5) le fourreau du pénis développe du côté dorsal et vers l'extrémité subapicale du tube, un long crochet en forme de dent, dont aussi longue que la partie terminale du tube; de côté ventral se développe une sorte de languette chitineuse (sclérite) en forme de crochet mousse et recourbé postérieurement. La forme de ce sclérite est donc bien différente de celle en queue de poisson qui caractérise l'espèce *X. tartus*.

4) le lastérin, étroit, à bord quasi parallèles, est arrondi à sa partie apicale;

3) le sternite IX, recourbé vers le haut, s'éffile graduellement vers l'apex;

2) les soies du processus PI sont comparativement plus courtes que les soies correspondantes de *X. chryomelas*.

La figure joindre représente les sternites VIII et IX et les terminales (Petits, processus P1 et P2).

Le but expédié de Bonne ne contenait pas de spécimens femelles. C'est la première fois que l'espèce *perezi* est signalée au Congo Belge. Sa présence dans le Bassin Congo doit être considérée comme une extension de sa distribution géographique dans l'Angola.

L'un de nos deux spécimens mâles est déposé au Musée du Congo Belge à Tervuren, le second à l'Institut de Médecine Tropicale d'Anvers.

REFERENCES BIBLIOGRAPHIQUES


New species
of Macromia from Tropical Africa

By Lt. Col. F. C. FRASER, I. M. S., Reid

The genus *Macromia* RAMER, 1842, is circumtropical in distribution but the bulk of the species are confined to tropical Asia and Africa; one species is found in southeast Europe, one in Japan and a small number in America, whilst some nine species are restricted to North America. No well-marked characters separate the various sexual groups, but on the whole, the African species are distinguished by the superior and appendages of the male without an external spine and the terminal segments of the abdomen exhibiting a greater dilatation, whilst segment 10, more or less, is surmounted by a dorsal spine.

Generally, species of the genus are large robust insects with an incredibly swift flight; their colouring varies from a dark mahogany brown to black with a more or less pronounced blue or greenish metallic reflex reflected by bold, clearest citron yellow markings; thus they include some of the finest insects not with in the order Diptera.

Originally all the species were included under the genus *Macromia*, but in the year 1878, SELSKY removed three species, *afrianus* SELSKY, *tropicalis* SELSKY and *trefarina* SELSKY, to a new genus *Phyllinocera*, giving it as characters, All triangles entire, median space of hindwings with at least 8 crossveins, discoidal field of forewings with a single row of cells, 8th abdominal segment of the male concomitant, dilated as lateral rounded wings, 10th segment without a dorsal elevation or spine and lastly, superior and appendages of the male without an external tooth. MARVEY (1906, Cat. Coll. Serbs. Cordilleras : 79) adopted this new classification, but later (1912, Faune trop., Nat. (5) 2, 699) expressed some doubt as to its validity. He said, - *a The genus *Phyllinocera* seems to stand apart from *Macromia* but only if the character based on a single row of cells in the discoidal field of forewings is constant in...*
Phyllolomuconia: it is not absolutely constant, especially in the females. Ris (1920, Ann. S. Afric. Mus. 18 : 375) found that the definition of Phyllolomuconia would not hold good even for a limited amount of material. I am now able to confirm the opinions expressed by these two specialists, after having examined about 200 specimens, or more than five times the number Ris had at his disposal. Only two characters are actually concerned, viz. the absence of a dorsal cone or spine on segment 10, and, only a single row of cells in the discoidal field of forewings. The first of these two characters is found to occur in some very large species in which the forewings have a double row of cells in the discoidal field of the forewings, and the second character is not only limited to the males but is also inconstant in that sex, thus it is common to find a single row in one forewing and a double row in the opposite one, and it is the rule rather than the exception to find that males with a single row of discoidal cells possess females in which a double row is found. It is evident that the genus Phyllolomuconia must now be merged with Macruconia and in doing this, there will be no necessity to alter the original definition of Macruconia.

The large amount of material which I have been able to examine has revealed an unexpected richness of the genus in the continent of Africa, more especially so in the tropical areas of the Belgian Congo, Cameroons, Uganda and Kenya; some 26 species have been named in literature but the validity of some of these is open to doubt. In the present paper I have shown five of these as synonyms but have added and described a further nine as new. The determination of species is often fraught with great difficulty owing to one or more of the following factors: 1) The marked differences between the two sexes, this even extending to the colour and venation of the wings, so that a description based on one sex is of little help in the determination of the other; it may indeed be quite impossible unless the two sexes have been taken in copula. 2) A comparatively rare event in my long experience of collecting oriental Macruconia. Where a species is the sole one of a particular habitat, such as M. trifasciata Salvin in Madagascar, no difficulty will be met with, but more often than not a number of species are received from a single locality. 3) The rapidity with which the living colours fade from decomposition after death, especially in a tropical climate; colour and markings are of great importance in determining species, so that a loss of these adds to the difficulties of determination. The case of M. sophia Salvin may be mentioned, the type and subsequent specimens having been described as with thorax without markings. Dr. Seneor even employs this negative character in a key for the differentiation of sophia from other species. (Sennor, 1954, Ann. Mus. Bourg., 29 : 160):

actually sophia has a brilliant golden yellow band encircling the thorax at its middle as pointed out by Dr. Schouteden (1934, Ann. Mus. Congo Belge (Tox.), Cat. Par. Ent. 111 : 60). In some of the fresh specimens of sophia which have been loaned to me for examination from the Musée du Congo Belge, this band has been preserved perfectly, whilst others show no sign of it due to postmortem decomposition. 3. The inadequate descriptions of some authors due to poor or insufficient material, and more particularly where these have been described from the female sex only.

Most of the material on which this work is based has been loaned to me by the authorities of the Musée du Congo Belge, Musée National d'Histoire Naturelle, Paris and British Museum (Natural History), to all of whom I desire to express my thanks and indebtedness. In addition I received either by gift or loan a large number of specimens from Mr. Elevé Pinhey of the Coryndon Museum, Nairobi, Kenya, and I am greatly in his debt for lengthy notes and much sound advice, without which much of this work could not have been written. Lastly a small number of specimens in my own collection were collected for me by the late G. Hale Carpenter of Oxford University.

In the following tables, I have selected a large number of characters each represented by a letter of the alphabet from A to Z in the first table and by a + or — in the second according to whether the character is or is not present in any particular species. It will be seen that by taking all the + signs and the corresponding letters of designation for any species, a formula can be constructed which will give the characters of that species; for example, + BCFGKHNPQV = the formula for sophia Salvin, and a reference to the first table will supply the explanation of the characters. Moreover the tables supply a useful key for the determination of any specimen: all that is necessary is to construct a formula based on its characters and lettering according to the first table in terms of plus and minus and then to compare the result with the second table which, in practice, is a + sliding rule.

The second table contains a list of all those species which have been described in literature as well as the following new species. + bipinn. kimurianus, Liangtseki, occidentalis, Schoutedeni, Spegeli, subtrigoniola, glyptodes and unicolorita. All these are described below as well as the unknown opposite sexes of: + bicostata Forster, clytome Rix, janyehora Malan, and pallidipennis Forster.
CHARACTERS OF THE AFRICAN MACROMIAS TABULATED

A. Only one row of cells in the discoidal field of forewings, at least in the male.
B. Two rows of cells in discoidal field of forewing in both sexes.
C. A dorsal cone, or spine surmounting a cone, on segment 10 of the males.
D. Thorax uniformly coloured, without yellow markings.
E. Thorax with yellow anteroventral stripe and anterlateral spots.
F. Sable marking on thorax, a midbasal bright yellow stripe.
G. Thorax with yellow anteroventral spot, anterlateral, medioventral, and metepimeral stripes.
H. Male wings with blankish brown markings at base.
I. Female wings with blackish brown markings at base.
J. Frums with at least some yellow on its upper surface.
K. Frums and vessel metallic or ferruginous and poorly metallic.
L. The greater part of segment 3 yellow in both sexes.
M. Superior and appendages without ventral or dorsal spines.
N. Superior and appendages with a ventral or dorsal spine.
O. Terebra of female small and inarticulate.
P. Terebra of female large, projecting substantially and forked.
Q. Large species with abdomen of at least 50 mm in length.
R. Medium sized species, abdomen over 40 but under 50 mm in length.
S. Small species with abdomen 40 mm in length or less.
T. Costa limby yellow, even in adults.
U. Superior and appendages yellow or partly so.
V. Pterostigma black.
W. Pterostigma brown or ochreous.

| Species | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W |
| Acanthophrax | + | + | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Aquatophrax | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Afrotropia | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Girontephia | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Biscotiidae | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bifrons | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

Characters of species shown in the above list have been derived from the original descriptions or from the types of new species; where any of these are known from only one sex, the characters of the male or females, as the case may be, will be unknown and are shown as "-".

The following species have been found to be synonymous: *Macromia Herold Schouteden* a synonym of *Mecocaria Jungerani Mearns*; *Phyllocarania bifrons Martin* a synonym of *Phlyllocarania crotaurina Selig*; *Phyllocarania leoni Fauske* a synonym of *Phyllocarania bifrons Martin*; *Mecocaria tropica Selig* and *Phyllocarania flavicincta Kirby* are both synonyms of *Mecocaria pietta Hages* in Selig.

The emergence of genus *Phyllocarania in Macromia has led to flavicincta Kirby from Africa, being preoccupied by flavicincta Selig from the Orient, and to avoid confusion I propose the name of flavicincta for the former. In the above table, under tropica, the presence of a spine or horn on segment 10 has been queried; this is because, in the type, segment 10 has been crushed flat and it is impossible to tell with certainty if a horn is present or not; Miss Latourre and myself, after a careful examination, are of opinion that vestiges of a horn can be made out; it is for this reason that 1 incline to the opinion held by the late Dr. Rus that tropica is a synonym for pietta.
I have compared the types of *M. funiculalis* and *M. Brevihi* and those of *continuana* and *bifform* and find that the characters of the two pairs are identical so that there can be no doubt about the synonymy given above. Regarding *leoni* and *bifasciata*, the former was described from a female, the latter from a male, the two sexes showing the usual broad differences, especially in the shape of the abdomen and the colour and markings of the wings; on the other hand, the dimensions and the variation of the wings agree so closely that the synonymy may be taken as a fact. Karsch has described the supposed male of *melania stans* which was described from a single female, but there are several known species, the males of which might equally be that of *melania*. Thus the relationship of Karsch's male can not be said to be established and is just as likely to be incorrect as correct. Dr Eduard Sehnert (1931), *Ara.*, *M. M. Borneo*, 29 : 189, has given a key for the identification of the African Macronius but has omitted the following species, *seneborhax* (Nunney), *leoni franki*, *bifasciata* (Karsch), and *plathidialis* foresti. He gives the following as synonyms, *bicornis* foresti and *amyza guntheri* for *pauli karschii* and *pche la hagen* in *stans*. The suggested synonymy of *bicornis* is quite unacceptable; the characters given are male, whereas *pauli* was described from a female, so that it is evident that he has borrowed the characters of the former to support those for *pauli*. These include a spine on segment 10, an unknown character in the females. Perhaps certainly did say that his species might be the male of *pauli* but then gave good characters to disprove this, and added, "It appears certain that this synonymy cannot be decided." Sehnert arbitrarily ignores this. *Bicornis* has a blue metallic frons, *pauli* a dark yellowish brown one. *Bicornis* is comprehensively blue metallic, whilst *pauli* is said to be generally black without noticeable metallic blue reflex. For *M. ophtia* *stans* he gives, "*M. stans* without bright stripes", which is entirely contrary to facts. *M. ophtia* is figured from the type in the Paris Museum, but Dr L. Amsel informs me that this type is now missing. Presumably the figure was made when Sehnert visited the Museum during the Occupation. Lastly I am unable to understand on what grounds he has based a supposed synonymy of *M. amyza guntheri* with *bicornis foresti*, as the former was described from an incompletely coloured female which unfortunately had been rather mishandled, and in which the colour and markings of the thorax could no longer be discerned. Truly poor material on which to base such important decisions?

In the same key, he distinguishes *Karsch guntheri* from *pche hagen*, by the absence of an antehumeral stripe, but the author stated that there were three stripes on each side of the thorax in *Karsch*, the most posterior being on the metepimeron; thus it is evident that the most anterior was a humeral one, and the second, the usual mediodorsal stripe, that is, the basic pattern of the African Macronius. I have determined some specimens of *Macronius* from Entebbe, Uganda as *Karsch* and the most striking feature to distinguish it from *pche* is the blue metallic frons, which is conspicuously marked with yellow above *pche*.

The African Macronius show little or no tendency to form defined groups, the characters being shared out indiscriminately, thus in the following descriptions of new species or of the opposite unknown sexes of some species, or the amplification of descriptions of known species, no definite order has been adopted. Much more needs to be known before a monograph on this magnificent group of insects can be attempted.

**Macronius aeneothorax** (Nunney).


This species is of interest in that it has been lost sight of since Nunney first described it as a new Gomphus. It was unknown to Dr Rau and it does not appear to have been mentioned even by McLachlan in whose collection it formed a resting place; it is not known how it came into this collection, especially as McLachlan identified Nunney's astonishing error in classification. Possibly Nunney presented it in order to stifle criticism. The type is now in the British Museum (N.H.) and is still in very fair condition, save that it has lost one of the superior and appendages and the spine on segment 10 has been fractured off and lost. Fortunately, Nunney figured this latter organ in his description and we are able to see that it is exactly similar to that of *M. macrurus* Schenckmüller, although it cannot be synonymised as it lacks the clearly defined lateral yellow stripes of the thorax of *Macrurus*. There is however a poorly defined metepimeral line which was mentioned by Nunney. The habitat is unknown but Nunney stated that he believed it to have come from the Cameroons; it bears a label "Ceranogyna aeneothorax* Nunney, 1935" and on the reverse "Sierra Leone in red ink, and a "TYPE." in black ink. It is certainly a good specimen, with hindwing about 48 mm and abdomen about 50 mm in length, and stands near the *M. bicarin- nis* group in its general facies.

**Macronius clymenis** Ris (Fig. 4). 2


The female of this species was hitherto unknown and is here described from a single specimen in the Coryndon Museum, Nairobi, from Tororo, Uganda, 3411/2, coll. T. H. E. Jackson.

Abdomen 39 mm. Hindwing 46 mm.

Lips face and front bright lemon-yellow, the labrum slightly ferruginous at its centre, the front with a dark reddish brown crescentic spot along its crest which is distinctly metallic bluish at its centre; underside metallic blue-black; occiput and behind head glossy black.

Thorax as for male, paler on dorsum than on the sides, the citron yellow stripes very sharply defined and not bordered with black; the metepimerone stripe reduced to a small upper posterior spot. Legs black save the anterior pair of femora which are bright citron yellow for the basal two thirds on the inner side. Abdomen stout and cylindrical especially at base and less so on end segments; segment 2 broadly yellow dorsally and subdorsally, this yellow enclosing a transversely oval brown spot except on middorsum where the spot is conform to basal and apical dark brown rings; segment 3 yellow subdorsally and subbasally save at the apical end and for a baso-dorsal diamond-shaped black spot; segments 4 to 6 with the basal half yellow, this enclosing a black diamond-shaped spot on the dorsum; segments 7 with slightly more than the basal half citron yellow, the rest black. Anal appendages shortly conical, conspicuously yellow as well as the anal valves between them. Wings (rather torn in this specimen) tinted palely with brownish yellow, this deepening between nodus and pterostigma to form a distinct amber tinted tibia extending diffusely across the whole breadth of wings. Nodal index — 11-12/11-16. 2 tons of discoidal cells in forewings, his 3/4, r 5/4, r1 4/3, anal-long 12 cells, membrane white.

Vulvar scale about half the length of segment 5, deeply bifurcated into two elongated triangular narrow lobes (differing strongly from the same organ in the nearly related M. theta Linn.).

This specimen differs in some respects from the male of *clytus* and it is possible that it does not actually belong to that species; the whole face is a much brighter yellow and the metepimeral yellow stripe of thorax is almost obsolete. It resembles the female of *theta* in many respects but the entirely different shape of the vulvar scale rules this species out.

Macromia bispina sp. nov. (Fig. 2, 3).

Male. Abdomen 38 mm. Hindwing 41 mm. Pterostigma 2 mm.
Head: labrum bright chrome yellow, borders of lobes blackish, labrum and front of frons from bright ferruginous, epistome olivaceous, from above and veicle blue black metallic, occiput black. Thorax rather brilliant dark blue metallic marked conspicuously with pale citron yellow; the middorsal carina,alar sinus, narrow complete antennal stripe, a mediolateral stripe covered over spinule, and finally the posterior fascia of metepimeron as well as pectus which is traversed anteriorly by a narrow band of dark blue metallic. Legs black; wings hyaline, scarcely tinted; membrane black; only a single row of discoidal cells in forewings; 6 cells in the anal-loop, 3-4 Rs's in forewings, 2 in the hind; 5 cubital crossveins in forewings, 4 in the hind; nodal index: 6:1:7.

Abdomen black marked with citron yellow as follows. - a narrow transverse stripe on segment 2 broadening anterolaterally so as to include the ocelli; segment 3 with a small crescentic spot on each side of the base, and a still smaller anteocular pair of crescentic spots; segment 4 with only the jugal spots, which are very small; segments 5 and 6 unmarked; segment 7 with its basal third yellow, this amnile partially divided in middorsum; remaining segments unmarked. Dorsum of segment 10 strongly ridged and raised into a steep cone which bears a couple of slightly divericate spines on its summit. Anal appendages black, superior about half as long again as segment 10, subhyaline, broad at base, tapering towards apex from which a small spine is divericate upwards and outwards; seen from above these appendages are strongly convergent. Inferior appendages of exactly the same length, triangular, the apex subtruncate and emarginate, the outer angles terminating in short pointed spines.

Female. Abdomen 38-40 mm. Hindwing 34-35 mm.

Recalls the male closely in colour and markings; the antennal stripes less conspicuous and the dorsum of thorax bright carmine with the antennal sinus above conspicuously pale cream yellow; on the sides, only the mediolateral stripe conspicuous (a male seen in a later date and more formal has this same pale type of coloring and markings). The transverse stripe on segment 2 much broader and broadly interrupted on middorsum. Base of segment 3 narrowly yellow, the jugal spots larger and prolonged basally so as to enfold a broad, elongated triangle of black on the middorsum of this is repeated on a smaller scale on segments 4 and 6; segment 7 with its basal half yellow; remaining segments black or dark ferruginous, unmarked. Terminal segments rather broadly fusiformy dilated and depressed. Wings hyaline, costa and venation black, pterostigma dark reddish brown between black veins, membrane blackish, white at extreme base. Bases of all wings up.

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![Diagram Image]
to the 1st antennal, Greg and for one cell at membrane a golden yellow; the costal margin of the forewing apex is also clouded with this same color (In two males recently received, the anal field of the hindwings is palely tinted with yellow). Nodal index, 9.4 | 14.5 (Two males examined recently, have a similar low index as compared to the type), remaining details of venation similar but slightly variable as in the male. Anal appendages black, very slightly conical; tergum very short, deeply emarginate and quite inconspicuous.

Habitat: type male from Kwenza Forest, Port Portal, 21°N, 1°51', Uganda, collected E. Puxxey; 2 pairs from Songo Bay, Katasi, Uganda, XXXVIII, collected T. H. E. Jackson. On this wing this species might be easily mistaken for pecina but it is a darker insect and without the pale head markings of that species; the hind spine on segment 10 will serve to distinguish it from all other species of pecina transversa and pecina spina, both of which are much larger insects. The female is not unlike pecina but the golden color at the base of the wings is more restricted and that at the apex for less conspicuous. Male and allotypic female will be deposited in the British Museum (N. 11.)

Macromia Schoutedeni sp. nov. (Fig. 1, 2 and 3).

Male. Abdomen 40 mm. Hindwing 32 mm. Pterostigma 3 mm. Head: labium chrome yellow, labium and lower part of frons ferruginous, epistome dark olive-green. Upper part of frons and its superior surface dark bluish green metallic. Occiput black. Thorax dark blackish brown with a blue metallic sheen and marked with citron yellow as follows: - medial dorsal carina, antecalar sinus, very narrow and rather sinusuous antennal stripes, a mediadlateral stripe centered over the spiracle and finally, the posterior half of the metepisternum. Legs black; hindlegs very long, extending nearly to the middle of segment 5. Wings hyaline; discoidal field of forewings variable, tending to become 2 rows of cells but with occasional single cells interposed; 9-14 M's in forewings. 2 in the hindwing. 4-5 G's in forewings. 4 in the hind. nodal index, 10-11 | 17-19. anal.

long 6 cells: membrane black. Abdomen black marked with citron yellow; segment 2 with a narrow transverse dorsal stripe broadening laterally to include the ovipositor; segment 3 with a very narrow basal annule slightly interrupted on millindorum, and a pair of anteguinal semilunar spots; segment 4 with only the jugal pair of spots; segment 5 with a basal ring covering nearly one quarter of its length; its apical end and segment 6 very broadly expanded (rather more so than in bispina). Segment 10 with a small centrally situated cone on the millindorum, from the oblique apex of which a tiny spine slopes obliquely upwards and posteriorwards. Anal appendages black, superior half as long again as segment 10, broad at base, tapering to apex which is acuminate and turned slightly outwards; viewed laterally each appendage is seen to possess a robust spine situated at its middle on the inner ventral surface. Inferior appendage of the same length, broadly truncate and rather deeply emarginated at apex, with the outer angles bearing minute spines.

Female. Abdomen 39 mm. Hindwing 37 mm. Colouring and markings very similar to male; the wing bases broadly tinted with golden yellow, nearly halfway to nodus in forewings and two thirds of that way in the hind. Venational differences rather broad (as is usual), nodal index, 11-12 | 13-14. anal. Mu | 4 | 5. Greg | 5 | 6. 15-14 cells in anal-loop. Abdomen with somewhat similar markings but the transverse stripe on segment 2 interrupted at its middle and there is a narrower basal stripe which may become confluent with the expanded portion of the medial stripe to enclose a broad black transverse stripe. Segments 2 and 4 similar but 4 has the basal spots only and these are repeated on segment 5. Anal appendages shortly conical, black, subvar scale minute, about one fourth the length of segment 9, biled into two narrow spine-like tergum; the ventral plate posterior to it, as well as that of segment 10, a bright greenish yellow (evidently an identification sexual mark).

Habitat: Belpina Congo, Eula, 4-15. J. Germain; Lambeau, V-30. J. Vilbrod; Luluvi; Theopaa, IV-31, F. G. Overlaff. It closely resembles bispina by its colour and markings but is easily distinguished from all other african Macromia by the medial spine on the superior anal appendages. Type in the Musée du Congo Belge.

Macromia sophia Selys, (Fig. 2, 12; fig. 3, 9).


Schouteden has already corrected the original description, which failed to mention the striking band of bright citron yellow which en-
circles the thorax laterally, and also the body figure of the anal appendages given by Martin. It remains to correct the description of the female which Stoll made from an entirely different species. This is evident from the description of the vulvar scale and the character of the wing marking.

Female. Abdomen 60 mm. Hindwing 35 mm. Pterostigma 4 mm. Coloured similarly to the male, including the beautiful yellow band.

which encircles the middle of the thorax passing up over the tegum between the wing roots and downwards across the pectus. The build of the insect is very massive, more so than any other African Macromia which I know of. The abdomen thick, compressed and the vulvar scale projecting at a right angle to the abdominal axis at the posterior border of segment 8; seen in profile this organ is narrowly triangular and with a small lobe projecting posteriorly from its middle; this latter represents the apex of a fold caused by the infolding of the tergum (fig. 2, 1). Seen from behind, the organ is seen to be deeply bifid, the two forks widely separated but parallel. (From its formation, it would appear that oviposition is carried out by this species in an abnormal manner and probably very similar to the method employed by several species of Semeothrinia metallica, linearis and tenebrina). The wings are heavily marked at the base with blackish brown to as far as the 3rd antennal vein in both wings but not to the end of the membrane.


Macromia Soydell nov. sp. (Fig. 1, 7; fig. 2, 12).

Male. Abdomen 56 mm. Hindwing 42 mm. Pterostigma 3 mm.

This species is coloured and marked exactly as in euphis for which, the male, at least, may be mistaken; the female may be easily differentiated by its small vulvar scale which is minute and does not project like the large structure of euphis. The male is more slender than euphis, thus its abdomen is longer but its wings shorter. There are 3 rows of denticulate cells in the forewings, anal-loop 8 cells, 4-5 His crosses in the forewings, only 2 in the hind, 5 cubital crosses in forewings, 3 in the hind, nodal index 18-8/18-8. Anal appendages black, superior stout at base where is found a very large conical spine with its apex directed posteriorly (absent in euphis), long and slender, tapering but slightly towards the apex which is subacute; seen in profile, they are strongly and evenly arched downwards. The inferior a little shorter, expanded at the middle, truncate and rather deeply constricted at apex. Segment 10 bearing a robust compressed cone which is surmounted by a rather slender spine (under a high power, this spine is seen to be made up of for the most part by a thick black setae). Anteriorly the base of the cone projects as an angle and there is a second but much smaller...
angulation posteriorly just below the root of the spine. The secondary
genitalia on segment 2 moderately large but very small compared to the
massive hamules of *Sophia* which form a conspicuous projecting lobe.
Finally the extreme bases of all wings possess a black vitta, which in the
hindwing extends to the 1st antennal (Quite absent in the male of
*Sophia*).

**Female.** Abdomen 39 mm. Hindwing 45 mm. Protarsus 3.5 mm.

Entirely similar to the male in colouring but differing from the fe-
male of *Sophia* by its much slenderer abdomen and by the tiny inconspic-
uous vulvar scale. Venational details. - Submedian vein much closer than
in the male (or than in the female of *Sophia*); 2 rows of cells between
CuP and 

1 in the hindwings instead of only 1 row; 3 cubital crossveins in
the forewings, 6 in the hind; 44 in crossveins in forewings, 2 in the
hind; 14 cells in the anal-lobe; nodal index 13.4; membranous
blackish brown; bases of wings with broad blackish brown vitta extending
to the 2nd antennal in all wings, to the base of 1A in forewing and
to the apex of membrane in the hind. No visible pale markings on abdo-
men, even on segment 7 but they may be obscured by postmortal decomp-
osition? Vulvar scale a minute, bifid triangular organ about one fifth
the length of segment 9. Anal appendages extremely short conical struc-
tures.

**Heintz, Belgium Congo, Lomami : Avevo-Djil, 26.X-35; CH. SEBRE;
Bumba, VI-36; J. V补偿IN; Lulua Kalingo, IV-34, F. G. OYERLACQ.
**

Although this new species resembles *Sophia* so strongly in its colouring
and especially in the striking thoracic markings, there is no difficulty in
separating them. The male is to be distinguished by the presence of
small but conspicuous dark basal markings in the wings and the large
costal basal spine of the superior anal appendages; the female has the
wing markings less extensive than in the female of *Sophia* but it has
2 rows of cells between CuP and 

1 and the vulvar scale is almost absol-
ute. Type and allotype in the Musée du Congo Belge.

**Macromia sylvestris** n. sp. (Fig. 4, 5).

Material examined: A single pair from the Malaha Forest, Kahem,
Kenya Colony, VI-32, coll. T. B. JACKSON.

**Male.** Abdomen 42 mm. Hindwing 42 mm. Protarsus 3.5 mm. 

Head: labium with middle lobe orange yellow, bordered with black,
lateral lobes black to dark reddish brown marked obliquely with a broad
oral spot of bright orange yellow and a more diffuse spot at the exter-
nal anterior angle; labrum and epistome dark ferrugineous, from dark
violet metallic as well as the vesicle; an elongate spot of pale yellow
on the sides of face extending on to the postclypeus laterally; occiput
and behind head glossy black. Prothorax and thorax dark purplish
brown to black, the whole brilliant with violet, green or blue metallic
marked with pale citron yellow, - the mid part of middorsal carina, ante-
neral sinu, linear anteromarginal stripes broadening somewhat below, rather
narrow sharply defined mediolateral and metepimeral stripes. Wings

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**Fig. 4.**

spine of Macromia sylvestris* Schoenh., greatly magnified to show its formation
from several roots.
Macromia africana Selby (Fig. 2, 11; fig. 3, 2).

Macromia africana Selby, 1871, Bull. Acad. Belg. (2) XXXI: 554. —
Ho, 1878, Ibid. XIV: 199.
Phyllocoracama africana Kirby, 1908, Cat. Gen. 86. — Martins, 1966,
Cat. Col. Selby, Cordulidae, 77. — Ho, 1912, Feltile J. Ntl. (3), 72, 499:
96.
Macromia africana Roiv, 1908, Jemmiches Denkach. 13: 397. — Le Roux,
Egypte, 3: 98.
Male. Abdomen 32 mm. Hindwings 29 mm.

This is a very variable species, dry areas producing xerophilous forms, whilst wet forested areas show a much darker melanistic one. The species is a subspecies of the African Macromia and may be described as having the thorax with the 3stipite basic pattern, the stripes being a very pale creamy yellow and margined with dark blue metallic which serves to accentuate their pale coloring. The abdominal markings are of the pteris scheme, the dark dorsal markings being to the jugal sutures on segments 3 to 6 being either diamond-shaped spots or produced into complete black bands encircling the abdomen. The terminal four segments are usually ferruginous but may deepend to almost black. The 10th segment is devoid of a dorsal spine. The venation is very open and there is only a single row of cells in the discoidal space of the forewings in both sexes. Selys figures the abdomen of a male from Portuguese Guiana, with pale bands on segments 3 to 5 and a midlateral spot on segment 6; the end segments are pale ferruginous and segment 2 is largely yellow. This is a typical xerophilous form. I have seen a very melanistic example from the Belgian Congo in which segment 2 is almost entirely black, segment 3 has the prejugal annule incomplete low down on the sides, while segments 4 to 6 have broad complete prejugal annules almost obliterating the yellow spots. Finally the end segments are black with only the lateral borders dark ferruginous. This may be described as a typical melanistic form, but it is probable that many intermediate forms link up between these two, so that it is difficult if they can be classified as definite races.

The type is a female in the Selby collection and is from Nubia.
M. africana does not appear to be a common insect anywhere although it is apparently widely distributed right across the breadth of Africa. Dr Schucherti has reported with some doubt, a specimen from Baraka in the Belgian Congo. It should be noted that figure 8h, in the Cat.
Coll. Selby, Cordulidae represents africana and not tropica.
Macromia subtropicalis sp. nov. (Fig. 1, 9, fig. 5, 5).

Material examined: 2 males, Ucbe, Bambusa, Belgian Congo, XI-58, collected by J. Vattem. Closely similar to Kuchi but easily distinguishable from that species by the absent spine on segment 10.

Male: Abdomen 19 mm. Hindwing 33 mm. Petrotigna black.

Head: Lips, face and lower part of the anterior surface of frons a dark reddish brown, rather more brightly ferruginous on the frontal; superior surface of frons and vertex dark blackish brown with some bluish metallic reflexes; occiput black (yellow in afrocanus); thorax very dark purple-brown with metallic blue reflexes, marked with citrine yellowish-anteral sinus (very pale creamy yellow), very narrow antehumeral stripe, rather broader, sharply defined pale stripes on the meso- and metepimeron. Legs black, hind femora save for the distal ends, bright fer- pingren. Halters black, hind femora save for the distal ends, bright fer-

Wings hyaline, nodal index 7: 910/910. 1 row of cells in the discoidal space of forewings, membrane black, white at base; costa and petrotigna black. Abdomen black marked with yellow; a narrow median jugal complete stripe on segment 2; which extends laterally on to the ocelli; a small spot on the genital tubes; paired small triangular spots on segments 5 and 6 at base and jugum; 5 and 6 without yellow markings. 7 with a pair of basal spots on the basal third of the segment, broadly separated by the black dorsal carina; segment 8 very broadly expanded as a slightly abruptly truncate and shallowly emarginate at apex. Female unknown.

This species is confined, so far as is known, to the Belgian Congo. It is a larger and much darker species than afrocanus (which latter is both the smallest and palest known of the african Macromias). Type in the Musée du Congo Belge.

Macromia occidentalis sp. nov. (Fig. 1, 2).

Material examined: 1 male from the Ivory Coast, the holotype, now in the Musée National d'Histoire Naturelle, Paris. The specimen has been determined by Martin as nequatinus. Martin lists it as distinctly different from the type of the latter which is in the same collection. It bears some resemblance to the last described species and, in some respects, to the supposed afrocanus described by Sehun from Portuguese Guinea.

Male: Abdomen 37 mm. Hindwing 33 mm. Petrotigna brown.

Head: Lips, epistome and frons ferruginous, the anterior face of the latter bright chestnut brown, the superior surface and vertex brown but the floor of the ocellus bright citron yellow, whilst the stripes of the thorax are tipped with bright metallic blue. Thorax glossy dark metallic blue with the middorsal carina finely yellow, anterolateral sinus pale yellow, sharply defined antehumeral, mediolateral and metepimeral stripes citron yellow. Wings hyaline, unbled. Costa finely yellow, petrotigna reddish brown, membrane black, white at base. Nod- index 7: 910/910. 1 row of cells in the discoidal space of forewings.

Abdomen black to the apical end of segment 7, sides of 8-10 ferruginous, 10 with its apical border yellow, its dorsal slightly elevated and with a minute pencil of stiff bristles resembling a spine at the extreme base, the area posterior to this also being with short stiff setae. Marked with yellow as follows: a narrow, complete subbasal jugal stripe on segment 2, which extends laterally to include the ocelli; segments 3 to 6 similar to pietra, with paired basal and jugal yellow spots growing progressively smaller from front to rear segment, segment 7 with the basal third yellow. Anal appendages not differing from those of pietra, dull yellow to ferruginous.

This species is distinguished from pietra by the absence of yellow on the posterior aspect of the vesicle and by the absence of the cone and spine on segment 10. The dilatations of segments 8 and 9 are similar to those of pietra, with a distinct elongation, thus differing from those of subseventia. The absence of a cone and spine on segment 10 distinguishes it from Korek which otherwise resembles it rather closely in colour and markings.

Macromia pietra HENRY in SELVA. (Fig. 2, 10; fig. 5, 1 and 7).

Macromia pietra HENRY in SELVA. 1874, Bull. Acad. Belg. (1) 11 : 552.


Phyllostrema tephralis SELVA, 1878, Bull. Acad. Belg. 56.

Macromia pietra KIRBY, 1890, Cat. Odon. : 55.

Phyllostrema tephralis KIRBY, 1890, Cat. Odon. : 56.

1931, Mem. Transvaal Mus. 5 : 190.

I have examined the type of tropicola in the British Museum (N.H.I.); it is a
specimen in rather poor condition with the anal appendages broken but appearing
to be of a dull yellow, the 10th segment is flattened but seems to possess a carina or even a small spine which has been
crushed into the body of the segment (Miss Lowenthal who made the examination at the same time was inclined to agree with me
this) and so, then the main character separating it from pieta dissipates. The specimen is of the same size as pieta, the frons is a
bright yellow above as well as anteriorly; the end segments of the abdo-
men are greatly dilated and ferruginous in colour.

I have also examined the type of flavicincta Kirby which Rus thought to be a
synonym of pieta and am inclined to agree with him. Kirby
forgot to describe the character of the 10th segment which I now find
possesses a dorsal spine similar to that of pieta; it is perhaps somewhat
deeper anteroposteriorly but this is an artifac due to compression in
paper I think. Mr Pesty has given me examples of his supposed pieta
from Rustenburg, which was the type type of flavicincta, and there is
no doubt about this diagnosis, nor is there any doubt that they are
the same species as Kirby’s flavicincta. The two points of bright yellow
(often fused) behind the vesicle are diagnostic of pieta and these are
found also in flavicincta; as regards the female from the Pieters River
described by Kirby as the allotype, the distribution of the golden ame-
lar area to the outer third of the wings is entirely typical of pieta, so
that we find both sexes and the habitat all in agreement; there can
be no doubt about the synonymy in the face of such facts.

It is unfortunate that Kirby should have named his species flavicinct-
a, although it was in a subgenus, since there was already a Macromia
flavicincta Stiles described from India which, now that the two genera
are merged, may be confused with pieta.

Macromia Kochi Graufeld. = pieta

Material examined. — Several males and females from Lake Victoria,
Entebbe, Uganda, collected by G. Hale Carpenter, 15-VI-37 and 28-
XII-37, both sexes, Entebbe, V-32, collected E. Pesty.

There is a strong probability that this species has been mistaken for
and reported as pieta by more than one author, as the two species are
readily similar.

Macromia koeki Graufeld, 1911, Ent. Randleaf. 28 : 104.

Malo. Abdomen 36-38 mm. Hindwing 31 mm. Pterostigma dark.
Head: labium, labrum and epistome ferruginous, frons anteriorly
bright reddish ochreous to ferruginous, darker above where it has a
bluish metallic reflex; vesicle dark blue metallic, unmarked with yel-
low. Thorax as for pieta, with dark reddish brown ground-colour which
develops a dark blue metallic reflex in adults, marked with citron yellow;
the middorsal carina very finely, annulus sinus, narrow ante-
humeral, broader mediolateral and metapleural stripes. Legs black to
dark brown. Wings hyaline, usually without colouring but in some
examples with a pale amber tinting in the tornal area of the hindwing
Nodal index 29:0 9:8 6:1 1 row of cells in discoidal space or forewings. Abdomen black marked with yellow;
a complete subbasal jugal stripe on segment 2 extending laterally
to include the ocelli and a spot on the genital lobe; base of segment
3 ringed narrowly and only sometimes interrupted on the dorsum by an
invasion of black, also a pair of triangular dorsal jugal spots, segments
4 to 6 with similar markings but more restricted, segment 7 with its
basal third yellow, segments 8 and 9 dilated laterally and here often
dark ferruginous, segment 10 black, bearing a dorsal cone surmounted
by a short but prominent spine. Anal appendages similar in shape to
those of pieta, pale to dull yellow according to age, more or less dark
reddish brown at base and along the sides of the inferior appendage.

Female. Abdomen 30 mm. Hindwing 36 mm. Pterostigma dull brown
to ochreous.

Similar to the male in colour and markings but the face with a yel-
low stripe traversing the epistome and the frons yellow laterally and in
its axillar; the vesicle dark however and without yellow points posterior-
ly. Wings hyaline, tinted with golden amber at base to as far as 3rd
antennal and nearly to alula; the central border of forewings from
node to apex; and the extreme apex of hindwings similarly coloured;
membrane black, white at its base.

Macromia kimminsi n. sp. (Fig. 2, 6, 7).

Male. Abdomen 32.5 mm. Hindwing 45 mm. Pterostigma 5 mm.
Head: labium and labrum bright rich yellow, the latter centered
with reddish brown; rest of face and frons greenish yellow coaded with
short black hairs the crest of frons bearing a thick, sharply-defined
crescentic spot of dark reddish brown with a coppery reflex, the
convexity of the spot directed posteriorly. No basal dark line to frons;
vesicle dark purplish brown but slightly metallic; ociput and behind
head glossy black. Syntarsus chocolate brown, the sides only with iridescent purplish metallic red; marked with crimson yellow as follows: the lower part of the middorsal carina, anterior sinus, complete antehumeral stripes, a mediolateral stripe completely encircling the thorax, by fusion on both pretarsus and tegumen between the roots of the wings: finally a narrow stripe interrupted at its middle bordering the metepimeron posteriorly. Legs black, anterior femora on the inner sides and the tibial keels yellow. Wings hyaline, palely tinged throughout with yellow; pterostigma blackish brown; membrane cinereous, white at base.

venational details—nodal index 2 1 2 12 1 1 1 1
Ht 11 11 11 1 1 1
Hs 5 in the forewings, 4 in the hind, unicolor of 6 to 7 cells; 2 rows of cells in the discoidal field of forewings; base of wing very deeply notched; costa, nodus and many cross-veins in the anterior part of wing proximal to nodus as well as about the torus pale yellow. Abdomen black marked with yellow as follows: a transverse jugal stripe on segment 2 broadening laterally to include the ocelli and lobe of genitalia; segment 3 with a pair of basolateral spots narrowly separated on middorsum and a second pair of costal jugal spots which are narrowly confluent over the dorsum; segments 4 to 6 similar but the spots becoming progressively smaller until they are mere points on segment 6; segment 7 with its basal half yellow with the jugum outlined thinly in black; segments 9 and 10 with small apical lateral spots, the latter segment surmounted by a conical ridge on which are superposed two robust spines, side by side and separated by about their own length (fig. 2, 7).Anal appendages: superiors pale yellow, robust, rather short, about half as long again as segment 10, converging and acutely narrowing towards apex which are bevelled outwardly to end in a short spine. Inferior about one third shorter, subquadrangulate, narrowing slightly to a truncated apex which is shallowly emarginate and with a small apical spine at each outer angle, yellow but the outer borders reddish brown. Genitalia prominent, hamules and lobe of great size, the former ending in a claw-like hook.

Habitat: Tropical Africa: Kahala, Sierra Leone, one male, the type. 29-IV-12, coll. J. A. Snows. (British Museum, 1921-176). Three affinic species of Macrotria are now known which possess a geminate spine on the dorsum of segment 10. i.e. bicornis Forster, and bipinnata Kishida, the latter being a very much smaller species than Kishida. This new species is distinguished from bicornis, which is of similar size, by yellow frons, bright yellow superior anal appendages and by the different shape of the twin spine on segment 10, these being finer and approximated at the base in bicornis.

Macrotria Liefencki n. sp. (Fig. 2-4) = f. of aenethorax

Male: Abdumen 22 mm. Hindwing 46 mm. Pterostigma 27.8 mm. Head: labium castaneous, borders of lateral lobes and base of middle lobe bright ochreous; labrum and rest of face dark olivaceous brown, the frons on its upper surface and along the crest bright metallic blue or green; vesticle metallic blue; occiput black, a little tumid posteriorly and shallowly bilobate; behind head glossy black. Syntarsus dark castaneous with some blue or green metallic iridescence laterally and marked with bright yellow as follows: the antenal sinus, a narrow antehumeral stripe deficient in its upper part, a narrow mediolateral stripe and a third stripe along the posterior border of the metepimeron, all sharply defined. Legs black, the hind femora extending to the apical border of segment 2. Wings palely but evenly infuscated, without basal dark markings; pterostigma small, blackish brown; venational details (from two specimens)—nodal index 11 11 11 11 11 11 11
Ht 5 1 4 4
Hs 5 1 1 1 4
Cpg 5 to 6 in all wings; 6 to 7 cells in the anal-loop: anal triangle narrow, space between CadP and A4 begins with 2 rows of cells; discoidal field of forewings with 2 rows of cells; base of hindwing shallowly excavate. Abdomen black marked sparingly with yellow; segment 2 with a narrow jugal stripe extending outwards to include the ocelli and the ventral border but the apex of genital lobe black; segment 3 with a rather narrow but complete lateral annule and a pair of narrow hamules on the jugal suture; segment 4 with the same markings but the basal annule interrupted on the middorsum and the jugal hamules very small; hardly the basal fourth of segment 7. Segment 10 with a large dorsal cone-shaped spine which is laterally compressed and surmounted by a brachy or penet of stiff black setae. Anal appendages black, the superiors about as long as segment 8, broad at base and tapering gradually to a fine slightly curved point; the two appendages converging towards their apexes. At the base, on the ventral aspect, a small oblique tooth, whilst nearer the apex, the ventral surface is bent with small black spines. Inferior appendage of nearly the same length, triangular, the apex narrowly truncate and with a small apical spine at each outer angle. Hamules massive, tapering rather abruptly at the apex which ends in a claw-like spine, the hamule extending to the apex of lobe which is truncated at its end.

Habitat: Finland-Po, Mok, 2 males, 29-III-33, coll. W. H. T. Tams, type in the British Museum (Natural History) (B. M. 1953-59). Female unknown. This species is easily recognised by the presence of the ven-
tral tubercle at the base of the superior anal appendages. The only other African species with ventral processes or spines are Schizodentini Fras. which has a medio-ventral robust spine and Seydeli Fras. which has a large basal spine directed posteriorly, but in this species, the thorax has the markings limited to a single bright golden yellow band on the sides. I name this new species after Dr M. A. Lestina for his great work on the oriental Macromiinae.

**Macromia bifasciata** (Martin). (Fig. 2, 3; fig. 3, 4).


The species was described from two males, one of which was in very poor condition. The female holotype, described under the name of leoni, was fully adult and in good condition but the thoracic markings were lost, but for the bright anterior bands. In the new females and the male examined, a distinct humeral stripe can be discerned as described for the type male.

Male and female. Abdomen 40-47 mm. Hindwing 10-12 mm.

Wings of male palely enflamed. Pterostigma reddish brown; membrane dark brown; costa finely yellow, the antennae and veins framing the anal triangle in hindwing a bright yellow. Nodal index of 5.14 | 5.5. 6.14 | 5.6. 7 | 5. 8 | 5. 9 | 5. 10 | 5. 11 | 11.9. type male 4-11 | 11.9. type female 4-11 | 11.9. Height of cell a | 0.2. 2 Coop. 0.2. arm. loop elongated; discoidal field of forewings with only a single row of cells (a in the type but 2 rows of cells in the female). Abdomen black marked with bright yellow as follows: segment 2 with a narrow jugal stripe or a small middorsal spot separated from another covering the ovipositor and a third spot on the genital tube; segment 3 with rather more than its basal half yellow (nearly entirely yellow in the female), segments 4 to 6 with narrow basal annules and paired lateral jugal spots; segment 7 with the greater part of the dorsum yellow; segments 8 and 9 dark ferruginous (but 6 with its base yellow in the female); segment

10 almost black, very small, without either dorsal cone or spine but vestiges of a carina at the base. Anal appendages: superior black to blackish brown, rather more than half as long again as segment 10, parallel, of almost uniform width, apex with a small evverted spine. Inferior yellow, black along borders, broad, truncate and shallowly emarginate along apical border which has a small upwardly spine at each outer angle. Humules large, rounded, ending in a short curvate spine (figured by Schmidt, loc. cit.).

Female. The terminal female in the British Museum has a fairly well defined humeral stripe and a small point of yellow over the thoracic spiracle. The forewings are closely studded with golden yellow for rather more than half way from pterostigma to nodus (Such a character is common to a large number of species of Macromia in the general state and is gradually lost in the majority of specimens as adult age is assumed; in the adult this tinting is partially concealed by infasciation but is still to be discerned. The dark brown markings at the base of the wings is more restricted than in the type of leoni and is confined to two cells adjacent the membrane, but the area adjoining it is tinted strongly with amber yellow. The adult female from Kaeng differs only in the smaller, occidental details.


About the only species with which bifasciata is at all likely to be confused, is Reginae le Roi which however is a larger insect and with the forewings dark crimson blue. In bifasciata the forewings is distinctly marked with bright greenish yellow above, and this colour descends along the sides of the face. The female has the basal dark markings much more restricted than in Reginae, in which they are perhaps the most conspicuous character of the insect. The two species are no doubt very closely related as they possess many characters common to both.

**Macromia umbratica** n. sp. (Fig. 2, 9).

Material examined: one pair, M. Mfale (1400 m), 1-20-V-47, coll. G. M. Wynn. The female agrees in most respects with the male and without doubt belongs to it. Type and allotype in the Institut des Pares Nationaux du Congo Belge.

Female. Abdomen 51 mm. Hindwing, 10 mm. Head: labium ochraceous with two bright yellow spots at base, labrum and clypeus and a yellowish brown, the lower part of face and labrum and postclypeus a darker brown; above froms, the floor of the deep unless a greenish yellow bordered anteriorly with black at crest of from which colour extends downwards on each side of face to
join the darker colour of the postclypeus to enclose the bright ferruginous area on the anterior face of forefem. The black band on the sides again bordered with conspicuous greenish yellow which borders the eyes. Vestige reddish brown with a poor coppery metallic reflex, aciptus black. Thorax unalunghay brown with a good metallic brown reflex, antecular sinus conspicuously yellow, humeral and antehumeral stripes absent but a single, sharply defined citron yellow band at the sides. The thorax between the wings (as in *cypion*) is elongate narrow and spindly, black except the yellow thorax keels which extend along the distal i and ii of the anterior tibia and the whole length of the hind pair. Wings hyaline with a faint tinting of yellow in the anal area of the hindwing; membrane transparent becoming black at apical end; petiole black, 2.75 mm in length. Nodal index 8-9 to 1-10.

at extreme base but no dark vitig; petha black changing to yellow at Nudus; pretarsi black; short, covering from 2 to 5/12 cells, nodal index 11-14 to 15-16.

2 rows of cells in the discoidal field of forewings; 5 *Cypion* in forewings, 4 in the hind; anal-loop 3-celled; *Ht* with 1 cross vein in forewings, 2 in the hind; venation normally open in character, with only a single row of cells between COP and EA in hindwing and only one cell between the anal triangle and anal-loop, the former of which is 2-celled.

Adults black from segment 2 to middle of 5 after which the rest is ferrugineous. Yellow markings as follows: - a single transversal medial stripe on segment 2, narrow on dorsom but broadening basally to include the ocelli and becoming confluent with a pair of subdorsal, subapical spots. Segment 3 with a basal annula, narrow on dorsum but broadening widely on each side, also a pair of jugal dorsal wide-shaded spots, segments 3 to 6 with broader basalar annula but jugal spots present only on 4 and 5. Segment 7 with its basal half yellow, apical half ferrugineous, segment 8 with a submedian dorso basal spot on each side, the remaining segments ferrugineous. Segment 9 with a small median apical spine, segment 10 with a robust dorsal spine, angulate at base from which it slopes strongly posteriorly to end in a short spine; superior anal appendages rather slim, cylindrical curving strongly downwards to end in an acute point; inferior homodactylus, the apical border shallowly emarginate.

Female. Adults 50 mm. Hindwing 14-16 mm.

Head similar to the male except that the stern yellow floor of frontal suture is completely enclosed by blackish which renders it much more conspicuous than in the male. Thorax similar, the lateral band somewhat broader and tapering below. Wings with slight yellow tinting.

This new species in some respects resembles *clyne* but the latter has a well marked antehumeral stripe, the yellow on superior surface of forefem is continuous with that on the sides of face, and the shape of the dorsal spine in segment 10 is somewhat different, its anterior border slightly concave and the posterior border with a small spine not amounting to an angulation, subapically segment 9 is not protracted as a short spine. The middle lateral yellow band is reminiscent of that in *clyne* and *clyman* both these species are very black in strong contrast to the generally ferrugineous colouring of *nudus*.

Macromia paula KASCH.


I have not seen this species which is known only from a single female from Ruca in the Cenario, W. Africa. Type in the Berlin Museum. Adults 60 mm. Hindwing 35.5 mm. Colour generally black without noticeable metallic blue reflex. Face unicolorous dark yellowish brown. Thorax marked with yellow, antehumeral strips and two rather broad, diffuse oblique lateral stripes; antecular sinus and tegal spots. Legs black, slim and very long. Wings hyaline with dark reddish brown vittae at bases extending to arculus, not sharply defined and with the included cell middles hyaline; apices also tinted brown. Veneration black as well as pretarsi which is 10-11 to 15-16.


discoidal field of forewings with 2 rows of cells. Adults black marked with yellow; segment 2 with a transverse jugal spot interrupted at its
Macronia bicornis Forster. (Fig. 1: 1; fig. 2: 8).


The female and the male unknown: A pair and 3 males were found in the above material but both agree with the same marking in the dorsal of segment 2. The capture of a pair in cap leaves no doubt about the relationship of the sexes.

Female. Abdomen 55 mm, Hindwing 47 mm. Pterostigma 3 mm. Colour and markings very similar to the male. Face including labium (the latter missing in the type) castaneous, the anterior surface of forewings especially bright ferruginous, its base and the coxal dark brown, vestige metallic bluish black, hind head glossy black. Thorax dark reddish brown to black with the blue metallic reflex less evident than in the male but with the same yellow markings. Wings marked: Fly farther thin in the male, the base dark reddish brown to as far as the 2nd or 3rd antennal in the costal and subcostal spaces and to as far as the level of the axillary in the cubital space, extending posteriorly to the end of the membrane which is blackish brown; pterostigma black; 8-18 I-18; 8-18 I-18; 5-6 cross veins in the Rs of forewings, 5 in the hind; 6-7 cubital cross veins in the forewings, 4-5 in the hind; 2 rows of cells in the discoidal field of forewings; 13-14 cells in anal-loop. In most specimens the wings are hyaline save for the extreme bases but in some the apices to as far proximally as the nodus are a rich golden yellow in the forewings. Abdomen black, compressed save at base which is swollen, marked with yellow as in the male but in addition, segment 2 has a narrow basal yellow annule notched by the black on midesoma; the transverse saddle-shaped stripe at the jugum is narrower and distinctly interrupted at the middle line and often also laterally, where the upper part of the side is broadly yellow, segment 3 has also a narrow basal annule expanding on the sides, whilst the paired jugal spots on segment 4 are scarcely visible; segment 7 with its basal half yellow, Teretin very short and deeply bifid, extending for less than one fourth the length of segment 9. Ani appendages dark brown, sharply conicol.

The female of bicornis is extremely similar to that of M. mensis but the two may be differentiated as once by the shape of the dorsal marking on segment 2, which in bicornis as viewed from the dorsum is seen to be two transverse fusiform lines narrowly separated in the medial line and not confluent with the basal yellow line; in mensis this is replaced by a longitudinal stripe running from the base where it is confluent with the basal annule, along the medial carina to the apical lobe of segment and expanding abruptly subbasally into a small quadrate spot, the whole shaped like a spinning-top.

The discovery of this female proves that it is not related to paula, which species agrees more with mensis than with bicornis.

Macronia funicularia Martin. (Fig. 1: 4).


I have made a reexamination of the type of funicularia and have been able to confront it with the type of bredoi and find that the only differences present are due to postmortem discolouration and fading of yellow markings. Actually in the type of funicularia both mediodorsal and metepisternal stripes can be seen although not mentioned in Martin's description. I found also good traces of large intercalae and a pair of jugal spots on segment 3, while smaller equivalents could be made out on segments 4 and 5. The abdomen is 48 mm in length, not 44 mm as given by Martin, and the hindwing 35.5 mm. In the British Museum (N. H.), there is a specimen of this insect labelled by the late Herbert Cameron as Macronia Selgi Kirby, the measurements of
which are similar to those given by Martin. Dr Schouteden has suggested that *Macti* may be a synonym of *maenaeura* Forskål, but I think that he has overlooked the fact that the latter species has a single row of cells in the discoidal space of the forewings, whilst *funicularia* has two, which quite rules out any possibility of synonymy. The female of *funicularia* was unknown to Martin but has been described by Dr Schouteden under the name of *brevipalpis*; the only female of this species which I have seen has the wings uniformly fuscous and the apices of all four tinted with golden amber; the basal dark reddish brown to blackish marking is limited to the costal and subcostal spaces as far out as the 1st antenodal only.

Habitat: Tropical West Africa; Cameroon; Belgian Congo. The type of *funicularia* from the Cameroon; the British Museum specimen (labelled as Selysi Karny) from Ka Yuma, Sierra Leone. 23-VIII-12, coll. J. Simpson; type of *brevipalpis* from Bambous; a male from Vékö: Bambous. V-30 and another on VI-57, collected by R. Herrero and J. Vivarino respectively. Type of *brevipalpis* from the Musée du Congo Belge: type of *funicularia* in the Muséum National d'Histoire Naturelle, Paris.

**Macronia Selysi** Karny. (Fig. 4, 7).


In the British Museum (N. H.) are two specimens labelled as *Macronia Selysi*, the type by Karny, and a second quite different species, by the late Herbert Champion; this latter specimen has been determined by me, as mentioned above, as *funicularia* Martin. The type of *Selysi* bears a label: *Mac. Selysi*, type. Free Town, Sierra Leone. 16-JX-00. E. L. Austin. A Abdonne 50 mm, hindwing 21 mm. Karny failed to note that segment 10 bears a robust dorsal spine (figure 1, 7), but may have inferred such as he stated that the species was closely allied to *sphina*. It appears to be a quite a good species, characterised by the thorax almost entirely unmarked, by the single row of postdiscal cells and by the size and shape of the dorsal spine on segment 10. The yellow marking on segment 6 mentioned by Karny, should be segment 7.

**Macronia reginae** le Rat.


* M. hebei* Friesen, differs from the type of *reginae* by possessing a pale
and deeply suffrasonated. I find the following differences: discoidal field of forewings with a single row of cells (although a female); always 2 rows in Schausiana; anal-loop with 3 rows of cells and elongated, instead of 4 rows and nearly quadrate; yellow on the upper surface of frons and side of face, this colour being replaced in Schausiana by ferruginous and blue metallic. The type is somewhat terrestrial and it is possible that the pale colours of the frons and face may be due to this and the curious venation an aberration? The insect is too small to be the female of elynene which Dr Schaus uses says it recalls, but in addition to the dissimilarity in size, many other differences are listed. I note two errors in the original description. Line 12, for **atopus**, **atopus** should be substituted.

Macromia pallidipennis FORSTER.


This species was described from a single holotype; female, but so adequately that there has been no difficulty in recognizing it from fresh specimens of both sexes taken in Kenya by Mr E. Posnay, who has kindly placed them at my disposal.

Material examined. One pair, Thika, Kenya, IV-18, collected by E. Posnay.

Male. Abdomen 41 mm. Hindwing 35 mm. Pterostigma 2 mm.

In addition to the data, the specimen is labelled *Macromia (near tropicella)* and my own serial number *M. 100*.

Head. Lips echinate, labium traversed and bordered with ferruginous postclypeus traversed by a narrow stripe of greenish yellow, above and below which the area are bright ferruginous; superior surface and sides of frons greenish yellow but the base of frons, especially in the floor of sulcus is ferruginous. Occiput dark reddish brown. Thorax chocolate brown with bluish metallic head and coxstum with yellowish hairs, marked with pale chocolate yellow, antecollar sinus conspicuously, a point on the antennal carina, humeral, mediolateral and metepimerunal stripes, the median the most conspicuous and bordered anteriorly and posteriorly by blue black metallic. Legs very long and slim, the posterior femora extending beyond the 2nd abdominal segment, black anterior femora citron yellow within. Wings hyaline, costal, antenodals. Nodus and many cross-veins including the veins forming the anal triangle bright citron yellow; pterostigma black save its bright yellow costal border (remnant of the similar complex found in species of


H. 1 / 1.1 Fix. 1 / 4. 4 / 7 cells in anal-loop, only a single row of cells at proximal end of discoidal space of forewing. Abdomen black becoming blackish brown on the terminal segments, marked with citron yellow as follows: segment 2 with two fusiform median dorsal spots nearly confluent and extending laterally onto the cerci; segment 3 with nearly the basal half yellow, this colour enclosing a large black triangular spot, its base just short of the base of segment, its apex tapering and prolonged along the middorsal carina to as far as the jugal suture; segment 3 to 6 with a similar marking but becoming progressively shorter and the black spot therefore more quadrate or shaped like a spinning-top; segment 7 with about its basal half yellow, the rest unmarked. Segment 10 with a robust medial keel on dorsum from which arise a narrow spine tipped with a few stout setae and bordered posteriorly with yellow. Anal appendages black, the upper surface of inferior yellow. Superior rather short and stout, apex converging and rather obtuse; on the ventral surface, especially near the base of appendages, a row of short stout spines.

Female. Abdomen 42-14 mm. Hindwing 38 mm. Pterostigma 2 mm.

FORSTER’S description agrees with the present female so closely that it might be the type; it only remains to amplify his description. The amber tinting of the bases of the wings is less intense than in the type but that at the apices brighter, deeper and extending over the whole of the outer third of the wings, giving imperceptibly at the margin and extreme apex of some; the discoidal field of forewings has occasional single cells interspersed with 2 cells; anal-loop nearly quadrate, 8-celled; other details of venation as in the type; membrane large, opaque white but with a narrow dark edge on the distal side near its apex. Humeral stripes present although not nearly so bright and distinct as the lateral stripes. Abdomen with the adult colouring and markings fully developed: segment 1 dark reddish brown at base, yellowish along apical border; segment 2 black medially, dark ferruginous on dorsum marked with a pair of large fusiform oblique citron yellow spots which partially enclose a dark triangle at base of segment; laterally an irregular stripe slightly interrupted sublaterally, and a very narrow line bordering the ventrum; segment 3 similar to the male but with an additional fusiform oblique spot on the dorsum posterior to the jugal suture; segments 3 to 6 similar to 5 but the postjugal spots linear and almost confluent with the basil yellow on 4 and 5 and quite absent on segment 6; segment 7 and rest of abdomen similar to the type.
Macromia monoceros Forster.


I have not seen this type which was described from a single male from Nkole, East Usambara Mts. Forster thought it might be related to picta but it is a much larger and darker species agreeing more closely with theis Rmk, which species it may indeed be. Mr Proisy has sent me 2 males and a female of theis, taken in the E. Usambara Mts (Amami Terr.), which is the type typical of monoceros. If I am correct in this synonymy, then Forster's name has priority.

In the Coryndon Museum, Nairobi collection, is a male from the Shinhla Hills, Montana, XX651, collected by Mr Proisy and determined by him as monoceros, a determination with which I am inclined to agree. The specimen is not entirely typical however as it has a shorter abdomen, 42 mm instead of 46.5 mm, and a slightly shorter hindwing, whereas the prothorax is a little longer. The venational details agree closely but it is noticed that the discoidal field of the left forewing has a single row of cells, and the right a double row; in monoceros there is a single row but this may be subject to some variation and it may be certain that the female always has two rows. The 9th abdominal segment bears an apical dorsal spine as in theis Rmk but the spine on segment 10 is rather different and with a distinct angulation on the posterior border as seen in profile. The spine in monoceros is said to arise from the diaphragm of segment 10 and to be produced into a long straight horn, 2 mm in length; this would answer roughly for the present specimen. M. theis agrees in many respects with monoceros but it has a double row of cells in the discoidal space of forewing and this character appears to be constant in the species. M. rhyneur, which also agrees with monoceros in many respects, is still larger than theis and differs like this species in having a double row of cells in the discoidal space of forewing. For the present, monoceros must be considered as a distinct species.


Description d'un Coléoptère Bostrychide nouveau de l'Afrique Centrale

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Publié dans le cadre des recherches entreprises par la Commission pour l'étude des Bois Congolais, Section des Xylophages.

Lors de son récent voyage d'études au Congo Belge, Mr le Professeur R. Mayné, accompagné du Dr. Karl E. Scudder, a rencontré de nombreux Bostrychides dont il a conçu l'étude. Parmi beaucoup d'espèces intéressantes dont l'identification sera bientôt publiée par le Professeur Mayné lui-même, avec toutes les données écologiques recueillies, se trouvait une forme nouvelle du genre Xyloxyphus que je décrit ci-dessous.

Xyloxyphus Maynéi, n. sp.

Long. 3 mm. — Tête et pronotum d'un brun rouge foncé; élytres d'un testacé brunâtre; dessous plus foncé que les élytres mais plus clair que l'avant-corps; antennes et pattes ferrugineuses, les tarse testacés. Dessus glabre; dessous couvert d'une fine pubescence testacée. Corps remarquablement étroit et allongé. Front fortement granuleux, sans carène transverse, ni soie; face dorsale convexe; sutures élytop-frontale peu marquées; élyphes nettement échancrées à son bord antérieur; yeux convexes, fortement détachés des tempes en arrière. Antennes à articles 5 à 7 réunis nettement plus longs que le 8° qui est à peu près aussi long que large au bord antérieur, le 9° aussi long que large, le 10° largement allongé en palette; dépressions sensorielles des articles 8 et 9 peu marquées.

Pronotum non subcarré comme chez les autres espèces du genre mais