

Review of the genera of the African Histerini (Coleoptera: Histeridae)

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An actual state of the knowledge of the African Histerini is presented with special references to the taxonomy and systematics of particular genera.

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Africa seems to be one of the most important centre of the evolution and dispersion of the *Histerini*, having representatives 16 (64%) of all the genera and 186 (45%) of all the described species (12 genera are endemic to the Ethiopian Region).

The species classified here show a tremendous rank of diversity in both, the external and internal (genital structure) morphology.

The only existing monograph of this group is that of Bickhardt (1919). Being almost 90 years old it is still the most valuable and comprehensive elaboration of the African histerans, especially for everybody determining the African *Histerini*.

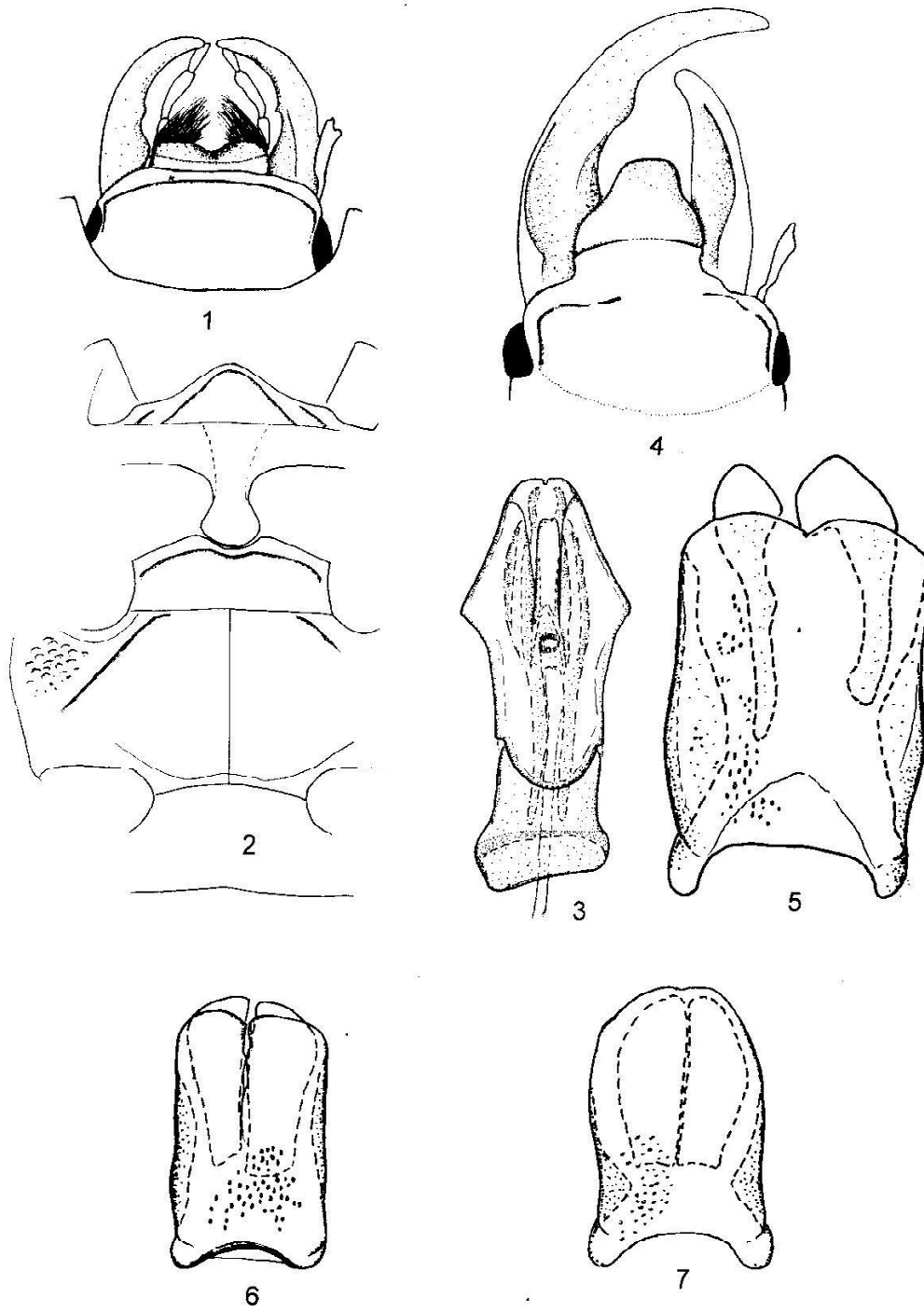
In sight of the modern systematics, reflecting the phylogeny, this work is, however, far outdated.

As defined by Mazur (1990: 751), the *Histerini* may be characterized as having antennal club with two annuli and by penis strongly sclerotized and modified with posterior (proximal) apodemes with median lobe.

Adopting this definition, the genera *Atribalus* Bickhardt, 1921 and *Rhybochares* Marseul, 1853 should be rejected from *Histerini* and transferred to *Omalodini* (Vienna, 2000: 68; Vienna, 2002: 222).

A systematic status of *Hubenthalia* Bickhardt, 1918 is also unclear. When describing Bickhardt (1918: 170) placed it between *Microlistes* Lewis, 1905 (now *Pltysomatini*) and *Asolenus* Lewis, 1906 (now *Omalodini*). Some affinities between it and *Seitzister* Cooman, 1948 were found by Cooman (1948: 128), but the placement of the latter in *Histerini* is also doubtful.

The genus *Pactolinus* Motschulsky, 1860 is almost African in distribution. As redefined lately (Mazur, 2004: 165-166), the genus is discriminating by its long and falciform mandibles (Fig. 1) with one dent at inner margin, by transverse, arcuately and deeply incised labrum, by shortened lateral metasternal stria without a recurrent arm (Fig. 2) and by the edeagus being short and depressed, triangularly dilated in apical



Figs. 1-7. 1-3 - *Pactolinus* sp., 1 - head, 2 - under side, 3 - edeagus. 4 - *Pachylister* sp., head of the male. 5-7 - 8th segment, 5 - *Hister quadrimaculatus*, 6 - *H. nomas*, 7 - *H. grandicollis*.

part (Fig. 3). According to this definition, some species previously classified here, had to be transferred to the genus *Hister* Linnaeus, 1758.

Pactolinus seems to be monophyletic, originated and distributed in Africa (only one species is known to enter to the Mediterranean).

On the contrary, the genus *Pachylister* Lewis, 1904 cannot be so uniformly defined. As it is to expect, this is a complex of form, 2 or 3 in number, having only the asymmetrical mandibles, especially the left ones in males (Fig. 4). All the remaining characters used for definition of the genus, are variable being found also in other genera (Mazur, 2005b: 79; Mazur & Węgrzynowicz, 2008: 185).

Hister is the biggest genus among the African histerans, comprising 82 species known to occur in the Ethiopian Region. This genus is clearly polyphyletic, having no unique and discriminating characters.

All the species known to the author have a long 8th tergite, at least as long as its width (Figs. 5 - 7). Considering this, the author (Mazur, 2005b: 79, 80) transferred some species to other genera: to a newly created *Ghanister* [apart from the genital structure (Fig. 9), the strong reduction of marginal pronotal stria (Fig. 8) and incomplete profemoral stria] with *Hister gorilla* as the type] and *Barbarus* [shape of the 8th tergite (Fig. 12), strongly reduced marginal pronotal stria, pilosity of pronotal epipleura (Figs. 10-11), prosternal lobe doubly margined laterally] with *Hister barbarus* as the type]. Especially the last example is very spectacular as nicely illustrating the difficulties in classification of particular species. *Hister barbarus* was originally described by Bickhardt in his monograph. 11 years earlier Lewis described another species calling it *Macrolister debellatus*. A verification of the types allowed the author (Mazur, 2007c: 149) to establish the identity of both, *H. barbarus* and *M. debellatus*. Bickhardt probably did not see the types and knew *M. debellatus* only from the description, so same species has been described twice in his monograph.

One may select some groups among the African *Hister*-species:

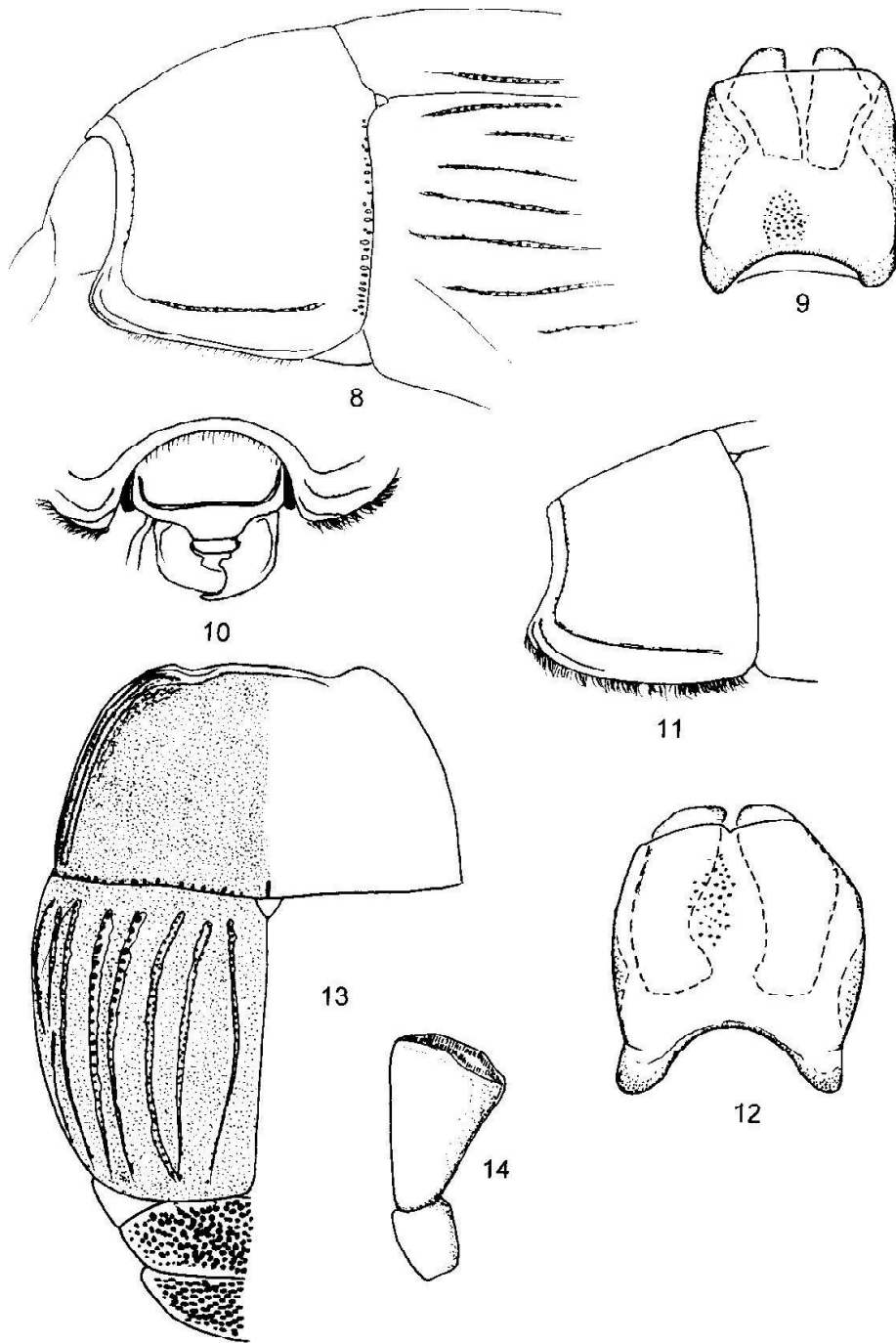
- 1) species without inner subhumeral striae and without pilosity on pronotal Epipleura: *Hister gehini*, *H. lentulus*.
- 2) species with inner subhumeral stria and with ciliate Epipleura. Many species: *H. tropicus*, *H. calidus*, *H. zulu*, etc. A differentiated group with several lineages, very hard to define.
- 3) species without ciliate Epipleura and with distinct sexual dimorphism in males: the fore tibiae angular, markedly broadened. Only two species: widely distributed and introduced into various points in the tropics, *Hister nomas* and very local *H. leopoldi*.
- 4) species with concave forehead and with mesosternum being rounded anteriorly, not emarginate: *Hister circularis*, *H. barkeri*.

The question what are these groups remains still open.

After examining the types of *Hister honestus*, *H. castus* and *H. martius*, the author was able, on the other hand, to express a supposition all these are synonymous (unfortunately, only one type-species was a male) and, on the other, to transfer *H. honestus* (Mazur, 2007: 139) to the genus *Eudiplister* Reitter, 1909 (the genus not represented in the African fauna as yet). Having all the main characters of *Eudiplister*, *Hister castus* differs, however, from the Palearctic species of the genus by different structure of the male genitalia. To resolve this problem more materials of these rare species are needed.

The genus *Neohister* Desbordes, 1928 is a monotypic. The type-specimen was examined. The genus shows any affinities with the rest of the African genera.

Erecting the genus *Zabromorphus* Lewis (1906: 399) emphasized only 3 dentate anterior tibiae



Figs. 8-14. 8 - *Ghanister gorilla*, pronotum, laterally. 9 - *G. ertli*, 8th segment. 10-12 - *Barbarus pilicollis*, 10 - head, 11 - pronotum, laterally, 12 - 8th segment. 13-14 - *Zabromorphus* sp., 13 - upper side, 14 - two last segments of maxillary palpi.

(apical tooth very robust) as a character of the genus, adding later "... the form of the inner humeral stria may be considered a generic character" of *Zabromorphus*. Owing to this inadequate definition, 23 species were classified within the genus.

As a result of the studies provided by the author (Mazur, 2006) the genus may be characterized chiefly by oval, strongly convex body, by the last segment of maxillary palpi being more or less triangularly dilated, truncate at apex (Fig. 14) and by short elytra (ratio of elytral length varying from 0.85 to 1.07; Fig. 13). So, the number of species classified here diminished from 23 to 9. The remaining ones have been again transferred to the genus *Hister* (9 species) or placed into newly created genera: *Errabundus* (2 species) with *Hister ignavus* as the type (similar situation as in *Barbarus*: Bickhardt described a new species *Hister bierigi*, redescribing on another page *Zabromorphus deflexus* though both these species are identical) and *Tineatrix* (1 species) with *Hister holubi* as the type.

Owing to this elaboration, the genus *Zabromorphus* might be treated as a monophyletic one, restricted in distribution only to Africa.

The genera *Teinotarsus* Marseul, 1864, *Campylorhabdus* Schmidt, 1889 and *Omotropis* Reichardt, 1933 show many mutual affinities, first of all the strongly dilated mid and hind tibiae and the elytra more or less coarsely punctured (Figs. 15-16). Such characters are to be found commonly among myrmecophilous species (see *Psiloscelis* Marseul, 1853, *Myrmecohister* Ōhara, 1999, etc.) and may be treated as a kind of adaptations which may occur within unrelated groups. Anyway, almost all the types were studied and some structural details were published (Mazur, 2008, figs. 21-25).

The species of the genus *Contipus* Marseul, 1853 were primarily defined as having very dilated mid and hind tibiae (Fig. 20) with 19 species included. It was Caterino (1999: 11) retransferred two South

American species into the "coenosus-group" of *Hister*.

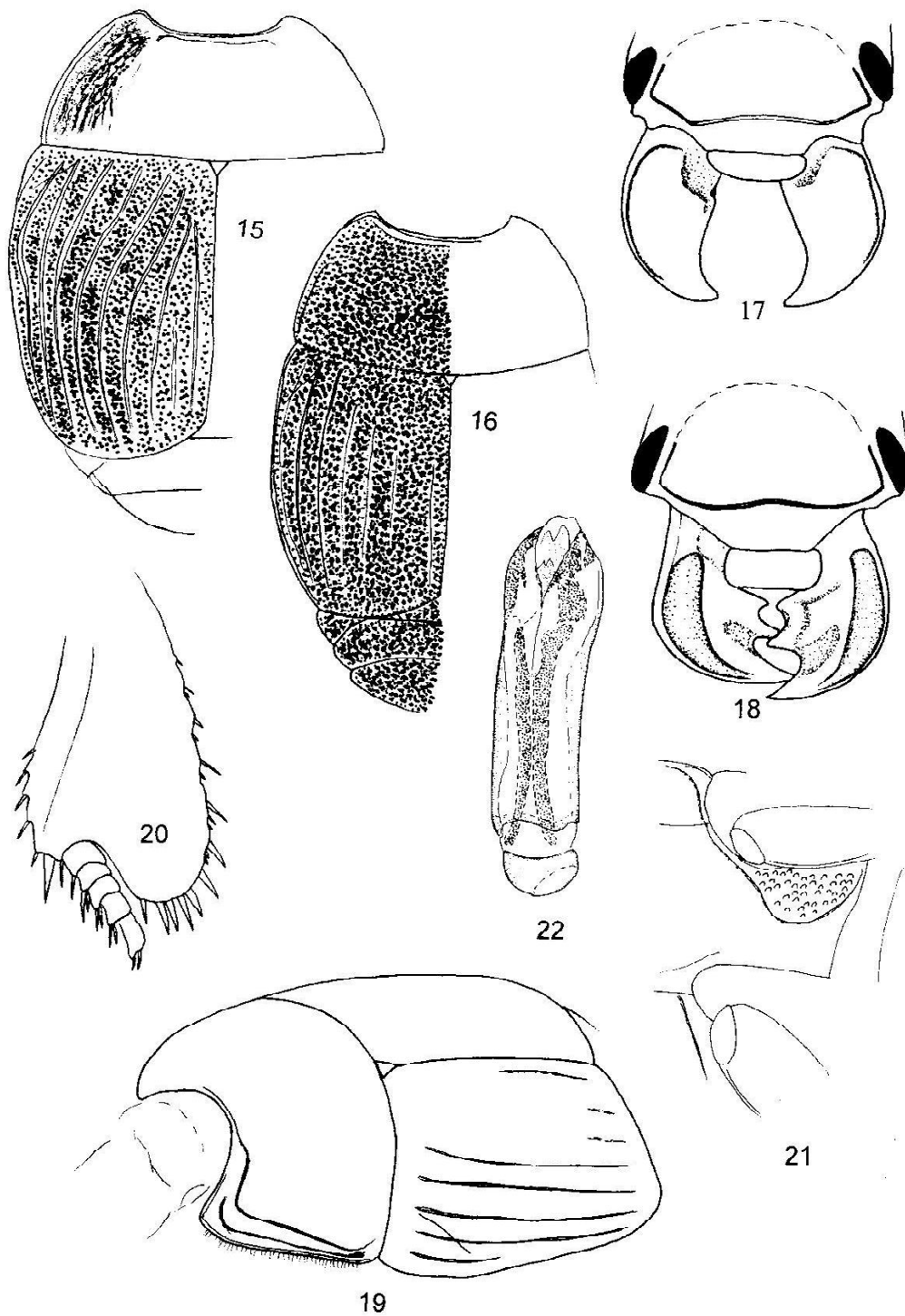
Detailed studies provided by the author showed that *Contipus* was a monophyletic genus characterized by a combination of the following characters: presence and shape of outer subhumeral stria (Fig. 19), dilated tibiae and sexual dimorphism (mandibles concave and margined laterally in females, Fig. 17-18). The genus is endemic to tropical Africa.

Very similar is a newly created genus *Afrohister* Mazur, 2006 having most characters in common with *Contipus*. *Contipus pycnurus* should be also transferred to *Afrohister*.

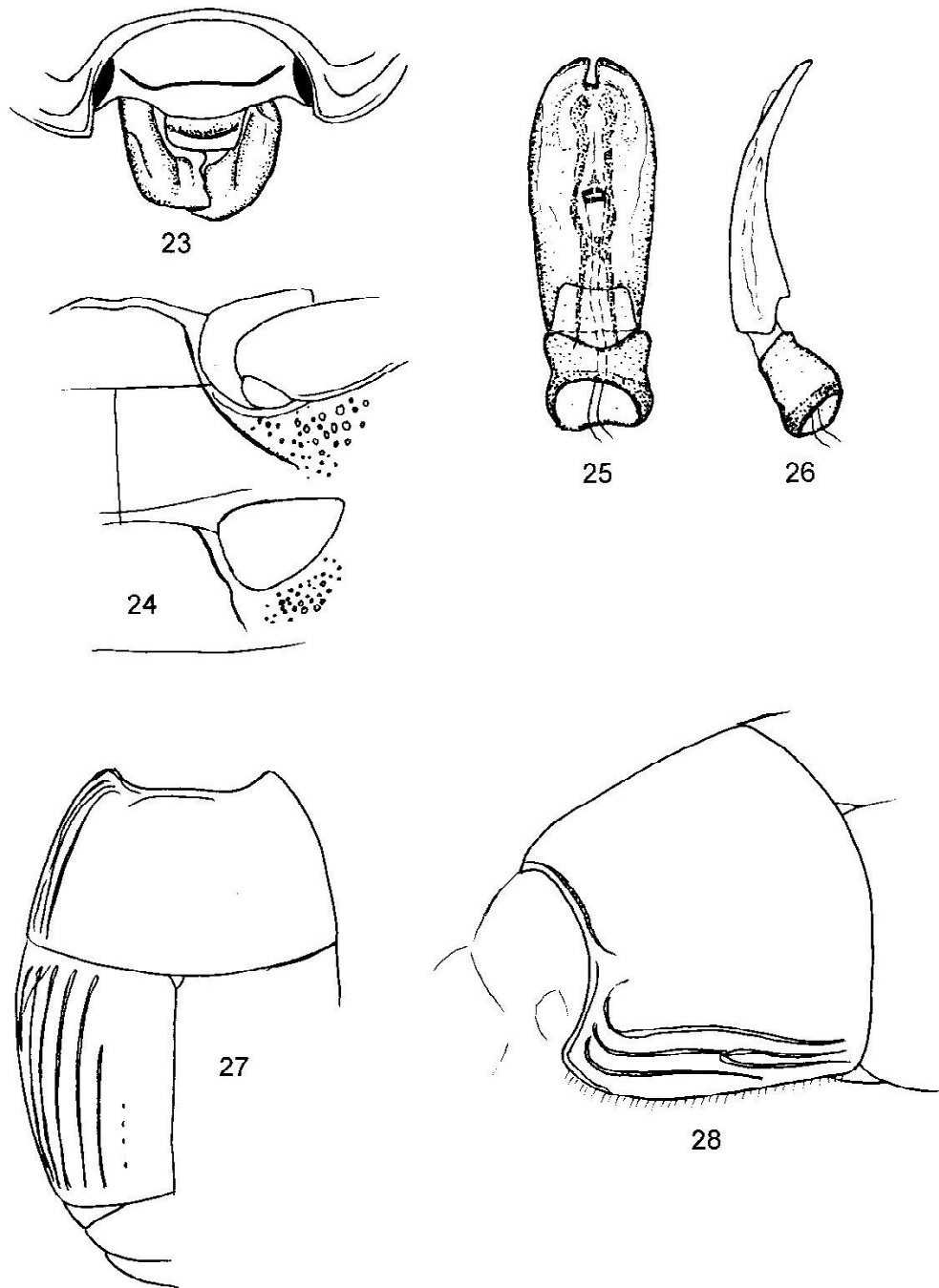
The genus *Eugrammicus* Lewis, 1907 was never a subject of detailed studies. It shares the genus *Exorhabdus* in most characters, differing from it, however, by the recurrent arm of lateral metasternal stria being complete and distant from the metasternal-metepisternal suture. Two species, exclusively African in distribution.

The genus *Exorhabdus* Lewis, 1910 was primarily characterizes as having both, the inner and outer subhumeral striae. Detailed studies (Mazur, 2005: 52) showed, however, that to this genus should had been transferred all the species classified previously in *Hister* which have very sclerotized, almost cylindrical edeagus with short basal piece (Fig. 22), strongly crenulated dorsal striae and, first of all having complete recurrent arm of lateral metasternal stria not confluent with the metasternal-metepisternal suture (Fig. 21). This is true for *Hister colonicus*, *H. mechowi* and *H. tropicalis*.

Later studies showed (Mazur, 2007b: 141), however, that the genus *Exorhabdus* included two distinct groups: one of them possesses the very broad and not so strongly sclerotized edeagus (Fig. 25-26). Furthermore, the mandibles and the frontal and lateral pronotal striae are carinate (Fig. 23). Additionally, the recurrent arm of the lateral metasternal stria may be obsolete or



Figs. 15-22. 15, 16 - upper side, 15 - *Campylorhabdus poggei*, 16 - *Omotropis terrenus*, 17-20 - *Contipus digitatus*, 17-18 - head, 17 - male, 18 - female, 19 - lateral view, 20 - hind tibia, 21, 22 - *Exorhabdus* sp., 21 - meso- and metasternum, laterally, 22 - eedeagus.



Figs. 23-28. 23-26 - *Geminorhabdus* sp., 23 - head, 24 - meso- and metasternum, laterally, 25, 26 - edeagus, 25 - ventral, 26 - lateral, 27, 28 - *Quassarus aenescens*, 27 - upper side, 28 - pronotum, laterally.

absent (Fig. 24). This group has been separated as a new genus *Geminorhabdus* Mazur, 2007. Théron (1961: 111) described also *Exorhabdus aenesceus* as having three complete lateral striae. An examination of the type-specimens clearly showed that it belonged to the genus *Quassarus* which had been erected to include a single species *Qu. rubripes* (Mazur, 2007: 136). Both these species are very similar, so their identity should be confirmed on larger material (Figs. 27-28).

The African species of *Atholus* Thomson, 1859, 16 in number, do not differ from the remaining species of the genus and they fit exactly with the last definition of *Atholus*, perfectly compiled by Ōhara (1992: 167-168).

The genus *Coptosternus* Lewis, 1914 is endemic to Madagascar. Nothing we can say about it owing to its rarity and a lack of new materials.

Summarizing, we can emphasize that the species composition of the African *Histerini* is pretty well recognized, though new species are still being described.

The taxonomic and systematic status of the majority of the species is not cleared as yet because of inadequate and often artificial generic rank used in classification. There is also a great deal of variability, especially in external structures: size, tibial denticulation, elytral and pronotal striation, etc.

Owing to these circumstances some species have been described twice or more as belonging to different genera. For instance, even a common pan African species, *Hister tropicus*, having been described four times by Marseul and, lately, once as belonging to *Contipus*.

The heart of the matter is that temporary classification is, at best, dubious.

So, having made a first step, it means a thorough recognition of all the species described, the next step should be made, including the finding and

selecting new characters which might be used in the classification of particular taxa.

The problem is highly complicated because many of characters used are simply an example of parallelism eg. ciliate epipleura or tridentate for tibiae. Thus, we have to use more tiny characters, located on antennae, mouth parts or under side as well as carefully check the genital structure in both, females and males.

Using all these characters in a thorough morphological study it is hoped that a satisfactory classification can be derived.

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