

SBORNÍK NÁRODNÍHO MUZEA V PRAZE

ACTA MUSEI NATIONALIS PRAGAE

XLI B (1985), No. 3—4

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REVISION OF THE GENERIC CLASSIFICATION OF THE OLD WORLD OEDEMERIDAE (COLEOPTERA)

No paper that would survey the classification of the Old World Oedemeridae has been published since SEIDLITZ (1899). A lot of new genera have been described by various authors in the meantime and — apart from that — opinions on the modern phylogenetic classification in general have been subjected to a considerable development, too. Those facts were the first reason for writing the present study. The other, and by no means less important reason was the apparent inequality of the concepts of genera and subgenera applied by various authors. Taxa with a very low taxonomic value were often described as genera and/or subgenera from the comparatively well investigated Palaearctic region, while — on the other hand — large collective genera have survived in the classification of tropical faunas. Genera were mostly defined by external characters, which are often subject to a convergent evolution in the family Oedemeridae. In the course of my work it was necessary to solve also a lot of nomenclatorial problems.

The aim of the present paper is the revision of already described genera, based upon examination of an extensive material and application of uniform criteria to their classification. It further aims at the attempt to establish phyletic relationships between particular genera and to draw conclusions concerning the phylogeny of Oedemeridae as a whole.

The paper is based especially upon the morphology of male copulatory organs, which seem to be to a lesser extent subject to the selection pressure of the environment than most external characters are and which consequently seem to reflect more exactly the true phyletic relationships between the taxa. However, the study of external morphology was not omitted either.

The study of external morphology revealed some new characters applicable for the purpose of supergeneric classification of the family. This subject is therefore paid attention to in this paper, even though it was out of its original scope.

I am well aware of the fact that the present survey of the classification of Oedemeridae is by no means perfect. This results from a necessarily subjective approach of the author, proper to any classification, as well as from new results that will be obtained by study of more extensive material of especially tropical Oedemeridae in future.

1. MATERIAL AND METHODS

I have examined about 14,200 specimens of Oedemeridae from the Palearctic (11,500 spec.), Ethiopian (700 spec.) and Oriental (2,000 spec.) regions. About 290 species in 72 genera and subgenera were identified from this material. From the point of view of nomenclature, study of the type-species of particular genera was of a special importance. As can be seen from the above account, particular zoogeographic regions were not equally represented in the examined material. For this reason some changes in the generic classification of tropical — especially African — Oedemeridae may be expected when a more extensive material is available in future.

Male genitalia of all examined material were studied. Morphology of mouth-parts and ovipositor was studied in detail in 10 and 11 genera respectively. Slides of wings were made in 33 species belonging to 24 genera.

All examined characters were studied by means of the stereomicroscope FM XX by Carl Zeiss, Jena under magnification 16X to 100X. Ovipositors were mounted into glycerin-gelatin medium.

Drawings were made with the ocular grid-screen and are always accompanied with a corresponding scale except for those of wings, which are somewhat sketchy and drawn all in an approximately equal size.

This paper could never be accomplished without a generous help of following entomologists and institutions, who sent me kindly on loan the material in their charge:

Dr. R. H. Arnett, Jr., Florida, State Collection of Arthropods, Gainesville
Dr. C. Besuchet, Muséum d'Histoire naturelle, Genève
Dr. M. Brancucci, Dr. W. Wittmer, Naturhistorisches Museum, Basel
Mr. M. J. D. Brendell, British Museum (Nat. Hist.), London
Dr. B. Brugge, Zoologisch Museum, Amsterdam (ZMA)
Dr. A. Casale, Museo Regionale di Scienze Naturali, Torino
Dr. R. Damoiseau, Institut Royal des Sciences Naturelles, Bruxelles
Dr. J. Decelle, Musée Royal d'Afrique Centrale, Tervuren
Dr. C. Girard, Muséum d'Histoire Naturelle, Paris
Mr. C. Girard, Muséum d'Histoire Naturelle, Paris
Dr. Z. Kaszab, Természettudományi Museum, Budapest
Dr. R. Krausse, Staatliche Museum für Tierkunde, Dresden
Dr. J. Krikken, Rijksmuseum van Natuurlijke Historia, Leiden
Dr. N. Nikitsky, Zoologičeskij muzej MGU, Moskva
Dr. R. Poggi, Museo Civico di Storia Naturale „G. Doria“, Genova
Dr. J. E. Raastad, Zoologisk Museum, Oslo
Dr. E. Ratti, Museo Civico di Storia Naturale, Venezia
Dr. W. Schawaller, Staatliches Museum für Naturkunde, Stuttgart
Dr. G. Scherer, Zoologische Sammlung des Bayerischen Staates, München (ZSM)
Dr. M. Uhlig, Zoologisches Museum der Humboldt-Universität, Berlin
Dr. M. Volkovič, Zoologičeskij Institut AN SSSR, Leningrad.

Additional examined material is deposited in my own collection as well as in the collection of the National Museum in Prague.

Last but not least it is my pleasant duty to express my thanks to Dr. J. Jelínek (National Museum Prague) and Dr. P. Stys (Faculty of Natural History Charles University, Prague) for their comments and to Dr. S. Bílý (National Museum, Prague) and Mr. M. J. D. Brendell [British Museum (Nat. Hist.), London] for their help in providing the necessary literature.

2. HISTORICAL REVIEW

Towards the end of the XIXth century the papers of three authors — GANGLBAUER, SEMENOV and SEIDLITZ — appeared, which were to represent the top of our knowledge of the Old World Oedemeridae for the next fifty years.

GANGLBAUER (1881) published the key to west-palearctic species of Oedemeridae. Even though he did not pay a special attention to the super-generic classification of the family, his paper became a basis for further authors.

SEMENOV (1894) published the key to subfamilies, tribes and genera of the palaearctic Oedemeridae. He divided the family into two subfamilies: 1) Calopodidae with the tribes Calopodidae and Sparedridae and 2) Oedemeridae with the tribes Ditylidae, Ganglbaueridae, Nacerdidae, Ascleridae, Oedemeridae and Stenostomatidae. In his following study (SEMENOV, 1900) he responded to the monograph by SEIDLITZ (1899) and correctly emended some mistakes of the latter author concerning the generic classification of the family.

The above papers were dealing especially with palaearctic fauna, while only scattered descriptions of particular taxa existed from both the Ethiopian and Oriental regions. That gap was at least partly filled up by the monograph of Oedemeridae by SEIDLITZ (1899). This author treated in his paper morphology of both larvae and adults, anatomy, biology and systematic position of Oedemeridae and gave a complete account of the history of classification of the family from the beginning up to his time. That part of his paper is quite complete and represents the summary of all facts known at that time from the mentioned regions. Therefore I feel it reasonable to begin my following account of the history of classification of Oedemeridae with SEIDLITZ (1899) and to refer reader to that monograph for the older period.

Further part of the SEIDLITZ'S monograph dealt with author's own concept of classification of Oedemeridae. He divided the family into two subfamilies: 1) Calopodini, not divided into tribes, and 2) Oedemerini with three tribes: Nacerdina, Asclerina and Oedemerina.

In the paper were given 46 taxa of the genus-group (further referred to as genera for simplicity) from the Old World. The monograph was an outstanding work in its time and it has still preserved its value, especially because of the completeness of the data collected. Unfortunately, many — especially exotic — genera have been dealt with only according to descriptions, a fact that had a negative effect on the quality of their interpretation and has partly limited the value of this work.

In following 50 years no paper comparable as to extent with that by SEIDLITZ (1899) appeared and the authors of smaller, regionally limited papers preserved both SEIDLITZ'S supergeneric system and his standard of the generic classification of the family. The same may be said even about the Catalogue of Oedemeridae of the World by SCHENKLING (1915), which gives 54 genera from the Old World and contains almost complete references to literature.

A lot of new genera described between 1915 and the fifties by PIC. Unfortunately, his papers did not reach the standard raised up to

SEIDLITZ and his predecessors. PIC'S descriptions are extraordinarily brief and do not contain any data concerning such important characteristics as the form of mandibles and tarsal claws. He had described 13 new genera from the Old World before 1948. Further 10 genera have been described by other authors, among which the most important was BLAIR (1926). ARNETT (1950) published the list of all taxa of the genus-group with their type-species. This paper, which promoted a higher standard of the taxonomic treatment of the family listed 79 Old World genera together with their type-species, often subsequently designated by author. It contained also complete references to literature and made up a solid basis for further work in the taxonomy and nomenclature of Oedemeridae.

The revision of nearctic species by ARNETT (1951) became a turning-point in the history of our knowledge of Oedemeridae. The author gave a survey of morphology of the male genitalia and abdominal segments VII.—IX. and adopted the observed differences in distinguishing taxa on the genus- and species-level. It is regrettable that the same approach has not been applied also to the supergeneric classification of the family. ARNETT (1951) distinguished three subfamilies: Calopodinae, Nacerdinae and Oedemerinae, the latter one subdivided into the tribes Ditylini, Asclerini and Oedemerini. Nacerdinae was raised to the subfamily level for the first time in that paper. This revision was followed by the key to genera of the Nearctic and Neotropical regions (ARNETT, 1961) with remarks to some from other regions. Unfortunately, no male genitalia have been figured in that paper and it seems, that the author partly refrained from their application in generic classification.

Further papers published from the fifties on and concerning the Old World fauna have a regional character and they are on the level of the ARNETT'S papers (e.g. NAKANE, 1954, ŠVIHLA, 1980a, b, 1983a, b, MACNAMARA, 1969, 1971, HUDSON, 1975).

Morphology of larvae and pupae was studied in detail by ROZEN (1959, 1960). Even though he pointed out the close relationship between Nacerdinae and Ditylini, he preserved the supergeneric classification proposed by ARNETT (1951).

A brief account of the history of supergeneric classification and a number of genera of the Old World Oedemeridae is given in the following tables

Table 1. History of supergeneric classification of the family

Author	Subfamily	Tribus
SEMENOV, 1894	Calopodinae	Calopodidae
		Sparedridae
	Oedemeridae	Ditylidae
		Ganglbaueridae
		Nacerdidae
		Ascleridae
		Oedemeridae
		Stenostomatidae

SEIDLITZ, 1899	Calopodini Oedemerini	Calopodina Nacerdina Asclerina Oedemerina
ARNETT, 1951	Calopodinae Nacerdinae Oedemerinae	Calopodini Nacerdini Ditylini Asclerini Oedemerini
ŠVIHLA, 198	Nacerdinae Calopodinae Oedemerinae	Ditylini Nacerdini Calopodini Asclerini Oedemerini Stenostomini

Table 2. History of number of valid names of genus-group of the Old World

Author	Number of valid taxa
SEIDLITZ, 1899	46
SCHENKLING, 1915	54
ARNETT, 1950	79
up to 1984	87
ŠVIHLA, 1985	78

3. CHARACTERISTICS USED IN GENERIC AND SUPERGENERIC CLASSIFICATION OF OEDEMERIDAE

External morphology of adult Oedemeridae with a special regard to the male genitalia is mostly dealt in the following survey. Developmental stages have already been treated by ROZEN (1959, 1960). A lot of new information important for the supergeneric classification of Oedemeridae will undoubtedly be brought about by study of internal morphology, anatomy and onthogeny in future. Considering that — as already stated above — the chief aim of the present paper is the generic classification of the family the above topics have remained out of its scope.

Head

Head in most species moderately prolonged, less often short and broad. The head prolonged into a rostrum occurs in the genus *Stenostoma* Latr. as well as in certain species of the genera *Chitona* Schm. and *Oedemera* Ol. With the prolongation of the head-capsule is correlated also the prolongation of eyes and mouth-parts. This undoubtedly derived form of head developed probably as adaptation to feeding in flowers.

Mandibles. General form of mandibles is arcuate; the falcate hypertrophic mandibles, curved almost in a right angle, occur only in some species of the genus *Colobostomus* Frm. (Fig. 58). Outer side of mandible bears sensory setae on its basal half. In the basal portion

of the inner side is situated a rugose oval mola; a membranose prostheca with a setose inner side grows on distad of it. Apex of mandible either simply pointed (Fig. 8), or bifid, i.e. with two teeth situated above each other (Fig. 9). Both apical teeth are either of equal length, or the ventral one is slightly shorter. Only exceptionally (*Anisochroa* Sem.) is the dorsal tooth of the right mandible shorter than the ventral one. On the outer side of the bifid apex occurs a more or less distinct longitudinal furrow. Subapical tooth appears only on the right mandible, always combined with a simple apex (Fig. 11), perhaps as a result of the secondary shift of the dorsal tooth of the original apex proximad. Retinaculum, situated more proximad, appears only in the genus *Pseudohyperaclera* Macn. (Fig. 152) and in the tribes Oedemerini and Stenostomini (Fig. 10). The following types of mandibles may be distinguished in the family Oedemeridae:

- 1) both mandibles with bifid apices: Nacerdinae, Calopodinae (*Calopus* F.), Asclerini part.
- 2) both mandibles with simple apices: Calopodinae (*Sparedrus* Dej.), Asclerini part.
- 3) both mandibles with simple apices, the right one with a subapical tooth: Asclerini part.
- 4) both mandible with simple apices, the right one with subapical tooth, the left one with retinaculum: Asclerini (*Pseudohyperasclera* Macn.).
- 5) both mandibles with bifid apices and with retinaculum: Oedemerini, Stenostomini.

The mandible with a bifid apex seems to be primitive, at least among Oedemeridae, while the simple apex appears only in more derived groups. Explicitly derived are mandibles with subapical tooth and retinaculum. Four of the five types of mandibles mentioned above occur in a mosaic manner in various groups of genera of the tribus Asclerini. This is apparently caused by the majority of the ancestral gene-pool being shared by closely related genera and manifesting itself in their various phenotypes. It is the case of parallelism (MAYR, 1963), resp. homoiology (HENNIG, 1951). Because of that, the type of mandibles cannot be used as the character for the stating of new tribes from the rank of the tribus Asclerini, how it did MACNAMARA (1969). The form of mandibles is an important character in both generic and — as it results from the above account — supergeneric classification of Oedemeridae.

Maxillae. The same form of maxilla has been found in all examined genera (Fig. 5). Its basal part is divided into cardo and stipes, the latter one secondarily divided by suture. Both lacinia and galea are strongly ciliate. Maxillary palpus foursegmented, joined to palpiger. Form of the terminal segment of maxillary palpus variable. The triangular to securiform shape is probably the primitive one, from which the slender, or cultriform forms may be derived. The most derived forms can be found in the genus *Schistopselaphus* Frm. Form of the terminal segment of maxillary palpus is correlated with the length of the sensory furrow at its distal end (the furrow is shorter in the securiform — and longer in the cultriform segment). There is another shallow sensorial pit in the lateropical part of the segment, which is distinct to completely

absent in some genera, while it is hypertrophic in the genus *Schistopselaphus* Frm. (Figs. 234, 235). Still other sensorial pit may be found on the inner side of the segment in females of the subgenus *Allagatha* Sem. et Min. of the genus *Nacerdes* Dej. (Fig. 47). The slender terminal segment occurs only in certain genera with diurnal activity, in which olphactory orientation gave way to the visual one. Such forms occur in all groups with exception of the subfamily Calopodinae, so that the slender terminal segment of maxillary palpus itself — without respect to other characters — cannot be used as a diagnostic character of the tribus Oedemerini, as it was done by former authors. Form of the terminal segment of maxillary palpus is constant on species- and sometimes even generic-level and is applicable in descriptions of taxa of those ranks.

Labium. No substantial differences in the form of labium of the examined taxa have been found (Fig. 4). Labium consists of a more heavily sclerotized postmentum bearing a membranose praementum. Labial palpus three-segmented, joined to palpifer. Glossae connate to form a ligula, ventrad of which are situated broad membranose paraglossae bearing many sensorial setae.

Antennae. Originally simple, filiform and eleven-segmented. In all groups — with exception of Calopodinae — the trend to division of the eleventh segment into two secondary ones occurs. This is especially markedly manifested by the circular constriction of the distal part of the segment between its midlength and two thirds of its length, or by a unilateral emargination of the part of the segment (in males in more extent). Complete division of the segment took place in males of the tribus Nacerdini, in which antennae are distinctly twelve-segmented. In all subfamilies occurs trend to modification of the original filiform antennae. Thus serrate antennae occur in genera *Calopus* F., *Sparedus* Dej. as well as in males of *Colobostomus* Frm. and *Schellia* Rtt., monstrose antennal segments in males of *Nacerdes* Dej. (*Patiala* Lew.), cylindrically thickened apical segments in Nacerdinae (*Opsimea* Mill., *Ascleranoncodes* Pic, *Diasclera* Rtt.), conspicuously flattened median segments in the genus *Pseudolycus* Guér. All the mentioned cases are derived. The form of antennae is an important characteristic of taxa of the genus-group and the trends to development of derived types may serve as characters of taxa on a supergeneric level.

Eyes are rather large and convex, rarely flat, in species with nocturnal activity often markedly enlarged. The primitive form of eye is reniform, with a narrow dorsal emargination near insertion of antenna, such as occurs in the tribus Nacerdini. This form developed in two different ways: 1) the excision became extremely deep, enclosing the insertion of antenna (Calopodinae), or 2) the excision has been gradually suppressed, so that the eye is oval in the most advanced taxa. The latter development is often correlated with prolongation of the head-capsule and the increase of the distance between eyes and insertions of antennae. The latter form occurs along with the derived one in all remaining groups of the family. Size and shape of eye are often variable even within one genus and cannot always be used as a diagnostic character of particular genera as it has been done by former authors. As example of genera displaying

gradual series of transitional forms may be given *Nacerdes* Dej., *Ischnomera* Steph. and *Oedemera* Ol.

Thorax

Pronotum is most often cordiform, often constricted before the base. A quadrangular form is much more rare and derived. Important characteristics of prosternum are the form of prosternal process and coxal cavities. Prosternal process is sharp and the anterolateral walls of procoxal cavities fall steeply down in the subfamilies Calopodinae and Nacerdinae as well as in the tribus Asclerini. At the contact of prosternal and episternal sutures of procoxal cavity occurs a sharp laterocranial process continued by the prosterno-episternal suture (Fig. 14). In the tribes Oedemerini and Stenostomini the situation is changed, with much more loosely articulated procoxae; prosternal process is rounded, walls of procoxal cavity fall obliquely down and the procoxal cavity is round, without a sharp process (Fig. 15). Scutellum triangular to semicircular, not offering characters applicable to classification.

Meso- and metasternum have the same form in most groups (Fig. 13), except for the subfamily Calopodinae (Fig. 12). In the latter group mesosternum does not reach the cranial border of mesothorax, being pushed back by mesepisterna which bear flat impressions corresponding to procoxae, trochanters and anterior femora. Mesocoxae are separated from one another by connate intercoxal processes of meso- and metasternum, metacoxae separated by the intercoxal process of the third (first visible) abdominal sternite. Consequently, three basic types of the structure of sternal area, corresponding to various degrees of mobility may be distinguished among Oedemeridae:

- 1) nacerdoid type (Fig. 13): intermediary to weak sclerification of sternum; the basic type, from which the following ones can be derived: Nacerdinae, Asclerini.
- 2) calopoid type (Fig. 12): heavy sclerification, much more limited mobility. Probably an unsuccessful model in terms of evolution: Calopodinae.
- 3) oedemeroid type (Fig. 15): differs from the first type by different configuration of prosternal area; weakly sclerified, very movable: Oedemerini, Stenostomini.

Wings are fully developed in most of genera, the only exceptions in the Old World being the genera *Apterosessinia* Blair and *Gilotia* Pardo, inhabiting desertic areas. Analogous cases of aptery of genera inhabiting similar habitats may be found also in other families of Coleoptera. Pigmentation of wings and wing-venation is generally weaker in species with nocturnal activity. Nomenclature of wing-venation is used according to ARNETT (1951) — Fig. 1a. A general trend to reduction of wing-venation may be observed in all higher taxa of Oedemeridae, especially in their more derived genera, but certain evolutionary trends are specific for certain taxa only. Common trends occurring generally in Oedemeridae are:

- 1) abbreviation (or a complete reduction) of the vein Rs; the long vein Rs occurs only in Calopodinae.

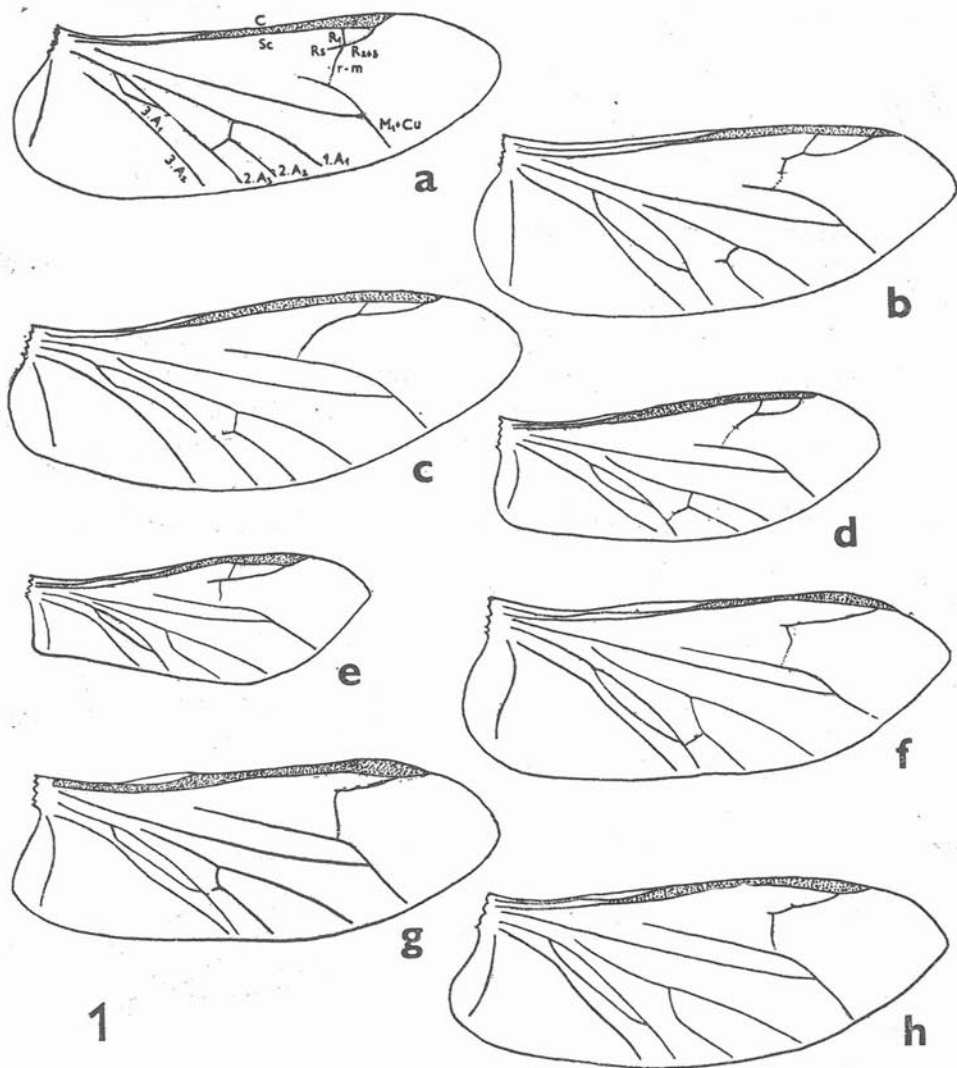


Fig. 1: wing-venation: a — *Calopus serraticornis* [F.], b — *Ditylus laevis* [F.], c — *Diplectrus longipennis* [Frm.], d — *Chrysanthia viridissima* [L.], e — *Opsimea quadrinervosa* [Rche.], f — *Nacerdes melanura* [L.], g — *Nacerdes (Xanthochroa) gracilis* [Schm.], h — *Nacerdes (Xanthochroa) carniolica* [Gistl].

- 2) abbreviation of the vein r—m (the first stage of which is the depigmentation of its distal portion) occurs in all taxa with exception of Calopodinae.
- 3) various degrees of reduction of the vein $2a_2 - 2a_3$ occur in all groups, the complete vein being preserved only in more primitive genera.

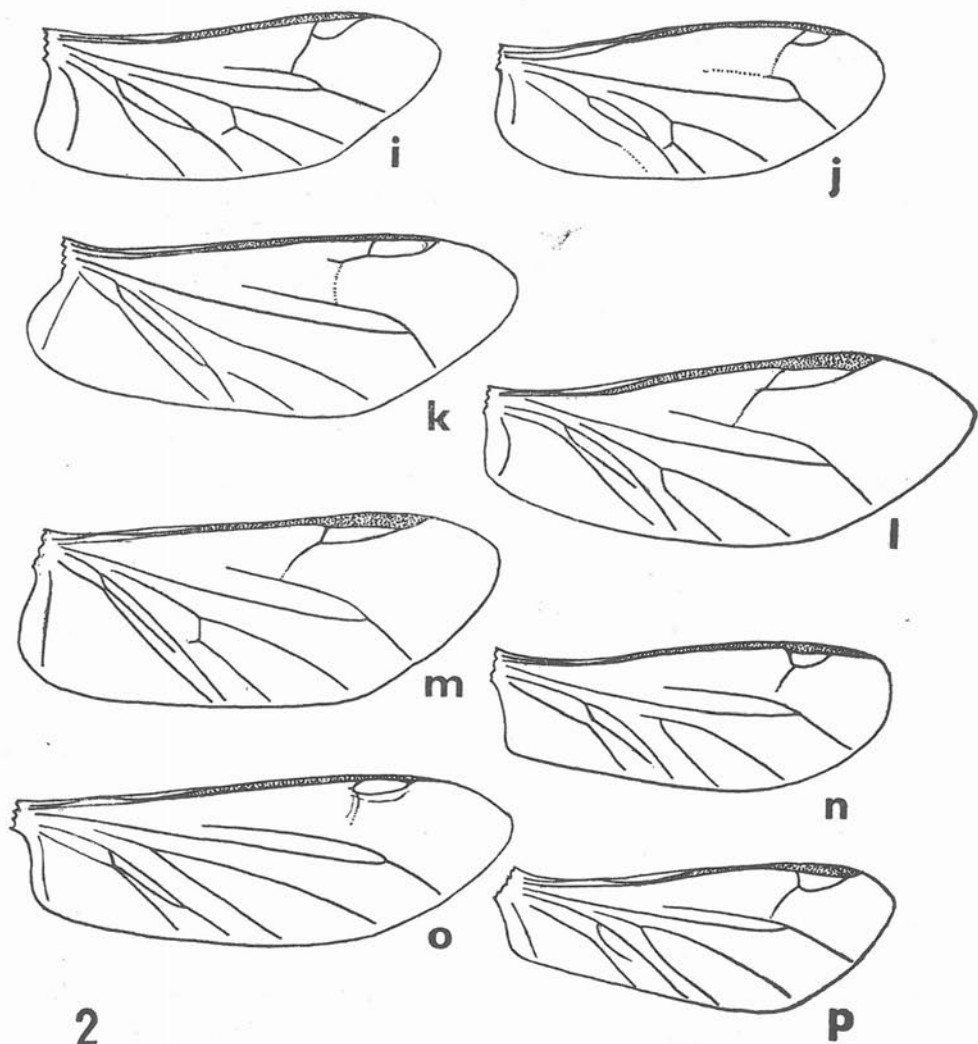


Fig. 2: wing-venation: i — *Colobostomus griseovestitus* Frm., j — *Nacerdochroa caspia* (Fald.), k — *Pseudolycus antennatus* Brancs., l — *Asclerosibutia lineaticollis* Pic, m — *Schistopselaphus apicatus* Frm., n — *Stenostoma coeruleum* (Pet.), o — *Oedemera flavicans* (Frm.), p — *Oedemera virescens* (L.).

4) abbreviation of the distal portion of the vein 3A₁ and its separation from 3A₃ occurs in more derived genera of all groups. The vein is invariably complete only in the subfamily Calopodinae.

The following trends — on the contrary — are more specific:

1) reduction of the vein R₁ in some species of the genus *Nacerdes* Dej. Nevertheless, at least a rudiment of the vein may always be found.

- 2) dichotomous connection of the veins 1A₁ and 2A₂ is characteristic of the tribes Oedemerini and Stenostomini. It is less developed in *Stenostoma* Latr., but markedly so in Oedemerini.
- 3) the veins 1a₁ — 2a₂ completely missing in the genus *Pseudolytus* Guér. For illustrations of particular types of wing-venation see Fig. 1—2.

Wing-venation is to a considerable degree variable within some genera. It may be used as a subsidiary characteristic in supergeneric classification. The most primitive types of wing-venation may be found in the subfamily Calopodinae as well as in more primitive genera of the tribes Ditylini, Nacerdini and Asclerini, while the most derived types occur in derived genera of Ditylini, Nacerdini, Asclerini and especially Stenostomini and Oedemerini. Taxonomic evaluation of wing-venation must be based on the whole complex of characters described above. A more detailed study will certainly reveal an even wider extent of variability, but the characteristics of either primitive or derived degree of wing-venation in taxa of a supergeneric rank will hardly undergo much change in future.

Elytra usually either dilated posteriorly or parallel-sided, separately rounded at the apex, exceptionally broadly rounded (*Ganglbaueria* Sem., *Apterosessinia* Blair) or acutely pointed and projecting into a thorn (*Ascleropsis* Seidl., *Falsosessinia* Pic) at the apex. Humeral bulge distinctly developed at the base of elytra, but reduced in apterous species. Aptery is accompanied with abbreviation of elytra, so that a larger part of abdomen besides pygidium is exposed. Elytra may be narrowed or even sinuate on both sides and sometimes — in connection with a pronounced stenoptery — abbreviated in some derived species (*Anogcodes* Dej., *Schellia* Rtt., *Oedemera* Ol.). Surface of elytra is corrugated, differing from the surface of head and pronotum, which are usually more or less densely punctate. Pubescence usually recumbent, in some species (*Asclerosibutia* Pic, *Isoloxantha* Sem.) undulate or scale-like. Besides the recumbent pubescence, more or less outstanding hairs occurs in the genus *Chrysanthia* Schm. as well as in the males of *Colobostomus longepubens* Švihla.

There are usually four nerves on each elytron: the first, subhumeral one is always developed, while the other ones may be abbreviated, reduced or even absent. The reduction affects most often the second, humeral nerve and then the fourth, sutural one, while the third one remains preserved most often. Strong costate nervation occurs in some derived genera (*Ischnomera* Steph., *Pseudolytus* Guér., *Asclerosibutia* Pic, *Melananthia* Blair). Transverse connection between basal parts of the nerves 3 and 4 has been observed in the genus *Oncomera* Steph., probably as a reinforcement of elytron.

The shape and nervation of elytra are variable not only within the genus, but even within particular species and may only rarely be used as a decisive generic characteristic. I consider the elytra that are moderately dilated posteriorly, with a well developed humeral bulge and four complete nerves, the most primitive ones. All different types of elytra and elytral nervation must be considered as more or less derived ones.

Legs. Coxae usually simple, in males of certain derived genera with spiny projections at the posterior margin (*Nacerdes* Dej., *Anogcodes* Dej., *Chrysanthia* Schm., *Diasclera* Rtt.). In other ones (Oedemerini) the metacoxae prolonged in males, hook-shaped. Femora usually slender, thickened femora occurring in the genera *Anogcodes* Dej. (anterior or all femora), *Nacerdes* Dej., *Chrysanthia* Schm. (all femora) and in the tribus Oedemerini (posterior femora). Femora with hooked projections are known in the genus *Anogcodes* Dej. Tibiae straight to moderately curved. Strongly curved metatibiae in males of Oedemerini are correlated with the hypertrophy of femora. Tibiae may be either dilated at the apex (*Ananconioa* Seidl., *Chitonoidea* Švihla) or thickened in their median portion (*Anogcodes* Dej., *Ananconiomorpha* Švihla) with a pair of spurs at their distal end. One of the spurs of anterior tibiae is reduced in the tribus Nacerdini, both of them on all tibiae in the genus *Dryopomera* Frm. Tarsi moderately dilated, heteromerous (5, 5, 4), ventral surface of some tarsal segments with a spongy glandular pubescence. In the genera that preserved primitive characters (Calopodinae, *Ditylus* Fisch.) this pubescence occurs on segments I—IV of anterior and intermediate tarsi and on segments II and III of posterior tarsus (pattern 4, 4, 2). In the rest of genera the spongy pubescence occurs only on the penultimate segments of all tarsi, occurring only sparsely at sides of remaining segments (pattern 1,1,1). Exceptionally modified intermediate tarsi are known in *Ananconiomorpha* Švihla and *Ananconia* Seidl. The original form of a tarsal claw is a slender one with a swollen basal portion, which may be prolonged into a tooth reaching two thirds of the length of the claw in some derived genera.

Taxonomic value of the characters on legs is variable. The reduction of one terminal spur of anterior tibia is a characteristic feature of the tribus Nacerdini, while the absence of both terminal spurs is only generic character of the genus *Dryopomera* Frm., since the reduction took place in all pairs of legs. The spongy pubescence of more than one segment of each tarsus is a very primitive character, improving the adhesion to substrate in the most ancient and robust forms and indicating the great age of the subfamily Calopodinae as well as of the genus *Ditylus* Fisch. The shape of tarsal claws may serve as a distinguishing character on generic level. Various types of tarsal claws seem to occur accidentally in various groups of genera, much like the various forms of mandibles, and fluent series of all transitional forms from a simple claw to a strongly dentate one may hitherto observed in *Ischnomera* Steph. only. The other modification of coxae, femora, tibiae and/or tarsi in males, mentioned above, are manifestations of the sexual dimorphism aiming at holding female during the act of mating. Such characters occur in all evolutionary lineages of Oedemeridae with exception of the subfamily Calopodinae. In my concept of classification they characterize mostly those taxa of the rank of subgenus, that comprize the most derived types of a given genus. Common trends to performance of such derived features may indicate a closer relationship of taxa on a supergeneric level. Thus for example the spiny projections of coxae occur only in

the subfamily Nacerdinae in members of both tribes Ditylini and Nacerdini.

Abdomen

Two principal trends may be distinguished in the evolution of the abdomen of Oedemeridae (as well as in the evolution of their thorax): either towards a heavier sclerotization and a limited mobility, or — contrary to the previous one — towards a higher mobility of particular segments and a weaker sclerotization. The last visible tergite (pygidium) as well as the last sternite of males are as a rule either rounded or moderately emarginate, pygidium nearly reaching the length of the last sternite or slightly exceeding it. In derived genera is either pygidium strongly prolonged (*Chitona* Schm., *Oedemera* Ol.), or the last sternite deeply emarginate, so that the projections of the urite VIII are visible from outside. This arrangement facilitates the mobility of the anal part of abdomen during copulation.

Morphology of urites VIII and IX, which constitute a part of the male copulatory apparatus, has been studied in detail by ARNETT (1951). Therefore, I am dealing in detail only with the paired projections of the urite VIII. The projections are either completely hidden inside abdomen or at most their apical portions are exposed in more primitive genera. In such cases they are rather weakly sclerotized. If the last sternite (i.e. sternite VII) is abbreviated or emarginate, the projections of the urite VIII are almost completely exposed, more heavily sclerotized and pigmented. That is often accompanied with reduction or even a complete loss of their pubescence. Apart from the subfamily Calopodinae, the evolution of the last abdominal segment and of the projections of the urite VIII from the primitive stage to the strongly derived ones may be observed in all groups of Oedemeridae. Difference between the length of pygidium and the last sternite is much smaller and the excision of the latter is generally shallower in females. The shape of both the sclerites in males may serve as a good diagnostic character on both generic and specific level.

Ovipositor of Oedemeridae is of a standard type with paired coxites and gonostyloids. The most modified type has been found in the genera *Asclerosibutia* Pic and *Microsessinia* Pic, in which a heavy secondary sclerification of coxites took place, so that the coxite seems to be divided into two sclerites. I failed in finding any character applicable in supergeneric classification of the family. In order to find diagnostic characters of taxa of a lower rank than tribes it would be necessary to examine a much more extensive material. Principal modifications of the ovipositor, probably conditioned by the substrate into which eggs are laid, are figured (Figs. 16—18).

Phallus is of the derived heteromeroid type (CROWSON, 1955). Nomenclature of its part is taken over from SNODGRASS (1957), but I feel it reasonable to compare it with that used by ARNETT (1951). Phallus consists of tegmen and aedeagus (= median lobe sensu ARNETT). I prefer the neutral term tegmen for description of remaining parts of phallus, since their homologization is not yet univocal.

No line of demarcation between paramerae and phallobase occurs on the tegmen of Oedemeridae. ARNETT (1951) homologized with phallobase a separate sclerite (= tegminite). On the contrary, the basal apodemes occurring on the basal part of the tegmen of the subfamilies Calopodinae and Oedemeridae seem to be homologous with the apodemes of the cucujoid type of phallus (CROWSON, 1955), which clearly form a part of phallobase, and thus suggest rather a complete concrescence of phallobase and paramerae. I preserved the term tegmen in this case in order to distinguish the mentioned structure from its divided parts i.e. paramerae.

Tegmen is primarily situated dorsad of aedeagus (Fig. 21), more or less covering at least its basal portion. Extraction genitalia I often found it in a lateral or even ventral position, i.e. revolved by 90° or 180° respectively, but its relative position, towards gonoporus and phallotreme of aedeagus remained unchanged. The same situation described CROWSON (1955) in some other families of Heteromera like Zopheridae, Monommidae and Trictenotomidae. I found the dorsal position of tegmen in the subfamilies Nacerdinae and Calopodinae [*Sparedrus* Dej.], while the ventral resp. lateral one seems to be characteristics of the subfamily Oedemerinae and partly also Calopodinae [*Calopus* F.]. For a practical reason, all tegmens are described and figured in one view (if not otherwise stated) irrespective their actual position inside body. Drawings of aedeagus are invariably made in lateral view. Following types of tegmen may be distinguished among Oedemeridae:

- 1) dityloid tegmen — apart from paramerae not being connate with phallobase it is a typical heteromeroid tegmen. It is relatively weakly sclerotized with distinct, non-pubescent paramerae, and tubuliform, embracing aedeagus except its apical portion (Fig. 19, 20). It is characteristic of the tribus Ditylini.
- 2) nacerdoid tegmen — strongly abbreviated, embracing only the basal portion of aedeagus (Fig. 22), paramerae reduced, at most marked by a shallow excision of the non-pubescent apical part. Characteristic of the tribus Nacerdini.
- 3) calopoid tegmen — very similar to the preceding one, but with well developed lateral apodemes embracing the basal part of aedeagus. Paramerae not even marked, the apical portion of tegmen more or less pubescent (Fig. 53, 57). Subfamily Calopodinae.
- 4) oedemeroid tegmen — weakly to very strongly sclerotized, paramerae developed, pubescent or not, basal apodemes fitting close to the basal apodeme of aedeagus (Fig. 21). The basal apodemes are secondarily very feebly developed in the genus *Stenostoma* Latr. Subfamily Oedemeridae.

The curved transversal edge situated just before the basal apodemes and occurring in derived genera of the tribes Asclerini and Oedemerini does not represent the obliterated original suture separating paramerae and phallobase. It functions as insertion of muscles attached to the basal apodeme of aedeagus and responsible for its movements. The first (dityloid) type of tegmen represents an initial stage of the evolution of Oedemeridae, corresponding most of all to the basic heteromeroid

type. In the second type, which is derived from the dityloid one, the reduction of paramerae has taken place. In the third and fourth types, which must have splitted very early from the common ancestral stock, basal apodemes and pubescence of paramerae (resp. of the apical portion of tegmen) have appeared. A secondary reduction of paramerae took place independently both in the calopoid and nacerdoid types (homoio-logy). Within the oedemeroid type evolution followed two different paths: 1) a tubular closure of a rather weakly sclerotized tegmen as in the dityloid type, or 2) an open, heavily sclerotized tegmen with powerful muscles attached to aedeagus and moving it. Seldom — as in the genera *Asclerosibutia* Pic, *Microsessinia* Pic, *Schistopselaphus* Frm. and *Eopse-laphus* gen. n. — paramerae are concrescent all along their length, but a distinct suture is always present between them. As a rule, the pubescence of paramerae is a derived character in Oedemeridae as a whole, but it seems to be rather a primitive one in the subfamily Oedemeridae. It is a good diagnostic character of certain genera and/or groups of genera.

Aedeagus of Oedemeiridae is cylindrical, only rarely dorsoventrally flattened (*Sparedrus* Dej.). Ejaculatory duct enters aedeagus ventro-basally; in dorsoapical position (before the recurrent teeth) opens phallos-treme, which is oblong oval to slot-shaped. Distad of phallos-treme is the apex of aedeagus, often bearing one or two pairs of recurrent teeth on its dorsal wall. Analogous teeth occur only seldom also on the ventral side (most often in the tribus Nacerdini). Two principal types of aedeagus may be distinguished among Oedemeridae:

- 1) calopoid aedeagus — straight to gently curved, without an arcuate basal apodeme. Aperture of the ejaculatory duct into aedeagus without a supporting sclerite (Fig. 24). This more primitive type is a characteristic one of the subfamilies Nacerdinae and Calopodinae, occurring also in primitive genera of the tribus Asclerini (*Colobostomus* Frm., *Dentostomus* Švihla, *Schellia* Rtt.) and secondarily also in the genus *Stenostoma* Latr. In the genera of Asclerini mentioned above the base of aedeagus is already somewhat curved, representing a transition to the second type. Also the supporting sclerite of the aperture of ejaculatory duct occurs in those genera for the first time.
- 2) oedemeroid aedeagus — base of aedeagus prolonged and curved, muscles moving aedeagus attached to its dorsal wall. Gonoporus situated apically from this basal apodeme. Aperture of ejaculatory duct sustained by a supporting sclerite (=subbasal apodeme sensu ARNETT, 1951), which is partly projecting into the gonoporus (Fig. 21). It is a derived type occurring in the tribes Asclerini and Oedemerini. Basal apodeme underwent further evolution within those groups. The most simple type is a short, thin and in lateral view flat apodeme (Fig. 3c), from which a further type has developed by its prolongation and coiling (Fig. 3d). In another type walls of the apodeme are extended laterad, so that the apodeme becomes concave either at the apex (Fig. 3f) or all along its length (Fig. 3e). A further type has developed from the preceding stage by coalescence of the lateral walls (Fig. 3g), being followed by an even more

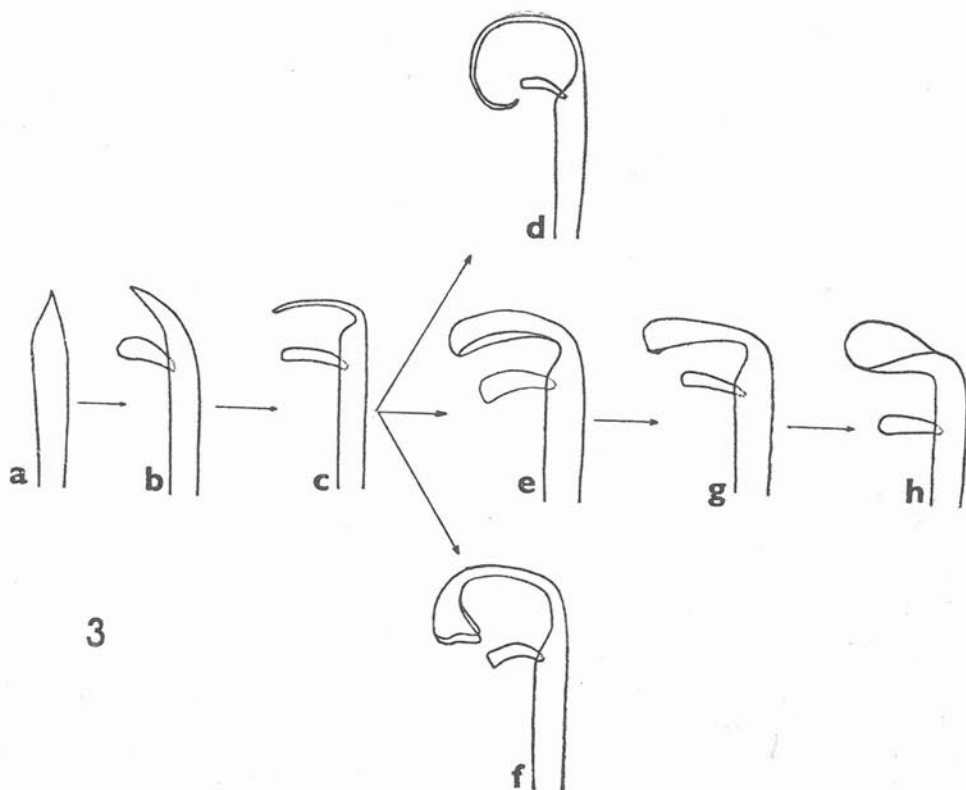


Fig. 3. Development of basal apodeme of aedeagus.

advanced stage in which the coalescent walls support an initially weakly, but later rather strongly sclerotized crest functioning as an insertion of muscles (Fig. 3h). Parallel to the evolution of the basal apodeme, its sclerification has been gradually increasing, too.

The particular types of the basal apodeme are more or less characteristic of certain groups of genera, particular genera or species groups. The recurrent teeth in the apical part of aedeagus are a derived character in comparison with the simple apex; they are sometimes multiplied in strongly advanced forms. Occurrence of the teeth is always correlated with a heavier sclerotization of aedeagus.

As it is evident from the above account, the form of tegmen and aedeagus is important in classification of Oedemeridae as well as other families. Particular types characterize taxa on a supergeneric level and they often represent a more reliable criterion of relationships than the external characters do. In the present paper, also the classification of genera (not only that of higher taxa) is based chiefly on those structures. The form of tegmen and aedeagus seems to be exposed to a considerably lower selection pressure of environment than many ex-

ternal characters, upon which the formerly proposed systems of the family have been based (e.g. the form size of eyes, form of body and elytra, nervation of elytra, width of tarsal segments etc.). Particular features of the male copulatory apparatus make it possible to establish mutual relationships between genera of each tribus and to deduce their phylogenetic relationships to other groups of genera.

Form of body, colour pattern, evolutionary stages, bionomy

The ancestral stock of the family Oedemeridae was probably represented by large and robust beetles resembling the modern genus *Ditylus* Fisch. The large size and heavier weight of their body were correlated with the presence of spongy pubescence on several tarsal segments as the adaptation improving their adhesion to substrate. Among modern Oedemeridae large forms like *Calopus* F., *Ditylus* Fisch., *Xanthochroa* Schm. and *Falsosessinia* Pic represent initial stages of particular evolutionary lineages and diminishing of the body size is a common evolutionary trend in the family. It is accompanied by modifications of the ventral side of body and its sclerotization, improving mobility of the beetles.

The more primitive forms have always a yellowish brown colouration and nocturnal activity, being attracted by light. They are characteristic of tropical and arid zones. A bright, often metallic colouration, correlated with prevalent diurnal activity, appears only in more advanced genera, which have spread into the temperate zones of both hemispheres.

The following account of the phylogeny of taxa of the family-group includes also the data on larvae and pupae of Oedemeridae given by ROZEN (1959, 1960). Most species develop in various stages of decomposition of a rotting wood, or — secondarily — in woody parts of herbaceous plants. The most advanced tribes Oedemerini and Stenostomini develop mostly in soft parts of herbaceous plants as suggested also by corresponding adaptations of their larvae.

4. SUPERGENERIC CLASSIFICATION OF THE FAMILY OEDEMERIDAE

1. Subfamily Nacerdinae Mulsant, 1958

Nacardates Mulsant, 1858: Ann. Soc. Linn. Lyon, 5: 99

Nacerdinae Arnet, 1951: Amer. Midl. Nat., 45: 273

Type-genus: *Nacardes* Dejean, 1834

Imago. Mandibles always with a bifid apex and without retinaculum. Trend to occurrence of cylindrically thickened antennal segments may be observed in advanced genera. Sternal region with a basic structure (Fig. 13). Wing-venation primitive to derived, aptery unknown. Spiny coxae and thickened femora occur in males of advanced genera. Tarsal claws simple. Tegmen in dorsal position, without basal apodemes, non-pubescent in its apical portion. Aedeagus of the calopoid type.

Larva. Ocelli reduced to absent, urogomphi absent. Thoracic terga I—III, further abdominal terga I—II (III) and usually also abdominal sterna III—IV with asperity-bearing ampullae. Development in wood.

Pupa. Setae on the surface of pupa inserted atop of round tubercles.

Distribution: all zoogeographic regions except the Ethiopian one.

Absent also in New Zealand and the islands of the Pacific (apart from the cosmopolitan species *Nacerdes melanura* L.).

The tribus Ditylini is a more primitive one of the two tribes included in this subfamily, as suggested by its heteromeroid phallus. The tribus Nacerdini is a derived group in which reduction of paramerae, loss of one terminal spur on anterior tibia and division of the eleventh antennal segment in male have taken places. Already ROZEN (1960) established the close relationship between Ditylini and Nacerdini on the basis of study of their larval morphology. Nevertheless, spite of it he accepted the classification proposed by ARNETT (1951), in which Ditylini made up a part of the subfamily Oedemerinae.

1. Tribus **Ditylini** Mulsant, 1858

Ditylates Mulsant, 1858: Ann. Soc. Linn. Lyon, 5: 99

Ditylini Arnett, 1951: Amer. Midl. Nat., 45: 287

Type-genus: *Ditylus* Fischer-Waldheim, 1817

Imago. Antennal segment 11 feebly emarginate or constricted. anterior tibia with two terminal spurs. Wing-venation primitive to derived. Tegmen with distinct paramerae (Fig. 23).

Larva. Asperity-bearing ampullae present on the thoracic terga I—III, abdominal terga I—III and abdominal sterna III—IV (*Ditylus* Fisch.), or missing on the abdominal sterna (*Chrysanthia* Schm.).

Distribution: all regions except the Ethiopian one, further missing in New Zealand and islands of the Pacific and Indian Oceans. Five genera known from the Old World. To this tribus belong also the genera *Agasma* Newm. (Australia), *Heliocis* Arn., *Eumecomera* Arn., *Sisenes* Champ. and probably some further american genera. Ranges of those genera are rather isolated, particular genera are well separated morphologically from each other, without close relatives. All these facts suggest a long evolution and a great age of the group.

This tribus represents the oldest branch separated from the common ancestral stock of Oedemeridae. The primitive genera *Ditylus* Fisch. and *Agasma* Newm. have the spongioid pubescence of tarsi corresponding to the pattern 4,4,2, a robust body, primitive wing-venation and slightly abbreviated last sternite. Remaining genera display various derived character like entire eyes, cylindrically thickened antennal segments, the shortened and deeply emarginate last sternite, visible projections of urite VIII and the pattern of occurrence of the spongioid tarsal pubescence invariably 1,1,1.

2. Tribus **Nacerdini** Mulsant, 1958

Nacerdates Mulsant, 1858: Ann. Soc. Linn. Lyon, 5: 99

Nacerdini Schenkling, 1915: Col. Cat., 65: 8

Type-genus: *Nacerdes* Dejean, 1834

Imago. Antennal segment 11 divided into two in males, anterior tibia with only one terminal spur, pattern of spongioid pubescence of tarsi 1,1,1. Last sternite shortened and emarginate, projections of urite VIII always visible, in advanced genera heavily sclerotized. Paramerae reduced, tegmen abbreviated.

Larva. Asperity-bearing ampullae occurring on the thoracic terga I—III, abdominal terga I—II and abdominal sterna III—IV.

Distribution: Nearctic, Neotropical, Palaearctic and Oriental regions. Missing south of the equator, completely missing in the Ethiopian and Australian regions (apart from the cosmopolitan species *Nacerdes melanura* L.). Three genera are known in the Old World.

Contrary to Ditylini, Nacerdini is a derived group, as suggested by reduction of one terminal spur of anterior tibia, reduction of paramerae, division of the antennal segment 11 and reduction of asperity-bearing ampullae of the abdominal tergum III. The tribus Nacerdini became separated only after the isolation of continents of the northern hemisphere had come into existence. Its dispersal to more southerly regions (Neotropical region) was only secondary. The most primitive group of the tribus is probably the subgenus *Nacerdes* s. str., the most advanced ones being the genera *Anogcodes* Dej. and *Opsimea* Mill.

2. Subfamily **Calopodinae** Costa, 1852

Calopini Costa, 1852: Fauna Regni Napoli, Edemer.: 4

Calopodinae Schenkling, 1915: Col. Cat., 65: 4

Type-genus: *Calopus* Fabricius, 1775

Sparedridae Semenov, 1894: Hor. Soc. Ent. Ross., 28: 449

Type-genus: *Sparedrus* Dejean, 1821

Imago. Mandibles either bifid or simply pointed, without retinaculum. Eyes deeply excised with antennal insertion situated within the excision. Antennae often serrate (especially in males), their terminal segment without any trace of subdivision. Sternal area strongly modified (Fig. 12), with a limited mobility. Wing-venation primitive (Fig. 1a), aptery unknown. Pattern of occurrence of the spongy tarsal pubescence 4,4,2. The last sternite not shortened, urite VIII completely hidden inside abdomen. Tegmen of the calopoid type (Figs. 53, 57), either in dorsal (*Sparedrus* Dej.) or ventral (*Calopus* F.) position, always with basal apodemes. Paramerae reduced, apex of tegmen pubescent. Aedeagus without basal apodeme and supporting sclerite.

Larva. Ocelli reduced, urogomphi present, strong. Asperity-bearing ampullae occurring on the thoracic terga II—III, abdominal terga I—V and abdominal sterna II—V. Development in a dead old wood.

Pupa. Setae on the surface of pupa inserted subapically on acute tubercles.

Distribution: two genera are known from the Holarctic region, one of them penetrating into the Neotropical and Oriental regions. Absent from other regions. The genus *Calopus* F. seems to be the more advanced one with respect to the ventral position of its tegmen.

According to the opinions advanced by previous authors, the subfamily Calopodinae should be the ancestral and the most primitive group of the whole family Oedemeridae. However, it is a typical example of the mosaic evolution in terms of modern taxonomy. The group preserved a lot of very primitive characters such a wing-venation, spongy pubescence of tarsi 4,4,2, calopoid type of aedeagus, numerous asperity-bearing

ing ampullae on the larval abdomen, well developed urogomphi as well as the type of pupal chaetotaxy resembling that of other heteromeroid families (ROZEN, 1959), however combined with a set of other, more or less derived characters, e.g. form of eyes, serrate antennae, a strongly modified sternal area, basal apodemes of tegmen and reduction of paramerae. ARNETT (1951) supposed the subfamily Calopodinae to be most closely related to the subfamily Nacerdinae according to the paramerae reduced in both the groups. This similarity is but an example of parallel evolution based upon the common gene-pool of the whole family. Other characters namely suggest the relationship between Oedemeridae and Calopodinae, especially the group of genera related to *Colobostomus* Frm. of the tribus Asclerini (occurrence of simply pointed mandibles and serrate antennae, tegmen with basal apodemes and pubescent in its apical part, resp. on paramerae). With respect to those facts I consider the subfamily Calopodinae as a group separated from the ancestors common with the subfamily Oedemerinae. The subfamily consists of the single tribus Calopodini.

1. Tribus **Calopodini** Costa, 1852

Calopini Costa, 1852: Fauna Regni Napoli, Edemer.: 4
Calopodini Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 729
 Type-genus: *Calopus* Fabricius, 1775
Sparedridae Semenov, 1894: Hor. Soc. Ent. Ross., 28: 449
 Type-genus: *Sparedrus* Dejean, 1821

4. Subfamily **Oedemerinae** Latreille, 1810

Oedemerites Latreille, 1810: Considér. gén.: 216
Oedemerinae Schenkling, 1915: Col. Cat., 65: 8
 Type-genus: *Oedemera* Olivier, 1789

Imago. Mandibles of various types. Eyes shallowly emarginate or entire. Antennal segment 11 slightly constricted to strongly emarginate. Sternal area either of the basic (Fig. 13) or of oedemeroid type (Fig. 15). Spongy pubescence of tarsi 1,1,1, tarsal claws often dentate. Wing venation primitive to strongly derived. Tegmen of the oedemeroid type (Fig. 21), paramerae pubescent or glabrous, sometimes secondarily concrescent. Aedeagus as a rule of the oedemeroid, rarely of the calopoid type, the supporting sclerite almost always developed. Larvae and pupae of various types.

Distribution: all zoogeographic regions, missing only on some isolated islands. The subfamily is divided into three tribes. Ancestors of this evolutionary lineage separated very early from the nacerdoid stock. Afterwards, the subfamily Calopodinae separated from the oedemeroid stock as did later in Tertiary, in connection with development of herbaceous plants, the common ancestors of the tribes Oedemerini and Stenostomini.

1. Tribus **Asclerini** Semenov, 1894

Ascleridae Semenov, 1894: Hor. Soc. Ent. Ross., 28: 450
Asclerini Schenkling, 1915: Col. Cat., 65: 21
 Type-genus: *Ischnomera* Stephens, 1832 = *Asclera* Dejean, 1834

Ganglbaueridae Semenov, 1894: Hor. Soc. Ent. Ross., 28: 450

Type-genus: *Ganglbaueria* Semenov, 1891

Hypasclerini Macnamara, 1969: Orig. Pac. Faun. Oedem.: 84 **syn. n.** (described as *Hyper-sclerini*, emended by MACNAMARA, 1971)

Type-genus: *Hypasclera* Kirsch, 1866

Oxacini Macnamara, 1969: Orig. Pac. Faun. Oedem.: 77 **syn. n.**

Type-genus: *Oxaxis* Le Conte, 1866

Danacerinae Macnamara, 1969: Orig. Pac. Faun. Oedem.: 100 **syn. n.**

Type-genus: not designated, probably *Danerces* Westwood, 1875

Imago. The type of mandibles variable, sternal area of the basic type (Fig. 14). Tarsal claws often dentate. Wing-venation primitive to strongly derived. Anterior tibia with two terminal spurs. Paramerae pubescent or not, aedeagus of the calopoid type in the most primitive genera, otherwise of the oedemeroid type, with well developed basal apodeme. Supporting sclerite missing in the *Eobia* group of genera. The last sternite in more primitive genera only slightly shorter than pygidium, in the derived ones abbreviated and strongly emarginate, so that the projections of the urite VIII become visible.

Larva. Ocelli reduced, urogomphi feebly developed or absent. Asperity-bearing ampullae occurring on thoracic terga I—III, abdominal terga I—III (II) and abdominal sterna II (III)—IV.

Pupa. Chaetotaxy of pupa as in the subfamily Nacerdinae.

Distribution: a great number of genera occurring in all zoogeographic regions. 42 genera are hitherto known from the Old World.

This is the oldest tribus of the subfamily from the evolutionary point of view, sharing a lot of characters with the subfamily Calopodinae. On the other hand, the genetic potential of this group is very broad, as manifested by various combinations of characters. The genera belonging to this tribus may be subdivided into several groups according to the type of their male genitalia and some other characters (see review of generic classification).

2. Tribus **Oedemerini** Latreille, 1810

Oedemerites Latreille, 1810: Considér. gén.: 216

Oedemerini Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 729

Type-genus: *Oedemera* Olivier, 1789

Oncomerinini Macnamara, 1969: Orig. Pac. Faun. Oedem.: 11 **syn. n.**

Type-genus: *Oncomerina* Seidlitz, 1899 = *Oedemera* Olivier, 1789

Imago. Mandibles always bifid with a small retinaculum. Prosternum of the oedemeroid type (Fig. 15). Wing-venation derived (Fig. 20—p). Both terminal spurs of anterior tibia either present or completely reduced. Tarsal claws always simple. Tegmen of the oedemeroid type, paramerae non-pubescent, aedeagus with a well developed basal apodeme and supporting sclerite (Fig. 21). The last sternite in male strongly shortened, projections of urite VIII visible.

Larva. Well developed ocelli situated on projections. Urogomphi absent. Asperity-bearing ampullae completely reduced. Development mostly in herbaceous plants.

Pupa. Chaetotaxy of pupa as in the subfamily Nacerdinae, but setae covered with microscopical tubercles.

Distribution: only three genera occurring in the Palaearctic and Oriental regions. Absent from other regions.

Together with the following tribus, with which it shares most characters, the tribus Oedemerini represents the youngest evolutionary lineage of the whole family. Most of its larval characters are connected with the development in herbs. The most primitive forms probably belong to the genus *Oncomera* Steph., from which the genus *Oedemera* Ol. as well as the most advanced genus *Dryopomera* Frm. have separated.

3. Tribus **Stenostomini** Mulsant, 1858

Stenostomates Mulsant, 1858: Ann. Soc. Linn. Lyon, 5: 100

Type-genus: *Stenostoma* Latreille, 1810

Both imago and larva corresponding in most characters to the tribus Oedemerini, from which Stenostomini differ by a secondary reduction of the basal apodeme of aedeagus and feebly developed basal apodemes of tegmen (Fig. 245, 246).

Distribution: the single genus *Stenostoma* Latr. is limited to the western part of the Palaearctic region.

The tribus Stenostomini developed from ancestors common with the tribus Oedemerini and it seems to represent a less successful branch of the oedemeroid stock.

Phylogeny of supergeneric taxa of Oedemeridae

Since the fossil evidence is very scarce and of a relatively recent origin (Tertiary), a reconstruction of the probable phylogeny may be based chiefly on two groups of facts: 1) weighting of characters and their comparison with those of related families and 2) present geographic distribution of particular taxa and its comparison with the available paleogeographic evidence (SMITH et al. 1982). Dating of the origin and evolution of particular taxa is necessarily hypothetical one and is based on the upper time-limit of the past connection of continental plates that enabled the dispersal of a given group.

From the evolutionary point of view, Oedemeridae may be divided into two principal evolutionary lineages: 1) the nacerdoid lineage characterized by tegmen without basal apodemes and 2) the oedemeroid lineage derived from the latter one and characterized by occurrence of basal apodemes of tegmen. The splitting of the ancestral stock into the two lineages must have taken place at last in the Upper Jurassic (140 mil. years ago), when southern continents including Madagascar (see the distribution of *Pseudolycus* Guér.) and New Zealand (occurrence of genera according to HUDSON, 1975) were still connected. As the mentioned genera are already rather well differentiated, their development previous to the above time-limit must be presumed. According to the modern distribution of the tribes Nacerdini and Calopodini (mostly in the northern hemisphere) their differentiation from the other taxa must presumably have taken place not before the Lower to Upper Cretaceous (120—80 mil. years), when Eurasia and North America were interconnected, but separated from southern continents. The evolutionary lineage represented by the tribes Oedemerini and Stenostomini probably se-

parated from the tribus Asclerini in the Upper Miocene to Eocene (40—20 mil. years), when Eurasia was isolated from all remaining continents. In the same period the first herbaceous plants appeared, too, so that the mentioned group was enable to occupy a new ecological niche.

The following phylogramme of Oedemeridae is a result of comparison of the morphological data from the preceding part of this paper with the chronology discussed above. Letters refer to the origin or reduction of certain characters and/or evolutionary trends in a given period of phylogeny.

a — Presumed characteristics of the ancestral stock: large, robust body, mandibles bifid without retinaculum, eyes reniform, antennal segment 11 without traces of division, sternal region of the basic type, anterior tibia with two terminal spurs, pattern of the occurrence of the spongiuous tarsal pubescence 4,4,2, phallus of the heteromeroid type, tegmen with a separated phallobase, paramerae nonpubescent. Larva: asperity-bearing ampullae occuring on the thoracic terga I—III and abdominal segments I—V, ocelli reduced, urogomphi developed. Chaetotaxy of pupa as in *Calopus* F.

b — Phallobase fused with paramerae.

c — Nacerdoid lineage: mandibles bifid, trend to cylindrically thickened antennal segments, antennal segment 11 with a shallow excision or constriction, trend to development of pointed coxae in males, tegmen dorsal without basal apodemes, paramerae glabrous. Larva: reduction of asperity-bearing ampullae on abdominal terga IV—V and abdominal sterna I—II, V. Chaetotaxy of pupa as in *Nacerdes* Dej.

d — Oedemeroid lineage: trend to the development of a simple apex of mandibles, antennal segment 11 without trace of division, trend to evolution of serrate antennae, perhaps appearance of the ventral position of tegmen and pubescence of paramerae. Origin of the basal apodemes of tegmen. Larva: reduction of the asperity-bearing ampullae on the abdominal sternum I. Chaetotaxy of pupa as in *Calopus* F.

e — Pubescence of tarsi 4, 4, 2.

f — Pubescence of tarsi 1, 1, 1.

g — Division of antennal segment 11 into two segments in males, reduction of one terminal spur of anterior tibia, pubescence of tarsi 1, 1, 1, reduction of paramerae.

h — Eyes deeply incised, antennal insertion situated within the incision of eye, antennal segment 11 without traces of division, strong modification of the sternal region, pubescence of tarsi 4, 4, 2, tegmen either in dorsal or in ventral position, reduction of paramerae. Larva: reduction of the asperity-bearing ampullae of the prothoracic tergum.

ch — Trend to the evolution of retinaculum, eyes reniform to entire, subdivision of antennal segment 11 marked, pubescence of tarsi 1, 1, 1, tegmen always in ventral or ventrolateral position. Larva: reduction of the asperity-bearing ampullae on the abdominal terga IV—V and on abdominal sternum V, gradual reduction of urogomphi. Chaetotaxy of pupa asi in *Nacerdes* Dej.

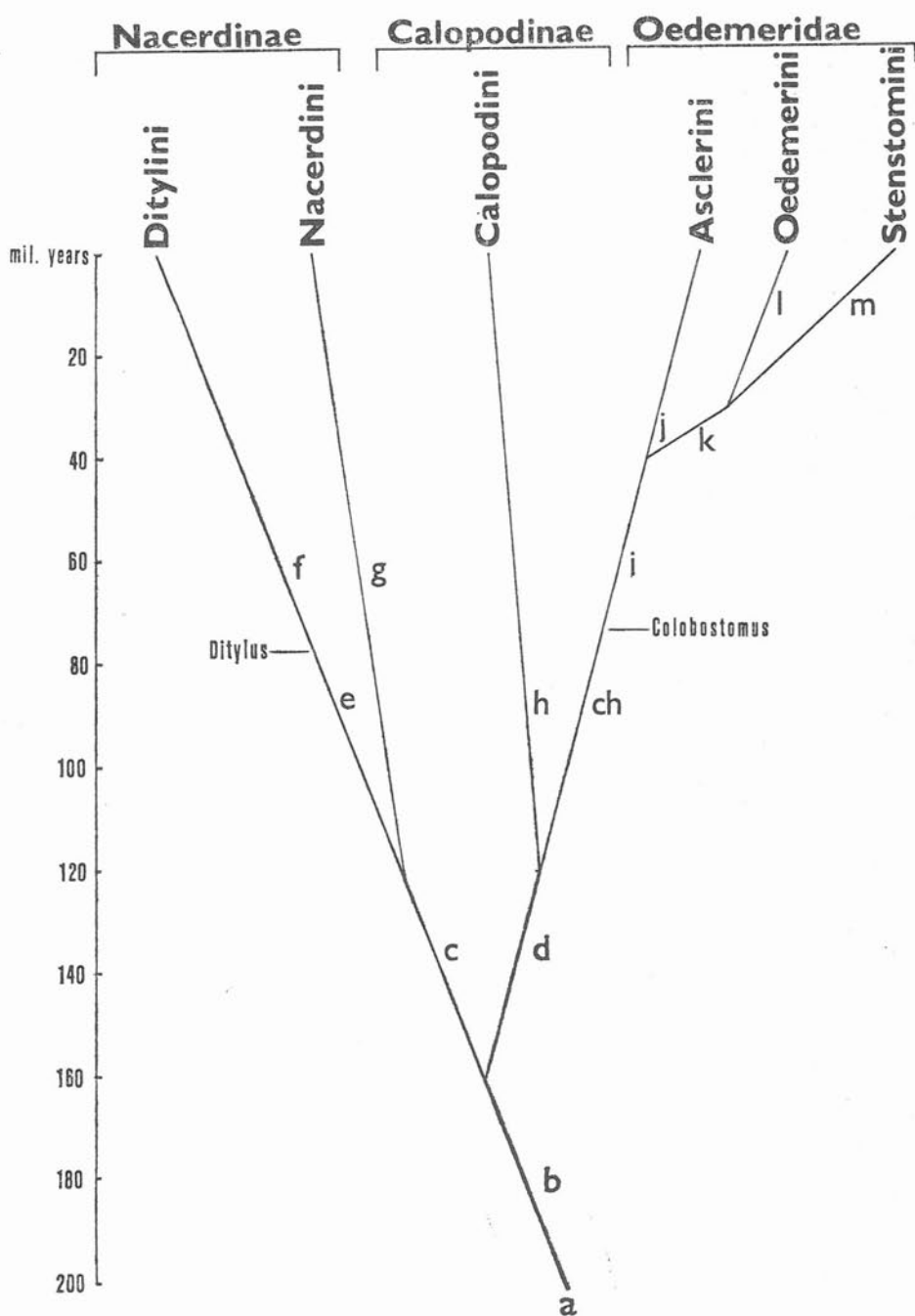
i — Origin of the basal apodeme of aedeagus and of the supporting sclerite.

j — Mandibles radiating into various types, prosternum of the basic type, connection of the wing-veins 1A₁—2A₂ transverse, paramerae pubescent or glabrous. Setae of pupa smooth.

k — Mandibles always bifid with retinaculum, prosternum of the oedemeroid type, loss of the pubescence of paramerae, trend to a dichotomous branching of the wing-veins 1A₁—2A₂ Larva: ocelli on tubercles, complete loss of asperity-bearing ampullae, loss of urogomphi. Setae of pupa with microscopical tubercles.

l — Both tegmen and aedeagus with distinct basal apodemes.

m — Tegmen with reduced apodemes, secondary absence of the basal apodeme of aedoagus and of the supporting sclerite.



Phylogramme 1. The evolution of the supergeneric taxa of the family Oedemeridae.

Tribes Asclerini and Oedemerini may be considered as the most successful ones from the evolutionary point of view. In a lesser extent the same is true with the tribus Ditylini (except for its archaic types) and Nacerdini. The tribes Calopodini and Stenostomini have been less successful in competition with those taxa.

5. KEYS TO DETERMINATION OF TRIBES AND OF THE OLD WORLD GENERA

Key to tribes

- 1 Antennal pit situated in deep incision of eye *Calopodini*
- Antennal pit situated outside of eye 2
- 2 Anterior tibia with single terminal spur *Nacerdini*
- Anterior tibia with two terminal spurs or without any spur 3
- 3 Anterior coxal cavities with sharp lateral projection, lateral walls of prosternal process sharply bent (Fig. 14), if mandibles bifid, then without retinaculum 4
- Anterior coxal cavities rounded laterally, lateral walls of prosternal process rounded (Fig. 15), mandibles always bifid with retinaculum 5
- 4 Both tegmen and aedeagus without basal apodemes, both mandibles always bifid, claws simple *Ditylini*
- Tegmen and as a rule also aedeagus with basal apodemes, mandibles of the different type, claws often dentate *Asclerini*
- 5 Aedeagus without basal apodeme, basal apodemes of tegmen strongly reduced, antennae short, not reaching the midlength of elytra (the only genus *Stenostoma* Latr.) *Stenostomini*
- Both aedeagus and tegmen with well developed basal apodemes, antennae reach at least the elytral midlength *Oedemerini*

Since no characters distinguishing females of the tribes Ditylini and Asclerini have hitherto been found, a common key for females of the both tribes is presented.

Key to genera of the Old World

Tribus **Ditylini** — males (females included in the key to Asclerini)

- 1 Spongiuous pubescence of tarsi 4,4,2, last sternite only slightly shortened, projections of the urite VIII invisible *Ditylus* Fisch.
- Spongiuous pubescence of tarsi 1,1,1, last sternite shortened and emarginate, so that projections of the urite VIII visible 2
- 2 Body large, over 16 mm, eyes large and vaulted, front much narrower between eyes than between antennal pits *Diplectrus* Kirsch
- Body smaller, less than 12 mm, front wider between eyes than between antennal pits 3
- 3 Paramerae with apical teeth (Fig. 34) *Diasclera* Rtt.
- Paramerae simple 4
- 4 Antennae filiform, last antennal segment rounded at its apex *Chrysanthia* Schm.
- Antennal segments from the fifth one on cylindrically thickened, the last antennal segment truncate and tapered (Fig. 42) *Ascleranoncodes* Pic

Tribus **Nacerdini** — males

- 1 The twelfth antennal segment not completely separated from the eleventh one (Fig. 50), elytra with four nerves *Opsimea* Mill.
- The twelfth antennal segment completely separated from the eleventh one 2
- 2 Pronotum with long pubescence, especially at lateral margins, elytra narrowed apically, with three nerves, front between eyes always wider than between antennal pits, femora and tibiae often modified *Anogcodes* Dej.

- Pronotum shortly pubescent, elytra with three or four nerves, at most femora thickened, tibiae simple. Front narrower between eyes than between antennal pits, if it is wider, then elytra parallel-sided or dilated apically *Nacerdes* Dej.

Tribus **Nacerdini** — females

- 1 Elytra with four nerves, front wider between eyes than between antennal pits, elytra parallel-sided or slightly narrowed apically *Opsimea* Mill.
- Elytra with three nerves, if with four nerves, then front wider between eyes than between antennal pits or elytra moderately dilated apically 2
- 2 Elytra parallel-sided or moderately narrowed apically, with three nerves, front always wider between eyes than between antennal pits *Anogcodes* Dej.
- Elytra moderately dilated apically, if parallel-sided, then with four nerves or front narrower between eyes than between antennal pits *Nacerdes* Dej.

Tribus **Calopodini** — males and females

- 1 Both mandibles bifid at apexes *Calopus* F.
- Both mandibles simple *Sparedrus* Dej.

Tribus **Asclerini** — males

- 1 Both mandibles simple 2
- Both mandibles bifid at apexes [Fig. 9] 18
- Left mandible simple or with retinaculum [Fig. 152], the right one with subapical tooth [Fig. 11] 34
- 2 Claws simple 3
- Claws dentate 15
- 3 Elytra strongly shortened, humeral bulge reduced [Fig. 199] *Gilotia* Pardo
- Elytra less shortened, humeral bulge developed 4
- 4 Elytra shortened, strongly sinuately narrowed [Fig. 72], antennae serrate [Fig. 76] *Schellia* Rtt.
- Elytra not sinuately narrowed 5
- 5 Basal apodeme of aedeagus very slightly developed [Figs. 60, 64] *Colobostomus* Frm.
- Basal apodeme of aedeagus well developed 6
- 6 Paramerae pubescent 7
- Paramerae non-pubescent 9
- 7 Paramera strongly dilated apically or with basal tooth [Figs. 160, 164] *Colobostomoides* Švihla
- Paramerae at least slightly dilated, simple 8
- 8 Tegmen semitubular [Fig. 121], pygidium emarginate *Probosca* Schm.
- Tegmen U-shaped in cross-section [Fig. 144], pygidium not emarginate *Sessinia* Pasc.
- 9 Last abdominal segment strongly curved ventrad [Fig. 100] 10
- Last abdominal sternite not curved 11
- 10 Each elytron widely rounded apically [Fig. 104], apex of aedeagus simple [Fig. 99] *Ganglbaueria* Sem.
- Apex of elytron not so widely rounded, aedeagus with strong apical tooth *Pseudananconia* Švihla
- 11 Apex of aedeagus with two teeth *Chitona* Schm.
- Aedeagus at most with one tooth 12
- 12 Eyes strikingly small [Fig. 137] *Anacerda* Champ.
- Eyes not strikingly small 13
- 13 Paramerae very short [Figs. 83, 84] *Oschaninia* Sem.
- Paramerae longer 14
- 14 Pygidium rounded at the apex [Fig. 97] *Xanthochroina* Gglb.
- Pygidium emarginate at the apex *Alloxantha* Seidl.
- 15 Paramerae non-pubescent 16
- Paramerae pubescent 17

- 16 Pygidium emarginate (Fig. 179), apex of aedeagus with two teeth *Achitona* gen. n.
 — Pygidium not emarginate (Fig. 142) apex of aedeagus with one feeble tooth *Anacerdochroa* gen. n.
- 17 Paramera with basal tooth *Paroxaxis* Arn.
 — Paramera simple *Anancosessinia* Kôno
- 18 Claws simple 19
 — Claws dentate 27
- 19 Paramerae pubescent 20
 — Paramerae glabrous 23
- 20 Tegmen strongly sclerotized, aedeagus with supporting sclerite, projections of the urite VIII as a rule visible 21
 — Tegmen feebly sclerotized, aedeagus without supporting sclerite, projections of the urite VIII as a rule invisible *Eobia* Sem.
- 21 Basal apodeme of aedeagus strikingly dilated at its apex (Fig. 173) *Ischnomera* Steph. part.
 — Basal apodeme of aedeagus at most slightly dilated 22
- 22 Paramera flat in cross-section, tegmen semitubular (Fig. 124) *Nacerdochroides* gen. n.
 — Paramera oval in cross-section, tegmen U-shaped in cross-section (Fig. 204) *Ditylomorphula* gen. n.
- 23 Right mandible with apical teeth equal in length, or the ventral one shorter 24
 — Dorsal tooth of right mandible shorter than the ventral one *Anisochroa* Sem.
- 24 Paramerae very short (Fig. 108), apex of aedeagus with tooth, elytra often metallic coloured *Ascleropsis* Seidl.
 — Paramerae long, if short, then apex of aedeagus with two teeth, elytra not metallic coloured 25
- 25 Projections of the urite VIII exceed apex of pygidium (Fig. 214), elytra with strongly developed nervation *Melananthia* Blair
 — Projections of the VIII. urite not exceeding pygidium, nervation feeble 26
- 26 Paramerae long, slender (Fig. 128), apex of aedeagus simple *Nacerdochroa* Rtt.
 — Paramerae shorter, wide (Fig. 201), apex of aedeagus with two teeth *Ditylomorphus* gen. n.
- 27 Antennal segments 3—5 dilated and flattened (Fig. 217) *Pseudolytus* Guér.
 — Antennal segments slender 28
- 28 Last segment of maxillary palpus strikingly emarginate at its outer side (Figs. 234, 235) *Schistopselaphus* Frm.
 — Last segment of maxillary palpus not or feebly emarginate 30
- 29 Paramerae pubescent 30
 — Paramerae glabrous 32
- 30 Basal apodeme of aedeagus strongly dilated at its apex (Fig. 173) *Ischnomera* Steph. part.
 — Basal apodeme of aedeagus gradually dilated towards its apex, with crest, paramerae as a rule conrescent 31
- 31 Pubescence of elytra dense and long, oblique between nerves, on nerves directed apically *Asclerosibutia* Pic
 — Pubescence of elytra shorter, oblique all over the area between suture and the nerve 3 *Microsessinia* Pic
- 32 Paramerae conrescent *Eopselaphus* gen. n.
 — Paramerae not conrescent 33
- 33 Paramera flat in cross-section (Fig. 175), projections of the urite VIII invisible *Zabriola* Frm.
 — Paramera oval in cross-section (Fig. 182) projections of the urite VIII visible (Fig. 184) *Anisochrodes* Švihla
- 34 Claws simple 35
 — Claws dentate 37
- 35 Subapical tooth of right mandible situated in dorsal position (Fig. 157), aedeagus strikingly long and slender (Fig. 158) *Alloxoides* Macn.
 — Subapical tooth of right mandible situated in dorsolateral position (Fig. 11) 36
- 36 Left mandible with distinct retinaculum (Fig. 152) *Pseudohyperasclera* Macn.

— Left mandible simple	
a) paramera rounded in cross-section, apex of aedeagus with tooth	<i>Parasessinia</i> gen. n.
b) paramera flat in cross-section, apex of aedeagus simple	<i>Hypasclera</i> Kirsch
37 Elytra shortened, humeral bulge slightly developed (Fig. 209)	<i>Apterosessinia</i> Blair
— Elytra not shortened, humeral bulge well developed	38
38 Both pygidium and last sternite emarginate (Fig. 213)	<i>Pterosessinia</i> gen. n.
— Both pygidium and last sternite rounded	39
39 Basal apodeme of aedeagus very slightly developed (Fig. 67)	<i>Dentostomus</i> Švihla
— Basal apodeme of aedeagus well developed	40
40 Tegmen semitubular, paramerae glabrous	<i>Alloxanthoides</i> gen. n.
— Tegmen U-shaped in cross-section, paramerae pubescent	41
41 Paramera with basal tooth	<i>Hypascleroides</i> gen. n.
— Paramera simple	<i>Asessinia</i> gen. n.

Tribus *Asclerini* — females (including females of genera of Ditylini)

1 Both mandibles simple	2
— Both mandibles bifid at apices	9
2 Claws simple	3
— Left mandible simple or with retinaculum, the right one with subapical tooth (Fig. 11)	27
— Claws dentate	<i>Anancosessinia</i> Kôno
3 Elytra shortened, humeral bulge not developed (Fig. 200)	<i>Gilotia</i> Pardo
— Elytra normally developed	4
4 Eyes strikingly small (Fig. 137)	<i>Anacerda</i> Champ.
— Eyes normal	5
5 Last sternite strongly curved ventrad (Fig. 100)	6
— Last sternite at most slightly curved ventrad	7
6 Each elytron widely rounded at its apex (Fig. 104)	<i>Ganglbaueria</i> Sem.
— Apexes of elytra not so widely rounded	<i>Pseudananconia</i> Švihla
7 Antennae short, not reaching 1/3 of elytral length	<i>Oschaninia</i> Sem.
— Antennae longer	8
8 Pygidium narrowly emarginate at its apex	<i>Alloxantha</i> Seidl. part., <i>Colobostomus</i> Frm. part., <i>Probosca</i> Schm.
— Pygidium rounded or very shallowly emarginate	<i>Alloxantha</i> Seidl. part., <i>Colobostomus</i> Frm. part., <i>Colobostomoides</i> Švihla, <i>Xanthochroina</i> Ggib.
9 Claws simple	10
— Claws dentate	22
10 Spongiouse pubescence of tarsi 4,4,2	<i>Ditylus</i> Fisch.
— Spongiouse pubescence of tarsi 1,1,1	11
11 Eyes large, front between eyes much narrower than between antennal pits, large species	12
— Front between eyes at most slightly narrower than between antennal pits	13
12 Pronotum simply punctate	<i>Diplectrus</i> Kirsch
— Pronotum punctate with microchagration	<i>Eobia</i> subg. <i>Falsosessinia</i> Pic
13 Antennal segments from the fifth one on cylindrically thickened (Fig. 42)	<i>Ascleranoncodes</i> Pic
— Antennal segments slender	14
14 Dorsal tooth of right mandible shorter than the ventral one	<i>Anisochroa</i> Sem.
— Both teeth of right mandible equal in length or the ventral one shorter	15
15 Last sternite with tapered projection at its middle	16
— Last sternite rounded or emarginate	17
16 Front narrower between eyes than between antennal pits	<i>Nacerdochroides</i> gen. n. part.
— Front wider between eyes than between antennal pits	<i>Ischnomera</i> Steph. part.
17 Eyes entire, nervation more or less distinct	18
— Eyes emarginate, if entire, than nerves excluding the first one not developed	19
18 Body metallic coloured nervation normal	<i>Chrysanthia</i> Schm.
— Body otherwise coloured, nervation costate	<i>Melananthia</i> Blair

19 Elytra metallic, lustrous	20
— Elytra flavous to fuscous	21
20 Last antennal segment constricted, rounded at its apex	<i>Ascleropsis</i> Seidl. part.
— Last antennal segment truncate and tapered (Fig. 38)	<i>Diasclera</i> Rtt.
21 Pygidium emarginate apically	<i>Eobia</i> Sem. part., <i>Nacerdochroides</i>
— Pygidium not emarginate	<i>Eobia</i> Sem. part., <i>Ditylomorphus</i> gen. n., <i>Ditylomorphula</i> gen. n.
22 Antennal segments 3—5 dilated and flattened (Fig. 217)	<i>Pseudolycus</i> Guér.
— Antennal segments slender	23
23 Antennae not reaching the midlength of elytra	<i>Anisochrodes</i> Švihla
— Antennae reaching at least the midlength of elytra	24
24 Last sternite acutely projecting at its middle	<i>Ischnomera</i> Steph. part.
— Last sternite rounded	25
25 Colouration flavous, fuscous or piceous, the Oriental region, Madagascar	<i>Eopselaphus</i> gen. n., <i>Schistopselaphus</i> Frm. <i>Zabriola</i> Frm.
— Colouration varied or metallic, Afrotropical region	26
26 Pubescence of elytra dense and long, oblique between nerves, on nerves directed apically	<i>Asclerosibutia</i> Pic
— Pubescence of elytra shorter, oblique all over the area between suture and the nerve 3	<i>Microsessinia</i> Pic
27 Claws simple	28
— Claws dentate	30
28 Subapical tooth of right mandible situated in dorsal position (Fig. 157)	<i>Alloxoides</i> Macn.
— Subapical tooth of right mandible situated in laterodorsal position (Fig. 11)	29
29 Left mandible with distinct retinaculum (Fig. 152)	<i>Pseudohyperasclera</i> Macn.
— Left mandible simple	<i>Parasessinia</i> gen. n., <i>Hypasclera</i> Kirsch
30 Elytra shortened, humeral bulge slightly developed	<i>Apteroseissinia</i> Blair
— Elytra not shortened, humeral bulge well developed	31
31 Basal tooth of anterior claw short, that of intermediate and posterior ones very short (Fig. 71)	<i>Dentostomus</i> Švihla
— Basal tooth of claw reaches at least its midlength	32
32 Antennae reaching almost the apex of elytra	<i>Asessinia</i> gen. n.
— Antennae reaching at most two thirds of elytral length	<i>Hypascleroides</i> gen. n., <i>Alloxanthoides</i> gen. n.

Females of the genera *Schellia* Rtt., *Anacerdochroa* gen. n., *Paroxaxis* Arn., *Achitona* gen. n. and *Pteroseissinia* gen. n. were not examined. The determination of females is always relatively uncertain. I did not succeed in finding distinguishing characters between some genera at all. The key of the tribes Asclerini can be used for the Old World species only.

Tribus Oedemerini — males and females

1 Apex of anterior tibia without terminal spurs	<i>Dryopomera</i> Frm.
— Apex of anterior tibia with two terminal spurs	2
2 Elytral nerves 3 and 4 transversely connected in basal portion	<i>Oncomera</i> Steph.
— Elytral nerves not transversely connected	<i>Oedemera</i> Ol.

6. CLASSIFICATION OF THE OLD WORLD GENERA

The type-species of particular genera are given without references to papers in which they have been designated. Those data — and many other ones — are contained in the review by ARNETT (1950). In the enumeration of the examined material references to the eventually examined

type-material are given as well as a total number of further examined species.

Descriptions of particular genera are as a rule brief, dealing only with the most important characters, resp. those that markedly deviate from the average ones. If a genus is subdivided into several subgenera, only the characters common to all of them are given. Geographic distribution — especially of tropical genera — is given mostly on the basis of the examined material. If a genus is subdivided, the distribution of particular subgenera is given separately. New species are described only in those cases, in which the description is necessary for establishing the genus. Many names included in synonymy are available names of subgenera, however they cannot be applied without revision of a given genus as a whole.

SUBFAMILY **NACERDINAE** MULSANT, 1858

TRIBUS **DITYLINI** MULSANT, 1858

1. **Ditylus** Fischer-Waldheim, 1817

Ditylus Fischer-Waldheim, 1817: Mem. Soc. Imp. Moscow, 5: 469

Type-species: *Helops laevis* Fabricius, 1792 [by monotypy]

Microps Megerle, 1821 in Dejean: Cat. Col.: 72

Type-species: *Helops laevis* Fabricius, 1792 [by monotypy]

Mimetes Eschscholtz, 1818: Mem. Acad. Pétersb., 6: 467

Type-species: *Mimetes unicolor* Eschscholtz, 1818 [by monotypy] = *D. laevis* (F.)

Material examined: *D. laevis* (F.) and 1 further species.

Body robust, wide, vaulted, colouration dark with metallic lustre. Length: 13.0—23.0 mm.

Male. Both mandibles bifid at the apex (Fig. 9), the last segment of maxillary palpus securiform, slightly emarginate at its outer margin (Fig. 25). Eyes small, vaulted, with a narrow, flat emargination. Head with eyes narrower than pronotum. Antennae short, rarely reaching elytral midlength, the last segment slightly constricted. Pronotum cordiform to almost rectangular, wider than long. Legs short, stout, spongiolous pubescence of tarsi 4,4,2, claws simple. Elytra dilated apically, all nerves distinctly developed. Pygidium slightly exceeding the last sternite (Fig. 26), projections of the urite VIII invisible. Tegmen semitubular, intermediary sclerotized (Fig. 23), aedeagus without apical tooth (Fig. 24).

Sexual dimorphism. Female not differing essentially from the male.

Distribution: Holarctic region, in the Palearktis one species.

This is the most archaic genus of the subfamily, if not of the whole family. It has no close relatives in the Old World, the most closely related being the Australian genus *Agasma* Newm.

2. **Diplectrus** Kirsch, 1866

Diplectrus Kirsch, 1866: Berl. Ent. Zeitschr., 10: 210

Type-species: *Diplectrus ferrugineus* Kirsch, 1866 [by monotypy]

Material examined: *D. ferrugineus* Kirsch, *D. longipennis* (Frm.), comb. n. [transferred from *Ananca*] and further 3 neotropical species.

Body large, but relatively slender, colouration flavous to fuscous. Length: 17.0—23.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus narrowly securiform (Fig. 30). Eyes large and vaulted, emarginate, head with eyes wider than pronotum. Antennae long, filiform, sometimes almost reaching the apex of elytra, the last segment slightly constricted at $\frac{2}{3}$ of its length. Pronotum more or less cordiform, slightly longer than wide, with two wide, almost indistinct depressions in its anterior portion. Legs long, slender, spongy pubescence of tarsi 1,1,1, claws simple. Elytra slender, parallel-sided, nervation slightly developed, the second nerve absent. Pygidium exceeds the last sternite, projections of the urite VIII visible (Fig. 29). Tegmen strongly sclerotized, paramerae short, sometimes obliquely wrinkled (Fig. 27). Aedeagus — Fig. 28.

Sexual dimorphism. Female: body more robust, antennae shorter, only slightly exceed elytral midlength and elytra dilated apically. Pygidium minimally exceeds the last sternite, both rounded at the apex.

Distribution: a number of species occur in the Neotropical region, in the Old World only one species from southern slopes of Himalaya — India, Burma.

This genus can be distinguished by character given in the key. According to its distribution and also according to its large body it is a very old genus, but a more derived one than *Ditylus* Fisch.

3. *Diasclera* Reitter, 1913

Diasclera Reitter, 1913: Deutsch. Ent. Zeitschr., 1913: 663

Type-species: *Diasclera viridescens* Reitter, 1913 [by monotypy]

Nacerdasclera Munster, 1921: Norsk Ent. Tidskr., 1: 8 syn. n.

Type-species: *Oedemera sibirica* Gebler, 1830 [by monotypy]

Material examined: *D. viridescens* Rtt. [type material], *D. sibirica* (Gebler), comb. n., [material from Munster's collection].

Body moderately vaulted, colouration metallic. Length: 7.5—11.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform, slightly emarginate at its outer side (Fig. 37). Eyes vaulted, reniform, head with eyes as wide as pronotum. Antennae sometimes slightly thickened, moderately exceeding elytral midlength, the last segment narrowed from its midlength on, tapered apically (Fig. 38). Pronotum as long as wide, slightly cordiform, sometimes with shallow depressions in its anterior portion. Coxae sometimes with sharp projections, claws simple. Elytra parallel-sided or slightly dilated apically, nervation slight to absent, excluding of the nerve 1. Pygidium exceeds the last sternite, both flatly emarginate, projections of the VIII. urite visible (Fig. 36). Tegmen semitubular, paramerae with apical teeth (Fig. 34). Apex of aedeagus simple (Fig. 35).

Sexual dimorphism. Eyes smaller in female, antennae shorter, not reaching elytral midlength, pygidium only slightly exceeds the last sternite, both shallowly emarginate. In *D. sibirica* (Gebler) female differs by red colouration of pronotum.

Distribution: one species occurs in Transcaucasia the other one in Siberia and northern China.

D. sibirica (Geb.) differs only by colouration and punctuation, the male copulatory organ is almost identical as in *D. viridescens* Rtt. The genus *Diasclera* Rtt. was described in the tribus Oedemerini, but its aedeagus and tegmen and also the type of anterior coxal cavities are distinctly dityloid ones. It is probable, that the nearctic genus *Eumecomera* Arn. is congeneric with *Diasclera* Rtt., but a larger material must be examined before establishing this synonymy.

4. *Chrysanthia* Schmidt, 1844

Chrysanthia Schmidt, 1844: Cat. Coleopt. Europa, ed. 2: 46

Chrysanthia Schmidt, 1846: Linn. Ent., 1: 17 [justified emendation]

Type-species: *Cantharis viridissima* Linnaeus, 1758 (designated by ARNETT, 1950)

Material examined: *Ch. viridissima* (L.), and further 9 species.

Body slender, subcompressed to semivaulted, predominantly green with metallic lustre. Length: 5.5—13.0 mm.

Male. Both mandibles bifid at the apex, the last segment of the male maxillary palpus slender, securiform, sometimes with flat emargination at its outer side. Eyes small, vaulted, entire, head with eyes approximately as wide as pronotum. Antennae reaching, rarely slightly exceeding elytral midlength, the last segment very feebly constricted. Pronotum as a rule longer than wide, slightly to distinctly cordiform, with a mediobasal depression, often with longitudinal and two shallow depressions in anterior portion. Femora slightly thickened or coxae with sharp projections in some species, claws simple. Elytra parallel-sided to moderately dilated apically, as a rule with three slightly developed nerves, the second one absent. Pygidium exceeds the last sternite, apically rounded or shallowly emarginate, the last sternite widely emarginate, projections of the urite VIII visible (Fig. 33). Tegmen feebly sclerotized (Fig. 31), apex of aedeagus simple or with tooth (Fig. 32).

Sexual dimorphism. Pronotum wider in female, femora not thickened, coxae without projections. Pygidium only slightly exceeds the last sternite, which is mostly rounded.

Distribution: about twenty species are described from the Palearctic region only, not occurring in arid areas.

It is related to the preceding genus, from which it differs by characters given in the key.

5. *Ascleranoncodes* Pic, 1914

Ascleranoncodes Pic, 1914: Echange, 31: 10

Type-species: *Ascleranoncodes distincticornis* Pic, 1914 (by monotypy)

Indanerces Pic, 1923: Mélanges exot.-ent., 39: 24 syn. n.

Type-species: *Indanerces nitidicollis* Pic, 1923 (designated by ARNETT, 1950)

Material examined: *A. distincticornis* Pic. *A. nitidicollis* (Pic), comb. n. [type material] and further 4 species.

Body small, slender, predominantly metallic coloured. At least the apex of the last antennal segment flavous or fuscous. Length: 5.0—8.5 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus slender, truncate apically, shallowly emarginate at its

outer side. Eyes small and vaulted, narrowly emarginate, head with eyes wider than pronotum. Antennae reaching elytral midlength, antennal segments from the fifth one on cylindrically thickened (Fig. 42), the last segment tapered. Pronotum as long as wide, almost quadrate, sometimes with two flat depressions in its anterior portion. Claws simple. Elytra slender, parallel-sided to moderately narrowed apically, three nerves distinctly developed, the second one absent. Pygidium exceeds the last sternite, shallowly emarginate at the apex, the last sternite widely emarginate, projections of the VIII. urite visible (Fig. 39). Tegmen mostly shortened but paramerae developed (Fig. 41). Apex of eadeagus simple (Fig. 40).

Sexual dimorphism. Antennae shorter in female, reaching $\frac{1}{3}$ of elytral length, pygidium only slightly exceeds the last sternite, both apically rounded.

Distribution: Oriental region, from southern India to Sunda Is. and Philippines.

It seems to be the most derived genus of the tribus, approaching by its shortened tegmen the tribus Nacerdini. It differs from the other genera by thickened antennal segments. The genus *Indanerces* Pic not differing significantly from the *Ascleranoncodes* Pic.

TRIBUS NACERDINI MULSANT, 1858

1. *Nacerdes* Dejean, 1834

Nacerdes Dejean, 1834: Cat. Col.: 228

Type-species: *Necydalis notata* Fabricius, 1775 (designated by ARNETT, 1950)
= *N. melanura* (L.)

Nacerda Stevens, 1839: Man. Brit. Col., Mandib., 1: 337

Type-species: *Cantharis melanura* Linnaeus, 1758 (by monotypy)

Nacerdoscuta Pic, 1915: M  l. exot-ent., 13: 6

Type-species: *Nacerdoscuta semirufa* Pic, 1915 (by monotypy)

Body subcompressed to moderately vaulted, colouration flavous or fuscous, elytra often metallic coloured. Length: 6.0—20.0 mm.

Both mandibles bifid at the apex, the last segment of maxillary palpus slender to securiform, as a rule more or less emarginate at its outer side (Fig. 46). Eyes narrowly, shallowly emarginate. Pronotum moderately cordiform. Claws simple. Pygidium distinctly exceeds the last sternite, which is deeply emarginate (Fig. 45), projections of the urite VIII visible, mostly spoon-shaped, pubescent. Tegmen (Fig. 43) slightly sclerotized, rarely shallowly emarginate at its apex, without pubescence. Aedeagus as a rule with apical tooth (Fig. 44). Both tegmen and aedeagus are of the same form in all genera of the tribus Nacerdini.

This genus differs from the other genera by characters given in key. It is probably the most primitive genus of the tribus (especially subg. *Nacerdes* s. str.). The generic statut of some genera of this tribus was based either on characteristics of sexual dimorphism (*Patiala* Lew.) or on the size of eyes and on the number of visible elytral nerves (*Xanthochroa* Schm., *Allagatha* Sem. et Min.), these characteristics varying even on the specific level. Because of this situation, these taxa are established in this paper as subgenera only.

Subgenus **Nacerdes** s. str.

Material-examined: *N. melanura* (L.) and further 2 species.

Eyes small, front wider between eyes than between antennal pits in both sexes. The last segment of maxillary palpus and antennae normally developed. Elytra not shortened, with 3 or 4 visible nerves, the second one reduced or absent.

Distribution: *N. melanura* (L.) is a cosmopolitan species, the original distribution unknown. Further two species occur in the mountains of Central Asia (Pakistan, Afghanistan, northern India).

The most primitive subgenus.

Subgenus **Allagatha** Semenov et Minasjan, 1937 stat. n.

Allagatha Semenov et Minasjan, 1937: Bull. Soc. Ent. France, 42: 227

Type-species: *Allagatha decora* Semenov et Minasjan, 1937 (original designation)

Material examined: *N. (Allagatha) decora* (Sem. et Min.), comb. n.

Front as wide between eyes as between antennal pits in both sexes, the last segment of female maxillary palpus with inner, antebasal sensoric pit (Fig. 47).

Distribution: Karakoram, Ladakh.

It differs from the other subgenera by the form of the last segment of maxillary palpus in female.

Subgenus **Axanthochroa** subg. n.

Type-species: *Xanthochroa brachyptera* Švihla, 1980: Ent. Basiliensia, 5: 46

Material examined: *N. (Axanthochroa) brachyptera* (Švihla), comb. n.

Front between eyes somewhat narrower in male, somewhat wider in female, than between antennal pits. The last segment of maxillary palpus slender, normal, antennae normal. Legs long and slender. Elytra with four visible nerves, shortened, not covering the last (in male) or the last two (in female) abdominal segments.

Distribution: the only species was described from Bhutan.

This subgenus represents a link between *Nacerdes* s. str. and *Xanthochroa* Schm. It differs by shortened elytra.

Subgenus **Xanthochroa** Schmidt, 1846 stat. n.

Xanthochroa Schmidt, 1846: Linn. Ent., 1: 17

Type-species: *Oedemera carniolica* Gistel, 1832 (designated by ARNETT, 1950)

Patalomorphia Nakane, 1954: Sci.-Rep. Saikyo Univ., 1: 174 syn. n.

Type-species: *Xanthochroa ainu* Lewis, 1895 (original designation)

Material examined: *N. (Xanthochroa) carniolica* (Gistel), comb. n. and further 21 species.

Eyes large and vaulted, front between eyes in male narrower than between antennal pits, at most of equal width in both places in female. The last segment of maxillary palpus and antennae normally developed. Elytra with three or four nerves. Coxae with sharp projections in some species.

Distribution: Palaearctic, Nearctic and Oriental regions.

It differs from the following subgenus by simple apex of anterior tibia and normal antennae in male.

The subgenus *Patialomorpha* Nak. was based on the presence of sharp coxal projections. This character is not sufficient to justify the existence of a distinct subgenus, but only of the group of species (cf. similar situation in *Chrysanthia* Schm.).

Subgenus *Patiala* Lewis, 1895

Patiala Lewis, 1895: Ann. Mag. Nat. Hist., 15: 434

Type-species: *Patiala antennata* Lewis, 1895 (original designation)

Material examined: *N. (Patiala) antennata* (Lew.), comb. n. (type material).

Eyes as in the preceding genus, from which it differs by the hook-shaped apex of anterior tibia (Fig. 49) and by irregularly developed antennal segments in male (Fig. 48).

Distribution: five species are known from Himalaya, China and Japan.

2. *Opsimea* Miller, 1880

Opsimea Miller, 1880: Verh. zool.-bot. Ges. Wien, 30: 224

Type-species: *Opsimea ventralis* Miller, 1880 (by monotypy) = *O. quadrinervosa* (Rche.)

Ezonacerda Kôno, 1934: Ins. Mats., 9: 28 syn. n.

Type-species: *Oedemera nigripennis* Matsumura, 1911 (original designation)

Material examined: *O. quadrinervosa* (Rche.), *O. nigripennis* (Mats.), comb. n.

Body small and slender, slightly vaulted, predominantly black with a slight metallic lustre. Length: 5.3—10.3 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus slender. Eyes small but vaulted, with shallow emargination, head with eyes wider than pronotum. Antennae filiform, apical segments becoming moderately cylindrical, the twelfth segment not distinctly separated from the penultimate one (Fig. 50). Antennae exceed the elytral midlength. Pronotum as long as wide, its lateral margins almost parallel-sided, surface of pronotum with two shallow depressions in central part. Claws simple. Elytra moderately narrowing apically, slightly stenopterous, with four visible nerves. Pygidium distinctly exceeds the last sternite, apically rounded, the last sternite deeply emarginate, projections of the urite VIII visible (Fig. 51). The form of the phallus is the same as in *Nacerdes* Dej.

Sexual dimorphism. Elytra not stenopterous in female, pygidium only slightly exceeds the last sternite.

Distribution: one species occurs in Mediterranean, the second one in Japan.

It differs from the other genera of the tribus by not completely separated last antennal segment in male and by four elytral nerves. The genus *Ezonacerda* Kôno not differing by any essential characters. The genus *Opsimea* Mill. was wrongly classified in the tribus Oedemerini.

3. *Anogcodes* Dejean, 1834

Anogcodes Dejean, 1834: Cat. Col.: 228

Type-species: *Necydalis melanura* Fabricius, 1787 (designated by DUPONCHEL, 1841) = *A. ustulata* (F.)

Anoncodes Redtenbacher, 1845 (unjustified emendation)

Pachychirus Redtenbacher, 1845: Gatt. Deutsch. Käfer-fauna: 134 syn. n.

Type-species: *Necydalis adusta* Panzer, 1795 (by monotypy)

Lethonymus Marseul, 1857: Cat. Col. Eur.: 130 syn. n.

Type-species: *Lethonymus difformis* Marseul, 1857 (by monotypy)

Oedechira Motschulsky, 1872: Bull. Moscou, 45: 54 syn. n.

Type-species: *Oedemera paradoxa* Faldermann, 1837 (designated by ARNETT, 1950)

Peronocnemis Fairmaire, 1886: Ann. Soc. Ent. France, 6: 352 syn. n.

Type-species: *Peronocnemis davidis* Fairmaire, 1886 (by monotypy)

Perocnemis Schenkling, 1915 (variant spelling)

Anoncodina Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 765 syn. n.

Type-species: *Necydalis ruficollis* Fabricius, 1781 (designated by ARNETT, 1950)

Material examined: *A. ustulata* (F.), type species of all synonymes and further 4 species.

Body slender, moderately to strongly vaulted, head and pronotum with long pubescence. Colouration flavous or metallic. Length: 7.0—14.0 mm.

Male. Both mandibles bifid at the apex the last segment of maxillary palpus slender, securiform. Eyes small but vaulted, reniform, head with eyes as wide or wider than pronotum. Antennae filiform, exceeding the elytral midlength, antennal segment 12 completely separated from the preceding one. Pronotum slightly cordiform, approximately as long as wide, mostly with two shallow depressions in central part. Legs mostly modified (coxae with projections, thickened femora or tibiae or femora with hook-shaped projections). Claws simple. Elytra narrowed apically, sometimes slightly stenopterous, with three visible nerves (the second one absent). Pygidium exceeds the last sternite, which is always deeply emarginate, projections of the urite VIII visible (Fig. 52), strongly sclerotized. Phallus has the same form as in *Nacerdes* Dej.

Sexual dimorphism. Antennae somewhat shorter in female, segment 11 distinctly constricted. Pronotum wider than long. Legs normal. Pygidium only slightly exceeds the last sternite, both rounded or shallowly emarginate. In almost all species is a distinct sexual dichroism, sometimes the cases of androchroism appear.

Distribution: Palearctic region, 21 species are described.

ARNETT (1950) stated *Cantharis melanura* L. as the type species, which is not an originally included one. DUPONCHEL (1841) did not mention the author of *A. melanura* in its designation, but it is evident, that it must have been the originally included *A. melanura* (F.) (nec L.) = *A. ustulata* (F.). Almost all species of this genus tend to a more or less strongly developed sexual dimorphism, what cannot be a reason for establishing subgenera or genera based on different phenotypic manifestations of this tendency.

SUBFAMILY CALOPODINAE COSTA, 1852

TRIBUS CALOPODINI COSTA, 1852

1. *Sparedrus* Dejean, 1821

Sparedrus Dejean, 1821: Cat. Col.: 72

Type-species: *Calopus testaceus* Andersch, 1797 [by monotypy]

Spharedrus Kuhn, 1912 [variant spelling]

Sparedropsis Heyden, 1886: Deutsch. Ent. Zeitschr., 30: 191 syn. n.

Type-species: *Sparedropsis fuscus* Heyden, 1886 [by monotypy]

Saloninus Fairmaire, 1891: Ann. Soc. Ent. Belg., 35: cxxxiii

Type-species: *Saloninus nebulosus* Fairmaire, 1891 [original designation]

Ocularium Pic, 1922: Mém. Exot. Ent., 36: 18 syn. n.

Type-species: *Ocularium rufum* Pic, 1922 [by monotypy]

Material examined: *S. testaceus* [And.], *S. fuscus* [Heyd.], comb. n. (type material), *S. nebulosus* [Frm.], comb. n., *S. rufus* [Pic] comb. n. (type material) and further 6 species.

Body subcompressed to moderately vaulted, colouration fuscous to piceous, light, recumbent pubescence on elytra often forms some markings. Length: 8.0—18.0 mm.

Male. Both mandibles simple at the apex, the last segment of maxillary palpus slender to securiform. Eyes large and often strongly vaulted. Head with eyes as a rule wider than pronotum. Antennae reach elytral midlength to slightly exceed elytral apex, segments sometimes flattened, antennae serrate. Pronotum longer than wide, subcylindrical. Claws simple. Elytra parallel-sided or slightly dilated apically, nervation absent or very feeble. Pygidium not exceeding the last sternite, both rounded or shallowly emarginate at the apex, projections of the urite VIII invisible. Tegmen (Fig. 53) feebly sclerotized, pubescent at its apex; aedeagus (Figs. 54, 55) dorsoventrally flattened, with lateral grooves in apical part, with or without tooth.

Sexual dimorphism. Eyes smaller in female, antennae shorter, at most very slightly serrate.

Distribution: southern part of the Holarctic and northern part of the Oriental and Neotropical regions.

It differs from *Calopus* F. by simple mandibles and by flattened aedeagus. The genus *Sparedropsis* Heyd. was described on the basis of penultimate segment of metatarsus, which is dilated and concave, and of the slender last segment of maxillary palpus. These characters form continuous links between species and cannot be used for distinguishing of genera. The genus *Ocularium* Pic is only extreme form with strongly vaulted eyes. This character is continually transient in the genus *Sparedrus* Dej.

2. *Calopus* Fabricius, 1775

Calopus Fabricius, 1775: Syst. Ent.: 182

Type-species: *Cerambyx serraticornis* Linnaeus, 1758 [designated by LATREILLE, 1810]

Material examined: *C. serraticornis* [F.]

Body moderately vaulted, long and slender, fuscous. Length: 15.0 to 20.0 mm.

1. *Colobostomus* group

Tegmen at most feebly in a tubular manner, paramera flat in cross-section, pubescent or not. Basal apodeme of aedeagus very feebly developed, apex of aedeagus simple. The last sternite not shortened, projections of the urite VIII invisible. Slightly serrate antennae were found in some males of *Colobostomus* Frm. Because of not having fully developed basal apodeme of aedeagus, this group is near to ancestors of oedemeroid lineage. Genera *Colobostomus* Frm. and *Dentostomus* Švihla occur in northeastern Africa, Arabia, Iran and India.

2. *Schellia* group

Tegmen in a tubular manner, paramerae not pubescent, basal apodeme of aedeagus short and dilated, apex of aedeagus simple. Antennae of male serrate. The only genus *Schellia* Rtt. from Central Asia can be derived from the preceding group. Derived characters are shortened last sternite, strongly narrowed elytra and serrate antennae, the primitive one is the type of aedeagus. Some relationship to the tribus Oedemerini is possible.

3. *Oschaninia* group

Tegmen only feebly in a tubular manner in its basal portion, paramerae short, flat, non-pubescent. Basal apodeme of aedeagus flat, with a slight crest, apex of aedeagus simple or with a slight tooth. The last sternite strongly shortened, projections of the urite VIII visible. Most probably related to the first group, possible is also relationship to *Eobia* Sem. (flat paramerae, simple aedeagal apex). It may be near to the ancestor of the tribus Stenostomini (type of paramerae). The only genus *Oschaninia* Sem. occurs in Central Asia.

4. *Alloxantha* group

Tegmen in a tubular manner, paramerae thin, at most on inner side very feebly pubescent. Basal apodeme of aedeagus flat, thin, tending to coil, very rarely with a crest. Apex of aedeagus simple to strongly toothed. The last sternite not shortened to strongly shortened, in the latter case projections of the urite VIII visible. The ancestral type of this group possessed not-shortened last sternite and simple apex of aedeagus. Then, two lineages of evolution can be presumed: 1) by curving ventrad of the last sternite — *Ganglbaueria* Sem., *Pseudananconia* Švihla; 2) by shortening of the last sternite — *Xanthochroina* Ggbl., *Alloxantha* Seidl. part. Some *Alloxantha* species and *Alloxanthoidse* gen. n. are the mestest to the ancestor of this group, which can be derived from the preceding one. Western Africa, Canary Is., Near and Middle East.

5. *Ascleropsis* group

Tegmen in a tubular manner, paramerae strikingly short, non-pubescent, strongly sclerotized. Basal apodeme of aedeagus with a slight crest, apex of aedeagus with tooth. The last sternite shortened, projections of the

urite VIII visible. The only genus *Ascleropsis* Seidlitz from southeastern Asia is probably derived from the preceding group.

6. *Eobia* group

Tegmen very feebly to slightly sclerotized, flat to U-shaped in cross-section, paramerae flat, always pubescent. Basal apodeme of aedeagus slightly concave, rarely with moderate crest, supporting sclerite absent, apex of aedeagus simple. The last sternite not shortened, projections of the VIII. urite invisible. The only genus *Eobia* Sem. widely distributed in the Oriental region and Malegassy and Polynesian subregions. Closely related are genera *Ananca* Frm., *Oxycopsis* Arn. and *Oxaxis* Lew., occurring in America. From this primitive group (slightly sclerotized, flat tegmen, absence of supporting sclerite and simple aedeagal apex) several evolutionary lineages can be derived.

7. *Probosca* group

Tegmen U-shaped to semitubular in cross-section, paramerae flat, densely pubescent. Basal apodeme of aedeagus concave, apex of aedeagus simple. The last sternite not strongly shortened, projections of the VIII. urite as a rule invisible. The genus *Probosca* Schm. occurs in Mediterranean, Sindho-saharian zone and in eastern part of Africa. It is derived from the preceding group, as an ancestral type can be considered subg. *Asclerella* Sem., with only slightly tubular tegmen (similar to that of *Eobia* subg. *Falososessinia* Pic).

8. *Nacerdochroides* group

Very near to the preceding group, along with which it can be derived from the *Eobia* group. It differs from the preceding group by strongly shortened last sternite, by visible projections of the urite VIII and by apical tooth at aedeagal apex. The only genus *Nacerdochroides* gen. n. occurs in Sunda Is.

9. *Nacerdochroa* group

Tegmen slightly to strongly sclerotized, U-shaped in cross-section, paramera flat to rounded in cross-section, non-pubescent. Basal apodeme of aedeagus flat to slightly concaved, aedeagal apex simple or with feeble tooth. The last sternite at most moderately shortened, projections of the urite VIII invisible. Genera *Nacerdochroa* Rtt., *Anacerda* Champ. and *Anacerdochroa* gen. n. are distributed in southern part of the Palearctic region and in southwestern Africa. This group originated from the sixth one (probably from the relationship of *Eobia* subg. *Falososessinia* Pic). Compared with the preceding two groups, the pubescence of paramerae was lost.

10. *Sessinia* group

Tegmen intermediately sclerotized, U-shaped in cross-section, paramerae flat to rounded in cross-section, always pubescent, in some genera

with basal teeth. Basal apodeme of aedeagus never with crest, aedeagal apex simple or with tooth. The last sternite shortened only in *Ischnomera* Steph., so that projections of the urite VIII visible. This group can be divided into three subordinate groups: 1) genera *Sessinia* Pasc., *Pseudohyperasclera* Macn., *Parasessinia* gen. n., *Assessinia* gen. n. and *Ananco-sessinia* Kôno — tegmen and aedeagus long, slender, aedeagus more or less thickened before apex; 2) genera *Alloxoides* Macn., *Colobostomoides* Švihla, *Paroxacis* Arn., *Hypasclera* Kirsch and *Hypascleroides* gen. n. — aedeagus and tegmen shorter, more robust, paramerae often with basal teeth; 3) genus *Ischnomera* Steph., the most derived genus of the group (shortened last sternite and dilated apex of basal apodeme of aedeagus). Distribution circumtropical, only the genus *Ischnomera* Steph. occurs in the temperate zone. This group can be derived from the sixth one, probably from subgenera *Eobia* s. str. and *Pareobia* subg. n.

11. *Zabriola* group

Tegmen intermediately sclerotized, almost flat, paramerae short, non-pubescent. Basal apodeme of aedeagus flat, apex of aedeagus with two teeth. The last sternite only feebly shortened, projections of the urite VIII invisible. Genera *Zabriola* Frm. and *Achitona* gen. n. are known from Madagascar and southern Africa. This group is also derived from the sixth one, from which it differs by more sclerotized tegmen, loss of pubescence of paramerae and by occurrence of aedeagal teeth.

12. *Chitona* group

Tegmen very strongly sclerotized, U-shaped in cross-section, paramera rounded in cross-section or slightly spoon-shaped, rarely pubescent. Basal apodeme of aedeagus flat, often with crest. Aedeagal apex rarely with one, as a rule with two teeth or the teeth are multiplied. The last sternite (excluding *Afrochitona* subg. n.) strongly shortened, projections of the urite VIII visible. Genera *Anisochroa* Sem., *Anisochroides* Švihla, *Chitona* Schm., *Gilotia* Pardo, *Ditylomorphus* gen. n., *Ditylomorphula* gen. n., *Apterosessinia* Blair, *Pterosessinia* gen. n., *Melananthia* Blair *Pseudolycus* Guér. The first two genera are more primitive, the most derived are the last four ones. This group is distributed over the Old World and Australia and very probably also in remaining zoogeographical regions. It is derived from the preceding group (common occurrence of aedeagus with two teeth, but there is also probable relationship to the tenth group (similarly preapically thickened aedeagus in some *Chitona*-species).

13. *Asclerosibutia* group

Very near to the preceding group, from which it is derived (probably from the close relationship of *Ditylomorphula* gen. n.). It differs by mostly concrescent paramerae, which are always pubescent. Genera *Microsessinia* Pic and the more derived *Asclerosibutia* Pic occur in the Afrotropical region.

14. *Schistopselaphus* group

This group is derived from the twelfth one parallel to the preceding group. Paramerae tend to fuse, always non-pubescent. The last segment of male maxillary palpus often deeply emarginate at its outer side. Genera *Eopselaphus* gen. n. (more primitive) and *Schistopselaphus* Frm. are known from Madagascar and Sunda Is., further genera are distributed in the New World.

Colobostomus group

1. *Colobostomus* Fairmaire, 1885

Colobostomus Fairmaire, 1885: Ann. Soc. Ent. France, 5: 452

Type-species: *Colobostomus griseovestitus* Fairmaire, 1885 [by monotypy]

Material examined: *C. griseovestitus* Frm. [type material], *C. (Chitonoidea) persicus* (Švihla), comb. n. and further 3 species.

Body slender, moderately to strongly vaulted, colouration flavous to piceous. Length: 6.5–11.7 mm.

Male. Both mandibles simple at the apex, the last segment of maxillary palpus securiform to cultriform. Eyes moderately vaulted, shallowly emarginate, head with eyes as wide as or feebly wider than pronotum. Antennae filiform, reaching $\frac{1}{2}$ – $\frac{1}{3}$ of the elytral length, the last segment slightly narrowed from its midlength. Pronotum moderately cordiform, as long as or slightly longer than wide, at most with very slight depressions in anterior portion. Claws simple. Elytra approximately parallel-sided, nervation reduced or completely absent. Pygidium slightly exceeds the last sternite, projections of the urite VIII invisible. Tegmen sclerotized, paramerae with or without pubescence, aedeagus only with feebly marked basal apodeme, apex simple.

Sexual dimorphism. Antennae shorter and eyes smaller in female.

Subgenus *Colobostomus* s. str.

Eyes almost transverse, head before eyes short. Mandibles in male often sickle-shaped, their apexes crossing over (Fig. 58). Antennal segments often flattened, antennae feebly serrate. The last tergite often with an oblique facet at the apex, truncate or shallowly emarginate as well as the last sternite. Tegmen and aedeagus — Figs. 59, 60.

Distribution: southwestern Africa, Arabia, India.

Subgenus *Chitonoidea* Švihla, 1983 stat. n.

Chitonoidea Švihla, 1983: Acta ent. Mus. nat. Pragae, 41: 116

Type-species: *Chitonoidea persica* Švihla, 1983 [original designation]

Eyes oblique, head slightly prolonged before eyes (Fig. 61), mandibles normal. Pygidium narrowing towards its apex, emarginate (Fig. 65). Posterior tibia thickened apically in male (Fig. 62). Aedeagus and tegmen — Figs. 63, 64.

Distribution: southern Iran.

Both subgenera show some derived characters (mandible, posterior

tibia) and both probably developed from a more primitive ancestor. Genus *Colobostomus* Frm. can be distinguished according to the characters given in key.

2. *Dentostomus* Švihla, 1984

Dentostomus Švihla, 1984: Fauna Saud. Arabia, 6: 261

Type-species: *Ananca anceyi* Pic, 1920 (original designation)

Material examined: *D. anceyi* (Pic) [type material]

Body moderately vaulted colouration flavo-fuscous. Length: 5.6 to 10.8 mm.

Male. Left mandible simple, the right one with subapical tooth (Fig. 69). The last segment of maxillary palpus cultriform (Fig. 68). Eyes vaulted, shallowly emarginate, head with eyes as wide as pronotum. Antennae filiform, reaching elytral midlength, the last segment at most feebly emarginate. Pronotum cordiform, somewhat longer than wide, without depressions. Anterior claw with long basal tooth (Fig. 70), intermediate and posterior ones with much shorter teeth (Fig. 71). Elytra moderately dilated apically, nerves slightly developed, the second one absent. Both pygidium and the last sternite of equal length, both rounded apically, projections of the urite VIII invisible. Tegmen feebly sclerotized (Fig. 66), aedeagus with slightly developed basal apodeme, aedeagal apex simple (Fig. 67).

Sexual dimorphism. Head with eyes slightly narrower than pronotum in female, all claws with small basal teeth (Fig. 71).

Distribution: the only known species occurs in Arabian peninsula and in adjacent region of Africa.

Most closely related to preceding genus, from which it differs by type of mandibles, form of claws and by slightly sclerotized tegmen.

Schellia group

3. *Schellia* Reitter, 1914

Schellia Reitter, 1914: Ent. Blät., 10: 49

Type-species: *Schellia sitaroides* Reitter, 1914 (by monotypy)

Material examined: *S. sitaroides* Rtt. (holotype, strongly destroyed, also original description was used).

Body strongly vaulted, piceous, elytra flavous. Length: 9.0 mm.

Male. Both mandibles simple, the last segment of maxillary palpus slender, truncate apically (Fig. 77). Eyes large, flat, reniform, head with eyes distinctly narrower than pronotum. Antennal segments from the third one on strikingly triangular (Fig. 76), from the segment 7 on lacking. Pronotum transverse, slightly cordiform, without depressions. Legs slender, claws slender, simple. Elytra shortened, covering only 2.5 of visible abdominal segments, strongly stenopterus (like in some *Oede-mera* species) — Fig. 72, nervation reduced. Pygidium exceeds the last sternite, its apex lacking, the last sternite widely emarginate, projections of the urite VIII visible, strongly sclerotized (Fig. 75). Tegmen slightly sclerotized, paramerae non-pubescent (Fig. 73), basal apodeme of aedeagus slightly developed, apex of aedeagus simple (Fig. 74).

Female unknown.

Distribution: monotypic genus, described from the Kyzyl-kum desert.

Strongly derived genus, related to the preceding group (slightly developed basal apodeme of aedeagus). This genus was described in the tribus Oedemerini, but the shape of anterior coxal cavities is distinctly ascleroid, even though certain evolutionary relationship to the latter tribus may exist (common occurrence of stenopterous elytra).

Oschaninia group

4. *Oschaninia* Semenov, 1898

Oschaninia Semenov, 1898: Wien. Ent. Zeit., 17: 175

Type-species: *Ganglbaueria wilkinsi* Heyden, 1894 [original designation]

Material examined: *O. wilkinsi* (Heyd.) (type material), *O. (Homomorpha) crucifera* (Sem.), comb. n. (type material) and one further species

Body moderately vaulted, colouration flavous to fuscous with elytral markings. Length: 6.0—8.2 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform to cultriform. Eyes relatively small, flat, shallowly emarginate, head with eyes slightly narrower than pronotum. Antennae filiform, reaching $\frac{1}{3}$ to $\frac{1}{2}$ of elytral length, the last segment feebly emarginate. Pronotum distinctly longer than wide, without depressions. Claws simple. Elytra very moderately dilated apically, nerves visible only in basal portion, the second one absent. Pygidium much longer than the last sternite, narrowly emarginate at its apex, the last sternite widely rounded, projections of the urite VIII visible (Fig. 80). Tegmen well sclerotized, paramerae short, aedeagus with distinct basal apodeme.

Sexual dimorphism. The last segment of maxillary palpus always securiform in female (Fig. 78), antennae short, not reaching $\frac{1}{3}$ of elytral length. Pronotum as long as wide. Pygidium exceeds the last sternite, apex of which is slightly curved ventrad (Fig. 81).

Distribution: desert regions from the Caspian Sea to southern Mongolia.

Subgenus *Oschaninia* s. str.

Antennae reach elytral midlength in male, the last segment of male maxillary palpus cultriform (Fig. 79), the penultimate segment of posterior tarsus in central part without spongiuous pubescence. Aedeagus and tegmen — Figs. 82, 83. Two species.

Subgenus *Homomorpha* Semenov, 1898 stat. n.

Homomorpha Semenov, 1898: Wien. Ent. Zeit., 17: 177

Type-species: *Homomorpha crucifera* Semenov, 1898 [original designation]

Antennae reach $\frac{1}{3}$ of elytral length in male, the last segment of maxillary palpus securiform (Fig. 86), the penultimate segment of posterior tarsi completely spongiuously pubescent. Tegmen and aedeagus — Figs. 84, 85. Two species.

The genus *Oschaninia* Sem. does not possess any close relatives. There is possible relationship to the tribus Stenostomini (similar type of tegmen).

Alloxantha group

5. *Alloxantha* Seidlitz, 1899

Alloxantha Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 814

Type-species: *Alloxantha lutea* Seidlitz, 1899 (designated by LUCAS, 1920)

Alloxanthina Švihla, 1983: Acta ent. Mus. nat. Pragae, 41: 117

Type-species: *Alloxanthina flava* Švihla, 1983 (original designation)

Material examined: *A. lutea* Seidl., *A. flava* (Švihla), *A. (Ananconiomorpha) platytarsia* (Švihla), and further 4 species.

Body subcompressed to slightly vaulted, colouration flavous to fuscous or piceous. Length: 4.7—13.3 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform. Eyes flat to moderately vaulted, with flat emargination. Head with eyes as wide as or feebly narrower than pronotum. Antennae filiform, reaching approximately the elytral midlength, the last segment slightly emarginate. Pronotum approximately as long as wide, moderately cordiform, with at most a slight depressions in anterior portion. The penultimate segment of posterior tarsus completely spongiously pubescent, rarely with narrow central glabrous stripe. Claws simple. Elytra moderately dilated apically, nervation slightly developed or absent. Pygidium always exceeding the last sternite, narrowly emarginate at its apex. The last sternite rounded or narrowly emarginate, its apex sometimes slightly curved ventrad. Projections of the urite VIII visible only in the species with the more shortened last sternite. Tegmen semitubular, paramerae non-pubescent. Aedeagus with thin basal apodeme, apex of aedeagus at most slightly toothed.

Sexual dimorphism. The last sternite almost as long as pygidium in female, always rounded.

Subgenus *Alloxantha* s. str.

Tibiae and tarsi normal in male. Tegmen and aedeagus as figured — Figs. 87, 88.

Distribution: Azores, Canary Is., southern parts of Arabia, Iraq and Iran. Hitherto three species were described.

Subgenus *Ananconiomorpha* Švihla, 1983

Ananconiomorpha Švihla, 1983: Acta ent. Mus. nat. Pragae, 41: 120

Type-species: *Ananconiomorpha platytarsia* Švihla, 1983 (original designation)

Intermediate tibia and tarsus monstrously modified in male (Fig. 89). Tegmen and aedeagus as figured — Figs. 90, 91. The only species occurs in southern parts of Arabia and Iran.

6. *Alloxanthoides* gen. n.

Type-species: *Sessinia lateritincta* Pic, 1920: Mém. exot.-ent., 35: 18

Material examined: *A. lateritincta* (Pic), comb. n.

Body semivaulted, colouration flavo-fuscos. Length: 9.0—12.5 mm.

Male. Left mandible simple, the right one with subapical tooth. The last segment of maxillary palpus cultriform (Fig. 94). Eyes relatively large and vaulted, flatly emarginate, head with eyes somewhat narrower than pronotum. Antennae filiform, slightly exceeding the midlength of elytra, the last segment slightly constricted behind its midlength. Pronotum as long as wide, moderately cordiform, with two shallow depressions in anterior portion and with another, central one before base. Claws dentate, the tooth reaches the midlength of claw. Elytra very slightly dilated apically, nervation very feeble, the second nerve quite absent. Pygidium slightly exceeds the last sternite, both rounded, projections of the urite VIII invisible. Tegmen and aedeagus of the similar type as in the preceding genus — Figs. 93, 92.

Sexual dimorphism. Pronotum slightly transverse in female, head with eyes distinctly narrower than pronotum.

Distribution: western part of tropical Africa: Ivory Coast to Congo.

Closely related to the preceding genus from which it differs by type of mandibles and by dentate claws.

7. *Xanthochronia* Ganglbauer, 1881

Xanthochroina Ganglbauer, 1881: Verh. zool.-bot. Ges. Wien, 31: 98

Type-species: *Xanthochroa auberti* Abeille, 1876 [by monotypy]

Asclerostoma Fleischer, 1919: Ent. Blatt., 15: 169 syn. n.

Type-species: *Asclerostoma reitteri* Fleischer, 1919 [by monotypy] = *X. auberti* (Ab.)

Material examined: *X. auberti* (Ab.), *Asclerostoma reitteri* Fleisch. [type material].

Body small, compressed, colouration flavo-fuscos. Length: 4.1—6.5 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform. Eyes moderately vaulted, reniform, with strikingly coarse facets. Head with eyes slightly wider than pronotum, head before eyes very short. Antennae feebly exceed the midlength of elytra, the last segment emarginate behind its midlength. Pronotum wider than long, cordiform, without depressions. Claws simple. Elytra moderately dilated apically, nervation slightly developed, the second nerve absent. Pygidium twice as long as the last sternite, both rounded at apex, projections of the urite VIII visible (Fig. 97). Tegmen slightly sclerotized, paramerae non-pubescent (Fig. 95), aedeagus with long basal apodeme and with small tooth at the apex (Fig. 96).

Sexual dimorphism. Pygidium only slightly exceeds the last sternite in female, eyes somewhat smaller.

Distribution: the only species of the Old World fauna occurs in northeastern Mediterranean, the second species is reported from North America.

Closely related to *Alloxantha* Seidl., but it differs by rounded pygidium and by coarse facets of eyes.

8. *Ganglbaueria* Semenov, 1891

Ganglbaueria Semenov, 1891: Hor. Soc. Ent. Ross., 25: 378

Type-species: *Ganglbaueria collaris* Semenov, 1891 [by monotypy]

Material examined: *G. collaris* Sem. [type material].

Body moderately vaulted, flavous, with semierect pubescence. Length: 5.0—15.0 mm.

Male. Both mandibles simple, the last segment of maxillary palpus cultriform (Fig. 102). Eyes moderately vaulted, flatly emarginate, head with eyes somewhat narrower than pronotum. Antennae filiform, exceeding the elytral midlength, the last segment without emargination. Pronotum slender, slightly cordiform, distinctly longer than wide, without depressions. The penultimate segment of posterior tarsus only at its lateral margins spongiously pubescent, its central part glabrous. Claws strikingly long and slender, simple (Figs. 103). Elytra parallel-sided, slightly shortened, not completely covering the last abdominal segment, widely rounded apically (Fig. 104). Nervation completely developed, but hardly visible owing to dense pubescence. The last abdominal segment — Figs. 100, 101. Tegmen sclerotized (Fig. 98), aedeagus (Fig. 99).

Sexual dimorphism. Antennae shorter in female, not reaching the elytral midlength.

Distribution: the only known species occurs in Chinese Turkestan and Karakoram.

It can easily be recognized according to the apex of elytra, pubescence of tarsi and form of the last abdominal segment.

9. *Pseudananconia* Švihla, 1983

Pseudananconia Švihla, 1983: Acta ent. Mus. nat. Pragae, 41: 121

Type-species: *Ananconia mesopotamica* Reitter, 1908 [original designation]

Material examined: *P. mesopotamica* [Rtt.] (type material) and one further species.

Body moderately to strongly vaulted, colouration flavous and fuscous. Length: 7.1—19.0 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform (Fig. 107). Eyes flat, almost transverse, shallowly emarginate, head with eyes narrower than pronotum. Antennae reach the elytral midlength, the last segment emarginate behind its midlength. The penultimate segment of posterior tarsus completely spongiously pubescent or with a very narrow, glabrous stripe in its central part. Claws simple. Elytra slightly dilated apically, nervation very feeble to absent. The last abdominal segment as in the preceding genus. Tegmen strongly sclerotized, paramerae non-pubescent (Fig. 105), aedeagus with tooth in apical part, basal apodeme with crest (Fig. 106).

Female does not differ by any essential characters.

Distribution: two known species occur in the Middle East.

This genus had probably a common ancestor with the preceding genus (the form of the last abdominal segment). It differs by the characters given in key.

Ascleropsis group

10. *Ascleropsis* Seidlitz, 1899

Ascleropsis Seidlitz, 1899: Naturg. Ins. Deutschl., 5: 848

Type-species: *Asclera maculicollis* Ganglbauer, 1890 [designated by Arnett, 1950]
Indasclera Švihla, 1980: Ent. Basiliensia, 5: 48 syn. n.

Type-species: *Asclera indica* Fairmaire, 1894 [original designation]

Material examined: *A. maculicollis* [Gglb.] (type material), *A. indica* (Frm.) comb. n. and further 10 species.

Body slender to robust, moderately to strongly vaulted. Colouration predominantly metallic, rarely fuscous. Length: 6.2—13.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform to cultriform. Eyes small but vaulted, feebly to strongly emarginate. Head with eyes approximately as wide as pronotum. Antennae filiform, reaching to slightly exceeding the midlength of elytra, the last segment constricted at its midlength. Pronotum approximately as long as wide, cordiform to almost parallel-sided, two depressions in anterior portion at most slightly indicated, in posterior portion often occurs a longitudinal keel. Claws simple. Elytra parallel-sided or moderately dilated apically, nervation distinct to completely absent. Pygidium always exceeding the last sternite, rounded or shallowly emarginate at its apex, the last sternite rounded, flatly emarginate or forming a short blunt projection. Projections of the urite VIII visible (Fig. 110). Tegmen slightly to well sclerotized, semitubular, paramerae short, non-pubescent (Fig. 108). Apex of aedeagus with tooth, basal apodeme often with crest (Fig. 109).

Sexual dimorphism. Pygidium only slightly exceeds the last sternite in female, both apically rounded.

Distribution: the genus contains a large number of species, but most of them are hitherto classified in the genus *Ischnomera* Steph. [= *Asclera* Dej.]. Southern and southeastern Asia.

It differs from the somewhat similar genus *Ischnomera* Steph. by the characters given in key. When I studied larger material of this genus, I found *Indasclera* Švihla to be conspecific with *Ascleropsis* Seidl.

Eobia group

11. *Eobia* Semenov, 1894

Eobia Semenov, 1894: Hor. Soc. Ent. Ross., 28: 455

Type-species: *Asclera cinereipennis* Motschulsky, 1866 [original designation]

Material examined: *E. cinereipennis* (Mots.), *E. (Falsosessinia) spinosa* (Pic), comb. n., *E. (Pareobia) florilega* Lew. (type material) and further 18 species.

Body moderately to strongly vaulted, colouration flavous to piceous. Length: 6.0—20.5 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform to cultriform. Eyes moderately to strongly vaulted, flatly emarginate. Antennae long, filiform, reaching at least elytral midlength, the last segment slightly emarginate or constricted. Pronotum as a rule longer than wide. Claws simple. Elytra parallel-sided or slightly narrowed apically, nervation slightly developed, the second nerve di-

stinct only in basal portion. Pygidium slightly exceeds the last sternite, projections of the urite VIII rarely visible. Tegmen feebly sclerotized, paramerae always flat, pubescent, aedeagus without apical tooth, basal apodeme sometimes with slight crest, supporting sclerite not developed.

Female not differing by any essential characteristics.

Distribution: Madagascar and adjacent islands, southeastern Asia, Pacific islands.

This is the only ascleroid genus of the Old World fauna, not possessing the supporting sclerite.

Subgenus **Eobia** s. str.

Eyes less vaulted, front approximately as wide between eyes as between antennal pits, pronotum distinctly cordiform, with slight depressions, surface of pronotum punctate, between punctures microchagreened. Projections of the urite VIII always invisible. Tegmen and aedeagus short — Figs. 111, 112. Smaller species, 6.0–10.5 mm. The ancestral type of genus.

Subgenus **Falsosessinia** Pic, 1923 stat. n.

Falsosessinia Pic, 1923: Mél. exot.-ent., 39: 28

Type-species: *Falsosessinia spinosa* Pic, 1923 [designated by ARNETT, 1950]

Eyes strikingly large, front between eyes narrower than between antennal pits, lateral margins of pronotum more or less straight, converging basally, surface of pronotum with flat depressions and impressions, punctuation the same as in *Eobia* s. str. Tegmen and aedeagus — Figs. 113, 114, paramerae very slender. Large species, 13.0–20.5 mm. Derived from *Eobia* s.str.

Subgenus **Pareobia** subg. n.

Type-species: *Eobia florilega* Lewis, 1895: Ann. Mag. Nat. Hist., 15: 438

The form of body and length the same as in *Eobia* s. str., pronotum very densely and coarsely punctate, therefore the microchagration visible only with difficulty. Pygidium more or less emarginate at the apex, aedeagus and tegmen long and slender, paramerae divergent, very sparsely pubescent — Figs. 115, 116. It is a derived subgenus, probably forming a link between *Eobia* Sem. and some genera near *Sessinia* Pasc.

Probosca group

12. **Probosca** Schmidt, 1846

Probosca Schmidt, 1846: Linn. Ent., 1: 17

Type-species: *Probosca viridana* Schmidt, 1846 [by monotypy]

Proboscea Schmidt, 1846 [variant spelling]

Material examined: *P. viridana* Schm., *P. (Asclerella) tenera* (Sem.) comb. n. (type material), *P. (Isoloxantha) handlirschi* (Seidl.) comb. n. (type material), *P. (Ananconia) martini* (Frm.) comb. n. (type material) and further 10 species.

Body slender to moderately robust, moderately to strongly vaulted, colouration flavo-fuscous or metallic. Length: 5.9–15.5 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform to cultriform. Eyes small, flat to slightly vaulted, head with eyes approximately as wide as pronotum. Antennae filiform, reaching $\frac{1}{3}$ — $\frac{2}{3}$ of elytral length, the last segment slightly emarginate or constricted behind its midlength. Pronotum more or less cordiform with two flat depressions in anterior portion. Claws simple. Elytra parallel-sided to moderately dilated apically, nervation slightly developed, the second nerve absent. Pygidium only slightly exceeding the last sternite, narrowly emarginate at its apex, the last sternite rounded or shallowly emarginate, sometimes slightly curved ventrad. Projections of the urite VIII invisible. Tegmen sclerotized, paramerae pubescent, aedeagus without apical tooth.

Sexual dimorphism. Eyes somewhat smaller and antennae shorter in female.

Subgenus *Asclerella* Semenov, 1900 stat. n.

Asclerella Semenov, 1900: Hor. Soc. Ent. Ross., 34: 648

Type-species: *Asclerella tenera* Semenov, 1900 (by monotypy)

Body flavo-fuscous, very slender, the last segment of maxillary palpus cultriform. Pronotum distinctly longer than wide, with three depressions and feeble central keel; surface of pronotum coarsely and densely but not rasply punctate. Intermediate legs normal. Both pygidium and the last sternite shallowly emarginate. Aedeagus and tegmen of the same type as in *Probosca* s. str., tegmen less in a tubular manner.

One species occurs in eastern Iran, the second one in eastern Africa. Probable ancestral type of the genus.

Subgenus *Isoloxantha* Semenov, 1902 stat. n.

Isoloxantha Semenov, 1902: Rev. Russe Ent., 2: 353

Type-species: *Ananconia handlirski* Seidlitz, 1899 (original designation)

Xanthomima Semenov, 1900: Hor. Soc. Ent. Ross., 34: 646 (nec Warren, 1897)

Body flavo-fuscous or partly metallic coloured. The last segment of maxillary palpus securiform. Pronotum cordiform to subcylindrical, depressions flat, surface of pronotum finely punctate. Intermediate legs normal. Tegmen and aedeagus (Figs. 119, 120) shorter than in *Probosca* s. str., excluding *P. (I.) notatithorax* Pic, which forms (also by partly metallic colouration) a link between *Probosca* s. str. and this subgenus.

Five species are known, distributed in the Sindh-saharian zone.

Subgenus *Ananconia* Seidlitz, 1899 stat. n.

Ananconia Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 816

Type-species: *Chitona martini* Fairmaire, 1896 (designated by SEMENOV, 1900)

Colouration flavous to piceous, without lustre. The last segment of maxillary palpus securiform. Pronotum finely punctate, cordiform, depressions deep. Intermediate tibia (Fig. 118) or tarsus (Fig. 117) modified in male. Tegmen and aedeagus as in *Probosca* s. str.

Three species occur in Arabia and eastern Africa. Together with the following one the most derived subgenus of the genus.

Subgenus *Probosca* s. str.

Colouration metallic, lustrous. The last segment of maxillary palpus securiform to cultriform, pronotum as long as wide, almost globular, its surface roughly, raspy punctate. Antennae not reaching elytral midlength, intermediate legs normal, the last abdominal sternite rounded (Fig. 123). Tegmen and aedeagus (Figs. 121, 122) strongly curved. Western part of Mediterranean.

Nacerdochroides group

13. Nacerdochroides gen. n.

Type-species: *Nacerdochroides suturalis* sp. n.

Material examined: *N. suturalis* sp. n. and further 2 species.

Body moderately vaulted, flavous to fuscous. Length: 10.8–15.5 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus long cultriform (Fig. 126). Eyes large and vaulted, flatly emarginate, head with eyes approximately as wide as pronotum. Antennae long and filiform, reaching elytral apex, the last segment emarginate behind its midlength. Pronotum distinctly longer than wide, with pair of slight depressions in anterior portion. Claws simple. Elytra parallel-sided, all nerves developed. Pygidium twice as long as the last sternite, flatly emarginate at the apex, blunt apical projection, projections of the urite VIII visible (Fig. 125). Tegmen sclerotized, paramerae long, shortly pubescent (Fig. 124), aedeagus with apical tooth (Fig. 127).

Sexual dimorphism. Pygidium only slightly exceeds the last sternite in female.

Distribution: Sunda Is., Micronesia.

It is very similar some *Nacerdochroa* and *Alloxantha* species, from which it differs by pubescent paramerae.

Nacerdochroides suturalis sp. n.

Body flavous, pronotum and elytra cinammon-coloured, sutural and lateral margins of elytra narrowly flavous bordered.

Male. Head densely punctate, sparsely flavous pubescent, dull. Eyes large and vaulted, head with eyes as wide as pronotum. Antennae reach the elytral apex. Pronotum about half longer than wide, more densely punctate than the head, with pair of flat depressions in anterior portion and with very slight longitudinal keel between them. Elytra parallel-sided, separately rounded apically.

All nerves developed, the second one somewhat obsolete. Surface of elytra corrugately and more densely punctate than head and pronotum, shortly recumbently pubescent. The last abdominal segment, tegmen and aedeagus as figured — Figs. 124, 125, 127.

Female. Pronotum only slightly longer than wide, head with eyes slightly narrower than pronotum. Pygidium feebly exceeds the last sternite, without emargination, the last sternite narrowly rounded at the apex.

Length: 12.3–14.2 mm.

Holotype: ♂, Noesa Kambangan I. (south of Java), 1.—7. ix. 1926, F. C. Drescher lgt.; paratype: ♀, Java, Tjilatjap, vi. 1919, F. C. Drescher lgt. [ZMA].

Nacerdochroa group

14. Nacerdochroa Reitter, 1893

Nacerdochroa Reitter, 1893: Wien. Ent. Zeit., 12: 113

Type-species: *Nacerdochroa plutschewskyi* Reitter, 1893 (by monotypy) = *N. caspia* (Fald.)

Material examined: *N. caspia* (Fald.), *N. (Holoxantha) concolor* (Brullé), comb. n. and further one species.

Body subcompressed to moderately vaulted, flavous to fuscous. Length: 8.7—15.5 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform. Eyes flat to moderately vaulted, shallowly emarginate, head with eyes approximately as wide as pronotum. Antennae rarely reach the midlength of elytra, the last segment constricted behind its midlength. Pronotum approximately as long as wide, cordiform, without depressions. Claws simple. Elytra slightly dilated apically, 3 nerves feebly developed, the second one absent. Pygidium not or very slightly exceeding the last sternite, narrowly emarginate at its apex, the last sternite rounded or moderately tapered, sometimes slightly curved ventrad, at most apexes of projections of the VIII. urite visible (Fig. 131). Tegmen intermediary to strongly sclerotized, paramerae very long, non-pubescent. Basal apodeme of aedeagus short, apex of aedeagus simple.

Sexual dimorphism. Head with eyes always narrower than pronotum in female, pygidium feebly exceeds the last sternite.

It can be distinguished from the related genera according to the characters given in key.

Subgenus Nacerdochroa s. str.

Last segment of posterior tarsus more than twice longer than the penultimate one (Fig. 130), paramerae flat in cross-section. Tegmen and aedeagus — Figs. 128, 129.

Three species are known, two of them from Soviet Central Asia, one from the Persian Gulf region.

Subgenus Holoxantha Semenov, 1894 stat. n.

Holoxantha Semenov, 1894: Hor. Soc. Ent. Ross., 28: 457

Type-species: *Ditylus concolor* Brullé, 1838 (original designation)

The last segment of posterior tarsus less than twice as long as the penultimate one (Fig. 134), tegmen strongly sclerotized, paramerae oval in cross-section (Fig. 132), aedeagus — Fig. 133.

The only species occurs in Canary Is.

15. Anacerda Champion, 1927

Anacerda Champion, 1927: Ent. Mon. Mag., 63: 249

Type-species: *Anacerda leptidioides* Champion, 1927 (by monotypy)

Material examined: *A. leptidioides* Champ. [type material.]

Body small, compressed, strikingly short, colouration flavous and fuscous. Length: 4.5—7.5 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform (Fig. 138), eyes strikingly small (Fig. 137), flat, slightly emarginate, head with eyes as wide as pronotum. Antennae reach $\frac{2}{3}$ of elytral length, the last segment constricted at its midlength. Pronotum slightly longer than wide, cordiform, without depressions. Legs short, claws simple. Elytra parallel-sided, their apexes widely rounded, 3 nerves hardly visible, the second one absent. Pygidium exceeds the last sternite, both rounded apically, projections of the urite VIII visible (Fig. 139). Tegmen sclerotized, paramerae non-pubescent (Fig. 135), aedeagus without apical tooth (Fig. 136).

Female was not examined.

Distribution: one species is known from southern slopes of Himalaya.

It can be easily recognized according to strikingly small eyes.

16. *Anacerdochroa* gen. n.

Type-species: *Anacerdochroa similis* sp. n.

Material examined: *A. similis* sp. n. and further one species.

Body moderately vaulted, colouration flavous to fuscous, imitating species of *Ditylomorphula* gen. n. and *Achitona* gen. n. Length: 8.5 to 9.7 mm.

Male. Both mandibles simple, the last segment of maxillary palpus narrowly securiform (Fig. 141). Eyes moderately vaulted, flatly emarginate, head with eyes narrower than pronotum. Antennae filiform, exceeding the elytral midlength, the last segment without emargination. Pronotum cordiform, longer than wide, with pair of very shallow depressions in anterior portion. Claws with small basal teeth not reaching their midlength. Elytra almost parallel-sided, nerves 2 and 3 feebly developed, the other ones absent. Pygidium only slightly exceeding the last sternite, widely rounded apically, the last sternite almost truncate, very shallowly emarginate, projections of the urite VIII invisible (Fig. 142). Tegmen sclerotized, paramerae flat in cross-section, non-pubescent. Aedeagus with flat basal apodeme and with very feeble apical tooth (Fig. 140).

Female unknown.

Distribution: southern Africa.

It differs from the related genera by slightly toothed claws in combination with simple mandibles.

Anacerdochroa similis sp. n.

Male. Colouration flavous, base of elytra and transverse stripe before apex fuscous. Surface of body very finely punctate, with dense, fine, recumbent pubescence.

Front between eyes wider than between antennal pits. Antennal segment 1 twice as long as 2, segment 3 as long as 1, segments 4 and 5 feebly shorter than 3. The last abdominal segment, tegmen and aedeagus as figured — Figs. 140, 142, 143.

Length: 9.7 mm.

Holotype: ♂, SW Africa, Hoffnung, 24.—26. x. 1933, K. Jordan lgt. (BMNH).

Sessinia group

17. Sessinia Pascoe, 1863

Sessinia Pascoe, 1863: J. Ent., 2: 45

Type-species: *Lagria livida* Fabricius, 1775 (designated by SEMENOV, 1894)

Material examined: *S. livida* (F.) and further one species.

Body relatively vaulted and robust, colouration flavous to fuscous. Length: 12.2—14.1 mm.

Male. Both mandibles simple, the last segment of maxillary palpus cultriform. Eyes large but flat, shallowly emarginate, head with eyes slightly narrower than pronotum. Antennae long, filiform, reaching almost the apex of elytra, the last segment very feebly emarginate behind its midlength. Pronotum moderately cordiform, approximately as wide as long, with two almost indistinct depressions in anterior portion, sometimes with slight longitudinal groove. Claws simple. Elytra parallel-sided, only the first nerve visible, the other ones feebly developed only in basal portion. Pygidium not exceeding the last sternite, both widely rounded, projections of the urite VIII invisible. Tegmen strongly sclerotized, paramerae oval in cross-section, pubescent (Fig. 144), aedeagus with apical tooth (Fig. 145).

Female not differing significantly from the male.

Distribution: especially Pacific islands. From the Old World the only species was examined from Christmas I. (possibly introduced).

It differs from the related genera by simple mandibles and claws. The following four genera not differing habitually from *Sessinia* Pasc., only differential characters are mentioned. These 5 genera differ from the other genera of the group by long and slender aedeagus more or less thickened before apex and paramerae never with teeth.

18. Anancosessinia Kôno, 1937

Anancosessinia Kôno, 1937: Ins. Matsum., 11: 139

Type-species: *Anancosessinia tarsalis* Kôno, 1937 (by monotypy)

Material examined: *A. tarsalis* Kôno and further 3 species.

Habitus as in *Sessinia* Pasc., colouration flavous to piceous, surface of pronotum between punctures microchagreened. Length: 6.8—8.5 mm.

Both mandibles simple. Eyes more vaulted, head with eyes as wide as pronotum. Pronotum slightly longer than wide, without depressions and grooves. Claws with basal teeth reaching almost $\frac{2}{3}$ of the length of claw. Pygidium very slightly tapered. Paramerae flat in cross-section (Fig. 146), aedeagus without tooth at its apex, sometimes with lateral depressions (Fig. 147).

Distribution: Ryukyu Is., Taiwan, Sri Lanka, Sunda Is.

It differs from the related genera by combination of simple mandibles and non-dentate claws.

19. *Parasessinia* gen. n.

Type-species: *Parasessinia nicobarica* sp. n.

Material examined: *P. nicobarica* sp. n. and two further species.

Habitus as in *Sessinia* Pasc., colouration flavous to dark fuscous, surface of pronotum microchagreened. Length: 9.8—11.8 mm.

Left mandible simple, the right one with subapical tooth. Head with eyes slightly narrower than pronotum. Pronotum sometimes with very slight depressions and central groove. Nerves 1, 3 and 4 very feebly indicated. Claws simple. Pygidium rounded or with flat emargination. Paramerae oval or flattened in cross-section (Fig. 148). Aedeagus with apical tooth (Fig. 149).

Distribution: Nicobar Is., Sri Lanka, Borneo.

It differs from its relatives by combination of characters of mandibles and of claws.

Parasessinia nicobarica sp. n.

Male. Basic colouration of head and pronotum light flavous, the spot between eyes, longitudinal stripe and lateral margins of pronotum fuscous. Elytra fuscous, only narrow lateral margins, one longitudinal, basally somewhat dilated stripe on each elytron and suture are flavous. Sternal part of thorax flavous, abdomen fuscous.

Head densely, finely punctate, finely flavous pubescent. Eyes large, flat, front distinctly wider between eyes than between antennal pits, head with eyes slightly narrower than pronotum. Antennae almost reach the elytral apex. Pronotum feebly wider than long, punctate and pubescent like the head, with hardly visible pair of depressions. Elytra parallel-sided, punctate like pronotum, somewhat more densely pubescent. Nerves 1, 3, 4 very slightly developed. Pygidium and the last sternite widely rounded. Tegmen and aedeagus — Figs. 148, 149.

Length: 9.8 mm.

Holotype: ♂, Nicobar Is., 1903, K. Rogers lgt. (BMNH).

20. *Pseudohyperasclera* Macnamara, 1969

Pseudohyperasclera Macnamara, 1969: Orig. Pac. Faun. Oedem.: 70

Type-species: *Pseudohyperasclera michaeli* Macnamara, 1969 (original designation)

Pseudohyperasclera Macnamara, 1971: Ent. News, 82: 164 (unjustified emendation)

Material examined: 5 species.

Habitus as in *Sessinia* Pasc., areas between punctures microchagreened. Length: 9.8—13.3 mm.

Left mandible with small lateral tooth (= retinaculum) — Fig. 152, the right one with normal subapical tooth. Head with eyes approximately as wide as pronotum. Pronotum slightly longer than wide, with at most very feeble depressions, in one species with longitudinal groove. Claws simple. Pygidium apically slightly tapered, the last sternite rounded or shallowly emarginate. Paramerae flat in cross-section (Fig. 150), apex of aedeagus without tooth, with lateral depressions (Fig. 151).

Distribution: Madagascar, Maldiv Is., Taiwan, Malaya, Sundra Is., Micronesia.

It differs from all related genera by the form of left mandible.

21. *Asessinia* gen. n.

Type-species: *Sessinia subopaca* Pic, 1924: Mél. exot.-ent., 42: 17

Material examined: *A. subopaca* (Pic), comb. n. [type material], further 9 species.

Habitus as in *Sessinia* Pasc., colouration flavous to piceous, areas between punctures hardly distinctly microchagreened. Length: 8.0 to 14.0 mm.

Left mandible simple, the right one with subapical tooth (Fig. 155). Head with eyes as wide as pronotum. Pronotum as a rule slightly longer than wide. Claws with basal teeth reaching their midlength. Pygidium apically rounded or feebly emarginate. Paramerae slightly flattened or sometimes oval in cross-section (Fig. 153). Aedeagus without tooth, with lateral depressions at its apex (Fig. 154).

Distribution: Mascarenes, Seychelles, Malediv Is., Malaya, Sundā Is., Philippines, Moluccas.

It differs by combination of characters of mandibles and claws.

22. *Alloxoides* Macnamara, 1969

Alloxoides Macnamara, 1969: Orig. Pac. Faun. Oedem.: 85

Type-species: *Alloxoides peadonnae* Macnamara, 1969 (original designation)

Material examined: 1 species.

Body moderately vaulted, flavous to fuscous. Length: 7.9—9.0 mm.

Male. Left mandible simple, the right one with subapical tooth, situated dorsally, not dorsolaterally as in preceding genera (Fig. 157). The last segment of maxillary palpus cultriform. Eyes moderately large, slightly vaulted, flatly emarginate, head with eyes as wide as pronotum. Antennae filiform, reaching $\frac{3}{4}$ of elytral length, the last segment very feebly emarginate behind its midlength. Pronotum moderately cordiform, slightly wider than long, without depressions. Claws simple. Elytra parallel-sided, only the first nerve feebly developed. Pygidium exceeding the last sternite, slightly emarginate, the last sternite rounded, projections of the urite VIII invisible (Fig. 156). Tegmen strongly sclerotized, paramerae situated laterodorsally, pubescent (Fig. 159), aedeagus strikingly long and thin, feebly sclerotized (Fig. 158).

Sexual dimorphism. Antennae only slightly exceed the elytral midlength, pygidium rounded in female.

Distribution: Borneo, Micronesia-Palau I.

It differs from all other genera of the family by subapical tooth on right mandible, situated dorsally.

23. *Colobostomoides* Švihla, 1983

Colobostomoides Švihla, 1983: Acta ent. Mus. nat. Pragae, 41: 113

Type-species: *Colobostomoides longepubens* Švihla, 1983 (original designation)

Material examined: *C. longepubens* Švihla and further 2 species.

Body strongly vaulted, colouration flavo-fuscous or grey, one species with long, erect pubescence in male. Length: 6.1—11.8 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform. Eyes vaulted, shallowly emarginate, head with eyes approximately as wide as pronotum. Antennae filiform, exceeding the midlength of elytra, the last segment almost not emarginate. Pronotum as long as wide, lateral margins converging basally, without depressions, sometimes with feeble longitudinal groove. Claws simple. Elytra slightly narrowing apically, nerves 1, 3 and 4 slightly developed. Pygidium only very slightly exceeding the last sternite, rounded, the last sternite rounded with flat emargination at its apex or feebly tapered, projections of the urite VIII invisible (Fig. 162). Tegmen sclerotized, paramerae spoon-shaped (Fig. 160) or with basal teeth (Fig. 164), always pubescent. The apex of aedeagus simple (Fig. 161).

Sexual dimorphism. Eyes somewhat smaller and more flat in female, antennae shorter, elytra parallel-sided, the last sternite rounded.

Distribution: eastern Iran, Pakistan, southeastern Africa, Madagascar.

It seems to be more derived than both the preceding and following genera. It can be distinguished according to the characters given in key.

24. *Paroxaxis* Arnett, 1951

Paroxaxis Arnett, 1951: Amer. Midl. Nat., 45: 334

Type-species: *Probosca lucana* LeConte, 1866 (original designation)

Material examined: *P. lucana* (LeC.) and further two species.

Body moderately vaulted, flavous to fuscous. Length: 6.0—11.1 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform (Fig. 171). Eyes vaulted, shallowly emarginate, head with eyes as wide as pronotum. Antennae filiform, slightly exceeding the midlength of elytra, the last segment very feebly emarginate. Pronotum distinctly longer than wide, cordiform, without depressions. Claws with basal teeth, which can reach almost the apex of claw. Elytra moderately dilated apically, only nerves 3 and 4 very slightly developed. Pygidium as long as the last sternite, both widely rounded, projections of the urite VIII invisible (Fig. 170). Tegmen sclerotized, paramera with tooth, pubescent (Fig. 168). Aedeagus simple or with slight tooth apically (Fig. 169).

Sexual dimorphism. Female does not differ from the male in any essential characters.

Distribution: this genus was described from North and Central America, in the Old World it is known to me from Sahara and Abdelkuri I. (near Socotra).

It differs from related genera by simple mandibles and dentate claws.

25. *Hypascleroides* gen. n.

Type-species: *Hypascleroides socotrensis* sp. n.

Material examined: *H. socotrensis* sp. n. and one further species.

Body moderately vaulted, flavous to almost piceous. Length: 6.0 to 10.3 mm.

Male. Left mandible simple, the right one with subapical tooth. The last segment of maxillary palpus narrowly securiform. Eyes slightly vaulted, flatly emarginate, head with eyes feebly wider than pronotum. Antennae filiform, exceeding the midlength of elytra, the last segment slightly emarginate at its midlength. Pronotum cordiform, distinctly longer than wide, with pair of flat depressions in anterior portion. Claws basally dentate, the tooth not reaching the midlength of claw. Elytra feebly dilated apically, nerves quite reduced. The last abdominal segment — Fig. 167, projections of the urite VIII invisible. Tegmen strongly sclerotized, paramerae with teeth, pubescent (Fig. 165), aedeagus without apical tooth (Fig. 166).

Sexual dimorphism. Female more robust, head with eyes narrower than pronotum, pronotum without depressions, nerves 1, 3 and 4 feebly developed.

Distribution: Socotra, Madagascar.

It differs from the most related genus *Hypasclera* Kirsch by dentate claws.

***Hypascleroides socotrensis* sp. n.**

Male. Head flavo-fuscous with longitudinal piceous stripe between eyes, sparsely and very finely punctate, finely and sparsely pubescent. Antennae flavous, segment 1 four times longer than the segment 2, segments 3—6 as long as 1, following segments lacking. Pronotum flavo-fuscous with three (2 marginal and 1 central) longitudinal spots. Surface of pronotum like the head punctate and pubescent. Legs and elytra flavo-fuscous, elytra darkened at lateral margins and near suture, suture itself flavous. Surface of elytra somewhat more densely punctate and pubescent than head. Abdomen fuscous. Last abdominal segment, tegmen and aedeagus — Figs. 165—167.

Female. Antennal segments from the eighth one on gradually shortened.

Variability: spots on head and lateral spots on pronotum may be absent.

Length: 6.0—10.3 mm.

Holotype: ♂, Socotra, Hadibo Plain, 19. iii. 1967, K. Guichard lgt.; paratypes: the same locality, 28. iv. 1967, K. Guichard lgt., 4 ♀♀; Darsi Island, 7. v. 1967, 1 ♀ (BMNH).

25a. *Hypasclera* Kirsch, 1866

Hypasclera Kirsch, 1866: Berl. Ent. Zeitschr., 10: 210

Type-species: *Hypasclera schistacea* Kirsch, 1866 (by monotypy)

Alloxaxis Horn, 1896: Proc. Calif. Acad. Sci., 6: 385

Type-species: *Nacerdes dorsalis* Melsheimer, 1846 (designated by LUCAS, 1920)

Material examined: *H. schistacea* Kirsch (type material), *H. dorsalis* (Melsh.) and *H. latevittata* (Pic), comb. n. (type material) transferred from *Sessinia* Pasc.

This genus differs in the main characteristics from the preceding one only by simple claws and by slightly sclerotized tegmen.

Distribution: North, Central and South America, southern India.

26. *Ischnomera* Stephens, 1832

Ischnomera Stephens, 1832: Ill. Brit. Ent., Mandib., 5: 53

Type-species: *Cantharis coerulea* Linnaeus, 1758 (designated by WESTWOOD, 1838)

Asclera Dejean, 1834: Cat. Col.: 228

Type-species: *Necydalis sanguinicollis* Fabricius, 1787 (designated by ARNETT, 1950)

Ascleronia Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 848 syn. n.

Type-species: *Ischnomera semiflava* Reitter, 1891 (designated by ARNETT, 1950)

Chromasclera Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 484 syn. n.

Type-species: *Asclera partitipennis* Fairmaire, 1892 (by monotypy)

Material examined: *I. coerulea* (L.) and further 15 species including the type species of all synonymes.

Body small, compressed, colouration predominantly metallic, but also flavous. Length: 4.4—11.3 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform to almost cultriform. Eyes small, vaulted to almost flat, reniform, rarely almost not emarginate. Head with eyes approximately as wide as pronotum. Antennae reach $\frac{1}{3}$ to $\frac{1}{2}$ of elytral length, the last segment slightly emarginate or constricted behind its midlength. Pronotum more or less cordiform, approximately as wide as long, with pair of depressions in anterior portion. Claws thickened to dentate basally, the tooth reaches at most the midlength of claw (this characteristic is continuously transient). Elytra moderately dilated apically, rarely parallel-sided, nervation costate to quite reduced (continuous transition). Pygidium strongly exceeding the last sternite, strongly narrowed apically, narrowly emarginate at its apex. The last sternite forms short, tapered projection apically often slightly curved ventrad (Fig. 174). Projections of the urite VIII visible. Tegmen sclerotized, paramerae pubescent (sparsely to densely, spiny in some species) — Fig. 172. Basal apodeme of aedeagus curved, thin, strikingly dilated apically, the apex of aedeagus mostly with tooth (Fig. 173).

Sexual dimorphism. Eyes smaller in female, antennae shorter, elytra always dilated apically, pygidium only slightly exceeds the last sternite.

Distribution: Holarctic region, species described from south-eastern Asia belong mostly to *Ascleropsis* Seidl.

Necydalis coerulea L. (= *Oedemera nobilis* Scop.) is not an originally species (it is *Cantharis coerulea* L.), therefore *Ischnomera* Steph. is not congeneric with *Oedemera* Ol., as it was misquoted by ARNETT (1950). The subgenera described by SEIDLITZ (1899) are based on characters, which are continuously transient in the genus and cannot be used for stating subgenera.

Ischnomera Steph. is the most derived genus of the group (visible projections of the urite VIII), easily recognized according to the tapered apex of the last sternite and the apically dilated basal apodeme of aedeagus.

Zabriola group

27. *Zabriola* Fairmaire, 1901

Zabriola Fairmaire, 1901: Rev. Ent., 2: 198

Type-species: *Zabriola obscurifrons* Fairmaire, 1901 (by monotypy)

Material examined: 3 species.

Body slender, moderately vaulted, colouration flavo-fuscos to piceous. Length: 6.0—7.8 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform. Eyes small and vaulted, feebly emarginate, head with eyes wider than pronotum. Antennae filiform, exceeding the elytral midlength, the last segment very slightly constricted behind its midlength. Pronotum very moderately cordiform, longer than wide, with almost indistinct pair of depressions in anterior portion. Claws with distinct basal teeth. Elytra parallel-sided, nerves excluding the first one visible only in basal portion. Pygidium not exceeding the last sternite, at the apex narrowly, shallowly emarginate, the last sternite roundly tapered, projections of the urite VIII invisible. Tegmen sclerotized, almost flat, paramerae short, non-pubescent (Fig. 175). Aedeagus with flat apodeme and with two small apical teeth (Fig. 176).

Sexual dimorphism. Pygidium at most very feebly emarginate in female.

Distribution: 7 species are described from Madagascar.

This genus forms a link between *Eobia* Sem. and the following group of genera. *Zabriola* Frm. was described in the tribus Nacerdini, but according to the type of phallus it belongs to Asclerini.

28. *Achitona* gen. n.

Type-species: *Achitona transversevittata* sp. n.

Material examined: *A. transversevittata* sp. n.

Body moderately vaulted, flavous and fuscous. Length: 9.2—10.4 mm.

Male. Both mandibles simple, the last segment of maxillary palpus narrowly securiform (Fig. 180). Eyes large and vaulted, shallowly emarginate, head with eyes narrower than pronotum. Antennae filiform, exceeding the elytral midlength, the last segment very feebly emarginate. Pronotum moderately cordiform, slightly longer than wide, without depressions. Claws dentate (Fig. 181). Elytra parallel-sided, all nerves developed, but very fine. Pygidium slightly exceeding the last sternite, shallowly emarginate at the apex, the last sternite rounded, projections of the urite VIII invisible (Fig. 179). Tegmen sclerotized (Fig. 177), aedeagus — Fig. 178.

Sexual dimorphism. Pygidium rounded in female.

Distribution: southern Africa.

This genus is related to the preceding one, from which it differs by simple mandibles.

Achitona transversevittata sp. n.

Male. Colouration flavous, base of elytra and transverse stripe

before apex, which can be divided in two spots, fulvous. Surface of body densely and finely punctate, with dense, fine, recumbent pubescence. Front wider between eyes than between antennal pits. Antennal segment 1 three-times longer than the segment 2, segment 3 somewhat longer than segment 1, following segments gradually shortened. Nervation visible in $\frac{2}{3}$ of elytral length. The last abdominal segment, tegmen and aedeagus — Figs. 177—179.

Length: 9.2—10.4 mm.

Holotype: ♂, South Africa, Cape Province, Matjesfontein, 14.—27. xi. 1928, R. E. Turner lgt; paratypes: SW Africa, Hoffnung, 24.—26. x. 1933, K. Jordan lgt., 1 ♂; SW Africa (WI), Nr. Onseepkans, Orange river banks, 8. x. 1972, Southern African Exp. B. M., 1 ♀; SW Africa (II), Aar Farm, 25 mls. ESE Aus, 15.—17. i. 1972, 1 ♀ (BMNH).

Chitona group

29. *Anisochrodes* Švihla, 1983

Anisochrodes Švihla, 1983: Acta ent. Mus. nat. Pragae, 41: 108

Type-species: *A. jelineki* Švihla, 1983

Material examined: *A. jelineki* Švihla and one further species.

Body slender, vaulted, flavo-fuscos or piceous. Length: 7.0—9.5 mm.

Male. Both mandibles bifid at the apex, the ventral tooth shorter than the dorsal one, the last segment of maxillary palpus cultriform. Eyes flat, shallowly emarginate, head with eyes approximately as wide as pronotum. Antennae short, filiform, not reaching $\frac{1}{3}$ of elytral length, the last segment slightly constricted at its midlength. Pronotum moderately cordiform, as long as wide, with pair of very shallow depressions in anterior portion. Claws dentate, the tooth reaching midlength of claw. Elytra parallel-sided or slightly narrowed apically, nervation reduced. Pygidium twice as long as the last sternite, narrowly emarginate at its apex, the last sternite widely rounded, projections of the urite VIII visible (Fig. 184). Tegmen strongly sclerotized, paramera with basal tooth (Fig. 182), aedeagus with one apical tooth (Fig. 183).

Sexual dimorphism. Elytra parallel-sided of feebly dilated apically in female, pygidium only slightly exceeds the last sternite.

Distribution: Iran, Afghanistan, two species.

It is most closely related to the following genus, differing by the characters given in key.

30. *Anisochroa* Semenov, 1900

Anisochroa Semenov, 1900: Hor. Soc. Ent. Ross., 34: 652

Type-species: *Anisochroa zarudnyi* Semenov, 1900 [by monotypy]

Material examined: *A. zarudnyi* Sem. (type material) and further one species

Body small, subcompressed, colouration flavous to fuscous. Length: 5.7—8.6 mm.

Male. Both mandibles bifid at the apex, the right one with dorsal tooth shorter than the ventral one. The last segment of maxillary palpus cultriform. Eyes of intermediary size, slightly vaulted, shallowly emarginate, head with eyes approximately as wide as pronotum. Antennae filiform, slightly exceeding the elytral midlength, the last segment con-

stricted at its midlength. Pronotum longer than wide, slightly cordiform, without depression. Claws simple. Elytra slightly dilated apically, nerves at most feebly developed in basal portion. Pygidium twice as long as the last sternite, narrowly emarginate at the apex, the last sternite widely rounded, projections of the urite VIII visible (Fig. 185). Tegmen strongly sclerotized (Fig. 186), aedeagus with two or three apical teeth (Fig. 187).

Sexual dimorphism. Pronotum as long as wide in female, the last segment of maxillary palpus securiform, pygidium only slightly exceeds the last sternite, flatly emarginate at its apex.

Distribution: two known species occur in eastern Iran.

This genus differs from the preceding one by the form of right mandible, non-dentate claws and by different shape of phallus.

31. *Chitona* Schmidt, 1846

Chitona Schmidt, 1846: Linn. Ent., 1: 134

Type-species: *Stenostoma variegata* Germar, 1824 (by monotypy) = *Ch. connexa* (F.)

Material examined: *Ch. connexa* (F.), *Ch. (Afrochitona) clarimacula* (Blair), comb. n. and further 5 species.

Body slender to robust, moderately to strongly vaulted. Colouration predominantly dark, often with metallic lustre. Length: 6.4–15.0 mm.

Male. Both mandibles simple, the last segment of maxillary palpus narrowly securiform to cultriform. Eyes relatively small, shallowly emarginate or entire, head with eyes as wide as or feebly narrower than pronotum. Antennae filiform, slightly exceeding the elytral midlength, the last segment slightly emarginate. Pronotum longer than wide, rarely as long as wide, moderately cordiform, often with pair of shallow depressions in anterior portion. Claws simple. Elytra more or less parallel-sided, nervation slightly developed, the second nerve absent. Pygidium exceeding the last sternite, shallowly emarginate at the apex. Tegmen strongly sclerotized, aedeagus with two apical teeth.

Sexual dimorphism. Pygidium only moderately exceeds the last sternite in female (Figs. 191, 195).

Subgenus *Afrochitona* subg. n.

Type-species: *Sessinia clarimacula* Blair, 1926: Ann. South Afr. Mus., 23: 367

Body robust, colouration flavo-fuscous, head slightly prolonged, eyes widely, shallowly emarginate. Pygidium only slightly longer than the last sternite, projections of the urite VIII invisible (Fig. 198). Tegmen and aedeagus — Figs. 196, 197.

Distribution: southern Africa. The most primitive subgenus (invisible projections of the urite VIII).

Subgenus *Dolichopyga* Seidlitz, 1899 stat. n.

Dolichopyga Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 816

Type-species: *Probosca acuminata* Reitter, 1890 [designated by SEMENOV, 1900]
Dolichopyga Lucas, 1920 (variant spelling)

Body slender, without markings (excluding sutural stripe). Head normal, eyes slightly emarginate, rarely entire. The last sternite much shorter than pygidium, rounded, projections of the urite VIII visible (Fig. 194). Tegmen and aedeagus Figs. 192, 193.

Distribution: eastern Mediterranean, Kirgisia.

Subgenus *Chitona* s. str.

Body slender, light pubescence often forms markings, eyes entire, head often rostrate. The last sternite with narrow emargination, much shorter than the pygidium, projections of the urite VIII visible (Fig. 190). Tegmen and aedeagus — Figs. 188, 189.

Distribution: the Iberian Peninsula, North Africa. The most derived subgenus (head rostrate, eyes entire).

32. *Gilotia* Pardo, 1968

Gilotia Pardo, 1968: Publ. Mus. Lab. Zool. Antropol. Fac. Cienc. Lisboa, 2(4): 42

Type-species: *Gilotia perroti* Pardo, 1968 [original designation]

No material was examined, but this genus was very exactly described and it is very characteristic.

Body slender, vaulted, colouration flavo-fuscos. Length: 8.5—12.5 mm.

Male. Both mandibles simple, the last segment of maxillary palpus securiform. Eyes small, vaulted, very shallowly emarginate, head with eyes slightly wider than pronotum. Antennae filiform, reaching $\frac{2}{3}$ of elytral length, the last segment without emargination. Pronotum longer than wide, slightly cordiform, with pair of very shallow depressions in anterior portion. Claws simple. Elytra slightly dilated apically, not covering the last abdominal segment (Fig. 199). Nerves developed, fine. Wings absent. Pygidium somewhat longer than the last sternite, both shallowly emarginate. Tegmen strongly sclerotized, aedeagus with long basal apodeme and two apical teeth.

Sexual dimorphism. Head with eyes narrower than pronotum in female, antennae shorter, not reaching elytral midlength. Elytra strikingly shortened, covering only the first and half of the second visible segments (Fig. 200). Pygidium only slightly exceeds the last sternite, which is rounded.

Distribution: the only known species was described from Morocco.

Closely related to the preceding genus, easily recognized according to shortened elytra and missing wings.

33. *Ditylomorphus* gen. n.

Type-species: *Ditylus atromaculatus* Pic, 1922: Echange, 38: 19

Material examined: *D. atromaculatus* (Pic), (type material), comb. n. and one further species.

Body robust, moderately vaulted, somewhat similar to *Ditylus* Fisch., colouration flavous and fuscous, elytra with long, erect setae. Length: 11.5—16.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary

palpus narrowly securiform to almost cultriform. Eyes vaulted, flatly emarginate. Head with eyes slightly narrower than pronotum. Antennae moderately exceed the elytral midlength, the last segment narrowed from $\frac{1}{3}$ of its length. Pronotum approximately as long as wide, sometimes with pair of depressions in anterior portion and with two protuberances before base. Claws simple. Elytra dilated apically, nervation slightly developed. Pygidium exceeding the last sternite, emarginate at its apex, the last sternite rounded, projections of the urite VIII visible (Fig. 203). Tegmen strongly sclerotized, laterally toothed in the middle part, paramerae non-pubescent (Fig. 201). Aedeagus with two apical teeth (Fig. 202).

Sexual dimorphism. Pygidium not exceeding the last sternite in female.

Distribution: tropical Africa: Ivory Coast to Congo.

Closely related to the following genus, from which it differs by more robust body, tegmen with lateral teeth and by always non-pubescent paramerae.

34. *Ditylomorphula* gen. n.

Type-species: *Sessinia bicoloripes* Pic, 1922: Mél. exot.-ent., 35: 17

Material examined: *D. bicoloripes* (Pic), comb. n. and 6 further species.

Body relatively slender and slightly vaulted, colouration flavous to piceous. Length: 8.5—10.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform to cultriform (Fig. 206). Eyes small but vaulted, very shallowly emarginate, head with eyes approximately as wide as pronotum. Antennae filiform, slightly exceeding the elytral midlength, the last segment narrowed from its midlength. Pronotum longer than or as long as wide, with two shallow depressions in anterior portion and with antebasal depression. Claws simple. Elytra dilated apically, more rarely parallel-sided, nervation feeble, but as a rule visible. Pygidium mostly exceeds the last sternite, so that the projections of the urite VIII visible, pygidium rounded or shallowly emarginate at its apex. The last sternite rounded or shallowly emarginate. Tegmen — Fig. 204, paramerae almost always pubescent, aedeagus at least with two teeth (Fig. 205).

Sexual dimorphism. Pygidium only slightly exceeds the last sternite, which is rounded, in female. Eyes less vaulted, antennae shorter, elytra more dilated apically.

Distribution: western Africa, south of Nigeria.

This genus is most closely related to the preceding one. The *Asclerosibutia* group can probably be derived from *Ditylomorphula* gen. n. (common occurrence of aedeagus with serrate teeth).

35. *Apterosessinia* Blair, 1926

Apterosessinia Blair, 1926: Ann. South Afr. Mus., 23: 357

Type-species: *Apterosessinia peringueyi* Blair, 1926 (by monotypy)

Material examined: *A. peringueyi* Blair (type material).

Body slender, moderately vaulted, colouration flavous. Length: 9.0 to 20.0 mm.

Male. Left mandible simple, the right one with subapical tooth. The last segment of maxillary palpus cultriform. Eyes of intermediary size, vaulted, shallowly emarginate, head with eyes slightly narrower than pronotum. Antennae filiform, moderately exceeding the midlength of elytra, the last segment feebly emarginate at its apex. Pronotum distinctly longer than wide, cordiform, without depressions. Legs very long and slender, claws dentate, the tooth reaches almost the apex of claw. Elytra parallel-sided, shortened, humeral bulge slightly developed, apices of elytra widely rounded (Fig. 209). Only nerves 1, 3 and 4 very feebly developed. Elytra not covering the last abdominal segment. Pygidium and the last sternite — Fig. 210, tegmen strongly sclerotized (Fig. 207), aedeagus — Fig. 208.

Sexual dimorphism. Female more robust, eyes smaller, head with eyes much narrower than pronotum, which is only slightly longer than wide. Elytra moderately dilated apically. Pygidium slightly exceeding the last sternite, truncate at its apex, the last sternite rounded.

Distribution: one species was described from southern Africa.

It is somewhat similar to *Gilotia* Pardo, but differs by the type of mandibles and by shape of claws. Together with the following two genera it forms a subordinate group, characterized by identical type of aedeagal apex.

36. *Pterosessinia* gen. n.

Type-species: *Pterosessinia longula* sp. n.

Material examined: *P. longula* sp. n.

Body long, slender, moderately vaulted. Colouration flavo-fuscous. Length: 12.9—16.2 mm.

Male. Left mandible simple, the right one with subapical tooth. Eyes relatively large and vaulted, flatly emarginate, head with eyes slightly narrower than pronotum. Antennae long, filiform, exceeding the midlength of elytra. Pronotum distinctly longer than wide, cordiform, with pair of shallow depressions in anterior portion and one antebasal depression. Claws dentate, the tooth exceeds the midlength of claw. Elytra parallel-sided, nervation slightly developed, the second nerve visible only in basal portion. The last abdominal segment — Fig. 213. Tegmen strongly sclerotized (Fig. 211), aedeagus — Fig. 212.

Female unknown.

It is closely related to the preceding genus, but differing by not shortened elytra with well developed humeral bulge.

Pterosessinia longula sp. n.

Male. Head and thorax flavous, abdomen fuscous excluding flavous last segment. Legs and abdomen flavous. Elytra fuscous, nerves and suture narrowly flavous. Head and pronotum densely and finely punctate, semilustrous, elytra finely corrugated, surface of body with short, dense, recumbent pubescent. Frons as wide between eyes as between antennal

pits. Antennal segment 1 three times longer than segment 2, segment 3 slightly longer than 1, following segments gradually shortened. The last two segments of antennae and the last segment of maxillary palpus lacking. The last abdominal segment, tegmen and aedeagus — Figs. 211—213.

Female unknown.

Length: 12.9—16.2 mm.

Holotype: ♂, SW Africa, Swakopmund, xii. 1952, G. Hobohm lgt.; paratypes: the same data, 2 ♂♂ (ZSM).

37. *Melananthia* Blair, 1926

Melananthia Blair, 1926: Ann. South Afr. Mus., 23: 354

Type-species: *Melananthia costipennis* Blair, 1926 (original designation)

Material examined: *M. costipennis* Blair [type material].

Body subcompresed, colouration flavous to piceous. Length: 10.0 to 12.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform. Eyes small, strongly vaulted, very feebly emarginate, head with eyes as wide as pronotum. Antennae filiform, exceeding the elytral midlength. Pronotum wider than long, moderately cordiform, with pair of depressions in anterior portion. Claws simple. Elytra parallel-sided, all nerves strongly developed, costate. The last abdominal segment — Fig. 216, projections of the urite VIII exceeding the pygidium, strongly sclerotized, spoon-like concave in apical portions. Tegmen strongly sclerotized (Fig. 214), aedeagus — Fig. 215.

Sexual dimorphism. Elytra moderately dilated apically in female, pygidium only slightly exceeds the last sternite, both rounded.

Distribution: two species are known from southern Africa.

It differs from related genera by bifid mandibles, striking projections of the urite VIII and by strong nervation. Very derived genus.

38. *Pseudolycus* Guérin, 1833

Pseudolycus Guérin, 1833: Ann. Soc. Ent. France, 2: 155

Type-species: *Pseudolycus marginatus* Guérin, 1833 (designated by ARNETT, 1950)

Material examined: *P. marginatus* Guér. and two species from Madagascar.

Body compressed, by its form and colouration imitating some species of Lycidae, colouration varied, without metallic lustre. Length: 7.5 to 9.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus securiform to cultriform. Eyes small, vaulted, shallowly emarginate or entire, head with eyes narrower than pronotum. Antennae exceeding the midlength of body, from segment 3 to 5—7 triangly dilated and flattened, following segments filiform (Fig. 217), the last segment constricted behind its midlength. Pronotum as long as wide or wider, lateral margins almost parallel-sided, with pair of depressions in anterior portion and with antebasal depression. Claws dentate (in species from Madagascar). Elytra moderately dilated apically, all nerves developed, costate. Pygidium exceeding the last sternite, moderately emarginate at its apex, the last sternite widely, shallowly emarginate, projections of the urite

VIII visible. Tegmen strongly sclerotized (Fig. 218), aedeagus with one or two apical teeth, basal apodeme often with crest (Fig. 219).

Sexual dimorphism. Pygidium slightly exceeds the last sternite in female, both rounded.

Distribution: many species are known from Australia, 6 species are described from Madagascar.

Asclerosibutia group

39. Microsessinia Pic, 1922

Microsessinia Pic, 1922: Mél. exot.-ent., 36: 18

Type-species: *Microsessinia cyanescens* Pic, 1922 (designated by ARNETT, 1950)
Idgiomima Blair, 1926: Ann. South Afr. Mus., 23: 373 syn. n.

Type-species: *Asclerosibutia (Idgiomima) neavei* Blair, 1926 [original designation]
Idgiomimula Blair, 1926: Ann. South Afr. Mus., 23: 374 syn. n.

Type-species: *Asclerosibutia (Idgiomimula) terminalis* Blair, 1926 [original designation]

Material examined: *M. cyanescens* Pic (material determined by Pic), *M. neavei* (Blair), comb. n. (type material), *M. terminalis* (Blair), comb. n. (type material) and further 4 species.

Closely related to the following genus, with which it forms a natural group. It differs from *Asclerosibutia* Pic by following characters: smaller (5.5—8.0 mm), pronotum more sparsely punctate and pubescent, head and pronotum lustrous, pubescence on elytra more sparse, from suture to the third nerve directed obliquely, out of the third nerve directed straight towards the apex. Nervation finer, the second nerve absent. Antennae filiform. Elytra parallel-sided or narrowed apically. The last abdominal sternite widely rounded in female. Phallus of the same type as in *Asclerosibutia* Pic, in one species was found the more primitive type of tegmen (Fig. 227), suggesting relationship to *Ditylomorphula* gen. n.

Distribution: from Cameroon to southern Africa.

The taxa *Idgiomima* Blair and *Idgiomimula* Blair, described as subgenera of *Asclerosibutia* Pic were stated to be congeneric with *Microsessinia* Pic on the basis of study of the type material.

40. Asclerosibutia Pic, 1914

Asclerosibutia Pic, 1914: Echange, 30: 67

Type-species: *Asclerosibutia diversithorax* Pic, 1914 (designation by BLAIR, 1926 nec by ARNETT, 1950)

Material examined: 4 species partly determined by Pic.

Body slender, subcompressed, surface of elytra between nerves obliquely pubescent, on nerves straightly, so that nervation is emphasized by pubescence directed apically. Colouration varied, flavous to piceous. Length 7.5—12.0 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus slender, securiform (Fig. 223). Eyes small, vaulted, relatively deeply emarginate, head with eyes wider than pronotum. Antennae long, but relatively robust, exceeding the elytral midlength, the last segment strongly emarginate (Fig. 224). Pronotum approximately as long as wide,

almost parallel-sided, with pair of depressions in anterior portion and the third antebasal one. Claws dentate, the tooth reaches at least the midlength of claw. Elytra as a rule moderately dilated apically, rarely parallel-sided or slightly narrowed. Nervation well developed, emphasized by pubescence. The last abdominal segment — Fig. 226, projections of the VIII. urite somewhat flattened. Tegmen strongly sclerotized, paramerae conrescent (Fig. 221), aedeagus with several apical teeth, basal apodeme with crest (Fig. 222).

Sexual dimorphism. Eyes smaller in female, head with eyes as wide or slightly narrower than pronotum, antennae shorter, not reaching the midlength of elytra. The last abdominal segment as figured — Fig. 225.

Distribution: tropical Africa.

This genus is derived from the preceding one. It was incorrectly classified in the tribus Oedemerini by BLAIR (1926).

Schistopselaphus group

41. Eopselaphus gen. n.

Type-species: *Eopselaphus sexmaculatus* sp. n.

Material examined: *E. sexmaculatus* sp. n. and further 5 species.

Body moderately vaulted, colouration flavo-fuscos to piceous with slight lustre. Length: 7.6—11.0 mm.

Male. Both mandibles bifid, the last segment of maxillary palpus narrowly securiform. Eyes large and vaulted, distinctly emarginate, head with eyes as wide as or wider than pronotum. Antennae filiform, exceeding the elytral midlength, the last segment slightly emarginate. Pronotum distinctly longer than wide, moderately cordiform, with pair of shallow depressions in anterior portion and one antebasal depression. Claws dentate, the tooth exceeds the midlength of claw. Elytra moderately dilated apically or parallel-sided, nerves excluding the second one, distinct. Pygidium exceeding the last sternite, shallowly emarginate, the last sternite widely emarginate or with obtuse projection. Projections of the urite VIII visible (Fig. 230). Tegmen sclerotized, paramerae conrescent, non-pubescent (Fig. 229), sometimes with a longitudinal, less sclerotized little window in apical part. Aedeagus with two or three apical teeth, basal apodeme with crest (Fig. 228).

Sexual dimorphism. Pygidium slightly exceeds the last sternite in female, both rounded. Pronotum as long as wide.

Distribution: Sulawesi, Philippines, Madagascar.

It differs from the most closely related *Schistopselaphus* Frm. by not dilated apical part of tegmen and by the simple last segment of male maxillary palpus.

***Eopselaphus sexmaculatus* sp. n.**

Male. Body flavous, vertex laterally obscured, six fuscos spots are on pronotum: two small, rounded ones behind anterior margin, two lateral ones on the widest part of pronotum and two longitudinal ones, situated besides antebasal depression.

Eyes large and vaulted, reniform, head with eyes wider than pronotum. Antennae lacking. Pronotum by half longer than wide. Elytra slightly dilated apically, all nerves distinctly developed. Surface of elytra corrugated, with recumbent flavous pubescence. The last abdominal segment, aedeagus and tegmen — Figs. 228—230.

Female: unknown.

Length: 9.1—10.5 mm.

Holotype: ♂, Sulawesi, Sopotan Masif, Nr. Kelelond, 14.—19. vi. 1954, A. H. G. Alston lgt., paratype: the same data, 1 ♂ (BMNH).

42. *Schistopselaphus* Fairmaire, 1896

Schistopselaphus Fairmaire, 1896: Notes Leyden Mus., 18: 126

Type-species: *Schistopselaphus apicatus* Fairmaire, 1896 (by monotypy)

Material examined: *S. apicatus* Frm. and two further species.

Body subcompressed to moderately vaulted, colouration flavous to fuscous. Length: 8.8—12.3 mm.

Male. Both mandibles bifid at the apex, the last segment of maxillary palpus strikingly emarginate to ragged (Fig. 234, 235). Eyes large and vaulted, emarginate, head with eyes wider than pronotum. Antennae filiform, exceeding the midlength of elytra, the last segment feebly emarginate behind its midlength. Pronotum longer than wide, moderately cordiform, with shallow depressions in anterior portion and before base. Claws dentate. Elytra parallel-sided or moderately dilated apically, all nerves visible, the second one sometimes slight. Pygidium exceeding the last sternite, apically rounded, the last sternite widely emarginate, short projection protrudes at the middle of emargination. Projections of the urite VIII visible (Fig. 233). Tegmen strongly sclerotized, paramerae more or less concrescent, dilated laterally (Fig. 231). Basal apodeme of aedeagus with low crest, apical part of aedeagus with two teeth (Fig. 232).

Sexual dimorphism. The last segment of maxillary palpus securiform in female, pygidium slightly exceeds the last sternite, both rounded.

Distribution: Sunda Is., New Guinea.

This genus is more derived in comparison with the preceding one (last segment of maxillary palpus, dilated paramerae).

TRIBUS OEDEMERINI LATREILLE, 1810

1. *Oncomera* Stephens, 1829

Oncomera Stephens, 1829: Nomecl. British Ins.: 20

Type-species: *Necydalis podagrariae* Linnaeus, 1767 sensu Stephens = *O. femorata* (F.) (by monotypy)

Oncomerella Reitter, 1911: Fauna Germ., 3: 406 syn. n.

Type-species: *Oedemera marmorata* Erichson, 1841 (by monotypy)

Material examined: *O. femorata* (F.), *O. marmorata* (Er.) and two further species.

Body long and very slender, colouration flavous to fuscous. Length: 12.0—18.0 mm.

Male. Both mandibles bifid at the apex and with small retinaculum, the last segment of maxillary palpus very narrowly securiform. Eyes large and vaulted, shallowly emarginate, head with eyes wider than or as wide as pronotum. Antennae long, filiform, somewhat exceeding the midlength of elytra, the last segment flatly emarginate. Pronotum moderately cordiform, with three shallow depressions (pair of anterior and antebasal). Posterior femora more or less thickened, apical spurs on anterior tibia developed. Claws simple. Elytra slightly narrowed. Elytra slightly narrowed apically or parallel-sided. Nervation distinct, the second nerve absent, nerve 3 and 4 are transversely connected in basal portion. Nervation tends to dilapidation. The last abdominal segment similar of *Oedemera* Ol., apex of pygidium rounded. Tegmen and aedeagus of the same type as in *Oedemera* Ol.

Sexual dimorphism. Posterior femora not thickened in female, pygidium slightly longer than the last sternite, both apically rounded.

Distribution: southern part of the Palearctic, but not continuously.

Oncomera Steph. differs from the related genera by transverse connection between nerves 3 and 4. *Oncomerella* Rtt. was established on the basis of dilapidation of nervation, but this character occurs to a smaller extent also in other species.

STEPHENS wrongly determined the type species, but it is quite sure (after his description), that he means *O. femorata* (F.). I propose to retain the name *Oncomera* Steph. before the opinion of the International Commission on Zoological Nomenclature appears.

2. *Oedemera* Olivier, 1789

Oedemera Olivier, 1789: Enc. Méth. Zool., 4[1]: 31 (no species included)

Aedemera Olivier, 1795: Entomologie 3[50]: 1, 5 (emendation)

Type-species: *Necydalis caerulea* Linnaeus, 1767 (designated by LATREILLE, 1810) = *O. nobilis* (Scop.)

Stenolytra Dilwyn, 1829: Mem. Col. Ins. Swansea: 61

Type-species: *Necydalis caerulea* Linnaeus, 1767 (by monotypy)

Stenaxis Schmidt, 1846: Linn. Ent., 1: 17 syn. n.

Type-species: *Oedemera annulata* Germar, 1824 (by monotypy)

Oedemerina Costa, 1852: Fauna Regni Napoli, Edemer.: 31 syn. n.

Type-species: *Necydalis lurida* Gyllenhal, 1810 (by monotypy) = *O. lurida* (Marsh.)

Oedemerastra Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 906 syn. n.

Type-species: *Necydalis podagrariae* Linnaeus, 1767 (designated by ARNETT, 1950)

Oedemerella Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 907 syn. n.

Type-species: *Oedemera croceicollis* Gyllenhal, 1827 (designated by ARNETT, 1950)

Oedemeronia Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 906 syn. n.

Type-species: *Necydalis flavipes* Fabricius, 1792 (designated by ARNETT, 1950)

Oncomerina Seidlitz, 1899: Naturgesch. Ins. Deutschl., 5: 884 syn. n.

Type-species: *Oedemera murinipennis* Kiesenwetter, 1859 (by monotypy)

Material examined: *O. nobilis* (Scop.) and further 31 species including the type species of all synonyms.

Body small to moderate, slender, colouration various, predominantly metallic. Length: 4.5—14.0 mm.

Male. Both mandibles bifid with small retinaculum, the last segment of maxillary palpus narrowly securiform or spindle-shaped (Fig. 238). Eyes vaulted to relatively flat, shallowly emarginate, head with eyes as wide as, rarely narrower than pronotum. Anterior portion of head often prolonged to rostrate. Antennae filiform, reaching at least the midlength of elytra, the last segment emarginate or constricted. Pronotum more or less cordiform, mostly longer than wide, with pair of depressions in anterior portion and with the antebasal one. Longitudinal keel often occurs between anterior depressions. Posterior femora rarely normal, mostly more or less thickened. Claws simple, terminal spur of anterior tibia developed. Elytra always narrowed apically, lateral as well as sutural margin of elytron often sinuately emarginate, elytra rarely stenopterous and shortened. Nervation developed, nerve 2 absent. Pygidium exceeds the last sternite, which is widely rounded, projections of the urite VIII visible (Fig. 239). Tegmen strongly sclerotized, paramerae non-pubescent (Fig. 236), aedeagus as a rule with apical tooth, basal apodeme with crest, which is sometimes very high (Fig. 237).

Sexual dimorphism. Elytra less narrowed, the last sternite not so much shortened in female, posterior femora not thickened.

Distribution: containing more species than any other genus of the family, (about 80 species are described from the Palearctic region and from northern part of the Oriental region).

Subgenera, which were described mainly by SEIDLITZ, are based on characters, which are transient and can be used only to characterize groups of species. Some names will be available in future, of course but only after a revision of whole genus is carried out.

3. *Dryopomera* Fairmaire, 1897

Dryopomera Fairmaire, 1897: Notes Leyden Mus., 18: 238

Type-species: *Dryops indica* Fairmaire, 1896 (by monotypy)

Paroncomera Nakane, 1954: Sci Reps. Saikyo Univ., 1: 179 syn. n.

Type-species: *Paroncomera yatoi* Nakane, 1954 (original designation)

Material examined: *D. indica* (Frm.), *D. (Mimoncomera) ocularis* (Pic), comb. n. and 6 further species.

Habitus as in preceding two genera, colouration flavous to piceous. Length: 9.0—15.0 mm.

Male. Both mandibles bifid with retinaculum, the last segment of maxillary palpus very slender, securiform. Eyes large and vaulted, shallowly emarginate, head with eyes wider than pronotum. Antennae long, filiform, sometimes reaching the apex of elytra, the last segment emarginate to beveled, sometimes with sensoric facet. Pronotum like in *Oedemera* Ol. Terminal spurs at anterior tibia quite reduced, absent, claws simple. The form of elytra and nervation like in *Oedemera* Ol. Pygidium exceeds the last sternite, which is widely emarginate or rounded, projections of the urite VIII visible (like in *Oedemera* Ol.). Phallus of the same type as in the preceding genus, paramerae rarely conerescent in their apical parts.

Sexual dimorphism. Pygidium slightly exceeds the last sternite in female.

Subgenus **Dryopomera** s. str.

Eyes smaller, the last segment of antennae emarginate from its midlength on, sensoric facet short, slightly distinct (Fig. 242). Posterior femora more or less thickened in males, posterior tibia straight or regularly curved. Abdominal sternites without protuberances.

Distribution: southern India, Sri Lanka, the Malayan Peninsula, Sunda Is., Japan.

Paroncomera Nak. does not differ by any essential characters.

Subgenus **Mimoncomera** Pic, 1923 stat. n.

Mimoncomera Pic, 1923: Mél. exot.-ent., 39: 28

Type-species: *Mimoncomera ocularis* Pic, 1923 (by monotypy)

Eyes large, almost touching each other on front, the last antennal segment beveled almost all along its length, with longitudinal sensoric facet, covered with microsetae (Fig. 241). Posterior femora not thickened in both sexes, posterior tibia curved in some species (Fig. 240). On the third and fourth visible abdominal sternite can be median globular protuberance.

Sexual dimorphism. Sensoric facet in female as in *Dryopomera* s. str., but distinctly limited, posterior tibia and abdominal sternites not modified.

Distribution: the Malayan Peninsula, Sunda Is.

The most derived type of the tribus Oedemerini.

TRIBUS **STENOSTOMINI** MULSANT, 1858

1. **Stenostoma** Latreille, 1810

Stenostoma Latreille, 1810: Consid. Gén.: 217

Type-species: *Leptura rostrata* Fabricius, 1787 (original designation) = *S. coeruleum* (Pet.)

Material examined: *S. coeruleum* (Pet.) and one further species.

Body small, moderately vaulted, predominantly metallic. Length: 4.8 to 9.8 mm.

Male. Both mandibles bifid with retinaculum (Fig. 10), the last segment of maxillary palpus spindle shaped (Fig. 244). Head rostrate. Eyes elongate, flat, entire, head with eyes narrower than pronotum. Antennae filiform, short, hardly reaching $\frac{1}{3}$ of elytral length, the last segment feebly constricted. Pronotum longer than or as long as wide (Fig. 243), with three almost indistinct depressions. Claws simple. Elytra parallel-sided, narrowed in apical portion, three nerves developed, the second one absent. The last abdominal segment — Fig. 247, projections of the urite VIII visible. Tegmen strongly sclerotized, paramerae short — Fig. 245, aedeagus — Fig. 246.

Female not differing from the male by any essential characters.

Distribution: Mediterranean, Madeira.

GENERA „INCERTAE SEDIS“

1. *Falsonerdanus* Arnett, 1950

Falsonerdanus Pic, 1943: Echange, 59: 7 (not usable name, no type species was designated by PIC)

Falsonerdanus Arnett, 1950: J. Washington Acad. Sci., 40: 221

Type-species: *Falsonerdanus nigrinotatus* Pic, 1943 (original designation)

No material reliably belonging to this genus, briefly described by PIC, was examined.

2. *Fissilonacerdes* Pic, 1935

Fissilonacerdes Pic, 1935: Mél. exot.-ent., 66: 21

Type-species: *Fissilonacerdes javanus* Pic, 1935 (by monotypy)

It seems to follow from the description of this genus, that PIC did not intend the name *Fissilonacerdes* as a name of a new genus, but as a kind of unjustified emendation of *Fissilanoncodes* Pic., since he distinguished the new species *Fissilonacerdes javanus* from *Fissilanoncodes maculicollis* Pic. This problem cannot be solved without examination of the type material.

3. *Nerdanus* Fairmaire, 1896

Nerdanus Fairmaire, 1896: Notes Leyden Mus., 18: 239

Type-species: *Nerdanus coeruleus* Fairmaire, 1896 (by monotypy)

No material was examined.

4. *Oxacosessinia* Pic, 1922

Oxacosessinia Pic, 1922: Mél. exot.-ent., 35: 17 nota

Type-species: *Ananca striola* Fairmaire, 1895 (by monotypy)

I was not able to examine the type material of the type species, but it is almost certain, that *Oxacosessinia* Pic, belongs to the *Sessinia* group of genera.

5. *Pseudonerdanus* Pic, 1923

Pseudonerdanus Pic, 1923: Mél. exot.-ent., 99: 24

Type-species: *Pseudonerdanus luteonotatus* Pic, 1923 (by monotypy)

The situation is the same as in *Falsonerdanus* Pic (see above).

6. *Zubkovia* Semenov, 1894

Zubkovia Semenov, 1894: Hor. Soc. Ent. Ross., 28: 454

Type-species: *Zubkovia turcomanica* Semenov, 1894 (by monotypy)

Zoubkovia Seidlitz, 1899 (variant spelling)

According to the description, this genus seems to be related to or congeneric with *Pseudananconia* Švihla, but no material was examined.

Ananca Fairmaire and Germain, 1863

Ananca Fairmaire and Germain, 1863: Ann. Soc. Ent. Fr., 3: 267

Type-species: *Nacerdes pallens* Solier, 1851 (designated by CHAMPION, 1917)

Many species from the Old World were described in this genus. I was not able to study the type material of the type species, but on the basis of the material from the British Museum it seems to be closely related to or congeneric with *Eobia* Sem. and *Oxycopis* Arn.

Copidita Le Conte, 1866

Copidita LeConte, 1866: New. Spec. N. Amer. Coleopt., 1: 184

Type-species: *Probosca quadrimaculata* Motschulsky, 1852 [by monotypy]

Some species from the Oriental region were described as members of this genus, but I have not examined the type material of any of them. At present it is not possible to consider the occurrence of this genus in the Old World to be proved.

Fissilanoncodes Pic, 1912

Fissilanoncodes Pic, 1912: Mém. exot.-ent., 1: 4

Type-species: *Fissilanoncodes maculicollis* Pic, 1912 [by monotypy]

Fissilamoncodes Neave, 1939 [variant spelling]

The only specimen examined (DEI), determined by Pic, agrees very well with the PIC'S description (lateral lobes of pronotum, outer claw of tarsi etc.). This genus is not an Oedemerid, it must be transferred to Cantharidae — Silinae.

7. CONCLUSIONS

1) Revision of the generic classification of the family Oedemeridae of the Old World is given in the present paper as well as the revision of the supergeneric classification of the family. The paper is based both on study of external morphology of adults and also on larval and pupal characters. The material examined contained about 14,200 specimens of 290 species classified in 72 genera and subgenera.

2) The morphological characters are considered from the point of view of their application to generic and supergeneric classification and the conclusions are compared with conclusions of other authors.

3) The male copulatory organs and structure of the sternal part of thorax were found to be the most useful in supergeneric classification and they were combined with other characters of external morphology and with characters of larvae and pupae. Some other features, often used in classification were found to tend to convergent evolution in diverse developmental lineages (e.g. the shape of the last segment of maxillary palpus).

4) The characters of the male copulatory organs were used as basic ones in the generic classification, the other ones having been used as auxiliary ones, as they are more often influenced by the environmental conditions and tend to convergency. Some characters formerly applied in distinguishing genera are not usable because of their variability or occurrence of transient interstages, when larger material of a genus was examined (e.g. number of visible nerves on elytron or shape or size of eyes).

5) The family Oedemeridae is divided into three subfamilies: Nacerdinae, Calopodinae and Oedemerinae. The subfamily Nacerdinae is divided into the tribes Ditylini and Nacerdini, the subfamily Oedemerinae into the tribes Asclerini, Oedemerini and Stenostomini. The essential changes are both in the systematic position of the tribus Ditylini and in its definition and its contents. The phylogramme of the evolution of super-generic taxa was elaborated, which is based both on morphological and zoogeographical and paleogeographic data.

6) The keys to determination of tribes and to the Old World genera were given.

7) 56 genera and 17 subgenera were found to occur in the Old World, 6 genera are classified as „incertae sedis“.

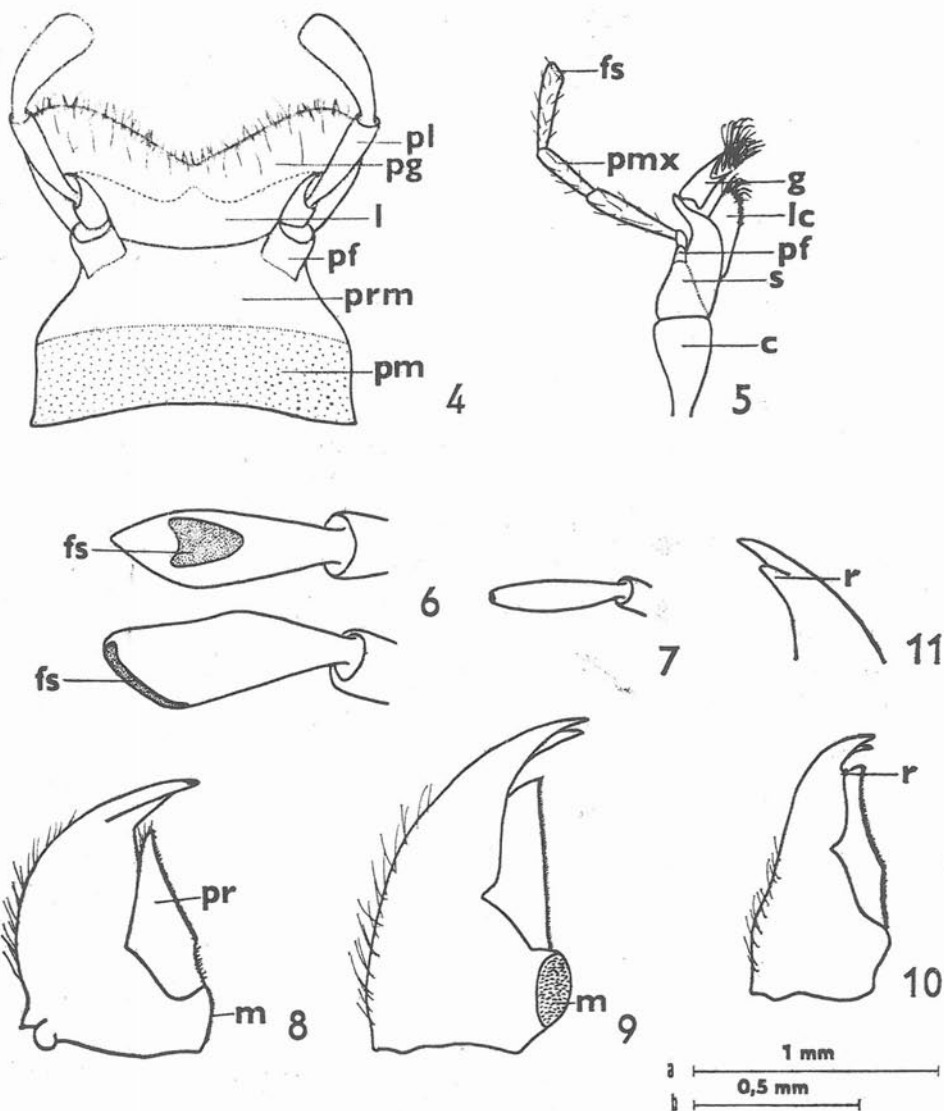
8) The genus *Fissilanoncodes* Pic was transferred to the family Cantharidae.

9) The genera *Diplectrus* Kirsch, *Chrysanthia* Schm. and *Ascleranoncodes* Pic were transferred from the tribus Asclerini to the tribus Ditylini, *Diasclera* Rtt. from Oedemerini to Ditylini, *Zabriola* Frm. from Nacerdini to Asclerini, *Opsimea* Mill. from Oedemerini to Nacerdini, *Schellia* Rtt. and *Asclerosibutia* Pic from Oedemerini to Asclerini.

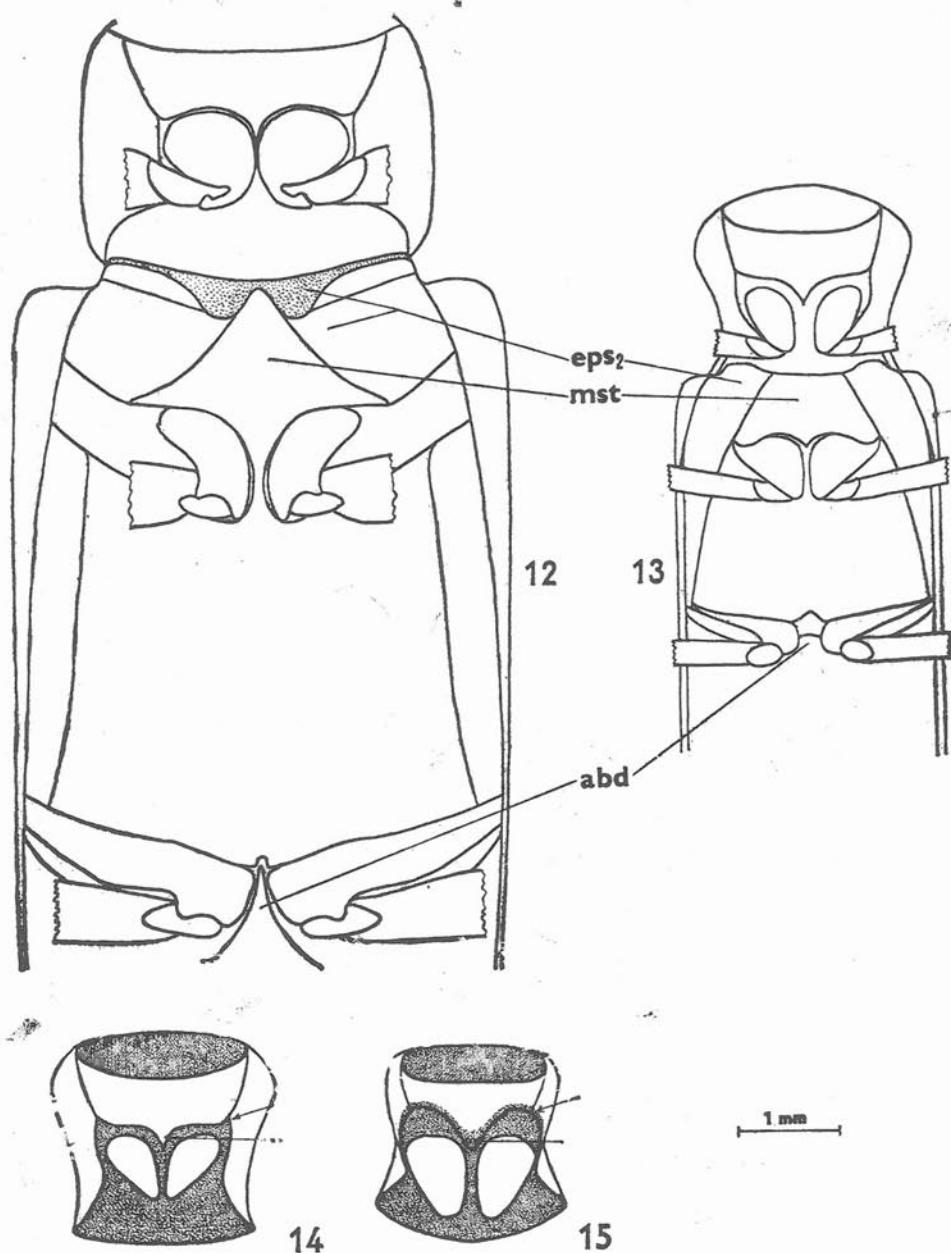
10) Following new taxa were described and illustrated: *Nacerdes* subg. *Axanthochroa* subg. n., *Alloxanthoides* gen. n., *Eobia* subg. *Pareobia* subg. n., *Nacerdochröides suturalis* [Java] gen. n., sp. n., *Anancerdochroa similis* [SW Africa] gen. n., sp. n., *Parassesinia nicobarica* [Nicobar Is.] gen. n., sp. n., *Assessinia* gen. n., *Hypascleroides socotrensis* [Socotra] gen. n., sp. n., *Achitona transversevittata* [S Africa] gen. n., sp. n., *Chitona* subg. *Afrochitona* subg. n., *Ditylomorphula* gen. n., *Pterosessinia longula* [SW Africa] gen. n., sp. n., *Eopselaphus sexmaculatus* [Celebes] gen. n., sp. n.

11) New statutes of following taxa were established: *Nacerdes* subgg. *Allagatha* Sem. et Min., *Xanthochroa* Schm., *Colobostomus* subg. *Chitonoidea* Švihla, *Oschaninia* subg. *Homomorpha* Sem., *Alloxantha* subg. *Ananconiomorpha* Švihla, *Eobia* subg. *Falsosessinia* Pic, *Probosca* subgg. *Asclerella* Sem., *Isoloxantha* Sem. and *Ananconia* Seidl., *Nacerdochroa* subg. *Holoxantha* Sem., *Chitona* subg. *Dolichopyga* Seidl., *Dryopomera* subg. *Mimoncomera* Pic.

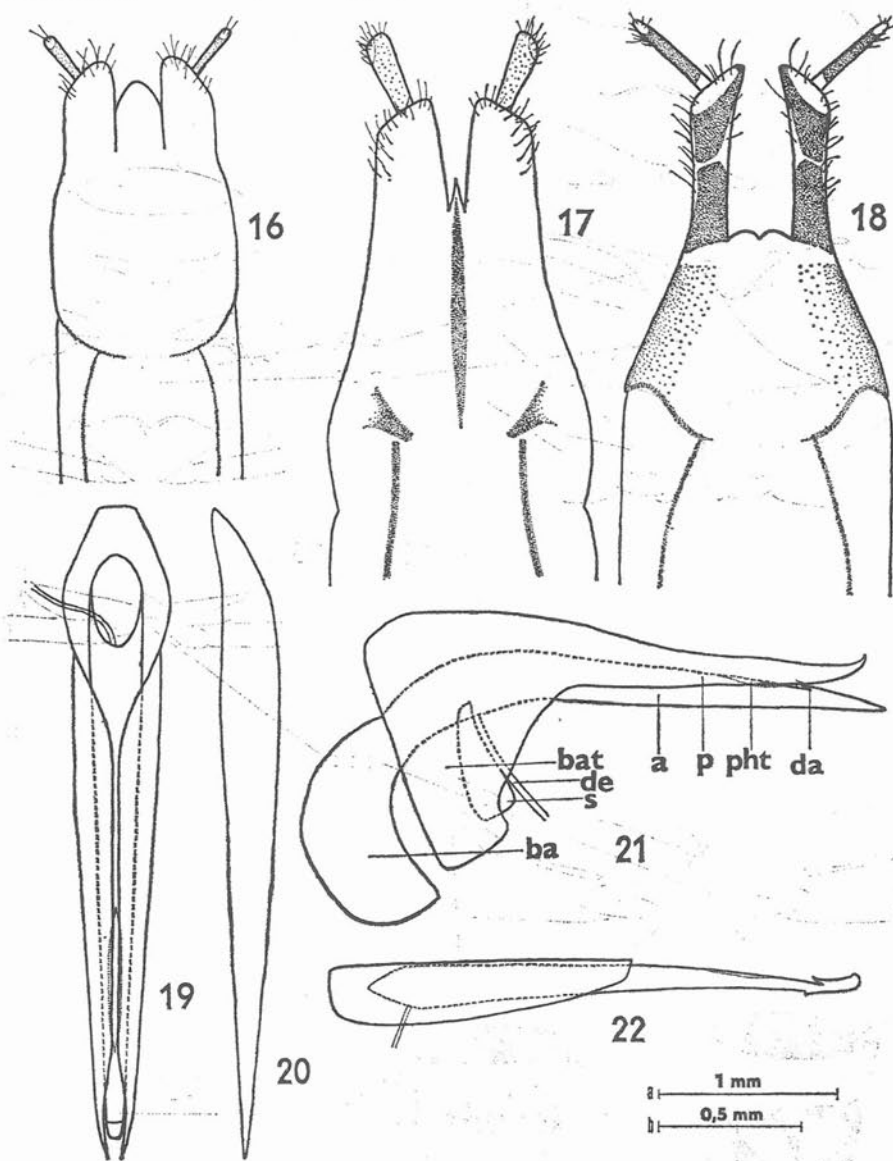
12) New synonyms were established as follows: *Diasclera* Rtt. = *Nacerdasclera* Munst.; *Ascleranoncodes* Pic = *Indanerces* Pic; *Xanthochroa* Schm. = *Patialomorpha* Nak.; *Opsimea* Mill. = *Ezonacerda* Kôno; *Anogcodes* Dej. = *Anoncodes* Redt., *Pachychirus* Redt., *Lethonymus* Mars., *Peronocnemis* Frm. and *Anoncodina* Seidl.; *Sparedrus* Dej. = *Sparedropsis* Heyd., *Ocularium* Pic; *Xanthochroina* Gglb. = *Asclerostoma* Fleisch.; *Xanthochroina auberti* [Ab.] = *Asclerostoma reitteri* Fleisch.; *Ischnomera* Steph. = *Asclera* Dej., *Ascleronia* Seidl. and *Chromasclera* Seidl.; *Ascleropsis* Seidl. = *Indasclera* Švihla; *Microsessinia* Pic = *Idgiomima* Blair, *Idgiomimula* Blair; *Oncomera* Steph. = *Oncomerella* Ritt.; *Oedemera* Ol. = *Stenaxis* Schm., *Oedemerina* Costa, *Oedemerella* Seidl., *Oedemerastra* Seidl., *Oedemeronia* Seidl. nad *Oncomerina* Seidl.; *Dryopomera* Frm. = *Paroncomera* Nak.



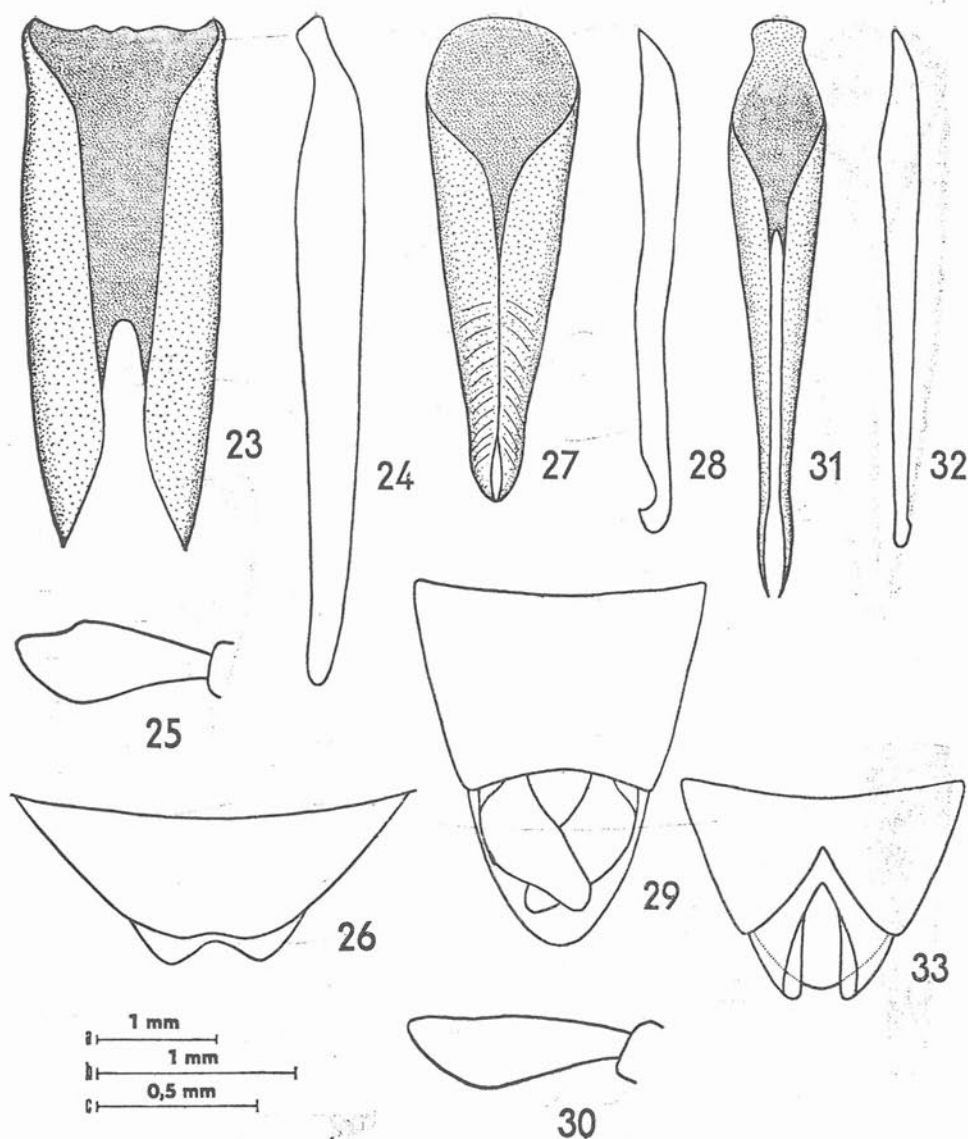
Figs. 4—11: 4 — *Sparedrus testaceus* (And.), labium, ventral view, 5 — *Oedemera nobilis* (Scop.), maxilla, 6 — *Nacerdes melanura* (L.), last segment of maxillary palpus, dorsal and lateral view, 7 — *Stenostoma coeruleum* (Pet.), last segment of maxillary palpus, 8 — *Sparedrus testaceus* (And.), right mandibula, ventral view, 9 — *Ditylus laevis* (F.), left mandibula, dorsal view, 10 — *Stenostoma coeruleum* (Pet.), left mandibula, dorsal view, 11 — *Dentostomus anceyi* (Pic), apex of right mandibula, dorsal view. Abbreviations: c — cardo, fs — fossula sensalis, g — galea, l — ligula, lc — lacinia, m — mola, pf — palpfiter, pg — paraglossae, pl — palpus labialis, pm — postmentum, pmx — palpus maxillaris, pr — prostheca, prm — praementum, r — retinaculum, s — stipes. Scale a Figs. 5, 8, 9, b Figs. 4, 6, 7, 10, 11.



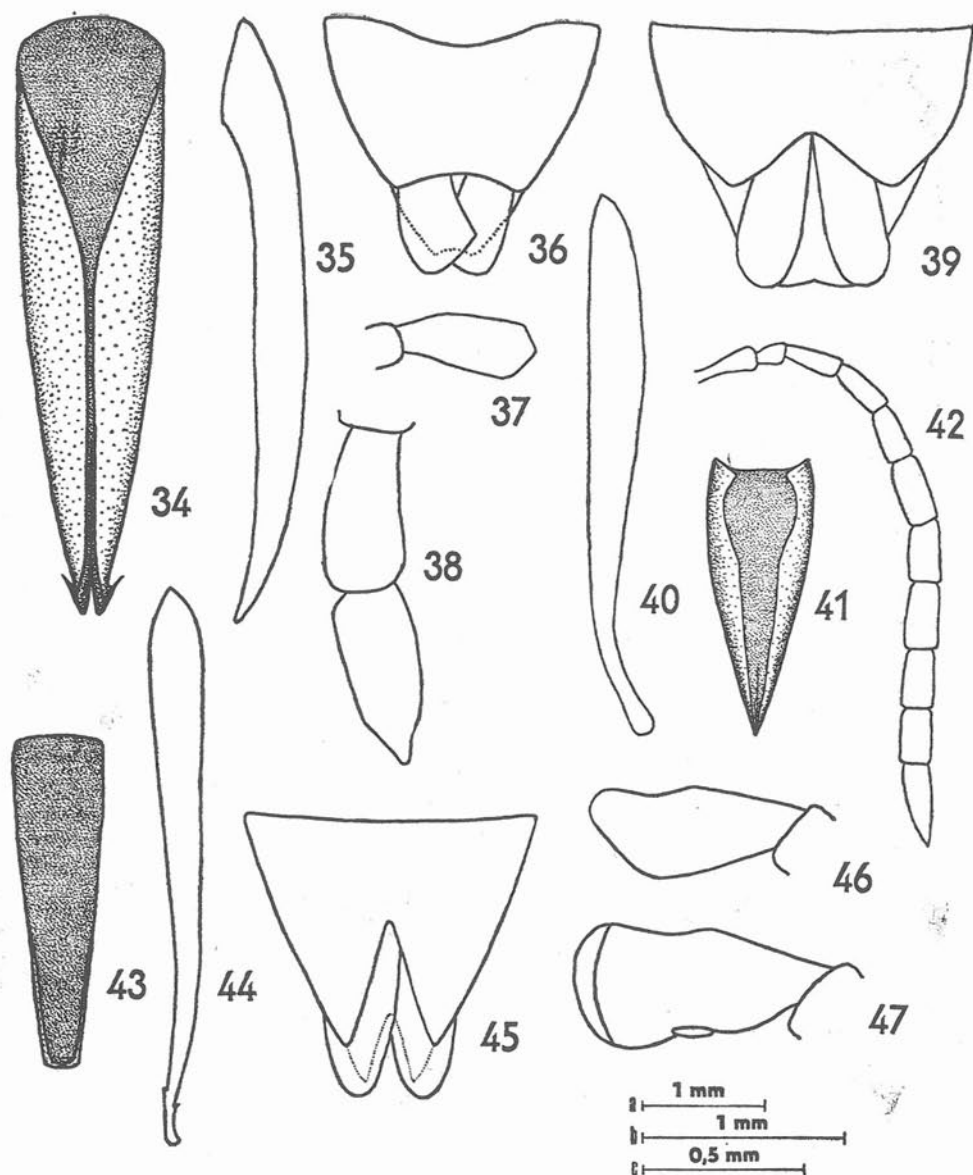
Figs. 12—15: 12 — *Sparedrus testaceus* (And.), thorax, ventral view, 13 — *Dolichopyga fucata* (Fald.), thorax, ventral view, 14 — *Dolichopyga fucata* (Fald.), prosternum, 15 — *Oedemera podagrariae* (L.), prosternum. Abbreviations: abd — abdomen, eps — episternum, mst — mesosternum.



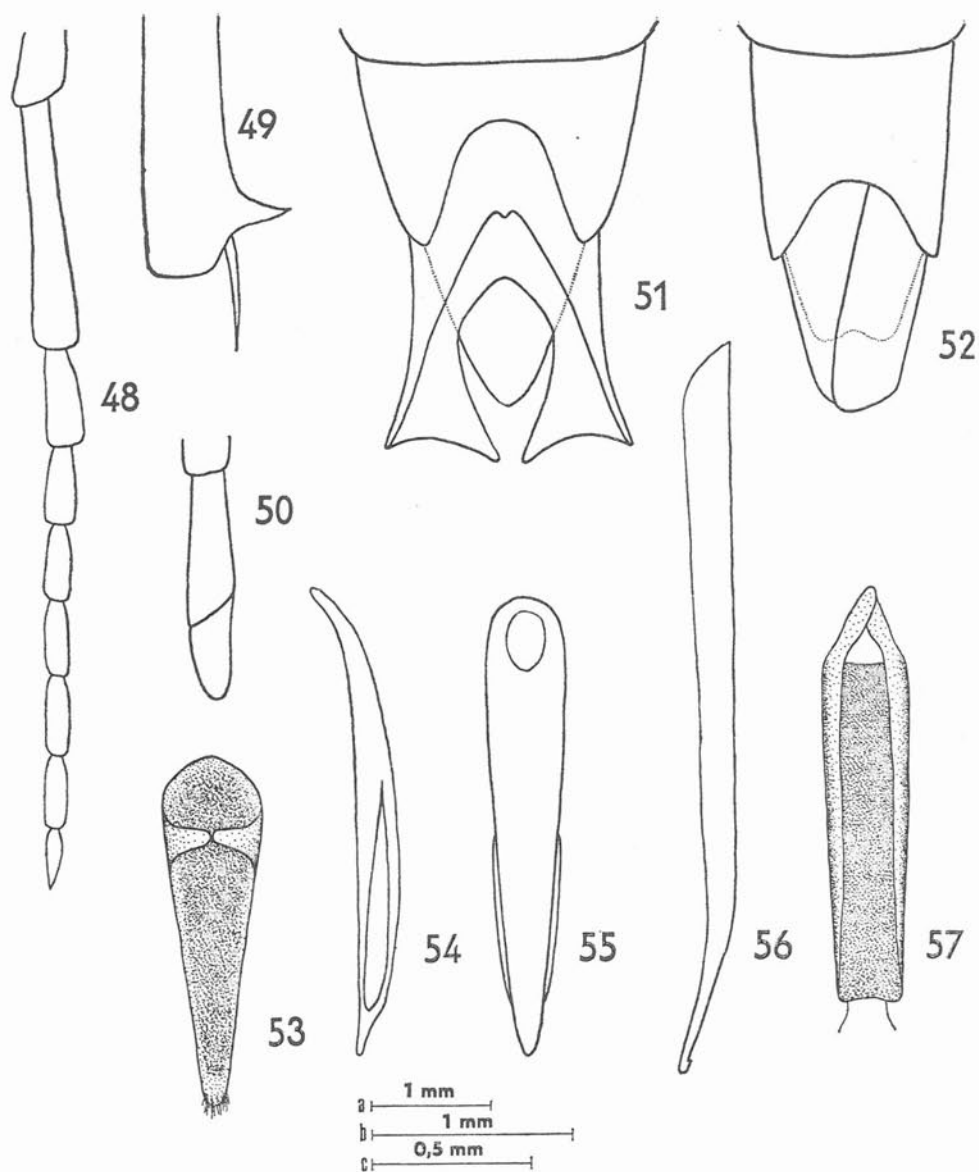
Figs. 16—22: 16—18: ovipositor of: 16 — *Oedemera nobilis* (Scop.), 17 — *Ditylus laevis* (F.), 18 — *Asclerosibutia lineaticollis* Pic; 19—20: *Chrysanthia viridissima* [L.]: 19 — phallus, ventral view, 20 — phallus, lateral view; 21 — *Oedemera nobilis* (Scop.), phallus, lateral view, 22 — *Nacerdes melanura* [L.], phallus, lateral view. Abbreviations: a — aedeagus, da — dens apicalis, de — ductus ejaculatorius, ba — basal apodeme of aedeagus, bat — basal apodeme of tegmen, p — paramera, pht — phallotreme, s — supporting sclerite. Scale a Figs. 22, b Figs. 16—21.



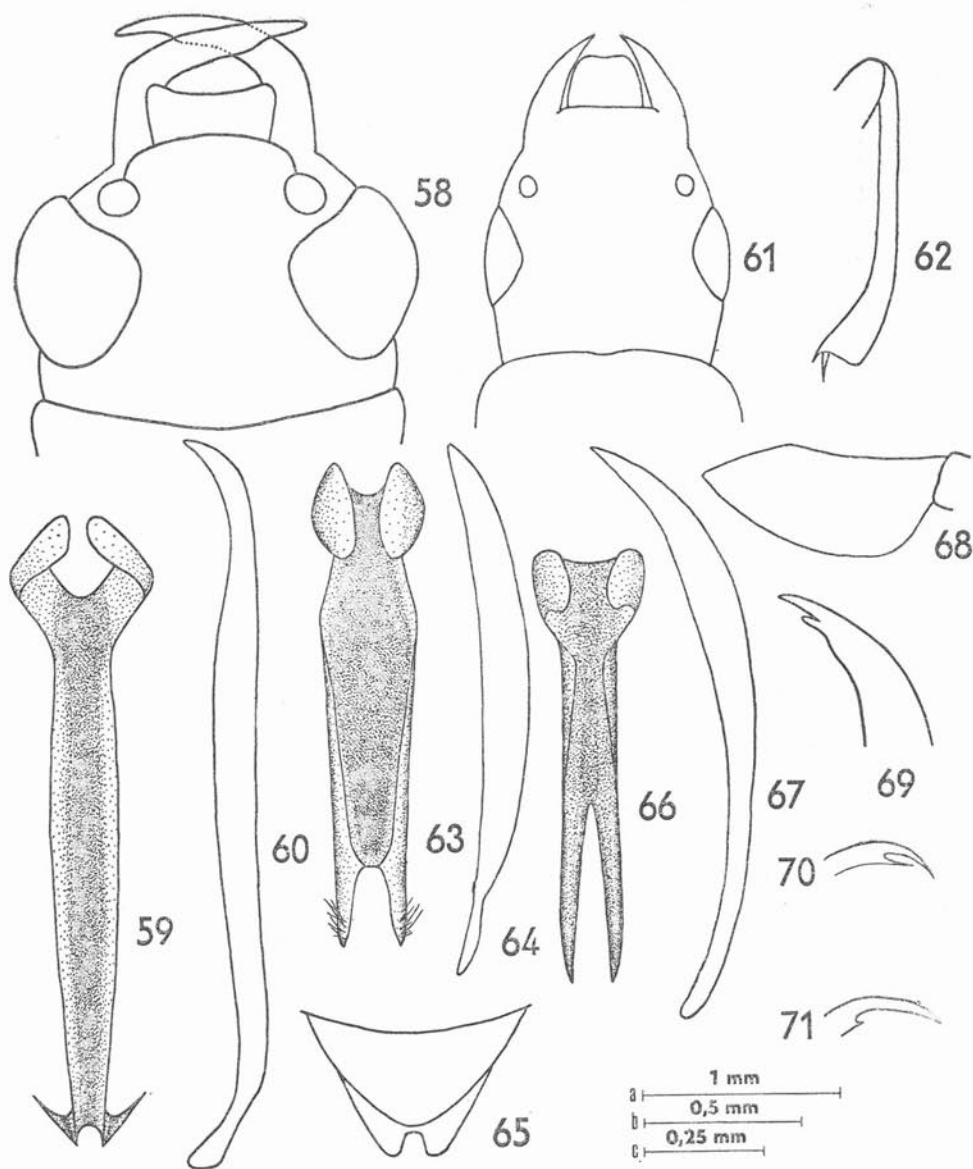
Figs. 23—33: 23—26: *Ditylus laevis* (F.): 23 — tegmen, 24 — aedeagus, 25 — last segment of maxillary palpus, 26 — last abdominal segment of male; 27—30: *Diplectrus longipennis* (Frm.): 27 — tegmen, 28 — aedeagus, 29 — last abdominal segment of male, 30 — last segment of maxillary palpus; 31—33: *Chrysanthia viridissima* (L.): 31 — tegmen, 32 — aedeagus, 33 — last segment of abdomen of male. Scale a Figs. 26, 29, 33, b 25, 27, 28, 30, c 23, 24, 31, 32,



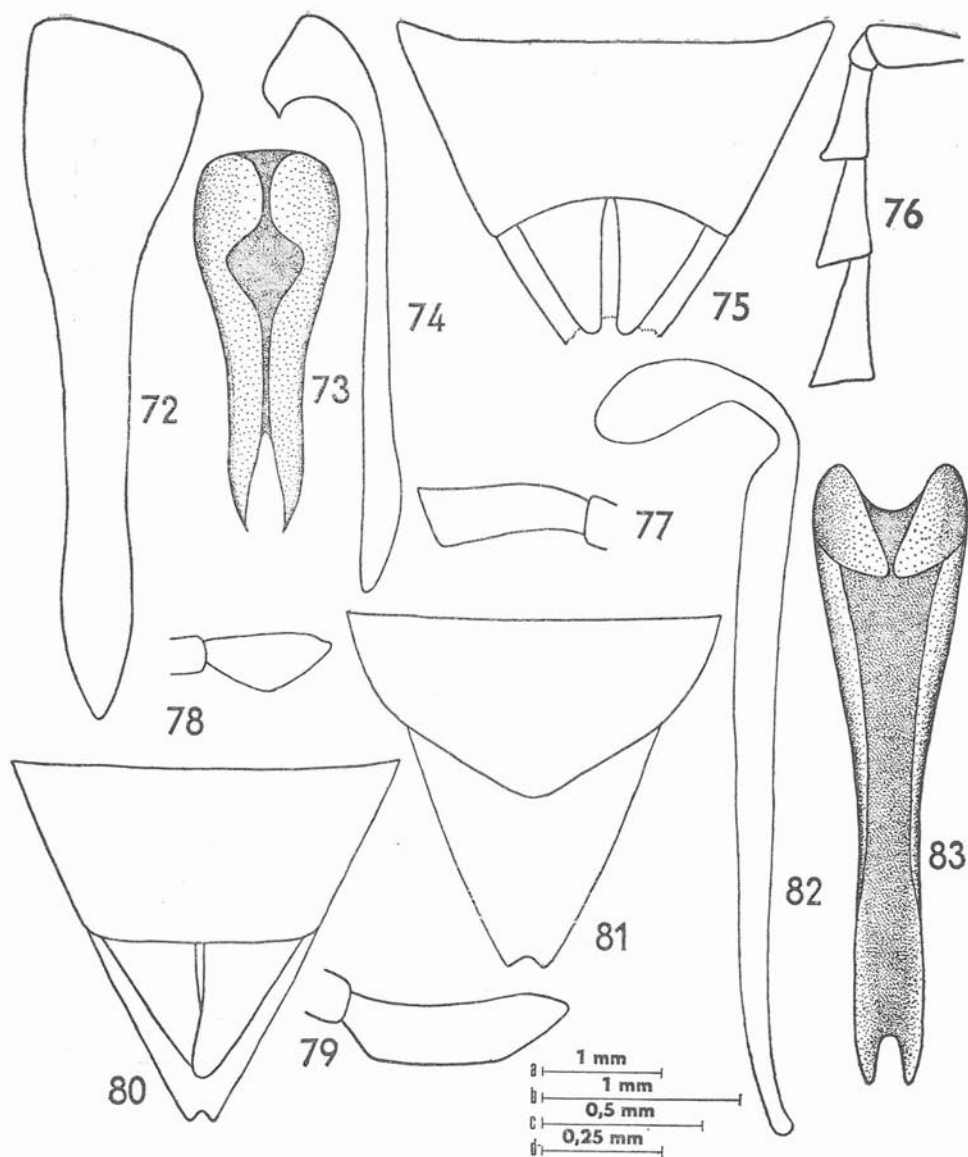
Figs. 34—47: 34—38: *Diasclera viridescens* Rtt.: 34 — tegmen, 35 — aedeagus, 36 — last abdominal segment of male, 37 — last segment of maxillary palpus, 38 — last antennal segment; 39—42: *Ascleranoncodes* sp.: 39 — last abdominal segment of male, 40 — aedeagus, 41 — tegmen, 42 — antenna; 43—46: *Nacerdes melanura* [L.]: 43 — tegmen, 44 — aedeagus, 45 — last abdominal segment of male, 46 — last segment of male maxillary palpus; 47 — *Nacerdes (Allagatha) decora* Sem. et Min., last segment of female maxillary palpus. Scale a Figs. 36, 45, b 39, 42, 43, 44, c 34, 35, 37, 38, 40, 41, 46, 47.



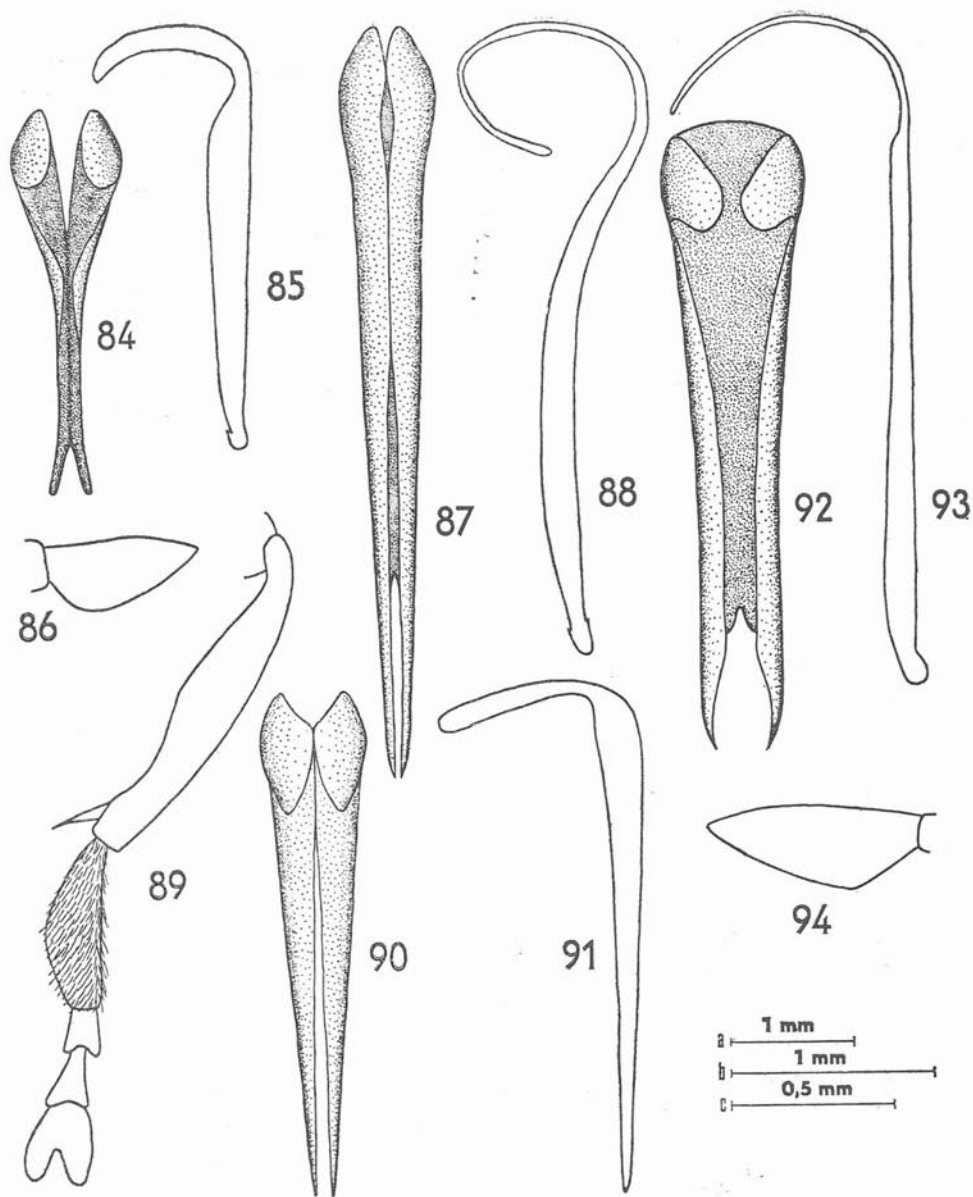
Figs. 48—57: 48—49: *Nacerdes (Patiala) antennata* (Lew.): 48 — antenna of male, 49 — apex of anterior tibia; — 50—51: *Opsimea quadrinervosa* (Rche.): 50 — last antennal segments of male, 51 — last abdominal segments of male; 52 — *Anogcodes ustulata* (F.), last abdominal segment of male; 53—55: *Sparedrus testaceus* (And.): 53 — tegmen, 54 — aedeagus, lateral view, 55 — aedeagus, ventral view; 56—57: *Calopus serraticornis* (L.): 56 — aedeagus, 57 — tegmen. Scale a Figs. 48, 56, 57, b 52, 53, 54, 55, c 49, 50, 51



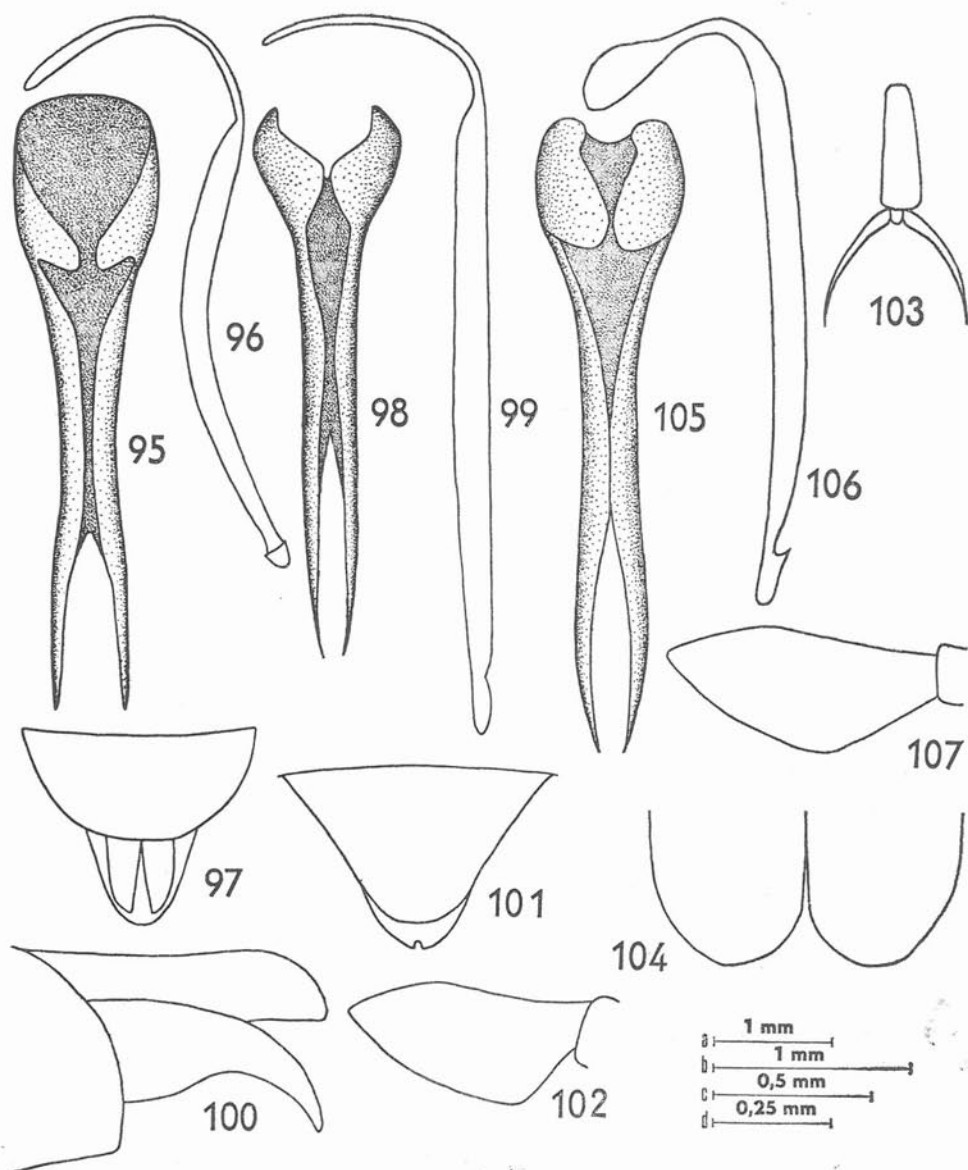
Figs. 58—71: 58—60: *Colobostomus griseovestitus* Frm.: 58 — head of male, 59 — tegmen, 60 — aedeagus; 61—65: *Colobostomus (Chitonoidea) persicus* (Švihla): 61 — head, 62 — posterior tibia of male, 63 — tegmen, 64 — aedeagus, 65 — last abdominal segment of male; 66—71: *Dentostomus anceyi* [Pic]: 66 — tegmen, 67 — aedeagus, 68 — last segment of male maxillary palpus, 69 — right mandibula, 70 — claw of protarsus of male, 71 — claw of mesotarsus of male. Scale: a Figs. 58, 61, 62, 65, b 59, 60, 63, 64, 69, c 66, 67, 68, 70, 71.



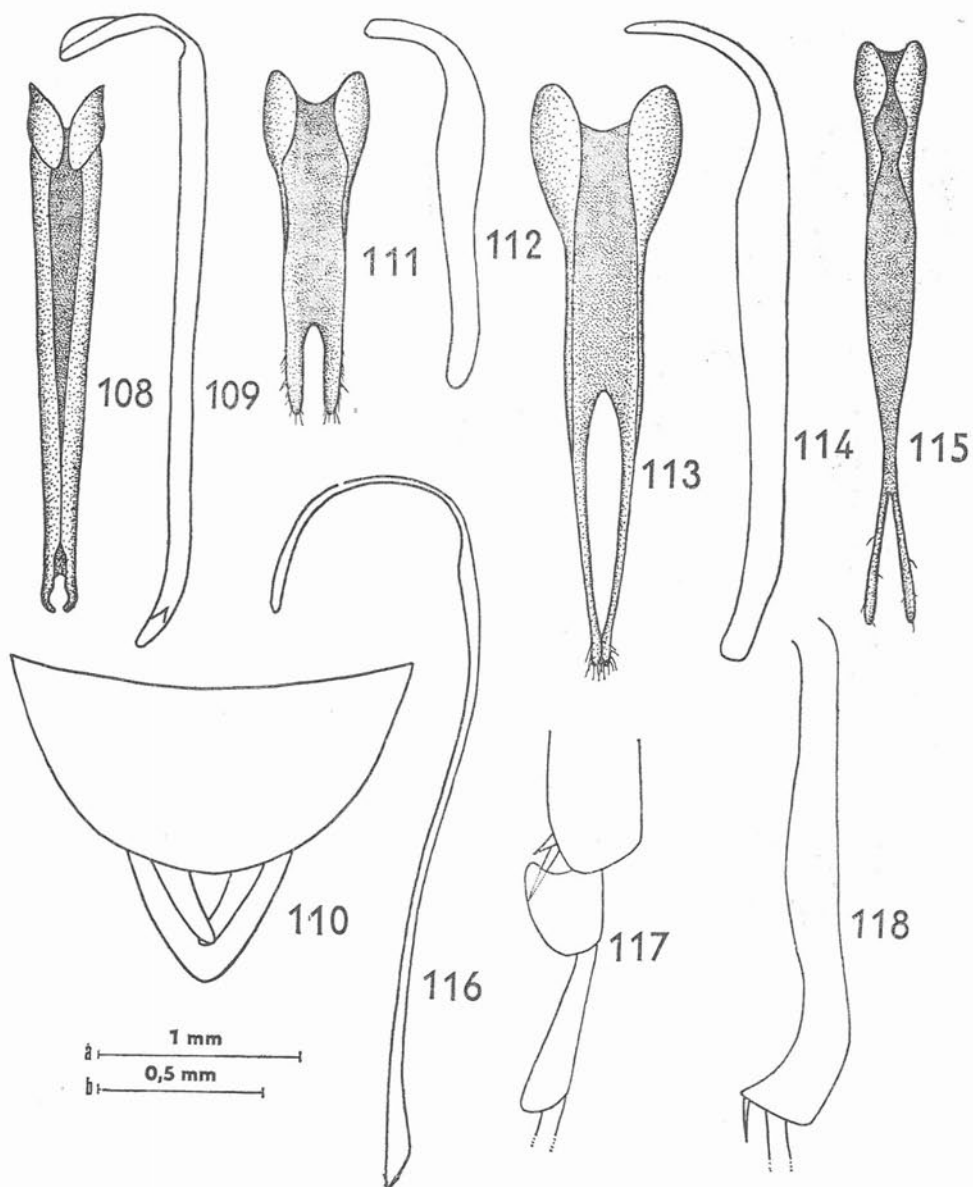
Figs. 72—83: 72—77: *Schellia sitaroides* Rtt.: 72 — elytron of male, 73 — tegmen, 74 — aedeagus, 75 — last abdominal segment of male, 76 — basal segments of male antenna, 77 — last segment of male maxillary palpus; 78—83: *Oschaninia wilkinsi* (Heyd.): 78 — last segment of female maxillary palpus, 79 — last segment of male maxillary palpus, 80 — last abdominal segment of male, 81 — last abdominal segment of female, 82 — aedeagus, 83 — tegmen. Scale a Figs. 72, 76, b 75, 80, c 73, 74, 78, 79, 81, 82, 83.



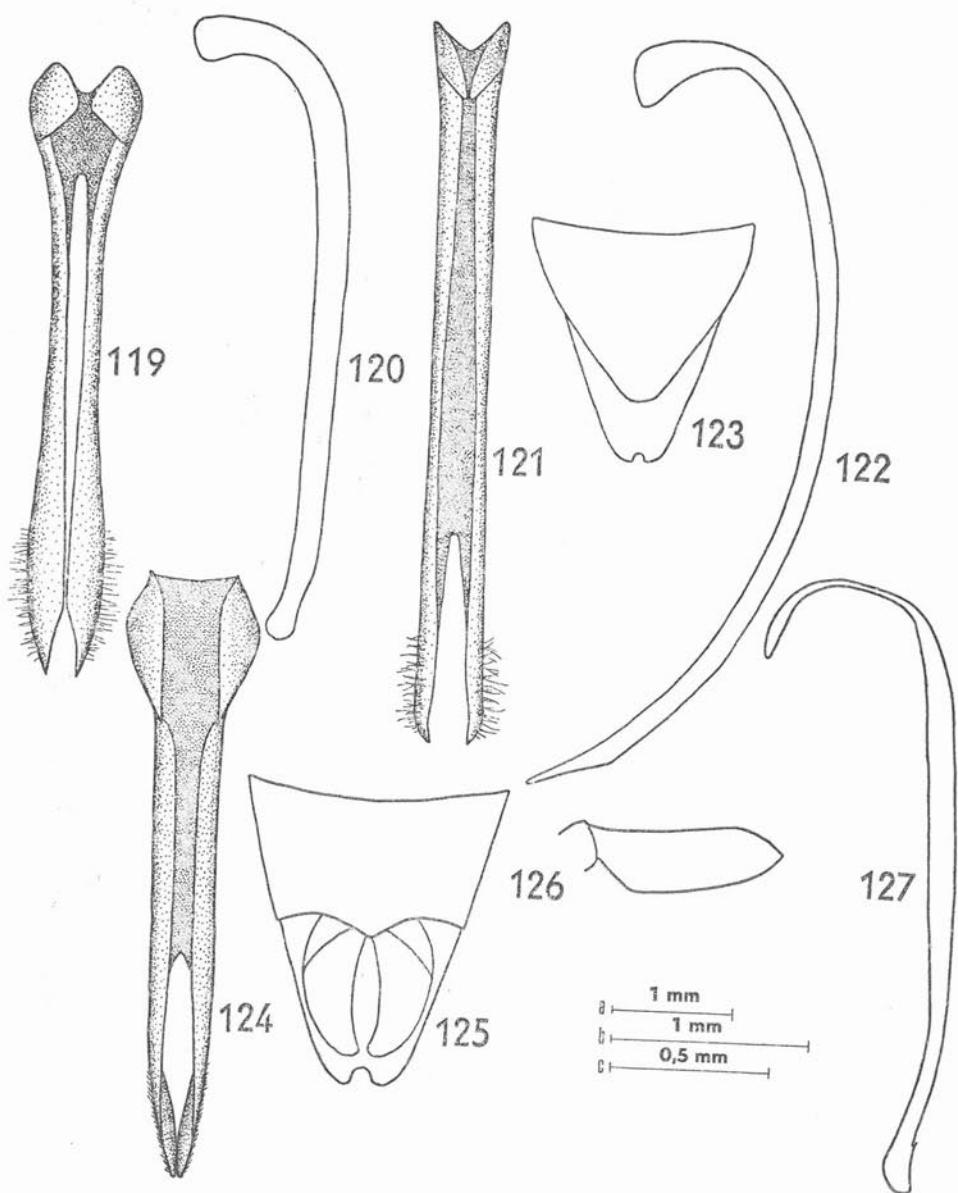
Figs. 84—94: 84—86: *Oschaninia (Homomorpha) crucifera* (Sem.): 84 — tegmen, 85 — aedeagus, 86 — last segment of male maxillary palpus; 87—88: *Alloxantha lutea* Seidl.: 87 — tegmen, 88 — aedeagus; 89—91: *Alloxantha (Ananconiomorpha) platytarsia* (Švihla): 89 — mesotibia and tarsus of male, 90 — tegmen, 91 — aedeagus; 92—94: *Alloxanthoides lateritincta* (Pic): 92 — tegmen, 93 — aedeagus, 94 — last segment of maxillary palpus. Scale a Figs. 87, 88, b 89, c 84—86, 90—94.



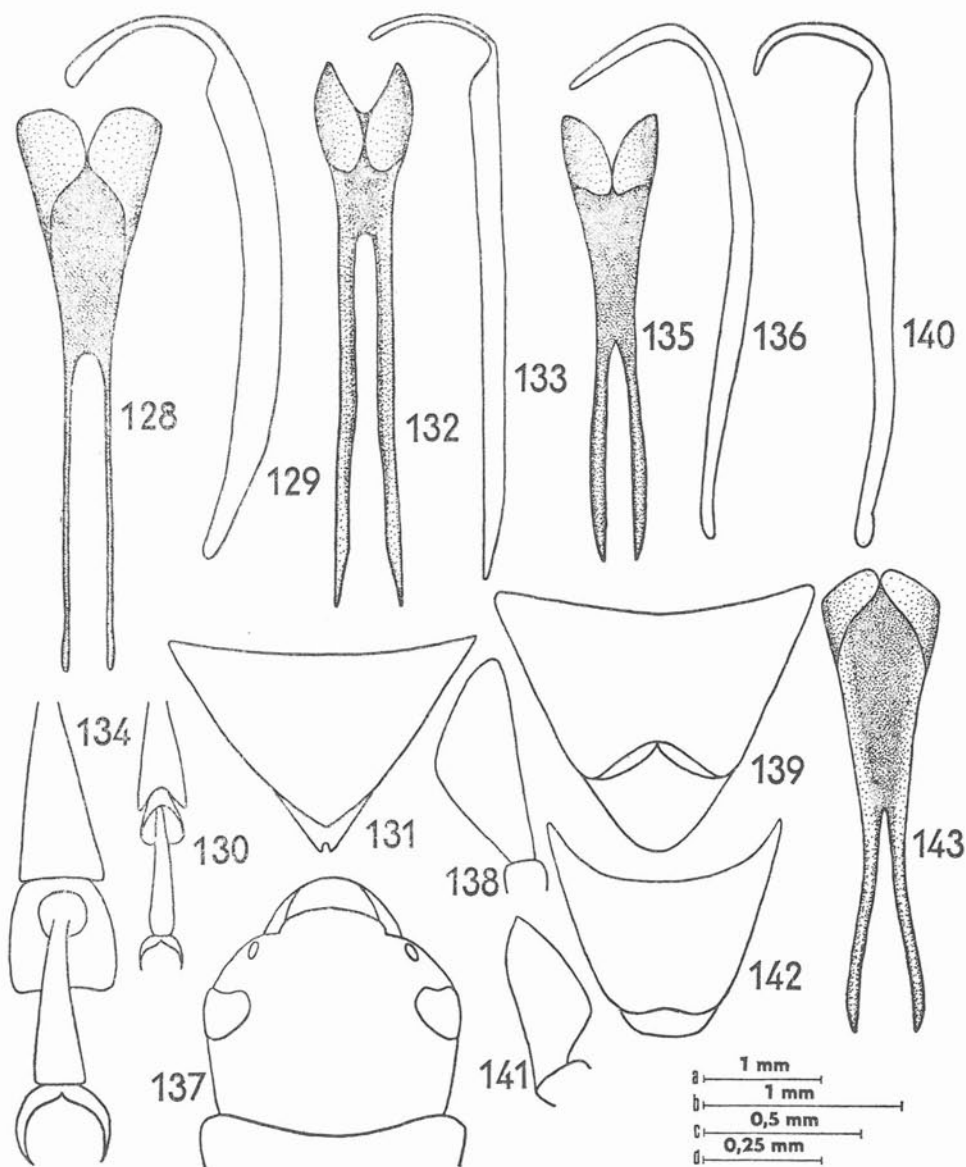
Figs. 95—107: 95—97: *Xanthochroina auberti* (Ab.): 95 — tegmen, 96 — aedeagus, 97 — last abdominal segment of male; 98—104: *Ganglbaueria collaris* Sem.: 98 — tegmen, 99 — aedeagus, 100 — last abdominal segment, lateral view, 101 — last abdominal segment, 102 — last segment of maxillary palpus, 103 — claw of metatarsus, 104 — apexes of elytra; 105—107: *Pseudananconia mesopotamica* (Rtt.): 105 — tegmen, 106 — aedeagus, 107 — last segment of maxillary palpus. Scale a Figs. 104, b 97, 100, 101, 105, 106, c 98, 99, 102, 103, 107, d 95, 96.



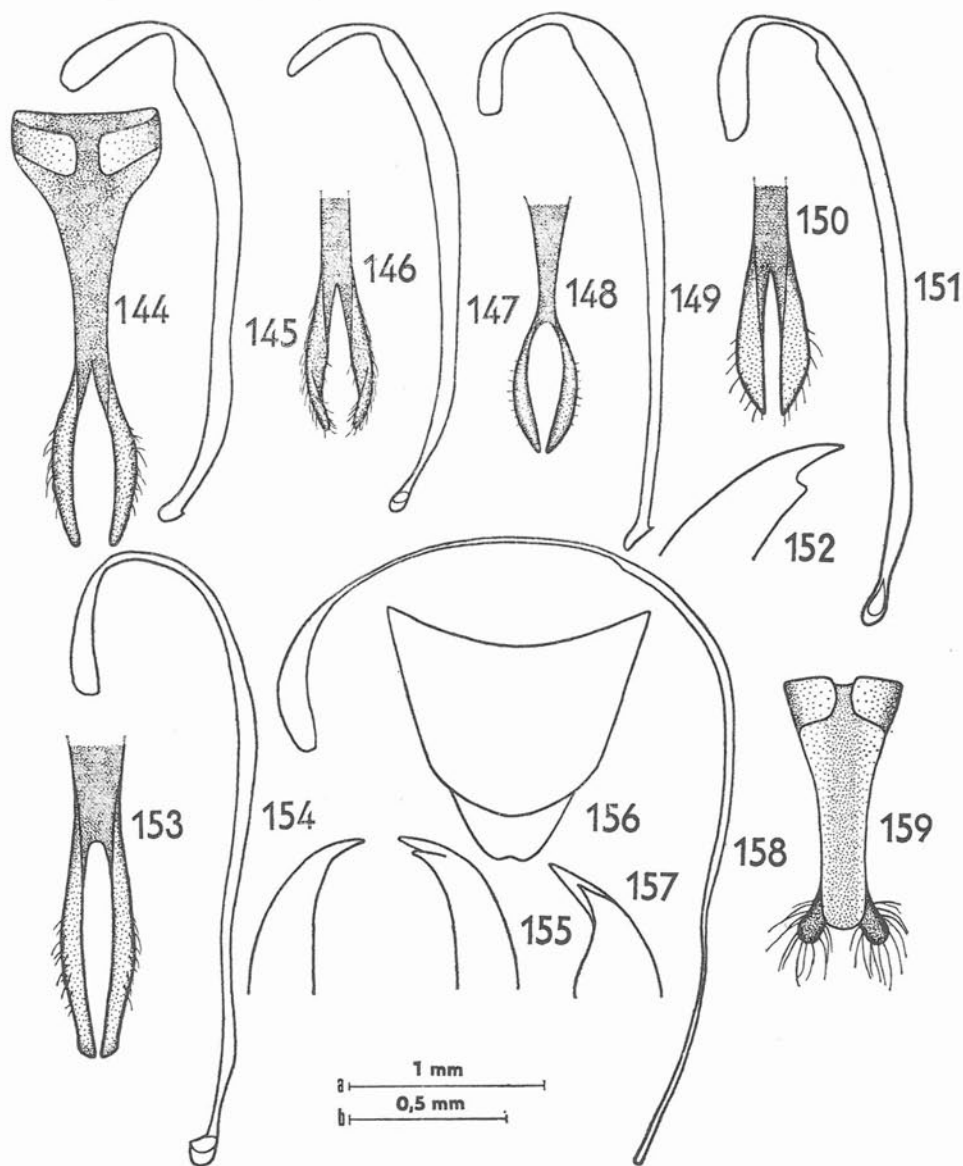
Figs. 108—118: 108—110: *Ascleropsis indica* (Frm.): 108 — tegmen, 109 — aedeagus, 110 — last abdominal segment of male; 111—112: *Eobia fuscipennis* Nak.: 111 — tegmen, 112 — aedeagus; 113—114: *Eobia (Falsosessinia) spinosa* (Pic): 113 — tegmen, 114 — aedeagus; 115—116: *Eobia (Pareobia) florilega* Lew.: 115 — tegmen, 116 — aedeagus; 117 — *Probosca (Ananconia) martini* (Frm.), mesotarsus of male; 118 — *Probosca (Ananconia) spurcaticollis* (Frm.), mesotibia of male. Scale a Figs. 108—110, 113—116, b 111, 112, 117.



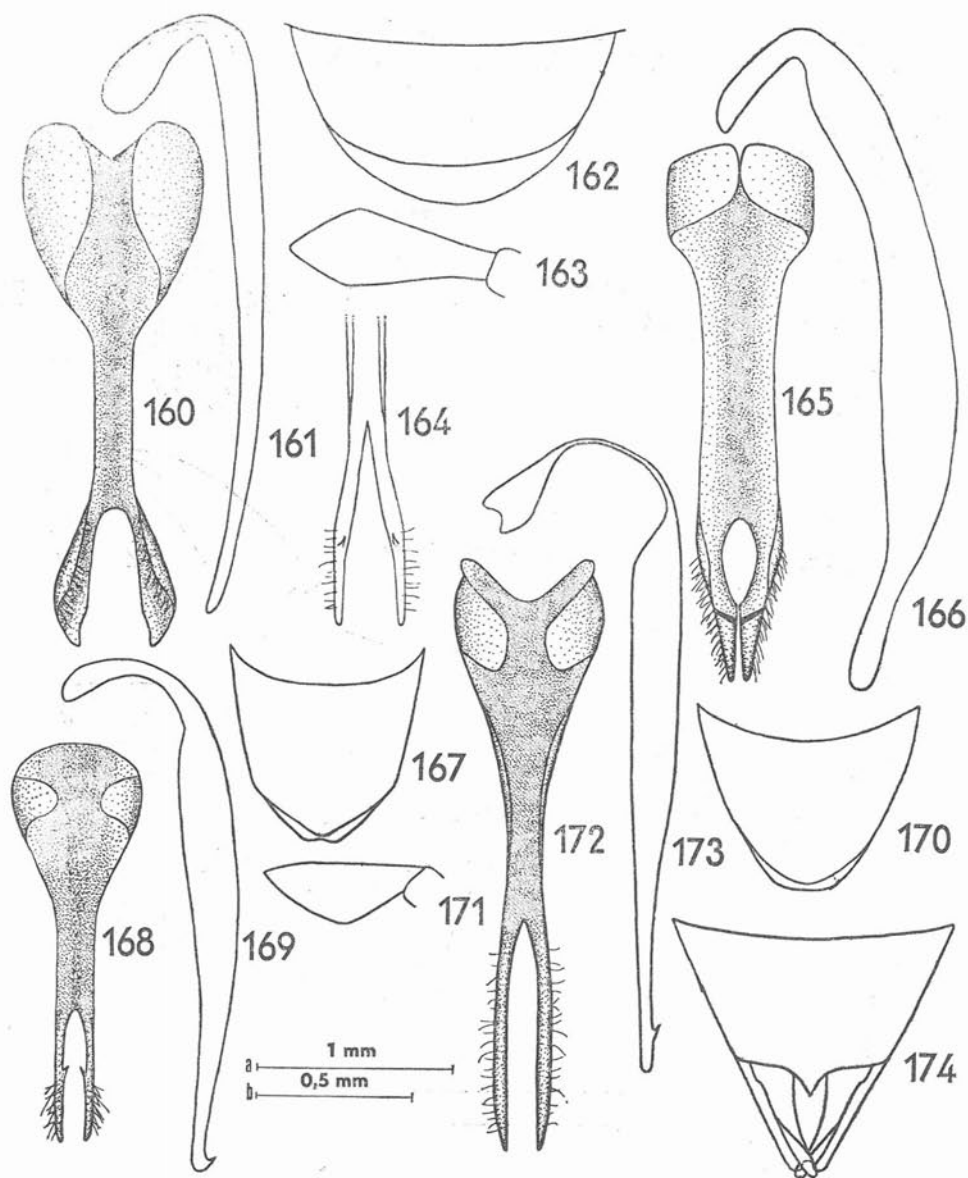
Figs. 119—127: 119—120: *Probosca (Isoloxantha) fuscipennis* (Blair): 119 — tegmen, 120 — aedeagus; 121—123: *Probosca viridana* Schm.: 121 — tegmen, 122 — aedeagus, 123 — last abdominal segment of male; 124—127: *Nacerdochroides suturalis* sp. n.: 124 — tegmen, 125 — last segment of abdomen of male, 126 — last segment of maxillary palpus, 127 — aedeagus. Scale a Figs. 125, b 123, 124, 126, 127, c 119—122.



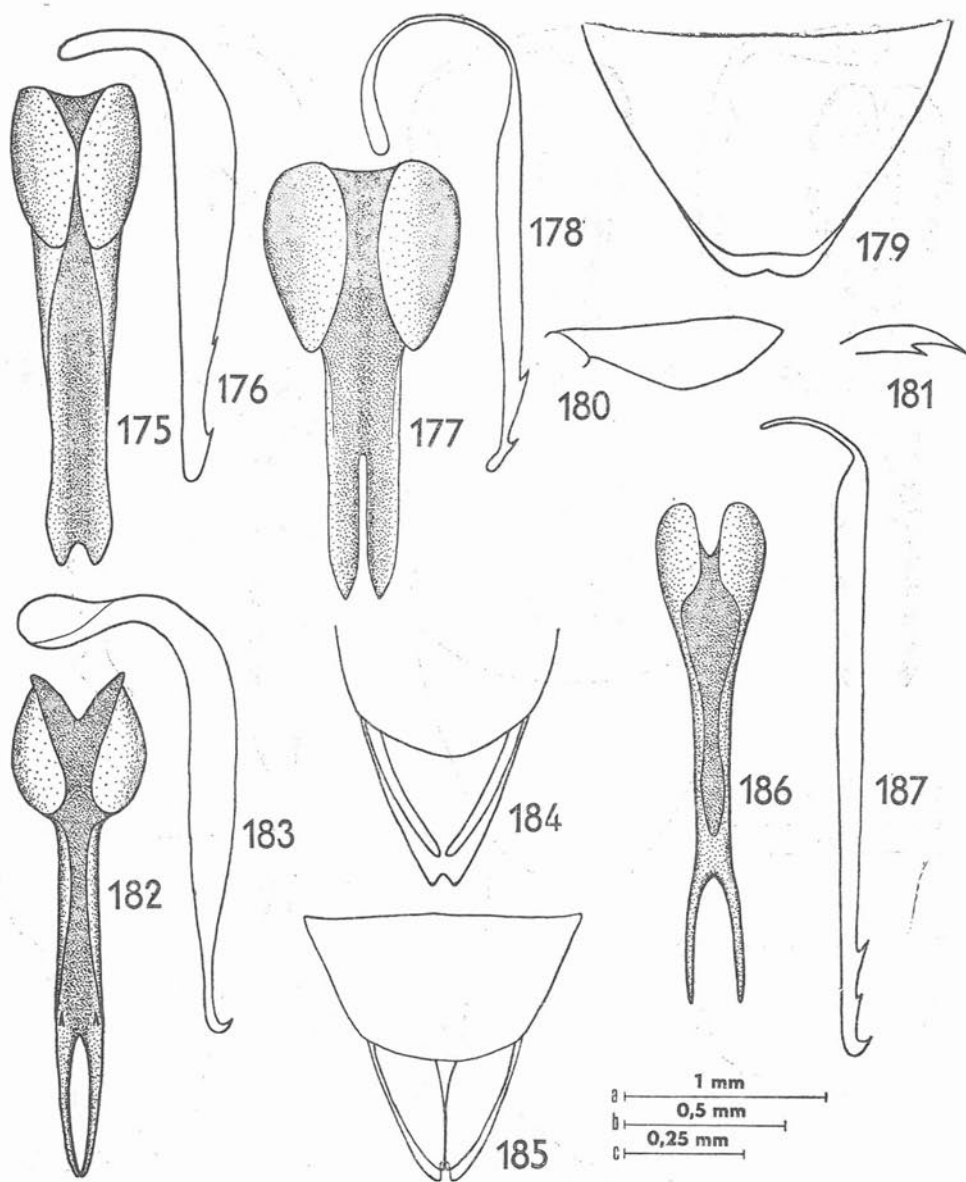
Figs. 128—143: 128—131: *Nacerdochroa caspia* (Fald.): 128 — tegmen, 129 — aedeagus, 130 — metatarsus, 131 — last abdominal segment of male; 132—134: *Nacerdochroa (Holoxantha) concolor* (Brullé): 132 — tegmen, 133 — aedeagus, 134 — metatarsus; 135—139: *Anacerda leptidioides* Champ.: 135 — tegmen, 136 — aedeagus, 137 — head, 138 — last segment of male maxillary palpus, 139 — last abdominal segment of male; 140—143: *Anacerdochroa similis* sp. n.: 140 — aedeagus, 141 — last segment of male maxillary palpus, 142 — last abdominal segment of male, 143 — tegmen. Scale: a Fig. 142, b 130—134, c 128, 129, 139—141, 143, d 135, 136, 138.



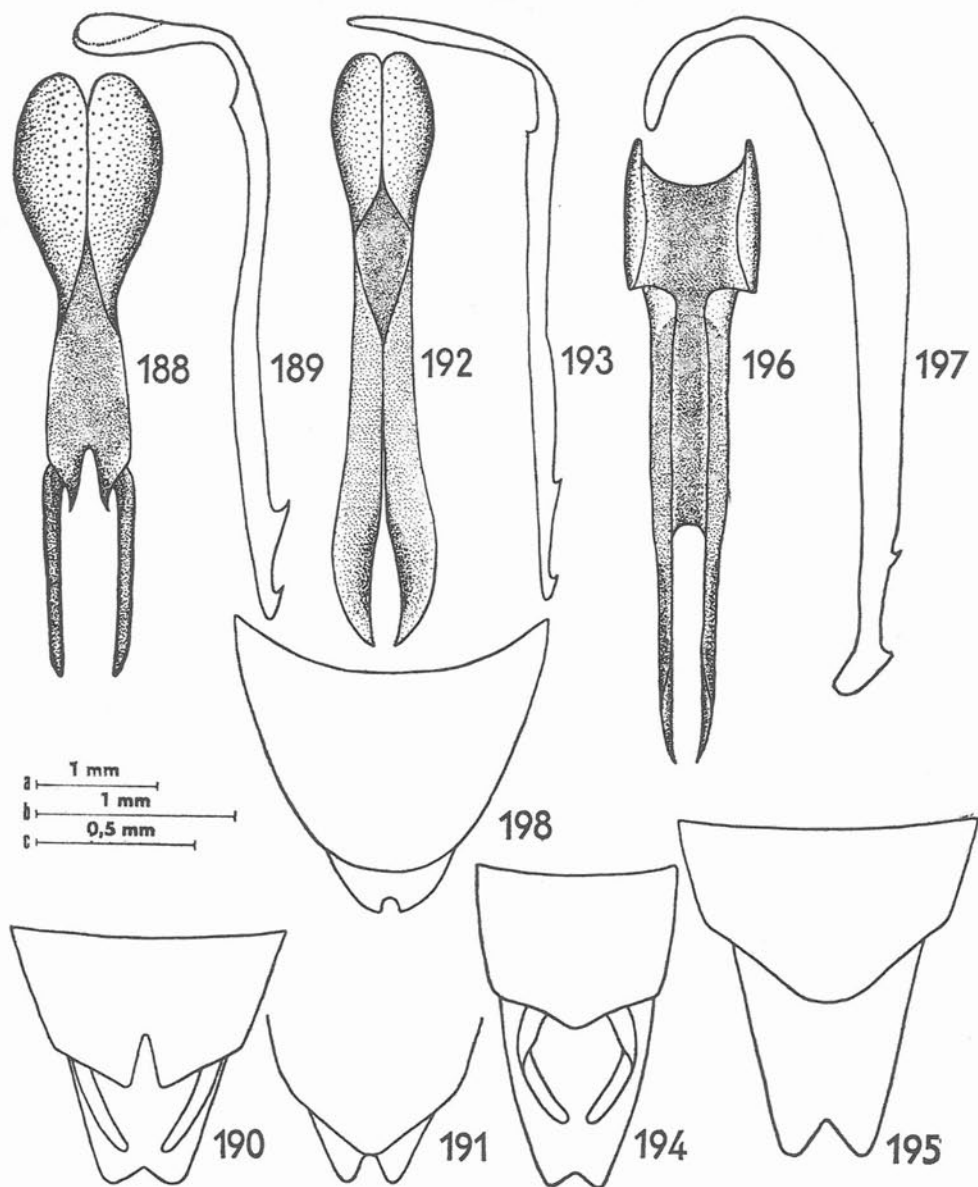
Figs. 144—159: 144—145: *Sessinia livida* [F.]: 144 — tegmen, 145 — aedeagus; 146—147: *Anancosessinia tarsalis* Kôno: 146 — paramerae, 147 — aedeagus; 148—149: *Parasessinia nicobarica* sp. n.: 148 — paramerae, 149 — aedeagus; 150—152: *Pseudohyperasclera* sp.: 150 — paramerae, 151 — aedeagus, 152 — apex of left mandibula; 153—155: *Assessinia subopaca* (Pic): 153 — paramerae, 154 — aedeagus, 155 — mandibles; 156—159: *Alloxoides* sp.: 156 — last abdominal segment of male, 157 — apex of right mandibula, 158 — aedeagus, 159 — tegmen. Scale a Figs. 144, 145, 148—151, 153—156, b 146, 147, 152, 157—159.



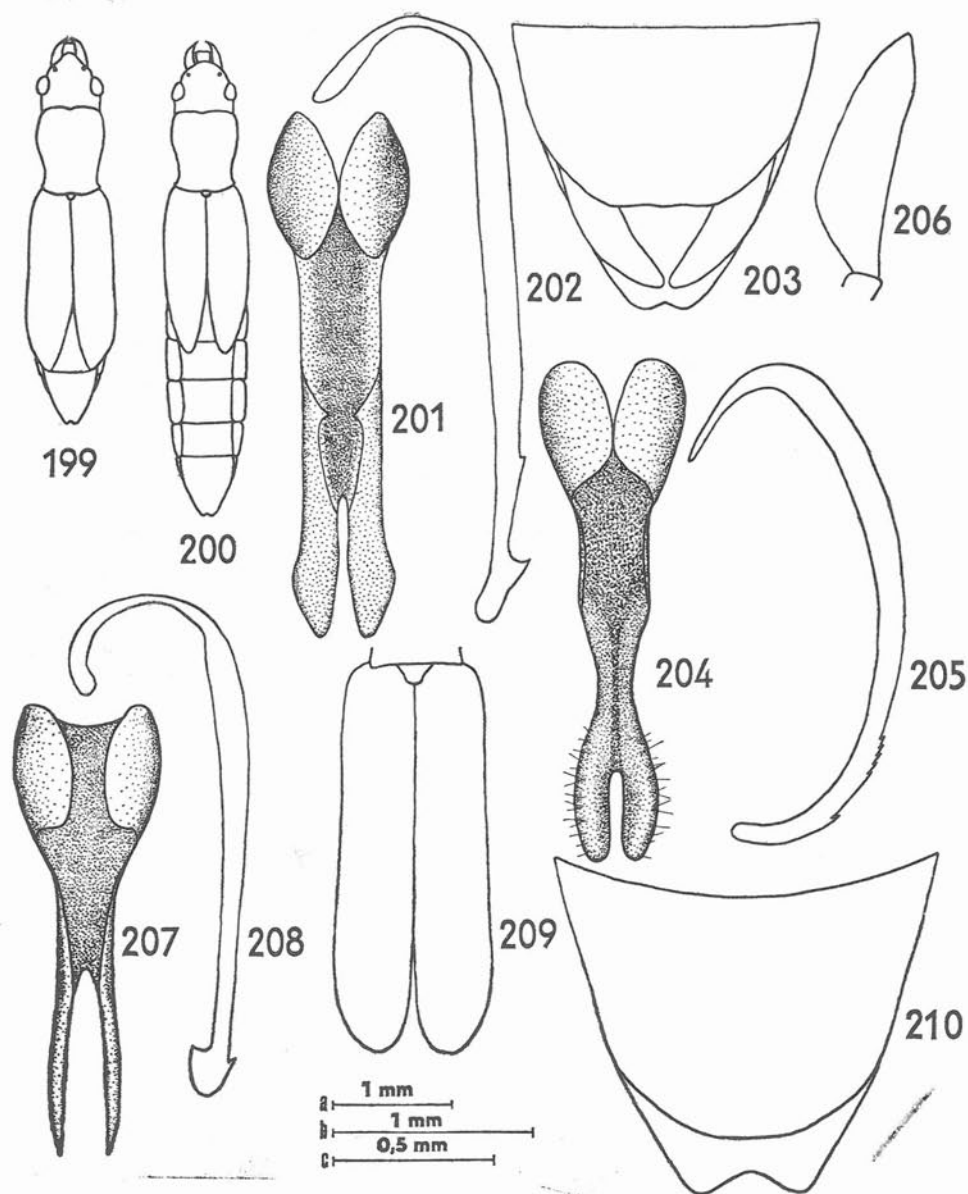
Figs. 160—174: 160—163: *Colobostomoides longepubens* Svihla: 160 — tegmen, 161 — aedeagus, 162 — last abdominal segment of male, 163 — last segment of maxillary palpus; 164 — *Colobostomoides* sp., paramerae; 165—167: *Hypascleroides socotrensis* sp. n.: 165 — tegmen, 166 — aedeagus, 167 — last abdominal segment of male; 168—171: *Paroxacis* sp.: 168 — tegmen, 169 — aedeagus, 170 — last abdominal segment of male, 171 — last segment of male maxillary palpus; 172—174: *Ischnomera sanguinicollis* (F.): 172 — tegmen, 173 — aedeagus, 174 — last abdominal segment of male. Scale a Figs. 160, 161, 163—166, 168, 169, 171—173, b 162, 167, 170, 174.



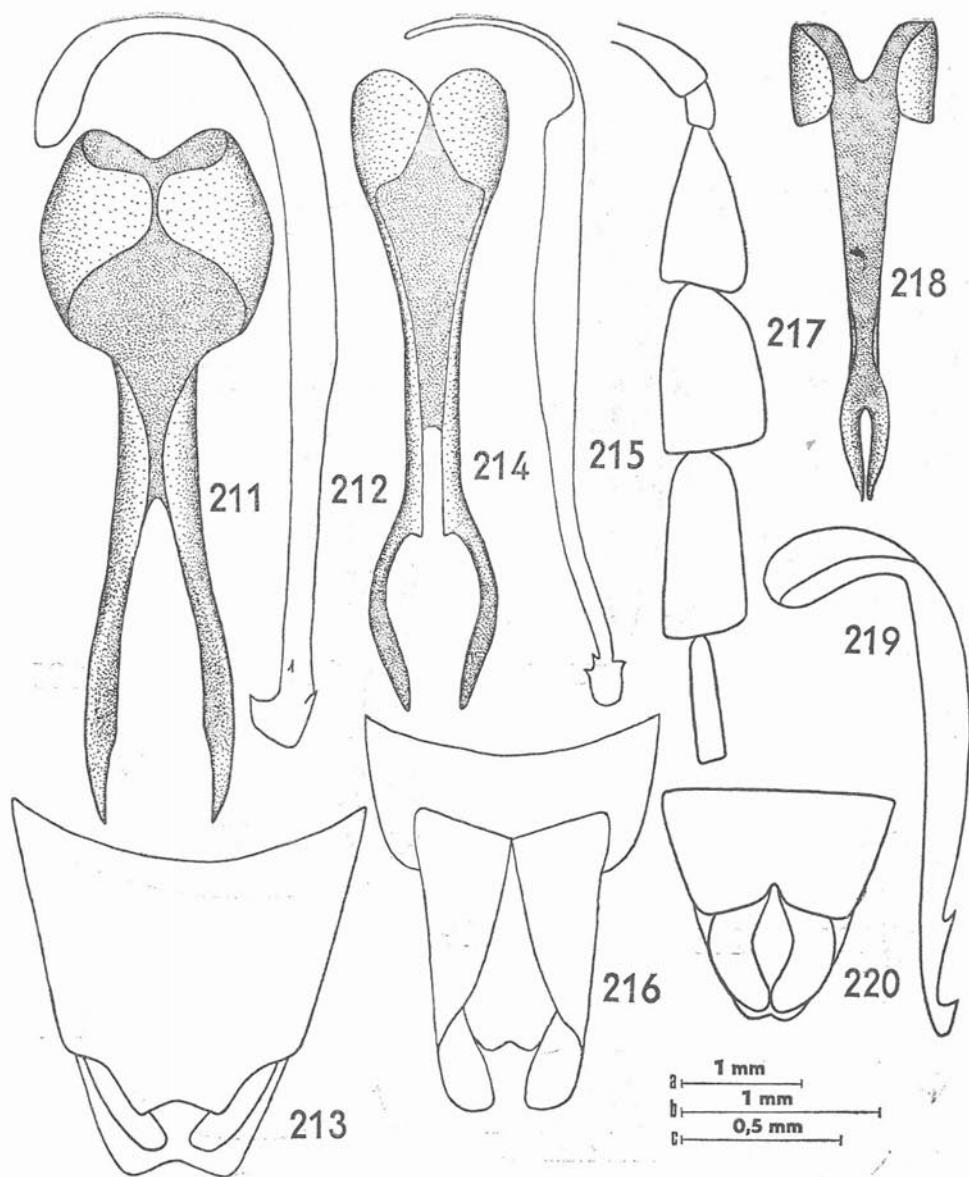
Figs. 175—187: 175—176: *Zabriola* sp.: 175 — tegmen, 176 — aedeagus; 177—181: *Achitona transversevittata* sp. n.: 177 — tegmen, 178 — aedeagus, 179 — last abdominal segment of male, 180 — last segment of male maxillary palpus, 181 — claw; 182—184: *Anisochrodes jelineki* Švihla: 182 — tegmen, 183 — aedeagus, 184 — last abdominal segment of male; 185—187: *Anisochroa zarudnyi* Sem.: 185 — last abdominal segment of male, 186 — tegmen, 187 — aedeagus. Scale a Figs. 179, 182—185, b 177, 178, 180, 186, 187, c 175, 176, 181.



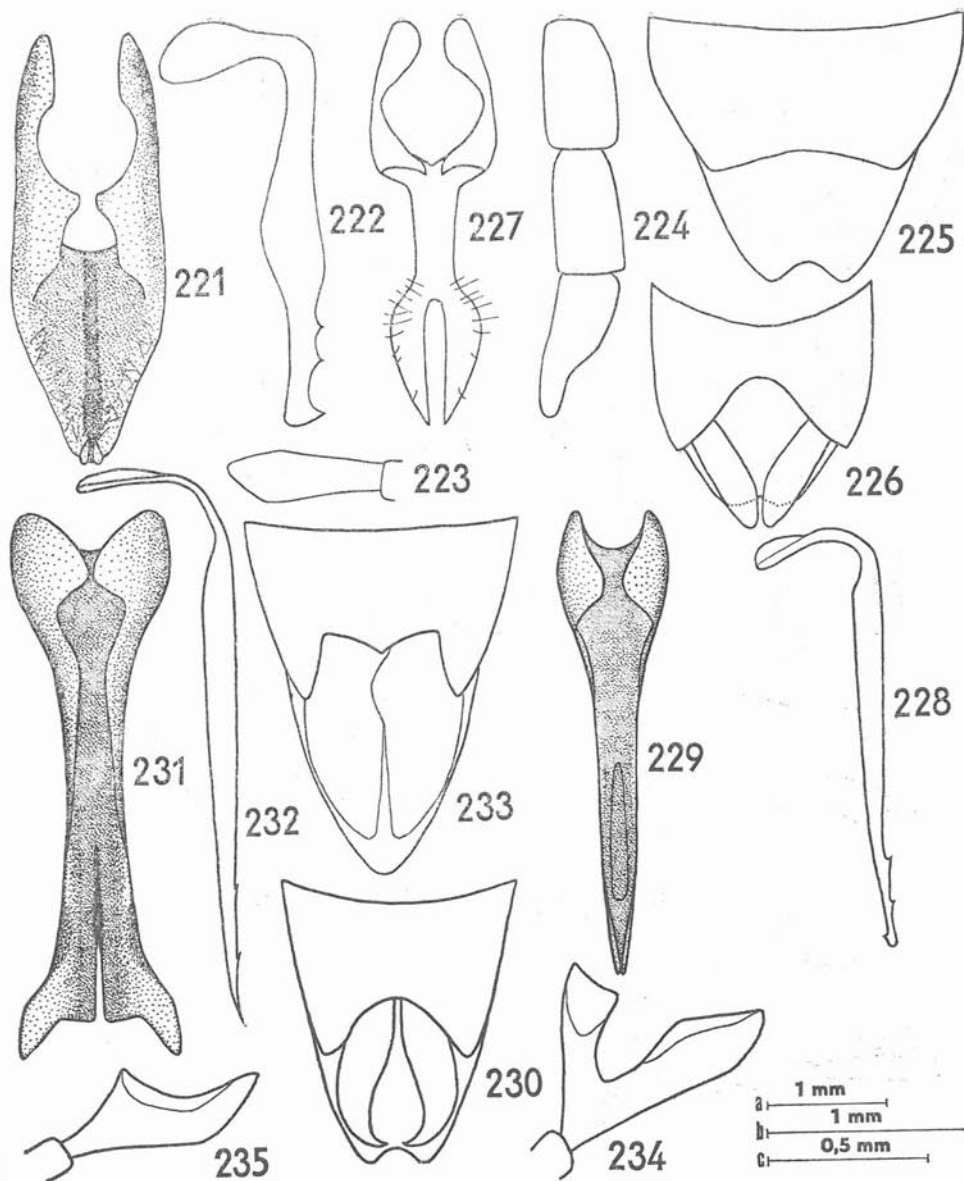
Figs. 188—198: 188—191: *Chitona connexa* (F.): 188 — tegmen, 189 — aedeagus, 190 — last abdominal segment of male, 191 — last abdominal segment of female; 192—195: *Chitona (Dolichopyga) incana* (Schm.): 192 — tegmen, 193 — aedeagus, 194 — last abdominal segment of male, 195 — last abdominal segment of female; 196—198: *Chitona (Afrochitona) clarimacula* (Blair): 196 — tegmen, 197 — aedeagus, 198 — last abdominal segment of male. Scale a Figs. 194, 195, 198, b 190—193, 196, 197, c 188, 189.



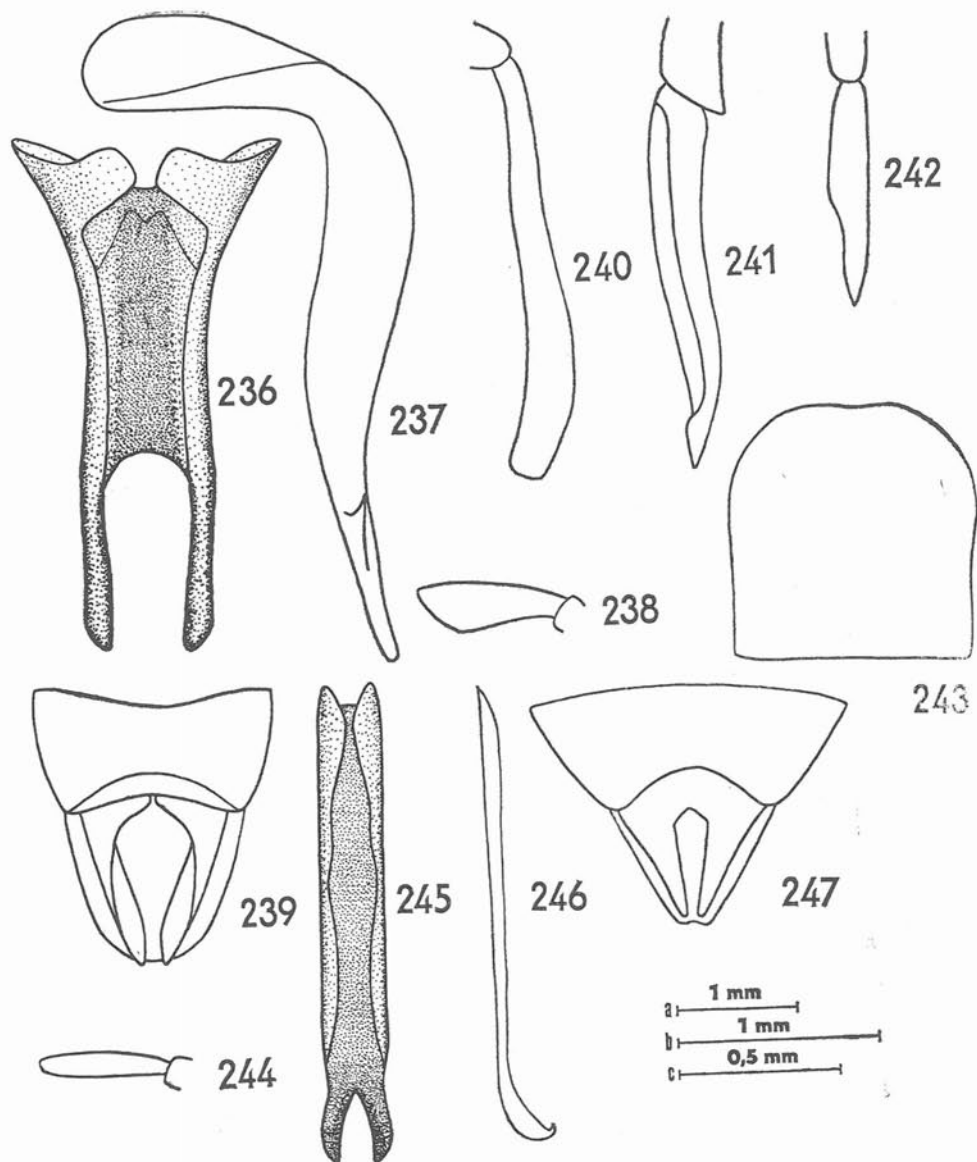
Figs. 199—210: 199—200: *Gilotia perroti* Pardo: 199 — body of male, 200 — body of female [after PARDO, 1969]; 201—203: *Ditylomorphus* sp.: 201 — tegmen, 202 — aedeagus, 203 — last abdominal segment of male; 204—206: *Ditylomorphula bicoloripes* [Pic]: 204 — tegmen, 205 — aedeagus, 206 — last segment of male maxillary palpus; 207—210: *Apterosessinia peringueyi* Blair: 207 — tegmen, 208 — aedeagus, 209 — elytra, 210 — last abdominal segment of male. Scale a Figs. 203, b 201, 202, 204, 205, 207—210, c 206.



Figs. 211—220: 211—213: *Pterosessinia longula* sp. n.: 211 — tegmen, 212 — aedeagus, 213 — last abdominal segment of male; 214—216: *Melananthia costipennis* Blair: 214 — tegmen, 215 — aedeagus, 216 — last abdominal segment of male; 217—220: *Pseudolycus antennatus* Brancs.: 217 — basal segments of antenna, 218 — tegmen, 219 — aedeagus, 220 — last abdominal segment of male. Scale a Figs. 213, 216, 217, 220, b 211, 212, 214, 215, c 218—219.



Figs. 221—235: 221—226: *Asclerosibutia lineaticollis* Pic: 221 — tegmen, 222 — aedeagus, 223 — last segment of male maxillary palpus, 224 — last antennal segments, 225 — last abdominal segment of female, 226 — last abdominal segment of male; 227 — *Microssessinia* sp., tegmen; 228—230: *Eopselaphus sexmaculatus* sp. n.: 228 — aedeagus, 229 — tegmen, 230 — last abdominal segment of male; 231—234: *Schistopselaphus apicatus* Frm.: 231 — tegmen, 232 — aedeagus, 233 — last abdominal segment of male, 234 — last segment of male maxillary palpus; 235 — *Schistopselaphus* sp., last segment of male maxillary palpus. Scale a Figs. 225, 226, 230, 233, b 221, 222, 224, 227—229, 231, 232, 234, 235, c 223.



Figs. 236—247: 236—239: *Oedemera nobilis* (Scop.): 236 — tegmen, 237 — aedeagus, 238 — last segment of male maxillary palpus, 239 — last abdominal segment of male; 240—241: *Dryopomera (Mimoncomera) ocularis* (Pic): 240 — posterior tibia of male, 241 — last antennal segment of male; 242 — *Dryopomera indica* (Frm.), last antennal segment of male; 243—247: *Stenostoma coeruleum* (Pet.): 243 — pronotum, 244 — last segment of male maxillary palpus, 245 — tegmen, 246 — aedeagus, 247 — last abdominal segment of male. Scale a Figs. 239, 240, 243, 247, b 245, 246, c 236—238, 241, 242, 244.

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**REVIZE RODOVÉ SYSTEMATIKY ČELEDI OEDEMERIDAE (COLEOPTERA)
Z OBLASTI STARÉHO SVĚTA**

Předložená práce podává revizi rodové klasifikace čeledi Oedemeridae z oblasti Starého světa a revizi supergenerické klasifikace čeledi. Práce je založená na studiu vnější morfologie imag, využity byly i znaky vývojových stádií. Celkový studovaný materiál obsahoval 14 200 exemplářů 290 druhů čeledi v 72 rodech a podrodech.

Jednotlivé znaky byly posuzovány z hlediska využití pro rodovou i supergenerickou klasifikaci a závěry byly porovnány se závěry předešlých autorů.

Z hlediska supergenerické klasifikace se ukázaly být nejspolehlivější znaky na samčích kopulačních orgánech a nově zjištěné znaky ve sternální oblasti thoraxu, kombinované s ostatními znaky vnější morfologie a morfologie larvální. Některé dříve i v současnosti používané znaky se vyvíjejí konvergentně u různých vývojových linií a byly z hlediska vyšší klasifikace zavrženy (např. tvar posledního článku maxilárního palpu).

Také při klasifikaci rodů byly použity především znaky na samčích kopulačních orgánech, teprve ve druhé řadě znaky vnější, které podléhají většímu tlaku vnějšího prostředí a jeví silné tendence ke konvergentnímu vývoji. Řada znaků, dříve používaných, se ukázala být nespolehlivá, protože jsou buď variabilní nebo v rámci většího množství druhů tvoří plynulé přechody (počet nervů na krovce, tvar a velikost očí).

Celá čeleď je rozdělena na 3 podčeledi: Nacerdinae, Calopodinae a Oedemerinae. Podčeleď Nacerdinae je dělena na triby Ditylini a Nacerdini, podčeleď Oedemerinae na triby Asclerini, Oedemerini a Stenostomini. Největší změny oproti stávajícímu systému nastaly jak v postavení, tak v definici a obsahu tribu Ditylini. Byl vypracován fylogram vývoje vyšších taxonů čeledi, za použití údajů morfologických, zoogeografických a paleogeografických.

Byly vypracovány klíče pro určení tribů čeledi a rodů z oblasti Starého světa.

Při revizi rodové klasifikace bylo pro oblast Starého světa zjištěno 56 rodů a 17 podrodů, 6 rodů bylo klasifikováno jako „incertae sedis“. 1 rod byl přearažen do čeledi Cantharidae. Na základě nové interpretace znaků bylo provedeno 8 přesunů rodů mezi triby a podčeledmi. Bylo popsáno a ilustrováno 10 nových rodů, 3 nové podrody a 7 nových druhů. 12 rodům byl přiznán jen statut podrodu a 25 rodů či podrodů bylo nově synonymizováno.