Papéis Avulsos de Zoologia

PAPÉIS AVULSOS ZOOL., S. PAULO. 33 (5): 99-125 8-5-1980

NOTES, DESCRIPTIONS AND CHECKLIST OF AFRICAN XYSTROCERA (COL., CERAMBYCIDAE)

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ABSTRACT

Based on elytral color pattern, African Xystrocera *are separated in four groups. Other characters, especially observed on males are adopted to subdivide groups (inferior ocular lobes, segment III of antennae, pronotum sculpture, mesosternal process, hind tibiae and tarsi, elytral sculpture and last urotergite). Critical remarks are presented on Breuning's (1957) revision of the genus, and the following species considered by him as synonyms are revalidated:* similis *Jordan, 1894;* natalensis *Ferreira, 1954;* cyanicollis *Ferreira, 1954;* ruficornis *Ferreira, 1954 and* rhodesiana *Veiga-Ferreira, 1954. Full specific rank is given to* X. subsimilis *var.* holatripes *Breuning, 1957.* X. subsimilis *Breuning, 1957 is considered a synonym of* X. similis *Jordan, 1894. All names cited as varieties by Breuning (except* holatripes*) and other authors appear as synonyms in the lists of species in each group. Notes are added on previously known species and three new ones are described:* ferreirae, *sp. n., from Mozambique;* ugandensis, *sp. n., from Uganda and* unicolor, *sp. n., from Ethiopia.*

A formal taxonomic revision of the African species of *Xystrocera* is impossible without study of all types. Recognition of species became extremely difficult and unsure after Breuning's 1957 revision of the genus. He used incomplete bibliography, considered several valid species as synonyms, and made a number of misidentifications. In addition, his tendency to consider as "varieties" a large number of new taxa or of previously described species has greatly confused the taxonomy of the group. I shall treat all these names as synonyms.

The division of the genus in groups and subgroups here addopted is almost exclusively based on male specimens, the characters of which are more conspicuous. The association of females with males in some species is impossible at this moment.

Based on elytral color pattern, African *Xystrocera* may be separated as follows:

Group 1 – Elytra without metallic colors, with scattered dark maculae irregularly distributed (figs. 1-3).

Group 2 – Elytra without metallic colors, with longitudinal dorsal dark bands or with longitudinal dorsal and marginal dark bands.

Group 3 – Elytra without metallic general color, without longitudinal bands or with only marginal bands, usually metallic green, blue or violet.

Group 4 – General color of elytra metallic.

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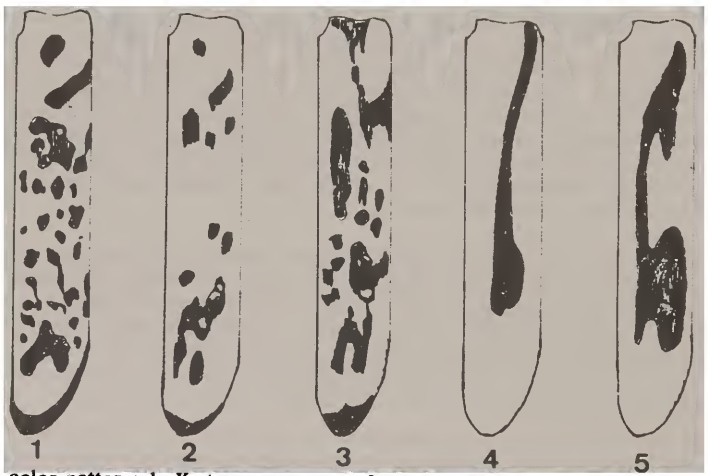
GROUP 1 – ANSORGEI

Elytra without metallic colors, with scattered dark maculae irregularly distributed (figs. 1-3).

Inferior ocular lobes (fig. 10) developed, almost reaching under side of head; female antennae not reaching elytral tips; segment III of male antennae unarmed at apex; male pronotum without defined areas of sexual punctuation: apices of posterior femora not reaching elytral tips; posterior tibiae not expanded; segment I of posterior tarsi as long as following segments together, not compressed; last abdominal tergite (♂) not notched.

Four species belong to this group: *ansorgei* Gahan (figs. 1, 10), *skeletoides* Breuning, *fuscomaculata* Breuning and *flavovariegata* Breuning.

Xystrocera skeletoides was not studied; the original description of the male pronotum was ommited by Breuning (1957: 1268) and other important characters were not mentioned. Its inclusion in the group was based on eleytral color pattern.



Elytral color pattern: 1, *Xystrocera ansorgei;* 2, *X. fuscomaculata;* 3. *X. flavovariegata;* 4, *X. abrupta;* 5, *X. interrupta.*

Xystrocera fuscomaculata is known only from the holotype, examined, and interpretd by Breuning (1957: 1268) as a female but actually a male (apex of genitalia exposed), as correctly pointed out by Ferreira & Veiga-Ferreira (1961: 165). Besides elytral color pattern (fig. 2), *fuscomaculata* can be distinguished (male comparisons) from *ansorgei* by: presence of brown areas on prothorax (from the anterior margin a narrow centro-dorsal branch to middle of pronotum; two lateral spots on each side of base; two larger lateral spots); presence of granulations (50x) on sides of mesosternum; absence of sericeous pubescence on abdominal sternites. The very short curved hairs on elytra of *fuscomaculata* are yellowish, while in *ansorgei* they are brownish, conspicuously contrasting with clear regions. *X. fuscomaculata* is the only species of group 1 from the Congo Basin.

Xystrocera flavovariegata. Only two females from Ethiopia (Chakiso and Sidamo Prov.: Dilla) were studied. Elytral color pattern characteristic (fig. 3).

LIST OF SPECIES

ansorgei, Gahan, 1898: 40; Gahan *in* Ansorge, 1899: 317, pl. 1, fig. 2; Aurivillius, 1913: 9; Breuning, 1957: 1267; Duffy, 1957: 88 (larva); Ferreira & Veiga-Ferreira, 1959: 111 (Cat.); 1961: 162 (Cat.).
pulcherrima Schwarzer, 1926: 6; Breuning, 1957: 1267 (synonymy).
Distribution: Kenya, Uganda.

flavovariegata Breuning, 1957: 1268; Ferreira & Veiga-Ferreira, 1961: 164 (Cat.).
Distribution: Ethiopia.

fuscomaculata Breuning, 1957: 1267; Ferreira & Veiga-Ferreira, 1961: 165 (Cat.).
Distribution: Congo.

skeletoides Breuning, 1957: 1268; Ferreira & Veiga-Ferreira, 1961: 167 (Cat.).
Distribution: Kenya.

GROUP 2 – VITTATA

Elytra without metallic colors, with longitudinal dorsal dark bands or with longitudinal dorsal and marginal dark bands (sometimes with slight metallic hue).

Inferior ocular lobes (fig. 9) very large, reaching under side of head; segment III of male antennae with apical spine; male pronotum with sexual punctuation, except on a dorsal horse-shoe shaped area; mesosternal process with or without sexual punctuation; apex of posterior femora (♂) not reaching elytral tips; posterior tibiae compressed but not enlarged; segment I of posterior tarsi as long as following segments together, not compressed; last abdominal tergite (♂) deeply emarginated (fig. 28).

Four species: *vittata* (Fabricius), *dispar* Fahraeus, *interrupta* Jordan and *abrupta* Aurivillius.

Xystrocera vittata (figs. 9, 12, 28) and *X. dispar* (fig. 12)

In my paper on Oriental and Australian *Xystrocera* (Martins, 1978), when dealing with *globosa* (*l.c.*: 227), I presented considerations on synonyms, and both *vittata* and *dispar* were mentioned. Duffy (1957: 86) treated *dispar* as a synonym of *vittata,* a procedure with which I do not agree.

Because of the similarity of elytral color pattern, *vittata* and *dispar* have been confused for a long time. The character adopted by Breuning (1957: 1225) to separate these two species in his key certainly will contribute to increase confusion. *X. vittata* is recognized as the species with "la bande discale de l'élytre... très large et nette", and *dispar* with "la bande discale de l'élytre... peu large ou rarement large et floue". Obviously, in a species with vast geographical distribution as *dispar* (fig. 12), the width of elytral dorsal band is highly variable and frequently wider than that of *vittata.*

Besides being alopatric (fig. 12), *vittata* and *dispar* are separate thus: in the males of *vittata* the mesosternal process is longitudinally depressed, without sexual punctuation; in *dispar* the mesosternal process is not depressed and is covered with sexual punctuation. Females of *dispar* have two low tubercles on prothorax sides (usually reddish), which are absent in females of *vittata.*

Xystrocera dispar is considerably variable. Specimens from Namibia (especially females) have very dark elvtra; the horse-shoe sculpture of male pronotum not contrasting in color with remainder surface. Tanzanian specimens have

narrow elytral bands with more metallic hue and reddish horse-shoe sculpture of pronotum, contrasting with general color.

The synonyms of *dispar* were ommited in Ferreira & Veiga-Ferreira s catalogue (1961). Based on the geographical distribution of the material cited in previous publications, bibliographical references to *vittata* and *dispar* are listed below.

The other two species of group 2 are *abrupta* Aurivillius and *interrupta* Jordan. Like *vittata,* they have depressed mesosternal process (♂), but are easely recognized by elytral color pattern (figs. 4, 5).

Xystrocera globosa has a longitudinal dark dorsal band on elytra and was recorded from Madagascar (and other African islands); the record from Mozambique is doubtfull. The male pronotum of *globosa* without horse-shoe sculpture (Martins, 1978: 234, fig. 1) is completely different from African species included in this group.

LIST OF SPECIES

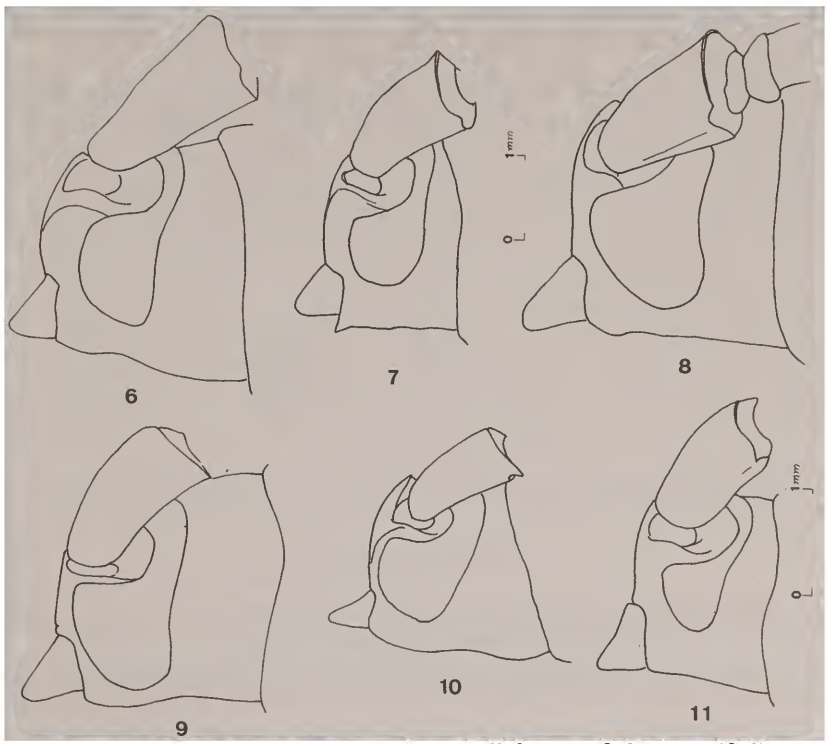
abrupta Aurivillius, 1908b: 142, note; Hintz, 1911: 427; 1916: 231; 1919: 602; Lepesme, 1948: 282; Duffy, 1953: 165; Breuning, 1957: 1243; Ferreira & Veiga-Ferreira, 1959: 111 (Cat.); 1961: 161 (Cat.); Villiers, 1959: 28; 1968: 1674; Ferreira, 1965: 964.
abrupta var. *lateconjuncta* Breuning, 1957: 1244.
Distribution: Chad, Cameroon, Central African Republic, Congo, Zaire, Angola.

dispar Fahraeus, 1872: 49; Quedenfeldt, 1882: 323; Aurivillius, 1908a: 430 (South Africa); 1908b; 142 (Tanzania); 1913: 9 (Ethiopia to South Africa); Lepesme, 1952: 1159 *(partim);* Lepesme & Breuning, 1952: 49 *(partim);* Quentin, 1956: 41; Ferreira, 1957: 35 *(partim);* 1963: 541 *(partim,* as synonym of *vittata);* 1965: 965 *(idem);* Duffy, 1957: 86 (synonym of *vittata*); Breuning, 1957: 1239 *(partim);* Ferreira & Veiga-Ferreira, 1957a: 51, 53 (Rhodesia, Mozambique, South Africa); 1959: 112 *(partim);* Tippmann, 1959: 160 (Transvaal, Basutoland); Villiers, 1959: 29 *(partim);* Veiga-Ferreira, 1964: 571, pls. 28, 29 *(partim);* 1967: 106 *(partim);* Fuchs, 1972: 96 (Sudan).
marginalis, White, 1853: 10 (*nec* Goldfuss, 1805) (South Africa); Distant, 1898: 369; 1904: 106, pl. 9, figs. 13, 14 (Transvaal, Natal, Mombasa, Masailand); Ferreira, 1957: 36 (Mozambique).
curticollis Fairmaire, 1882: 96; Breuning, 1957: 1239 (synonymy); Ferreira & Veiga-Ferreira, 1959: 111 (Cat.).
nitidiventris Fairmaire, 1887: 326; Lepesme, 1948: 282; Lepesme & Breuning, 1956b: 655; 1956c: 659; Duffy, 1957: 88; Breuning, 1957: 1239 (synonymy); Ferreira & Veiga-Ferreira, 1959: 116 (Cat.).
parvicollis Fairmaire, 1892: 120; Breuning, 1957: 1239 (synonymy); Ferreira & Veiga-Ferreira, 1959: 117 (Cat.).
vittata, Duffy, 1953: 97 (*nec* Fabricius, 1792); 1957: 86 (larva, Kenya); Quentin, 1956: 41 *(partim);* Breuning & Villiers, 1972: 355 *(partim);* Veiga-Ferreira, 1964: 570, 577, pls. 28, 29 (Mozambique, Rhodesia, South Africa, Bechuanaland, Oriental Africa).
Distribution (fig. 12): Chad, Sudan, Ethiopia, Somalia, Central African Republic, Zaire, Uganda, Kenya, Tanzania, Mozambique, Rhodesia, South Africa, Botswana.

globosa (Olivier, 1795). See bibliographical references in Martins (1978: 226). Distribution in Africa: Madagascar, Seychelles, Aldabra, Rodriguez, Mauritius, Reunion, (Mozambique?).

interrupta Jordan, 1903: 192; Duffy, 1957: 89; Breuning, 1957: 1244; Ferreira & Veiga-Ferreira, 1959: 114 (Cat.); Baguena & Breuning, 1962: 210.
pflugfelderi Hintz, 1919: 602; Breuning, 1957: 1244 (synonymy).
Distribution: S. Tome and Principe, Equatorial Guinea, Cameroon, Central African Republic, Gabon, Zaire, Uganda, Kenya.

vittata (Fabricius, 1792: 323; 1801: 338) *(Callidium)* (Senegal); Laporte, 1840: 427 (Senegal); Aurivillius, 1908b: 142; Breuning, 1957: 1237, fig. 2 (Senegal to Dahomey); Ferreira & Veiga-Ferreira, 1959: 119 *(partim);* Villiers, 1962: 1123 (Mali); Ferreira, 1965: 965 *(partim);* Fuchs, 1969: 347 (Ivory Coast); 1974: 220 (Ghana); Breuning & Villiers, 1972: 355 (Senegal).
senegalensis Klug, 1835: 44 (Senegal); Thomson, 1860: 251 (Senegal); Jordan, 1894: 150 (Ghana); Aurivillius, 1908b: 142 (synonymy).
senegalensis Laporte, 1840: 427 (Senegal).
dispar, Lepesme, 1952: 1159 (*nec* Fahraeus, 1872) (Dahomey); 1953b: 18, pl. 6, fig. 2 (Ivory Coast); 1955: 841; Lepesme & Breuning, 1952: 49 (Nigeria); 1956c: 384 (Guinea); Quentin, 1956: 41 (Chad).



Head, lateral view: 6; X. fulvipes; 7, *X. velutina;* 8, *X. femorata;* 9, *X. vittata;* 10, *X. ansorgei;* 11, *X. chalybaeata.* Figures 6-10 in the same scale.

marginalis, Lepesme, 1953: 18 (*nec* Goldfuss, 1805) (Ivory Coast); 1955: 841 (Ivory Coast); Ferreira & Veiga-Ferreira, 1959: 115 *(partim);* Breuning & Villiers, 1972: 355.
Distribution (fig. 12): Senegal, Mali, Guinea-Bisao, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Cameroon, Congo, (Chad?).

Fig. 12. Geographical distribution of *Xystrocera vittata* (triangles) and *X. dispar* (circles).

GROUP 3 – DEVITTATA

Elytra without metallic color, without longitudinal dorsal bands or only with lateral bands, usually metallic green, blue or violet.

Two species of this group were not studied: *rufobrunnea* and *sudanica*, the last one considered by Breuning (1957: 1233) as eventually the female of *granulipennis*.

The material of the group was abundant but insufficient to solve many problems. Valid names, synonyms and "varieties", with some notes are given.

Xystrocera erosa Pascoe (fig. 30).

Distant (1898: 369) considered *juvenca* Pascoe as a synonym and Breuning (1957: 1236) as a variety of *erosa* with "les bords latéral et apical de l'élytre parfois avec reflets verdâtres". I examined a species from South Africa, closely related to *erosa*, which could be *juvenca* (types should be studied for a decision). Another species from South Africa (Natal) with elytral margins greenish was described by Ferreira (1954) as *natalensis*, erroneously considered by Breuning (1957: 1234) a synonym of *devittata* (see below). The types of *natalensis* and *juvenca* should be compared. *X. ruficornis*, treated below, is another species of the "*erosa* complex"

Xystrocera ruficornis Ferreira, revalidated.

Breuning (1957: 1235) incorrectly considered *ruficornis* a synonym of *erosa*. The original description of *ruficornis* (Ferreira, 1954: 145) clearly describes the male mesosternal process as lacking sexual punctation. In *erosa* (Ferreira's conception), the male mesosternal process is not depressed and covered with sexual punctuation. Females of *erosa* can be recognized by the absence of a sharply defined lateral costa on elytra, which in *ruficornis* is very conspicuous, establishing an angle with lateral side.

Presence or absence of sexual punctuation on male mesosternal process, completely ignored by Breuning, was adopted by Ferreira & Veiga-Ferreira (1957: 51) to separate *ruficornis* from *natalensis* and *erosa*.

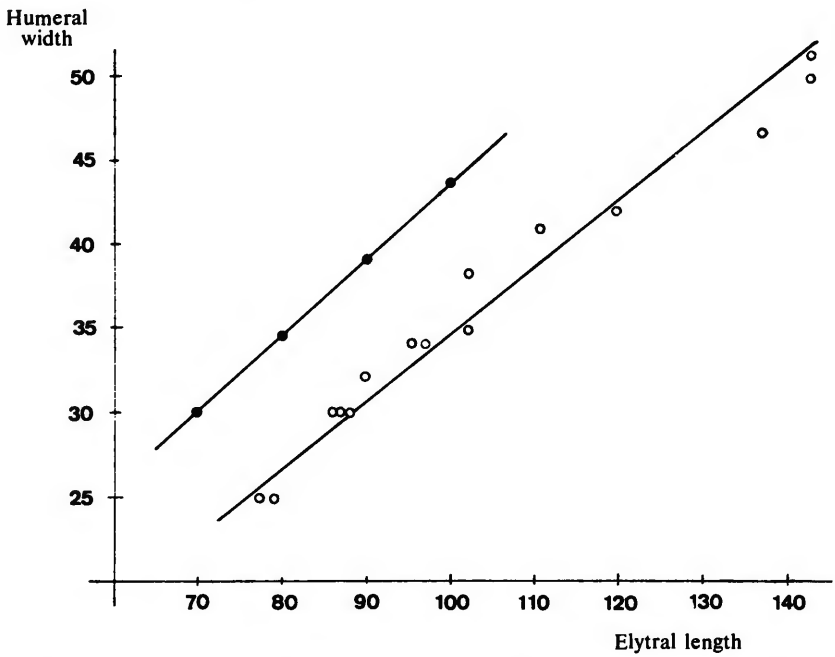


Fig. 13. Relation elytral length and humeral width (males): *devittata* (white) and *natalensis* (black).

X. ruficornis and *X. juvenca* also may be the same species.

Xystrocera devittata Kolbe (fig. 13)

Breuning (1957: 1234) interpreted *natalensis* as a synonym of *devittata*, again a wrong procedure in my oppinion. Ferreira (1954, 1957: 51) described the elytral length of *natalensis* as a little more than double humeral width ("comprimento pouco maior que o dobro da largura umeral"). Except for the total length, no other dimensions of *natalensis* were presented by Ferreira.

If elytral length of *natalensis* is scarcely more than double humeral width, I shall arbitrarily consider it as 2.3 times humeral width, to establish a comparison with the same relation in measured elytra of males of *devittata*. Both relations are presented in figure 13 and suggest a very different body shape.

Furthermore, *natalensis* is a small species (holotype length: 12 mm) with a completely different distribution (Natal: Hluhluwe); all studied specimens of *devittata* are from Tanzania. So, I believe it convenient to revalidate *natalensis* until a comparison of types can be made.

Xystrocera ferreirae, sp. n.
(Fig. 31)

This species is probably related to *natalensis* but easely distinguished by the absence of a horse-shoe sculpture on male pronotum (fig. 31); the granulations present in the interior of the horse-shoe area so dense and strong that no contrast is established with remaining pronotal surface. Male mesosternal process has sexual punctuation as in *erosa, granulipennis, natalensis* and *devittata*, species with a horse-shoe sculpture on male pronotum.

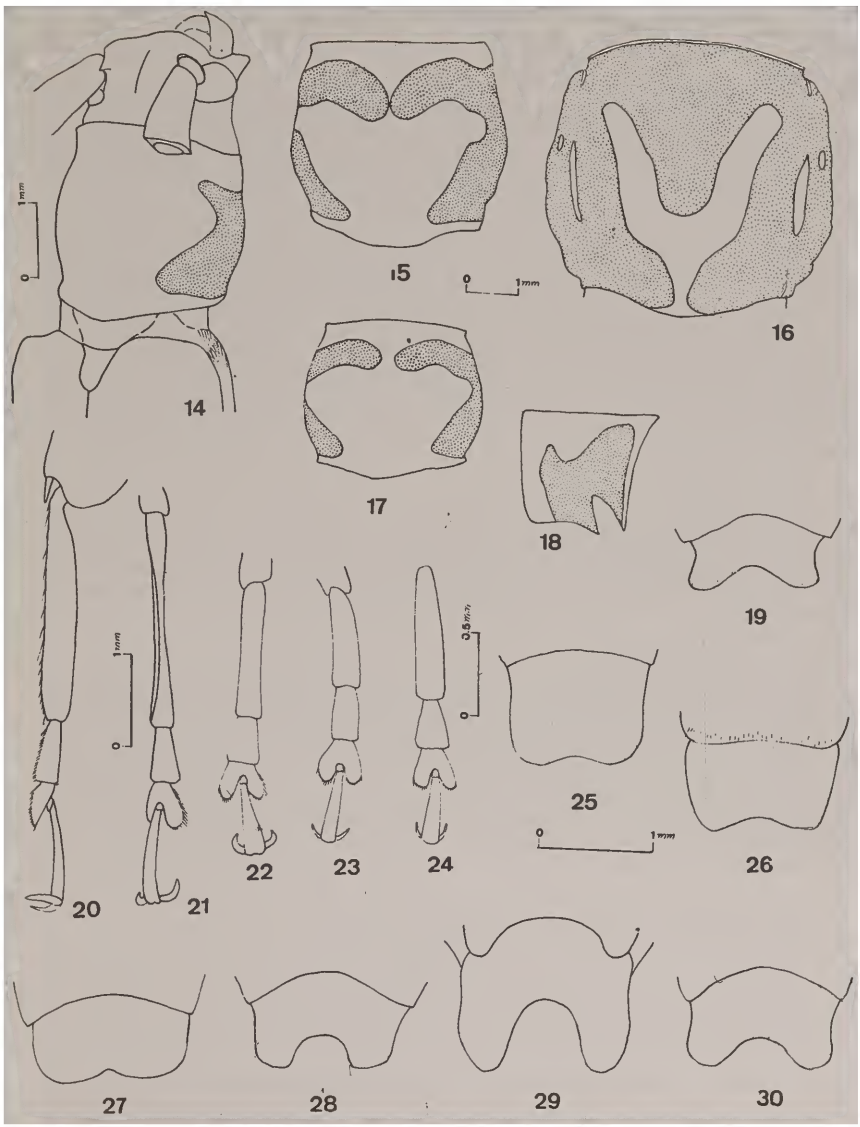
The name of the species is a homage to Dr. Maria Corinta Ferreira.

General color orangish red; lateral and apical margins of elytra metallic greenish blue (♂) or metallic violet (♀); male prothorax with faint green metallic hue; female prothorax with faint violet metallic hue at sides and on anterior margin.

♂. Inferior lobes of eyes developed, reaching under surface of head. Scape not projected at external side. Segment III of antennae with short projection at inferior side of apex; segments III-V with sexual pilosity at under side. Prothorax wider than long. Pronotum entirely covered by sexual punctuation; the horse-shoe sculpture not contrasting with remaining surface; lateral areas (usually present in other species) scarcely depressed an scarcely contrasting. Prosternum (except near anterior margin), prosternal process and mesosternum with sexual punctuation. Mesosternal process not swollen, flat, with sexual punctuation. Elytra granulated; costae not elevated. Apex of posterior femora not reaching elytral tips. Segment I of posterior tarsi as long as the following together. Last urotergite deeply notched.

♀. Pronotum regularly convex, finelly and sparsely granulated. Sides of prothorax without callosities. Hind part of external elytral costa not defining an angle with epipleuron.

Dimensions, in mm	♂	♀
Total length	10.4	12.2
Prothorax length	2.2	1.8
Prothorax width	2.6	2.6
Elytral length	7.6	9.2
Humeral width	2.2	3.2



Sexual punctuation on male prothorax: 14, *X. pauliani;* 15, *X. fulvipes,* 16; *X. femorata;* 17, *X. similis;* 18, *X. holatripes.* Hind tarsi: 20, *X. fulvipes* (lateral view); 21, *idem* (dorsal view); 22, *X. femorata;* 23, *X. chalybaeata;* 24, *X. cyanella.* Last urotergite: 19, *X. chalybaeata;* 25, *X. asperata;* 26, *X. unicolor;* 27, *X. fulvipes;* 28, *X. vittata;* 29, *X. femorata;* 30, *X. erosa.* Figures 15-18, 22; 19-21, 23, 28-30 and 25-27, respectively, in the same scale.

Material. MOZAMBIQUE. Chiluvo Hills, 1♂, 1♀, 3.XI.1963. Holotype ♂ and paratype ♀ in the National Museum of Rhodesia, Bulawayo.

Xystrocera marginipennis Murray

Breuning (1961: 308) established the subspecies *camerunensis* of *marginipennis,* based on two specimens with red antennal scape and apical halves of femora. Murray described *marginipennis* based on a single specimen from southeastern Nigeria ("Old Calabar") with scape "rufo-fusco" and "first article excepted, dark ferrugineous"; about the femora, he wrote: "femora clava plus minusve ferruginea" and "club of the thigs, which is reddish".

I studied only two females of this species, one from Ghana, the other from Cameroon, with identical color pattern. Breuning's subspecies thus agrees with the typical form in color and distribution and is relegated to synonymy.

Females of *marginipennis* and *devittata* are very similar, both with dark basal antennal segments (except scape and segment II). Besides completely different geographical distribution, the pronotum of *devittata* (♀) is opaque and abundantly granulose, while in *marginipennis* it is shining with sparse granulations; the prosternum of *marginipennis* (♀) is dark and of *devittata* orangish red as remaining surface.

Xystrocera dundensis Lepesme

Two females studied. The lateral metallic colored area of elytra is considerably wider than in *devittata* and *marginipennis* and the antennae are enterely reddish; sculpture of pronotum similar to that of *devittata* and prosternum is orangish red.

Xystrocera elongata Breuning

Not studied. In Breuning's key (1957), *elongata* is separated from *devittata* by male pronotum with "depression médiane en ovale allongé"; according to the original description, the pronotum of *elongata* is scarcely wider than long; elytra considerably elongated; basal lateral one third of elytra, tibiae and antennae dark reddish brown. I shall adopt these characters to separate *elongata* from *ugandensis,* sp. n., described below, also with a peculiar sculpture on male pronotum (fig. 32).

Xystrocera ugandensis, sp. n.
(Fig. 32)

Male prothorax characteristic (fig. 32) and distinguished from other unicolor, non-metallic colored species, which have the male pronotum with horse-shoe sculpture, except *elongata* and *nigrita* (males of *sudanica* unknown).

It seems that *ugandensis* is closely related to *elongata* (not studied), but differs thus: prothorax very short, strongly transverse (3.6 x 4.8 mm); dorsal area of pronotum not egg-shaped. Breuning did not mention other prothoracic areas devoid of sexual punctuation on male of *elongata;* in *ugandensis* there are three conspicuous areas and the lateral third of elytra, tibiae and antennae are not contrasting with general color.

♂ Orangish red; head, antennae and prothorax scarcely darker; pronotal areas destitute of sexual punctuation, darker, readdish.

Inferior ocular lobes of eyes developed, reaching under surface of head. Scape not projected at apex. Segment III of antennae without developed projection at apex. Sexual pilosity of segments III-V relatively very short. Prothorax short, evidently wider than long. Pronotum with fine sexual punctuation, except: anterior margin; central dorsal area, which is subtriangular, shining, finely and transversely rugose at middle, more irregularly sculptured at sides; subcircular area, well developed, at the border of pronotum and its sides; circular area, strongly shining, smooth, elevated, at middle of sides, and an irregular, pubescent area, at the sides, near anterior margin. Anterior portion of prosternum smooth. Prosternal process narrow, longitudinally depressed. Mesosternal process depressed, without sexual punctuation. Under surface with long hairs, especially concentrated on mesosternum, metasternum, metepimera, posterior side of trochanters and bases of femora. Elytra punctate and granulated; this sculpture more sparse at apex; costae moderately indicated. Apex of posterior femora not reaching elytral tips. Segment I of posterior tarsi as long as the following segments together. Last urotergite deeply notched.

Dimensions, in mm

Total length, 22.8; prothorax length, 3.6; prothorax width, 4.8; elytral length, 17.8; humeral width, 6.2.

Material. UGANDA. 1♂, Graner col., Coll. v. Bennigsen. Holotype ♂ in the Institut für Pflanzenschutzforschung, Eberswalde.

Xystrocera unicolor, sp. n.
(Figs. 26, 33)

Among unicolored species, *unicolor* is characterized by complete absence of differentiated areas of sexual punctuation on male pronotum (fig. 33) and by the scarcely notched last urotergite (fig. 26). It differs from *ferreirae,* where areas of sexual punctuation are little contrasting, by the larger size, absence of metallic reflex on prothorax (figs. 31, 33) and mesosternal process destitute of sexual puntuation.

At first I took this species as the male of *X. sudanica* Breuning, the latter unknown to me (only female described). However, Breuning's species has dark brown general color, while *unicolor* is orangish red. Another species of this group unknown to me is *rufobrunnea,* but male pronotum has differentiated areas of sexual punctuation.

♂. Orangish red, slightly lighter on elytra and abdomen. Inferior lobes of eyes developed but not reaching under side of head. Scape projected at apex. Segment III of antennae not spined. Sexual pilosity of segments III-VI as long as segments widths. Antennae reaching elytral tips at apex of segment VII. Prothorax wider than long. Pronotum (40x) finely microsculptured over the entire surface, with sparse granules provided with short, clear, curved and depressed hairs; a transverse depression at anterior one fourth and five low gibbosities (central one posterior than others). Sides of prothorax with a transverse depression at anterior one fourth, without granulations and a visible central gibbosity Anterior half of prosternum shining. Prosternal process laminiform. Mesosternum without sexual punctuation; mesosternal process narrow, longitudinally depressed, without sexual punctuation. Metasternum and abdomen with sparse short hairs. Elytra granulated; granules more concentrated near base; costae scarcely elevated. Posterior femora strongly pedunculate and clavate; apex not reaching elytral tips. Posterior tibiae not compressed. Segment I of posterior

Fig. 31, *Xystrocera ferreirae, sp. n., holotype* ♂; *fig. 32, X. ugandensis*, sp. n., holotype ♂; fig. 33; *X. unicolor*, sp. n., ♂ holotype

tarsi as long as following segments together. Last urotergite (fig. 26) scarcely notched at apex.

Dimensions, in mm

Total length, 16.2; prothorax length, 2.5; prothorax width, 3.1; elytral length, 12.2; humeral width, 3.4.
Material. ETHIOPIA. Adadikotto, 1♂, IV.1947, Gerth. Bexell col. Holotype♂ in Museum and Art Gallery, Doncaster.

Xystrocera granulipennis Breuning

Additional characters to original description, based on holotype ♂: apex of segment III of antennae not projected; prosternal shining anterior area destitute of sexual punctuation narrow; mesosternum and mesosternal process with sexual punctuation; last urotergite deeply notched at apex.

Male pronotum differs from *erosa:* absence of a very narrow longitudinal dorsal line from horse-shoe sculpture to anterior margin; more irregular surface; horse-shoe sculpture narrow, almost destitute of hairs; elytral costae scarcely visible.

Xystrocera nigrita Audinet-Serville

A well known species, erroneously indicated by Breuning (1957), Veiga-Ferreira (1964) and Breuning & Teocchi (1972) as the type-species of *Xystrocera* (see Martins, 1978: 222).

LIST OF SPECIES

devittata Kolbe, 1893: 246; Breuning, 1957: 1233; Duffy, 1957: 87, fig. 56; Ferreira & Veiga-Ferreira, 1959: 112 (Cat.); 1961: 163 (Cat.).
Distribution: Tanzania, ? Uganda.

dundensis Lepesme, 1953: 52; Breuning, 1957: 1242: Ferreira & Veiga-Ferreira, 1959: 112 (Cat.); Ferreira, 1965: 964; Villiers, 1969: 29.
Distribution: Zaire, Angola.

elongata Breuning, 1957: 1236; Ferreira & Veiga-Ferreira, 1961:163 (Cat.).
Distribution: Kenya.

erosa Pascoe, 1864: 287; Distant, 1898: 369; 1904: 106; Ferreira & Veiga-Ferreira, 1957: 52, 53, 63; 1959: 113 (Cat.); 1961: 164 (Cat.); Breuning, 1957: 1235; Tippmann, 1959: 160; Veiga-Ferreira, 1964: 574, pl. 26.
juvenca Pascoe, 1864: 287; Distant, 1898: 369 (synonymy).
semilunaris Fahraeus, 1872: 50; Aurivillius, 1908b: 142 (synonymy).
erosa var. *viridis* Breuning, 1957: 1236.
Distribution: Lesotho, South Africa.

ferreirae, sp. n.
Distribution: Mozambique

granulipennis Breuning, 1957: 1232: Ferreira & Veiga-Ferreira, 1961: 165 (Cat.).
Distribution: Zaire.

marginipennis Murray, 1870: 164; Jordan, 1894: 150; Breuning, 1957: 1248; Ferreira & Veiga-Ferreira, 1959: 115 (Cat.); 1961: 165 (Cat.); Fuchs, 1969: 347.
marginipennis var. *holoviridis* Breuning, 1957: 1248.
marginipennis camerunensis Breuning, 1961: 308, *syn. n.*
Distribution: Ghana, Togo, Cameroon.

natalensis Ferreira, 1954: 145, figs. 2, 6; Ferreira & Veiga-Ferreira, 1957: 51, 62; 1959: 116 (Cat.); Breuning, 1957: 1233 (as synonym of *devittata*), revalidated.
Distribution: South Africa.

nigrita Audinet-Serville, 1834: 70; Laporte, 1840: 427; Thomson, 1860: 251; Bates, 1890: 485; Duvivier, 1892: 333; Aurivillius, 1908b: 142; 1925: 2; Hintz, 1911: 427; 1919: 602; Gesquière, 1927:|9| (Host); Duffy, 1953b: 97; 1955: 203; 1957: 88, fig. 57 (larva, pupa); Lepesme, 1953a: 52; 1953b: 97, pl. 6, fig. 1; Quentin, 1956: 41; Lepesme & Breuning, 1956: 651; Ferreira & Veiga-Ferreira, 1957: 51, 58; 1959: 116 (Cat.); Breuning, 1957: 1230, fig. 1; Brivio, 1958: 113; Villiers, 1959: 28; 1962: 1123: 1968: 1673; Ferreira, 1963: 540; 1965: 965; Veiga-Ferreira, 1964: 576, pl. 27; Fuchs, 1969: 347; 1974: 222.

Distribution: Senegal, Guinea, Sierra Leone, Mali, Liberia, Ivory Coast, Ghana, Togo, Dahomey, Nigeria, Chad, Cameroon, Central African Republic, Equatorial Guinea, Gabon, Congo, Zaire, Uganda, Kenya, Angola.

ruficornis Ferreira, 1954: 144, fig. 4; Ferreira & Veiga-Ferreira, 1957: 51, 61; Breuning, 1957: 1235 (as synonym of *erosa*), revalidated.
Distribution: Rhodesia.

rufobrunnea Breuning, 1957: 1234; Ferreira & Veiga-Ferreira, 1961: 167 (Cat.).
Distribution: Togo.

sudanica Breuning, 1957: 1233; Ferreira & Veiga-Ferreira, 1961: 167 (Cat.).
Distribution: Sudan.

ugandensis, sp. n.
Distribution: Uganda.

unicolor, sp. n.
Distribution: Ethiopia.

GROUP 4

General color of elytra metallic. Males with elytral metallic reflexion can be separated in subgroups by: dimensions of inferior ocular lobes; spined segments of antennae; pronotum sculpture; shape and sexual punctuation of mesosternal process; elytral sculpture; length of posterior femora; shape of posterior tibiae and segment I of posterior tarsi; last urotergite.

SUBGROUP 4.1 – CHALYBAETA

Small inferior ocular lobes (fig. 11); segment III of antennae unarmed; pronotum with a large central subtriangular area destitue of sexual punctuation: uniform elytral sculpture over all surface; apex of posterior femora reaching elytral tips; posterior tibiae compressed but not laminiform or expanded;

segment I of posterior tarsi (fig. 23) short, not laminiform; last urotergite (fig. 19) scarcely notched at apex.

Xystrocera chalybaeta Gahan (figs. 11, 19, 23).

The following questions are involved in the nomenclature of this species:

Breuning (1957: 1266) considered *cyanicollis* Ferreira, 1954, a synonym of *chalybaeata* and established a variety, *rufiventris*, for a female with basal abdominal segments yellowish red.

Ferreira (1954: 143) described *vicina* which Breuning (1957: 1266) considered valid, although remarking: "Il me semble vraisemblable qu'il ne s'agit que d'une simple varieté de *chalybaeta* Gah."

Ferreira & Veiga-Ferreira (1959: 111) proposed the name "*nyassae* Gahan" for *chalybaeata* Gahan; I was unable to discover a reason for this procedure. *X. nyassae* Ferreira & Veiga-Ferreira is obviously a synonym of *chalybaeata* Gahan.

The few female specimens of *chalybaeata* studied have yellowish abdomen: the description of female abdomen of *nyassae (=chalybaeata)* by Ferreira & Veiga-Ferreira (1957; 54) point to a reddish abdomen (these authors did not describe the female abdomen of *cyanicollis* and *vicina*, as they were unknown to them). It highly probable that all females of *chalybaeata* have yellowish abdominal segments, so Breuning's variety *rufiventris* is completely superfluous.

Ferreira & Veiga-Ferreira (1957: 49) presented a key to separate males of *nyassae (=chalybaeata), cyanicollis* and *vicina* (this ommited in catalogue by same authours, 1959). My material is insufficient to confirm the validity of these species, but as usually Breuning erroneously considers Ferreira's species synonyms, it is necessary to observe that this subgroup could involve three species, listed below:

chalybaeata Gahan, 1890: 299; Breuning, 1957: 1265; Ferreira & Veiga-Ferreira, 1961: 162 (Cat.); Veiga-Ferreira, 1964: 570.
nyassae Ferreira & Veiga-Ferreira, 1957: 49, 52, 53; 1959: 111 (Cat.).
chalybaeta var. *rufiventris* Breuning, 1957: 1266.
Distribution: Tanzania, Malawi, Rhodesia, South Africa.

cyanicollis Ferreira, 1954: 141, figs. 3, 7; Ferreira & Veiga-Ferreira, 1957: 49, 54; 1959: 112 (Cat.); Breuning, 1957: 1265 (as synonym of *chalybaeata*), revalidated.
Distribution: South Africa.

vicina Ferreira, 1954: 143, fig. 8; Ferreira & Veiga-Ferreira, 1957: 49, 55; Breuning, 1957: 1266.
Distribution: South Africa.

SUBGROUP 4.2 – CYANELLA

Inferior ocular lobes developed, almost reaching under side of head; segment III of antennae with short projection on inferior side of apex (scarcely projected in *minuscula*); male prothorax shining, without sculpture and sexual punctuation; mesosternal process depressed, without sexual punctuation: elytral sculpture uniform; apex of posterior femora not reaching elytral tips; posterior tibiae not compressed and flattened (considerably swollen in *curvipes*, ♂); segment I of posterior tarsi (fig. 24) short, not laminiform; last urotergite deeply notched.

The following species belong to this subgroup: *cyanella* Chevrolat; *minuscula* Breuning and *curvipes* Breuning.

Xystrocera cyanipennis was included in Breuning's key among species with segment I of posterior tarsi as long as or longer than "articles deux à quatre réunis". (It is unbelievable that Breuning persists in considering *Xystrocera* as tetramerous cerambycids!). However, in his description of *cyanipennis* (*l.c.:* 1254) segment I of posterior tarsi is described as "moins long que les articles deux à quatre réunis", a character peculiar to this and preceeding subgroups. The male prothorax of *cyanipennis,* however, has sexual punctuation, a character seem in the subgroups treated below. Since Breuning's descriptions are as usual, restricted mostly to general characters, presented in all *Xystrocera,* the position of *cyanipennis* depends on the examination of specimens. The three mentioned species of this subgroup are known from Western Africa, while *cyanipennis* is from Tanzania.

Xystrocera cyanella var. *luteiventris* Jordan

Jordan (1894: 146) named as *cyanella* var. *luteiventris* one female "with *abdomen* luteous". It is inadmissible how Breuning (1957: 1265) could consider *luteiventris* "comme la forme typique mais avec le *pronotum* jaune". I studied two females with dark and one with yellowish abdomen, the latter with violaceous prothorax, and less rugose basal punctuation of elytra. The validity of *luteiventris* as a good species depends on the study of series.

Xystrocera minuscula Breuning

X. minuscula is closely related to *cyanella* (males compared), the basal punctuation of elytra similar to that of female *cyanella* var. *luteiventris.* It is possible that *minuscula* (female abdomen not described by Breuning) might be a synonym of *luteiventris.*

Xystrocera curvipes Breuning

Males of *curvipes* are very distinct from both those of *minuscula* and *cyanella,* its intermediate and posterior tibiae being as thicken as the club of femora.

LIST OF SPECIES

curvipes Breuning, 1957: 1265; Ferreira & Veiga-Ferreira, 1961: 163 (Cat.); Fuchs, 1969: 346.
Distribution: Guinea, Ghana, Togo.

cyanella Chevrolat, 1855: 515; 1858: 3; Murray, 1870: 164; Jordan, 1894: 146; Lepesme, 1953b: 18; Lepesme & Breuning, 1956c: 659; Breuning, 1957: 1264; Ferreira & Veiga-Ferreira, 1959: 111 (Cat.); Fuchs, 1969: 346.
Distribution: Ivory Coast, Nigeria, Cameroon, Gabon, Congo.

cyanella var. *luteiventris* Jordan, 1894: 146; Breuning, 1957: 1265; Ferreira & Veiga-Ferreira, 1959: 111 (Cat.).
Distribution: Congo.

minuscula Breuning, 1957: 1252; Ferreira & Veiga-Ferreira, 1961: 166 (Cat.).
Distribution: Gabon, Zaire.

SUBGROUP 4.3 – FULVIPES

Small inferior ocular lobes (fig. 6), not reaching under side of head; segment III of antennae projected at apex but not spined; pronotum with sexual punctuation distributed as in figures 14, 15, 17, 18; mesosternal process depressed, without sexual punctuation; posterior femora exceeding or reaching elytral tips; posterior tibiae usually strongly compressed; segment I of posterior tarsi (figs. 20, 21) compressed; elytra (except *gracilipes*), usually with differentiated sculpture near suture and margin or strongly and densely granulated over all surface; last abdominal tergite (fig. 27) not notched.

Xystrocera fulvipes Thomson (figs. 6, 15, 20, 21, 27)

The name *fulvipes* has priority over *frontalis* which was adopted by Breuning (1957: 1262).

On account of variation (especially in females), *fulvipes* received several names. Males studied are metallic green on upper surface; those with black legs have more developed sexual punctuation on pronotum and, consequently, a smaller shining central area; in specimens with bicolored or enterely reddish legs the central area is of variable size.

It was impossible, based on my material (many specimens with inaccurate data: "Congo", "Gabon", etc.) to connect color variation with geographical distribution, a desirable procedure when more material can be studied.

Breuning (1957: 1263) considered *similis* Jordan as a simple variety of *fulvipes*. Based on material identified by Duffy and on my own observations, I believe that *similis* is a good species as discussed below.

Again, Breuning (1957: 1262) interpreted *X. laeta* Ferreira (*nec* Péringuey), as a synonym of *fulvipes;* he did not even examine the figure of the holotype of *laeta* presented by Ferreira (1954: 142, fig. 1); see my discussion under *laeta.*

Types of species previously described and now considered synonyms or varieties of *fulvipes* by Breuning were not studied. Aware of Breuning's criterion to establish synonyms and "varieties", names cited in the list under *fulvipes* may be under suspicion of being good species.

A correction to couplet 29 of Breuning's key (1957: 1227), where *frontalis (=fulvipes)* is separated as the single species with "tibias postérieures fortement élargis"; remaining species are those with "tibias non fortement élargis". It is incompreensible why *minuta* (tibiae strongly expanded and flatened) and *minuscula* (males with tibiae strongly swoolen) were forcibly included here.

Xystrocera pauliani Lepesme & Breuning (fig. 14)

A single male studied. Differs from *fulvipes* (♂) by larger smooth pronotal area (fig. 14) and posterior tibiae flattened but not well expanded. Under *pauliani* names of four varieties are involved (see list).

Xystrocera violascens Franz

Not studied. Its inclusion in this group is based on original description and figures and Breuning's redescription (1957: 1261).

Xystrocera gracilipes Breuning

Holotype ♂ studied. Prothorax scarcely wider than long (length, 2.7 mm; width, 2.8 mm); segment I of posterior tarsi very long (2.4 mm), if compared

with length of II+III (0.9 mm); apex of posterior femora passing beyond elytral tips; uniform granulation and, violaceous margins of elytra.

Xystrocera minuta Jordan

Like *gracilipes*, segment I of posterior tarsi very long. However, *minuta* presents irregular elytral sculpture (dense and fine at lateral curvature), and posterior tibiae expanded like *fulvipes*. The absence of differentiated sculpture near elytral suture separates *minuta* from *fulvipes*.

Xystrocera similis Jordan (fig. 17), revalidated

I received from the Institut Royal des Sciences Naturelles a series of specimens from Zaire identified by Duffy in 1952 as *X. similis*, a species considered by Breuning (1957: 1262, 1263) as a variety of *frontalis (=fulvipes)*. As Breuning's synonyms are doubtful, these specimens were checked with original description and I completely agree with Duffy's identification which might have been done by comparison with Jordan's material in the British Museum.

X. similis is completely different from *fulvipes:* differentiated sculpture near elytral suture absent; sexual pilosity on male antennae denser and longer; male scape with hairs on external side; smaller. Thus, *similis* should be revalidated.

From the same Museum, I studied specimens from Tanzania identified by Breuning as *X. subsimilis* Breun., and was unable to discover differences in those from Zaire (*similis* Jordan). The description of *subsimilis* agrees with *similis* and Breuning included specimens from Zaire among typical series. I shall thus consider *subsimilis* a synonym of *similis*.

The varieties added by Breuning to *subsimilis* aggravate the problem: while var. *coerulescens* and var. *subcoerulescens* are really *similis* (material identified by Breuning studied), var. *holatripes* seems to belong to a closely related but different species, treated below.

Xystrocera holatripes Breuning (fig. 18), *status novus*

Material identified by Breuning as *Xystrocera subsimilis* var. *holatripes* indicates that this form could not be considered as a simple variety of *simils*. This same species was identified by Duffy in 1952 as "*Xystrocera nyassae* Gahan", a name not included in Aurivillius' Catalogue (1912). The interpretation of *nyassae* Gahan by Ferreira & Veiga-Ferreira (1959) was discussed under *chalybaeata*. It seems to me that *nyassae* Gahan is a *nomen nudum* and that the available name for this species is *holatripes* Breuning.

X. holatripes differs from *similis* by sexual punctuation of male prothorax (figs. 17, 18) not reaching the pronotum and black femora (in two specimens slightly reddish at middle).

Another new species related to *similis* and *holatripes* was named but not described by Duffy (1953) (*X. reducta*, nom. nud.). A single male identified by Duffy was studied; sexual punctuation of prothorax agrees with *holatripes*, but a red ring is present on femora as in similis.

Xystrocera granulithorax Breuning

If my identification of *granulithorax* is correct, this is another species related to the three preceeding ones, and separated by sexual punctuation of male prothorax; absence of hairs on scape and slender, sparser, sexual pilosity of antennae (as long as width of segments).

Xystrocera laeta Péringuey

Based on material identified by Breuning as *laeta* and on a previous publication by Ferreira (1954: 143) I believe that Breuning (1957) interpreted this species erroneously

Ferreira's publication seems to have been ignored by Breuning: if not, he certainly discovered that the holotype's male pronotum (redescribed and figured) does not agree with his redescription (1957: 1250). Based on the holotype's redescription by Ferreira, it is clear that *laeta* could never be "proche d'*aspera-ta*" (Breuning, *l. c.*), because it does not have the horse-shoe sculpture (see Ferreira, 1954: 142, fig. 1), and the color described is completely different from that mentioned by Breuning.

More, Breuning (1957: 1262) cited "*laeta* Ferreira (*nec* Péringuey)" among synonyms of *fulvipes*. This is inconceivable because Péringuey and Ferreira dealt with the same specimen, the holotype, described by Péringuey and redescribed and figured by Ferreira!

Dimensions of holotype were ommited by Ferreira and the legs and antenae are described as red. Among the species of this subgroup, only *fulvipes* has red antennae and legs but the pronotum is different from that of *laeta* (cf. Ferreira's figure). *X. laeta* was described from "Southern Rhodesia: Sebake"; no specimens of *fulvipes* studied are from this region.

X. laeta was not found among material studied.

X. pseudosimilis Breuning

Not studied. The description of male pronotum (Breuning, 1957: 1257) and the fact that only femoral coloration were adopted (key's couplet n. 45, p. 1230) to separate *pseudosimilis* and *subsimils (=similis)* I believe it belong to this subgroup.

LIST OF SPECIES

fulvipes Thomson, 1858: 156; 1860: 251; Ferreira & Veiga-Ferreira, 1959: 114 (Cat.).
frontalis var. *fulvipes,* Breuning, 1957: 1264.
frontalis Thomson, 1858: 156; 1860: 251; Breuning, 1957: 1262; Ferreira & Veiga-Ferreira, 1959: 113 (Cat.); 1961: 164 (Cat.); Villiers, 1968: 1673.
nigripes Thomson, 1858: 157; 1860: 251; Lepesme, 1952: 1159; 1953b: 19; Ferreira & Veiga-Ferreira, 1959: 116 (Cat.).
frontalis var. *nigripes,* Breuning, 1957: 1264.
lateralis Chevrolat, 1858: 244; Jordan, 1894: 147; Ferreira & Veiga-Ferreira, 1959: 114 (Cat.).
frontalis var. *lateralis,* Breuning, 1957: 1264.
trivittata Quedenfeldt, 1888: 196; Duvivier, 1892: 333; Hintz, 1911: 428; 1916: 331; Lepesme, 1952: 1160; 1957: 201; Lepesme & Breuning, 1952: 49; Breuning, 1957: 1264 (synonymy).
trivittata var. *dahomensis* Lepesme, 1952: 1160; Lepesme & Breuning, 1959: 659; Ferreira, 1965: 965.
latipes Hintz, 1911: 428; Lepesme, 1953a: 52; Lepesme & Breuning, 1956c: 659; Ferreira & Veiga-Ferreira, 1959: 115 (Cat.); Ferreira, 1965: 965.
frontalis var. *latipes,* Breuning, 1957: 1264.
frontalis var. *subviolacea* Breuning, 1957: 1263.
frontalis var. *subcoerulea* Breuning, 1957: 1263.
frontalis var. *rufoviolacea* Breuning, 1957: 1264.
Distribution: Dahomey, Nigeria, Cameroon, Gabon, Congo, Zaire, Angola.

gracilipes Breuning, 1957: 1254; Ferreira & Veiga-Ferreira, 1961: 165 (Cat.).
Distribution: Zaire.

granulithorax Breuning, 1964: 369.
Distribution: Zaire.

holatripes Breuning, 1957: 1256 (as variety of *subsimilis*), *status novus.*
Distribution: Zaire.

laeta Péringuey, 1892: 77; Ferreira, 1954: 143, figs. 1, 5 (holotype's redescription); Ferreira & Veiga-Ferreira, 1957: 50, 52, 56, 1959: 114 (Cat.).
Distribution: Rhodesia.

minuta Jordan, 1894: 146; Hintz, 1916: 231; Breuning, 1957: 1254; Ferreira & Veiga-Ferreira, 1959: 115 (Cat.); 1961: 166 (Cat.).
minuta var. *jordani* Breuning, 1957: 1254.
Distribution: Gabon, Congo, Zaire.

pauliani Lepesme & Breuning, 1951: 36; Lepesme, 1953b: 19; Breuning, 1957: 1259; Ferreira & Veiga-Ferreira, 1959: 117 (Cat.); 1961: 166 (Cat.); Fuchs, 1969: 347.
velutina var. *campmasi* Lepesme, 1955: 841.
pauliani var. *campmasi,* Breuning, 1957: 1261.
pauliani campmasi, Fuchs, 1957: 1261.
pauliani var. *rufinicornis* Breuning, 1957: 1260.
pauliani var. *nimbae* Breuning, 1957: 1261.
pauliani var. *zabeei* Breuning, 1957: 1261.
Distribution: Guinea, Ivory Coast.

pseudosimilis Breuning, 1957: 1257; Ferreira & Veiga-Ferreira, 1961: 167 (Cat.).
Distribution: Uganda, Tanzania.

similis Jordan, 1894: 148; Ferreira & Veiga-Ferreira, 1959: 118 (Cat.).
frontalis var. *similis,* Breuning, 1957: 1263.
subsimilis Breuning, 1957: 1255, *n. syn.*
subsimilis var. *coerulescens* Breuning, 1957: 1256.
subsimilis var. *subcoerulescens* Breuning, 1957: 1256.
subsimilis camerunica Breuning, 1961: 308.
Distribution: Cameroon, Gabon, Congo, Zaire, Kenya, Tanzania.

violascens Franz, 1942: 47, fig. 1; Breuning, 1957: 1261; Ferreira & Veiga-Ferreira, 1959: 119 (Cat.); 1961: 168 (Cat.); Baguena & Breuning, 1962: 210.
Distribution: Equatorial Guinea.

SUBGROUP 4.4 – VELUTINA

Small inferior ocular lobes (fig. 7), not reaching under side of head; segment III of antennae with short spine at apex; pronotum with horse-shoe sculpture (♂); mesosternal process depressed, without sexual punctuation; apex of posterior femora exceeding elytral tips; posterior tibiae and segment I of posterior tarsi strongly compressed, this one longer than following segments together; elytral sculpture not uniform; last abdominal tergite not notched.

Majority of characters agreeing with preceeding subgroup but horse-shoe sculpture of pronotum distinctive. This character approximates *velutina* and the following subgroups.

A single species:

velutina Jordan, 1894: 147; Hintz, 1911: 428; Lepesme, 1953b: 19, pl. 6, fig. 3; Lepesme & Breuning, 1956c: 659; Breuning, 1957: 1257, fig. 3; Ferreira & Veiga-Ferreira, 1959: 118 (Cat.); 1961: 168 (Cat.); Villiers, 1968: 1673.
pulchra Jordan, 1903: 135; Baguena & Breuning, 1962: 211.
velutina var. *pulchra,* Breuning, 1957: 1259.
velutina var. *anticoerulea* Breuning, 1957: 1259.
velutina var. *coerula* Breuning, 1957: 1259.
velutina var. *coerulea,* Fuchs, 1969: 347; 1974: 220.
velutina var. *purpurea* Breuning, 1957: 1259.
velutina var. *violaceicollis* Breuning, 1957: 1259.
velutina var. *rubripes* Breuning, 1957: 1259.
velutina var. *parterubra* Breuning, 1957: 1259.
Distribution: Ghana, Ivory Coast, Equatorial Guinea, Gabon, Congo, Zaire.

SUBGROUP 4.5 – FEMORATA

Large inferior ocular lobes (fig. 8), reaching under surface of head; segment III (and usually IV) of antennae strongly spined at apex; pronotum with horse--shoe sculpture (fig. 16); mesosternal process depressed, without sexual punctuation; elytral sculpture uniform; posterior femora exceeding or reaching elytral tips; posterior tibiae compressed but not expanded; segment I of posterior tarsi (fig. 22) as long as the following together, not compressed; last abdominal tergite (fig. 29) deeply notched.

Eigth species (four of which not seen): *femorata* Chevrolat; *conradti* Breuning; *nitidicollis* Quedenfeldt; *buquetii* Thomson (not studied; inclusion in the subgroup based on Thomson's original figure); *lujae* Hintz; *villiersi* Breuning & Teocchi (not studied; seems closely related to *lujae,* according to description and figure); *matilei* Breuning & Teocchi (not studied; inclusion in the subgroup supported by affinities with *lujae*); *orientalis* Breuning (not studied).

It is possible that *cyanipennis* Breuning (see subgroup 4.2), *viridilucens* Breuning (description based on a single female) and *bomfordi* Veiga-Ferreira belong to this subgroup.

Xystrocera boulardi Breuning & Teocchi

If my identification is correct, *boulardi* is related with *femorata*'s subgroup according to shape of last abdominal tergite, posterior legs and inferior ocular lobes. However, segment III of antennae is not spined at apex, and pronotal horse--shoe sculpture is not conspicuous, in spite of being visible, it is barely in contrast with remaining surface due to its own sculpture, which is fine and dense, except on a small centro-posterior area.

LIST OF SPECIES

buquetii Thomson, 1858: 155, pl. 5, fig. 2; Breuning, 1957: 1247; Ferreira & Veiga-Ferreira, 1959: 111 (Cat.); Fuchs, 1969: 346.
Distribution: Gabon.

conradti Breuning, 1957: 1247; Ferreira & Veiga-Ferreira, 1961: 163 (Cat.); Fuchs, 1969: 346.
Distribution: Togo.

femorata Chevrolet, 1855: 282; 1858: 1; Murray, 1870: 163; Lameere, 1893: 41; Jordan, 1894: 150; Lepesme & Breuning, 1952: 49; 1956c: 659; 1956d: 384; Lepesme, 1953b: 18; 1955: 841; Breuning, 1957: 1245; Duffy, 1957: 89; Ferreira & Veiga-Ferreira, 1959: 113 (Cat.); Fuchs, 1969: 347; 1974: 220.
pascoei Murray, 1870: 165; Aurivillius, 1912: 36 (synonymy).
togonica Hintz, 1909: 556; Lepesme, 1950: 395; Breuning, 1957: 1245 (synonymy).
femorata var. *nigrofemorata* Lepesme & Breuning, 1955: 90.
Distribution: Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Togo, Nigeria, Cameroon.

lujae Hintz, 1911: 427; 1916: 231; Breuning, 1957: 1244; Ferreira & Veiga-Ferreira, 1959: 115 (Cat.); Villiers, 1959: 28; Mayne & Donis, 1962: 124; Ferreira, 1965: 964; Breuning & Teocchi, 1972: 925, figs. 1, 5.
Distribution: Zaire, Angola.

matilei Breuning & Teocchi, 1972: 928, fig. 3.
Distribution: Central African Republic.

nitidicollis Quedenfeldt, 1883: 131; Breuning, 1957: 1246; Ferreira & Veiga-Ferreira, 1959: 116 (Cat.); Fuchs, 1969: 347.
emarginata Jordan, 1894: 148; Breuning, 1957: 1246 (synonymy).
Distribution: ?Ivory Coast, ?Gabon, Congo, Zaire, Angola.

orientalis Breuning, 1961: 308.
Distribution: Tanzania.

villiersi Breuning & Teocchi, 1972: 926, figs. 2, 6.
Distribution: Central African Republic.

Species probably belonging to subgroup 4.5

bomfordi Veiga-Ferreira, 1971: 5, est. 1.
Distribution: Mozambique.

boulardi Breuning & Teocchi, 1972: 930, figs. 4, 7-10.
Distribution: Central African Republic.

cyanipennis Breuning, 1957: 1253; Ferreira & Veiga-Ferreira, 1961: 163 (Cat.).
Distribution: Tanzania.

viridilucens Breuning, 1957: 1251; Ferreira & Veiga-Ferreira, 1961: 163 (Cat.).
viridilucens var. *basirufipes* Breuning, 1957: 1251.
viridilucens basirufipennis, Fuchs, 1969: 347.

SUBGROUP 4.6 – ASPERATA

Large inferior ocular lobes; apex of segment III of antennae projected but not strongly spined; pronotum with horse-shoe sculpture; mesosternal process depressed, without sexual punctuation; elytra uniformly sculptured; apex of posterior femora (♂) reaching elytral tips; posterior tibiae compressed but not strongly expanded; segment I of posterior tarsi as long as following segments together, not compressed; last urotergite (fig. 25) scarcely notched.

Sparse elytral sculpture, absence of spine at apex of segment III of male antennae and specially shape of last abdominal tergite distinguish this group from the preceeding.

Xystrocera asperata Thomson (fig. 25)
Ommited in Ferreira & Veiga-Ferreira's catalogue (1959).

Xystrocera rhodesiana Veiga-Ferreira, revalidated.

As discussed above, Breuning erroneously interpreted the true *X. laeta* Péringuey redescribed by Ferreira (1954). This error induced him to treat *rhodesiana* as a synonym of *laeta* (Breuning, 1957): 1250). A comparison between the pronotum of *laeta* (Ferreira, 1954: 142, fig. 1), and *rhodesiana* (Veiga-Ferreira, 1954: 148, fig. 1) confirms Breuning's mistake. Probably this error also motivated Fuchs (1974b) to describe *laeta* m. *burgeoni*, from Rhodesia, cited in the list below, among synonyms of *rhodesiana*.

LIST OF SPECIES

asperata Thomson, 1858: 156; Breuning, 1957: 1249; Ferreira & Veiga-Ferreira, 1961: 126; Fuchs, 1969: 346.
laevis Jordan, 1894: 149: Ferreira & Veiga-Ferreira, 1959: 114 (Cat.); Baguena & Breuning, 1962: 211.
asperata var. *laevis*, Breuning, 1957: 1250.
metallica Quedenfeldt, 1888: 197; Hintz, 1911: 428; 1916: 231; Lepesme & Villiers, 1944: 5; Lepesme, 1948: 282; Duffy, 1957: 89; Ferreira & Veiga--Ferreira, 1959: 115 (Cat.).
asperata var. *metallica*, Breuning, 1957: 1250.
asperata var. *atripes* Hintz, 1911: 428; Breuning, 1957: 1250; Ferreira & Veiga-Ferreira, 1959: 115 (Cat.); 1961: 162 (Cat.); Fuchs, 1969: 346.
asperata var. *pedrotti* Lepesme & Breuning, 1955: 90.
asperata var. *violaceomicans* Breuning, 1957: 1250.
asperata var. *rufiscapus* Breuning, 1957: 1250.
asperata var. *rufobasalis* Breuning, 1957: 1250.
Distribution: Ghana, Cameroon, Gabon, Congo, Zaire.

rhodesiana Veiga-Ferreira, 1954: 147, figs. 1, 2; Breuning, 1957: 1250 (as synonym of *laeta*), revalidated.
laeta m. *burgeoni* Fuchs, 1974b: 479.
laeta, Breuning, 1957: 1250 (*nec* Péringuey, 1892).
Distribution: Zambia, Rhodesia.

REFERENCES

Audinet-Servile, J. G., 1834. Nouvelle classification de la famille des Longicornes (suite). *Ann. Soc. Ent. France 3:* 5-100.

Aurivillius, C., 1908. Cerambycidae, *in* L. Schultze, Zool. u. anthrop. Ergebnisse e. Forschungsreise in Südafrika, Bd. 1, Lfg. 2. *Denkschr. med. Ges. Jena 13:* 429-434.

Aurivillius, C., 1908b. 11. Cerambycidae, pp. 139-152, *in* B. Y. Sjösted, Wissenchaftliche Ergebnisse der Schwedischen Zoologischen Expedition nach den Kilimandjaro, dem Meru, und... Y. Sjöstedt, Vol. 1, Schwedischen Akademie der Wissenchaften.

Aurivillius, C., 1912. Coleopterorum Catalogus, pars 39: 1-574. W. Junk, Berlin.

Aurivillius, C., 1913. Curvulioniden und Cerambyciden gesammelt während der Schwedischen Zoologischen Expedition nach British Ostafrika. *Ark. Zool. 8* (21): 1-10, 3 figs.

Baguena, L. & S. Breuning, 1962. Catalogo de los Cerambycidae de las provincias españolas del Golfo de Guinea. *Graellsia 19:* 137-228.

Bates, H. W., 1890. On some Coleopterous insects collected by Mr. W. Bonny in the Aruwimi Valley. *Proc. Zool. Soc. London 1890:* 479-492.

Breuning, S., 1957. Révision du genre *Xystrocera* Serv. (Coleoptera, Cerambycidae). *Bull. Inst. Fr. Afr. noire* (A)*19*(4): 1223-1271, 3 figs.

Breuning, S., 1961. Neue Cerambyciden aus den Sammlungen des Zoologischen Museums der Humboldt-Universität zu Berlin (Coleoptera, Cerambycidae). *Mitt. Zool. Mus. Berlin 37*(2): 297-328.

Breuning, S. 1964. Coléoptères Cerambycidae nouveaux des collections du Musée Royal de l'Afrique Centrale, à Tervuren. *Rev. Zool. Bot. Afr. 69:* 369-376.

Breunning, S. & A. Villiers, 1972. Contribution à l'étude biologique du Sénegal septentrional. XIX Coléoptères Cerambycidae. *Bull. Inst. Fr. Afr. noire* (A)*34*(2): 352-362.

Breuning, S. & P. Teocchi, 1972. Description de trois espéces nouvelles de *Xystrocera* Serv. et des stades larvaires de l'une d'elles (Col. Cerambycidae Cerambycinae). *Ibidem* (A) *34*(4): 924-935, 11 figs.

Brivio, P. C.,1958. Contributo alla conoscenza della fauna coleotterologica della Guinea Portoghese. II Cerambycidae, Chrysomelidae, Scarabaeidae. *Atti Soc. ital. Sci. Nat. 97*(2): 112-119.

Chevrolat, A., 1855a. Description de seize espèces de longicornes du Vieux Calabar à la côte d'Afrique. *Rev. Mag. Zool. (2)7:* 282-292.

Chevrolat, A., 1855b. Description de douze espèces de longicornes du Viex Calabar à la côte d'Afrique. *Ibidem,* 513-523.

Chevrolat, A., 1858. Description de douze espèces de longicornes du Vieux Calabar à la côte occidentale d'Afrique. *Ibidem 11:* 1-11.

Distant. W. L., 1898. Coleoptera collected in the Transvaal. *Ann. Mag. Nat. Hist. (7)1:* 366-384.

Distant, W. L., 1904. *Insecta transvaaliensia,* parts V-VI: 97-158, pls. 9-15, London.

Duffy, E. A. J., 1953a. *Ruwenzori Expedition, 1934-35.* Cerambycidae. Vol. 3: 165-174, 4 figs. British Museum (Natural History).

Duffy, E. A. J., 1953b. Cerambycinae (Coleoptera Phytophaga). Fam. Cerambycidae. *Explor. Parc. nat. Upemba, Miss. de Witte (1946-1949),* Brussels fasc. *17:* 95-110, 2 figs.

Duffy, E. A., 1955. Contributions à l'étude de la faune entomologique du Ruanda-Urundi (Mission P. Basilewsky 1953). XXI. Coleoptera Cerambycidae Cerambycinae. *Ann. Mus. Congo, Zool. 36:* 202-215.

Duffy, E. A J., 1957. *A mongraph of the immature stages of African timber beetles,* VIII+338 pp. 10 pls., British Museum (Natural History), London.

Duvivier, A., 1892. Contributions à la faune entomologique de l'Afrique centrale. II. Note sur les coléptères des vallées de l'Itimbiri-Rubi et de l'Uellé (régions du Haut-Congo). Recueillis en 1890, par MM. Joseph Duvivier et Milz. Liste des espèces et descriptions nouvelles. *Ann. Soc. Ent. Belgique 36:* 257-383.

Fabricius, J. C., 1792. *Entomologia systematica 1* (2), 538 pp., Hafniae.

Fabricius, J. C., 1801. *Systema eleutheratorum 2* (1); 366 pp., Kiliae.

Fahraeus, O. I., 1872. Coleoptera Caffrariae, annis 1838-1845 a J. A. Wahlberg collecta. Longicornia descripsit. *Ofvers. Kongl. Vet. – Akad. Förhand. 1:* 45-69.

Fairmaire, L. M. H., 1882. Coléoptères recueillis par M. G. Révoil chez les Çomalis, *in* G. Révoil, *Faune et Flore des Pays Çomalis (Afrique Orientale),* pt. 8, 104 pp., 1 pl.

Fairmaire, L. M. H., 1887. Coléoptères des voyages de M. G. Révoil chez les Somalis et dans l'intérieur du Zanguebar. *Ann. Soc. Ent. France* (6)*7:* 277-368, pls. 1-3.

Fairmaire, L. M. H., 1892. Coléoptères d'Obock. Troisième partie. *Rev. Ent. 11:* 77-126.

Ferreira, M. C. 1954. Contribuição para o estudo dos cerambicínios da África do Sul. VI. Algumas espécies novas do género *Xystrocera* Serv. (Tribo dos Oemini). *Bol. Soc. Estud. Moçambique 24*(84): 141-146, 8 figs.

Ferreira, M. C., 1957. Cerambíceos colhidos na Província de Moçambique por G. da Veiga Ferreira. *Ibidem 26*(103): 35-46.

Ferreira, M. C., 1963. Catálogo dos coleópteros de Moçambique. *Revta. Ent. Moçambique 6*(2): 533-1003.

Ferreira, M. C., 1965. Catálogo dos coleópteros de Angola. *Ibidem 8*(2): 415-1317.

Ferreira, M. C. & G. da Veiga-Ferreira, 1957. *Entomologia florestal de Moçambique. Contribuição para o estudo dos insetos xilófagos.* III^{a} parte. Subfamília Cerambycinae I. Supertribos Disteniina, Asemina e Cerambycina, 129 pp., 11 pls., 4 maps, Junta Com. Ext. Prov. Moçambique, Lourenço Marques.

Ferreira, M. C. & G. da Veiga-Ferreira, 1959. Catálogo dos cerambicídeos da Região Etiópica. II^{a} Parte. Supertribos Disteniina, Asemina, Cerambycina, Auxesina & Lepturina. *Mem. Inst. Invet. Cient. Moçambique 1:* 77-398.

Ferreira, M. C. & G. da Veiga-Ferreira, 1961. Aditamento à II parte do catálogo dos cerambicídeos da Região Etiópica. *Bol. Soc. portug. Cienc. Nat. 8:* 158-193.

Franz, E., 1942. Cerambyciden (Ins. Col.) aus Spanisch-Guinea. *Senckenbergiana 25* (1/3): 46-53, 6 figs.

Fuchs, E., 1969. Contributions à la connaisance de la faune entomologique de la Côte-d'Ivoire (J. Decelle, 1961-1964). XLI. Coleoptera Cerambycidae Cerambycinae. *Ann. Mus. Roy. Afr. centrale, Zool. 175:* 343-354.

Fuchs, E., 1972. Coleoptera aus Nordostafrika, Cerambycidae. *Notulae Ent. 52:* 93-101.

Fuchs, E., 1974a. Cerambyciden (Coleoptera) aus Ghana und Congo-Brazzaville. *Ann. Hist.-nat. Mus. Nat. Hung. 66:* 219-223.

Fuchs, E., 1974b. Neue Cerambycidae aus den Zaïre (Coleoptera Cerambycidae). *Rev. Zool. Afr. 88*(3): 477-483.

Gahan, C. J., 1890. On new Longicornia from Africa and Madagascar. *Trans. Ent. Soc. London 1890:* 297-328, pl. 9.

Gahan, C. J., 1899 *in* W. J. Ansorge, *Under the African sun,* XIV+355 pp., Chap 22, pp. 299-322, 1 pl., London.

Ghesquière, J., 1927. Les moeurs de quelques longicornes congolais. *Rev. Zool. Afr. 15*(2), *Bull. Cercle Zool. Congolais* [pp. 8 – 9.

Hintz, E., 1911. Cerambycidae. *Wiss. Ergebnisse d. Deutsche Zentral-Afrika-Exped. 1907-8,* Bd 3., Lfg. 11: 425-446, pl. 7.

Hintz, E., 1919. Cerambycidae. *Ergebnisse zweit. Deutsche Zentral-Afrika-Exped. 1:* 599-638.

Jordan, K., 1894. On African Longicornia. *Novit. Zool. 1:* 139-266, pls. 9-10.

Jordan, K., 1903. African Cerambycidae. *Ibidem 10:* 131-191.

Kolbe, H. J., 1893. Beiträge zur Kenntnis der Longicornier, II. Ueber die von Herrn Leopold Conradt in Deutsch-Ostafrika auf der Plantage Derema in Usambara und in den benachbarten Küstengegenden gesammelten Arten. *Stett. Ent. Zeit. 54:* 241-290.

Klug, J. C. F., 1835 *in* A. G. Erman, *Reise um die Erde durch Nord-Asien und die beiden Oceane in... 1828-30.* Naturhistorischer Atlas, VI+64 pp., 17 pls.

Lameere, A., 1893. Voyage de M. Ch. Alluaud dans le territoire d'Assinie (Afrique Occidentale) en juillet et août 1886. *Ann. Soc. Ent. France 62:* 39-50.

Laporte, F. L. N. C., 1840. *Histoire Naturelle des Insectes Coléoptères 2:* 1-563, 38 pls., P. Duménil, Paris.

Lepesme, P., 1948. Longicornes de Bukoko. *Agron. Tropicale* Nogent-s-Marne *3:* 282-286.

Lepesme, P., 1950. Longicornes récoltés au Liberia par P. L. Dekeyser et B. Holas. *Bull. Inst. Fr. Afr. noire 12:* 395-400, 1 fig.

Lepesme, P., 1952. Mission A. Villiers au Togo et au Dahomey (1950). XX. Coléoptères Cérambycides. *Ibidem 14*(4): 1159-1169.

Lepesme, P., 1953a. Coleoptera Cerambycidae de l'Angola obtenus par le Musée de Dundo. *Publ. Cult. Cia. Diamant. Angola 16:* 51-60, 1 pl.

Lepesme, P., 1953b. Coléoptères Cérambycides (Longicornes) de Côte d'Ivoire. *Cat. Inst. Fr. Afr. noire 11:* 1-103, 40 pls.

Lepesme, P., 1955. Addenda et corrigenda au catalogue des Colèoptères Cérambycides de Côte-d'Ivoire. *Bull. Inst. Fr. Afr. noire (A) 17* (3): 840-846.

Lepesme, P., 1957. Coleoptera Cerambycidae récoltés par P. Lepesme et P. Cachan dans la région du Bas-Cavally (Côte d'Ivoire). *Ibidem* (A) *19* (1): 201-208.

Lepesme, P. & A. Villers, 1944. *Les longicornes du caféier en Afrique intertropicale,* 44 pp., Imprimeire Nationale, Paris.

Lepesme, P. & S. Breuning, 1951. Cérambycides nouveaux récoltés par R. Paulian et Cl. Delamare dans la réserve forestière du Banco (Côte d'Ivoire) (Août-Octobre, 1945). *Rev. franç. Ent. 18:* 36-38.

Lepesme, P. & S. Breuning, 1952. IV. Coléoptères Cerambycidae, pp. 49-66 *in* La réserve naturelle intégrale du Mt. Nimba, fasc. I, *Mém. Inst. Fr. Afr. noire 19:* 1-334.

Lepesme, P. & S. Breuning, 1955. Longicornes nouveaux du Congo Belge (Coleoptera Cerambycidae). *Rev. Zool. Bot. Afr. 51:* 85-96.

Lepesme, P. & S. Breuning, 1956a. Cérambycides de la collection Maublanc. *Longicornia 3:* 651-654, 1 fig.

Lepesme, P. & S. Breuning, 1956b. Cérambycides récoltés au Cameroun par le R. P. Carret. *Ibidem 3:* 655-658, 1 fig.

Lepesme, P. & S. Breuning, 1956c. Cérambycides récoltés par Mr. R. Mussard en Côte d'Ivoire et au Congo Belge. *Ibidem 3:* 659-662.

Lepesme. P. & S. Breuning, 1956d. Cérambycides récoltés en Afrique tropicale. *Bull. Mus. Nat. Hist. Nat.* (2) *28:* 384-387.

Martins, U. R., 1978. Relationships between *Xystrocera* and Callichromatini, with remarks on Australian and Oriental species (Coleoptera, Cerambycidae). *Papéis Avulsos Zool.,* S. Paulo, 31 (15): 221-236.

Mayné, R. & C. Donis, 1962. Hôtes entomologiques du bois au Congo, Rwanda et Burundi. *Publ. Inst. Nat. Étud. Agron. Congo belge 100:* 1-514.

Murray, A., 1870. List of Coleoptera received from Old Calabar, on the west coast of Africa. *Ann. Mag. Nat. Hist.* (4) *6:* 161-176.

Pascoe, F. P., 1864. Additions to the Longicornia of South Africa, including a few species from Old Calabar and Madagascar. *J. Ent. 2:* 270-291;

Péringuey, L., 1892. Third contribution to the South African coleopterous fauna. On beetles collected in tropical South Western Africa by Mr. A. W. Ericksson. *Trans. S. Afr. phil. Soc. 6* (2): 1-94.

Quedenfeldt, G., 1822. Kurzer Bericht über die Ergebnisse der Reisen des D. v. Mechov, in Angola und Quango-Strom, nebst Aufzählung der hierbei gesammelten Longicornen. *Berl. Ent. Zeitschr. 26:* 317-362, pl. 6.

Quedenfeldt, G., 1883. Verzeichniss der von Herrn Stabsarzt Dr. Falkenstein in Chinchoxo (Westafrika, nördlich der Congomündungen) gesammelten Longicornen des Berliner Königl. Museums. *Ibidem 27* (1): 131-146, pl. 1.

Quedenfeldt, G., 1888. Beiträge zur Kenntniss der Koleopteren-Fauna von Central-Afrika nach den Ergebnissen der Liutenant Wissman'-schen Kassai-Expedition 1883 bis 1886. *Ibidem 32* (1): 155-219.

Quentin, R. M., 1956. Contribution à l'étude des coléptères Cerambycidae. II. Prioninae et Cerambycinae J récoltés par Ph. Bruneau de Miré et Coste au sud du Sahara français, avec description de trois formes nouvelles. *Bull. Soc. Ent. France 61:* 40-43.

Schwarzer, B., 1926. Beiträge zur Kenntnis der Cerambyciden. *Ent. Mitt. Berlin 15:* 6-14.

Thomson, J., 1858. Voyage au Gabon. *Arch. Ent. 2*: 7-376, 12 pls.

Thomson, J., 1860. *Essai d'une classification de la Famille des Cérambycides...* 396 pp., 3 pls., Paris.

Tippmann, F. F., 1959. Coleoptera: Cerambycidae pp. 152-193 *in* Hanström, Brinck & Rudebeck, *South African Animal Life, Vol. 6.*

Veiga-Ferreira, G. de, 1954. Uma espécie nova do gênero *Xystrocera* Serv. *Bol. Soc. Estud. Moçambique 24*(84): 147-149, 2 figs.

Veiga-Ferreira, G. da, 1964. Longicórnios de Moçambique, I. *Rev. Ent. Moçambique 7* (2): 451-838.

Veiga-Ferreira, G. da, 1967. Cerambycidae from the Kruger National Park, I. *Koedoe 10:* 104-110.

Villiers, A., 1950. Contribution à l'étude de l'Aïr (Mission L. Chopard et A. Villiers). Coléoptères Cerambycidae. *Mém. Inst. Fr. Afr. noire 10:* 199-201.

Villiers, A., 1959. Coléoptères Cérambycides d'Angola. *Publ. Cult. Cia. Diamant. Angola 41:* 25-32.

Villiers, A., 1962. Coléoptères Cérambycides récoltés au Mali par R. Demage. *Bull. Inst. Fr. Afr. noire* (A) *24* (4); 1121-1125.

Villiers, A., 1968. Contribuition à la faune du Congo (Brazzaville). Mission A. Villiers et A. Descarpentries. LXXX. Coléoptères Cerambycidae Disteniinae et Cerambycinae. *Ibidem* (A) *30* (4): 1172-1686.

White, A., 1853. *Catalogue of the coleopterous insects in the collection of the British Museum 7:* 1-174, pls. 1-4, London.