells; larger (but not very large) and darker spots on costa opposite base of *Rs*, at stigma, tip of *R* 2+3, lower half of *m-cu*, and tip of *Ax*. Costal cell slightly widened before middle, but hind margin evenly rounded (not expanded at tip of *Ax*, as in ♂ of *C. irrorata*). Venation normal; cross-vein *r* oblique and curved; *R* 2 moderately long, turned up at tip; *r-m* immediately before end of discal cell. Halteres yellow. Length of body 14 mm.; wing 10.5 mm.

Principé, 10. xii. 32, ♂.

This apparently has much resemblance to *C. malagasya* Alex. of Madagascar, differing in the absence of a dark seam on vein *R* 2 and other details.

*Conosia thomensis*, sp. n.

♂.—Allied to *C. principalis*, which it resembles in many respects, differing as follows:—Thorax somewhat darker, but quite unmarked. Abdomen relatively shorter, with the basal two-thirds of each segment dark brown, distal third ochreous-brown. Wings with the dark spots less numerous but much larger (as well as less regular) and occupying a large part of the surface of the wing. Costal cell scarcely widened in middle. Cross-vein *r* straighter. Halteres with knob darkened. Length of body 10 mm., wing 8.5 mm.

São Thomé, near Roça Zampalma, 26. xi. 32, 1 ♂.

*Erioptera* (s. str.) *genualis*, sp. n.

*Head* whitish above; eyes widely separated in both sexes. Palpi and scape of antennæ black, first four flagellar segments whitish yellow; remainder dark brown. *Thorax* and *abdomen* pale brownish, pleuræ somewhat dusted with grey. Hypopygium of ♂ with outer style rather broad, with blackened and slightly hooked tip; inner style of peculiar form, projecting inwards to an acute elbow, then suddenly reflexed, distal portion forming a long straight spine directed caudally. *Legs* light brownish, knees abruptly white, this colour embracing an equal extent of tips of femora and bases of tibiæ. *Wings* quite unmarked; venation normal for the subgenus, except that vein *Cu* is rather strongly bent forwards at the tip. Halteres yellow. Wing-length 4–4.5 mm.

São Thomé, xi. 1932, 10 ♂♂, 4 ♀♀, at light.

This is quite distinct from any described African species, but is very similar to the Oriental *E. javanensis* de Meij.; the latter differs in having the tips as well as the bases of the tibiæ conspicuously white and in having vein *Cu* straight.

*Adelphomyia polysticta*, sp. n.

♂.—*Head* dark brownish, heavily pruinose with greyish brown. Antennæ with scape light brownish, first two flagellar segments thickened and yellow, rest slender and blackish. Palpi blackish. *Thorax* almost uniformly light reddish brown, pleuræ for the most part indefinitely darker; mesonotum slightly shining. *Abdomen* dark brown, posterior margins of tergites and hypopygium ochreous. *Legs* pale brownish, femora with a conspicuous narrow blackish subterminal ring, tips of tibiæ narrowly darkened, terminal tarsal segments blackish. *Wings* with yellowish ground-colour, with a dark grey band at base from vein *R* 1 to hind margin; a large dark grey spot over base of *Rs*, broad dark seams over the cord and apex of discal cell, and a dark cloud at the tip of each vein, the largest on vein *Ax*. Cell *M* 1 absent; veins *Cu*, *An*, and *Ax* rather strongly curved down at tip. Halteres yellow. Wing-length 7 mm.

São Thomé, 6. xi. 32, 1 ♂.

This is strikingly distinct in its wing-markings from the

two known African species, but considerably resembles certain Oriental species, such as *A. nebulosus* (de Meij.), differing in the absence of cell *M* 1.

*Nephrotoma angustifrons*, sp. n.

♂.—*Head* dull brownish orange, with a narrow blackish median triangle on occiput and a small blackish area adjoining each eye. Front narrower than usual in this genus, at its narrowest point, as seen from above, distinctly less than half as wide as one eye; frontal tubercle only very slightly developed, much smaller than usual. Antennæ over half as long as body, mainly yellowish, first six flagellar segments narrowly darkened at base, last five darker, 2–6 with slight basal enlargement. Rostrum wholly light brownish. *Thorax* wholly shining, brownish ochreous; præscutal stripes evidently variable in development, in one specimen the stripes are mainly brown, with their outer edges narrowly black anteriorly, in the other the blackened area is more extensive but the median stripe remains divided, pronotum, scutellum, and postnotum brownish ochreous, unmarked; a narrow black lateral border to præscutum and scutum; sternopleura and mesepisternum darkened anteriorly. Scutellum (except at base) and postnotum (mediotergite) covered with a short, dense, blackish pubescence. *Abdomen* shining light brownish; tergite 2 with a pair of longitudinal blackish stripes, transversely interrupted in middle, and united on posterior border; tergites 3–5 broadly blackish in middle except towards base, the black area more or less divided in front; 6–8 largely dark. Hypopygium mainly yellowish; outer style moderately long and slender; sternite 8 prominent but without appendage, with a moderate amount of mixed black and yellow hair. *Legs* light brownish, tips of femora and tibiæ only narrowly and indistinctly darkened. *Wings* mainly clear; costal cell rather bright yellow; stigma dark brown, hairy. Discal cell rather small; cell *M* 1 sessile. Halteres with blackish knobs.

São Thomé, 2 ♂♂. A single ♀ from Principé perhaps belongs to an allied but distinct species.

*N. angustifrons* is fairly well distinguished from other members of the genus by details of coloration and by the narrow front and pubescent postnotum. I cannot



indicate an African species which might be regarded as a close ally.

*Tipula alphaspis* Speiser, var. ?

Fernando Po, Misko, near Moka, 1 ♀.

*Ctenacroscelis albovittatus* Macq.

São Thomé, 1 ♀.

XXX.—A new Characin Fish of the Genus *Vesicatrurus* from British Guiana. By J. R. NORMAN, Department of Zoology, British Museum (Nat. Hist.).

AMONG a large collection of fishes made by Dr. G. S. Carter, principally from the Mazaruni and Cuyuni Rivers, are two specimens of a small Characin fish, which is apparently new to science. The collection also includes examples of three species which were not mentioned by Eigenmann\* in his important work on the freshwater fishes of British Guiana. These species, all from the Mazaruni River, are :—

*Lycengraulis grossidens* (Cuv.).

*Eleotris pisonis* (Gmel.).

*Euctenogobius strigatus* (O'Shaun.).

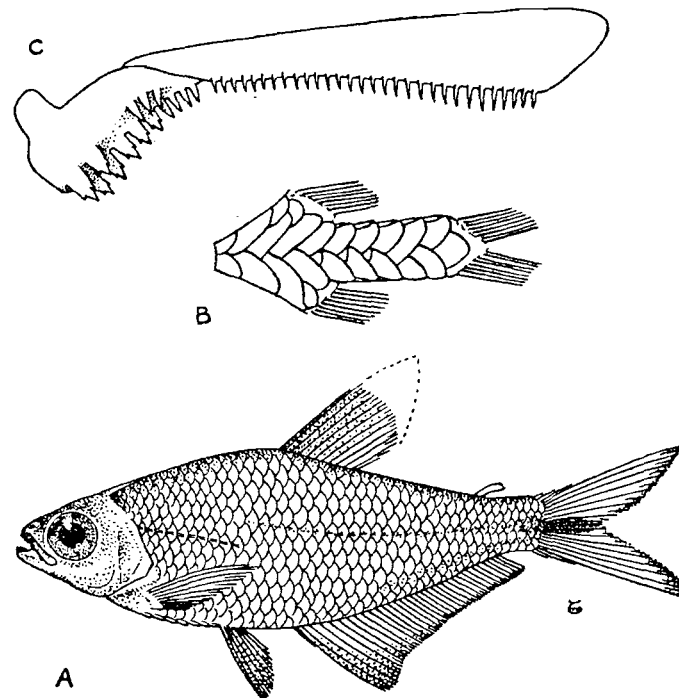
*Vesicatrurus carteri*, sp. n. (Figs. A-C.)

Depth of body  $2\frac{1}{2}$  to nearly 3 in length, length of head  $3\frac{1}{2}$  to  $3\frac{3}{4}$ . Dorsal profile nearly straight from snout to dorsal fin; ventral profile evenly curved. Snout shorter than eye, diameter of which is  $2\frac{2}{3}$  to  $2\frac{3}{4}$  in length of head, and greater than interorbital width. Maxillary extending to below anterior margin of pupil or not quite as far; each præmaxillary with an outer series of two tricuspid teeth near the symphysis, and with or without a row of 2 to 4 conical teeth near its junction with the maxillary †; an inner continuous series of 5 tricuspid and 2 to 4 conical teeth; each maxillary with from 28 to 30 graduated conical teeth, extending along the greater part of its length; lower jaw with 6 tricuspid teeth on each side of the

\* Mem. Carnegie Mus. v. (1912).

† Apparently absent in the larger specimen.

symphysis, followed by a series of about 12 graduated conical teeth. Occipital process about four times in the distance from its base to origin of dorsal, bordered on each side by  $3\frac{1}{2}$  scales. 7 or 8 gill-rakers on lower part of anterior arch. Scales each with a few divergent striæ; 36 to 38 in a longitudinal series, 11 or 12 between origin of dorsal and root of pelvic; predorsal area bluntly



*Vesicatrurus carteri*, sp. n.

A. Lateral view of holotype ( $\times 2$ ); B. Ventral surface of same specimen ( $\times$  about 6); C. Dentition of upper jaw of paratype (greatly enlarged).

keeled, with about 12 median scales; area in front of pelvics flattened, with two series of overlapping scales; a small scale in the angle between each of the middle pairs; caudal fin not scaled. Lateral line developed only on the first 9 or 10 scales. Dorsal 11; origin equidistant  
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