

The monophyly of the subfamily Perisphaeriinae (Dictyoptera: Blattaria: Blaberidae)

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Abstract. A new definition of the subfamily Perisphaeriinae is given on the basis of five synapomorphies described from male and female genitalia and head morphology. The subfamily comprises eighteen genera: *Bantua*, *Compsagis*, *Cyrtotria*, *Derocalymma*, *Ellipsica*, *Elliptoblatta*, *Gymnonyx*, *Hostilia*, *Laxta*, *Neolaxta*, *Perisphaeria*, *Perisphaerus*, *Pilema*, *Platysilpha*, *Poeciloblatta*, *Pseudoglomeris*, *Trichoblatta*, *Zuluia*. Two genera are newly assigned to the Perisphaeriinae: *Laxta* and *Neolaxta*. Four genera are removed from the Perisphaeriinae: *Aptera*, *Blepharodera*, *Eustegasta*, *Isoniscus*. One new generic synonymy is proposed: *Pronaonota* as a synonym of *Pilema*. The subfamily has a large geographical range including tropical Africa, the Arabian Peninsula, Asia and Australia.

Introduction

A few recent works deal with higher taxonomic categories in Blattaria. Princis (1960) listed all extant genera and species of cockroaches and assigned them to a large number of families while considering only morphological characters. Relationships between families were partly based on similar characters to those previously used by Brunner von Wattenwyl (1865) or Saussure (1864) (e.g. femoral spurs). McKittrick (1964) examined a smaller sample of genera but studied their anatomy thoroughly. She placed these taxa in fewer subfamilies compared with the families of Princis and clustered these subfamilies in a very different way. The classification of McKittrick is most often used as a reference, according also to the studies of Roth (1970a,b, 1972, 1973) on male genitalia and reproductive behaviour. Later, Grandcolas (1996a) presented a morpho-anatomical appraisal of phylogenetic relationships between cockroaches at the family level.

It is now necessary to assign the many taxa considered by Princis (1960) to the subfamilies erected by McKittrick (1964) and to redefine these subfamilies, owing to these new assignments (Roth, 1970a,b, 1972, 1973; Grandcolas & Deleporte, 1992; Grandcolas, 1993a,b, 1994, 1997).

The subfamily Perisphaeriinae (*sensu* McKittrick, 1964) needs to be newly redefined. This group was recognized early in the works of Brunner von Wattenwyl (1865) and Saussure & Zehntner (1895). Princis (1960) divided it in two related families, Derocalymmidae and Perisphaeriidae, and placed

supplementary genera in both taxa. McKittrick (1964) defined the subfamily Perisphaeriinae to include just eight genera, some of which have never been thought to be related to Perisphaeriinae before. Roth (1973) described the male genitalia of Perisphaeriinae. He also removed and added several genera to this subfamily. Grandcolas (1993a) transferred the genus *Gyna* from the subfamily Perisphaeriinae to the subfamily Gyninae.

The monophyly and membership of Perisphaeriinae are still not clearly defined, in spite of these works, as no authors since Princis (1960) have considered all genera previously cited in the literature and none have clearly defined apomorphies. This work is intended to fill these gaps: a preliminary cladistic analysis is carried out on all genera cited as belonging to the subfamily Perisphaeriinae in the context of most genera of the family Blaberidae. This analysis is intended to provide synapomorphies for defining the Perisphaeriinae, which could be later included in a general cladistic treatment of the family Blaberidae.

Material and methods

All genera previously considered by any author as belonging to the Perisphaeriinae or related taxa were examined, usually considering several species (Appendix 1), except *Thoracopygia* Saussure & Zehntner, 1895 and *Thliptoblatta* Saussure & Zehntner, 1895 which were deposited at the Geneva Museum (respectively male holotype of *T.loricata* Saussure & Zehntner, 1895 and types of *T.obtrita* Saussure & Zehntner, 1895) and which could not be obtained. *Neolaxta* has not been directly observed and the characters have been checked in Mackerras (1968) and Roth (1992). First, characters

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formerly given by authors were analysed to assess whether they are homologous and whether they actually define a group. Secondly, new morphological and anatomical characters were investigated to define the Perisphaeriinae subfamily as a whole. All these characters were also observed in many genera of the family Blaberidae (Appendix 2) to ascertain whether they are in a derived state in the genera which are supposed to belong to the Perisphaeriinae. Thirdly, a list of genera is proposed which comprises taxa showing the synapomorphies defined in the first and second steps of the analysis. A redescription of the subfamily, as well as its geographical and ecological ranges are given. Male and female genitalia were studied after dissection and clearing in cold KOH.

Results

Critical review of previous classifications

Princis (1960, 1963, 1964) distinguished two related taxa that he ranked as families: Perisphaeriidae and Derocalymmidae. They included two and three subfamilies, respectively: Apterinae and Derocalymminae in the family Derocalymmidae, and Perisphaeriinae, Gyninae and Zetoborinae in the family Perisphaeriidae. He only considered in his keys one or two morphological characters for these large groups, such as the form of subgenital plate or the presence or absence of a row of spurs on the hind tibiae.

The subfamilies Derocalymminae and Apterinae clustered in the family Derocalymmidae because they were said to lack a third and external row of spurs on tibiae. But not all genera within these groups show this feature; the character is thus polymorphic. Moreover, the genera which show this feature are not all identical. Only *Aptera* has outstandingly wide outer carenae on the hind tibiae with only two rows of spurs. Other genera such as *Hostilia* or *Zuluia* have very flattened hind tibiae and the two rows of spurs are more or less present depending on the width of the outer carenae.

Within the Perisphaeriidae of Princis (1960), the subfamily Perisphaeriinae was defined by its subgenital plate (the so-called 'Perisphaeroid type'). The remaining subfamilies (Gyninae and Zetoborinae) were only grouped by Princis (1960, 1963) because they lack a character: they did not have a subgenital plate of the blaberid type. Grandcolas (1993a) showed on the basis of more characters and the assessment of their derived state that the subfamilies Gyninae and Zetoborinae are closely related to the subfamilies Blaberinae and Diplopterinae.

Characters used by Princis (1960, 1963, 1964) are either polymorphic or weak (e.g. the only lack of one character). Only the Perisphaeroid subgenital plate remains a valuable character. But it only defines a small part of all genera previously considered as related to Perisphaeriidae in the old literature.

Only two characters are presented in McKittrick (1964) to justify her concept of the subfamily Perisphaeriinae. They both concern the proventriculus structure (cf. her Table VII, no. 5 and 12): 'primaries flanking I largest in the armarium', 'teeth narrow and elongate, often multijointed'. The first one is also

found in two genera of the subfamily Epilamprinae and could not be *a posteriori* taken as a synapomorphy of the Perisphaeriinae. Both characters are presented in her table VII for six genera and the subfamily is said to comprise seven genera: the genus *Gyna* seems not to have been examined.

The blaberid proventriculi are difficult to interpret: most of them are unsclerotized and the character 'teeth narrow and elongate, often multijointed' is extremely difficult to assess. The figures of McKittrick (1964) (her Figs 168–180) do not clearly show this character. After Miller & Fisk (1971), it appeared that this character may be found in other taxa than those cited by McKittrick (1964).

Roth (1973) did not mention defining characters for the subfamily but provided a general illustration of the male genitalia. He generally agreed with McKittrick (1964). However, he added to the subfamily Perisphaeriinae *sensu* McKittrick (1964) seven genera considered by Princis either as Derocalymmidae or as Perisphaeriidae, namely: *Bantua*, *Blepharodera*, *Cyrtotria*, *Hostilia*, *Pseudoglomeris*, *Trichoblatta* and *Zuluia*. He removed *Eustegasta* and *Isoniscus* from the subfamily, on the basis of their male genitalia (without mentioning any character).

No characters are therefore found in the previous works which could justify the monophyly of the subfamily Perisphaeriinae, even in the general framework of the work of McKittrick (1964).

Synapomorphies of the subfamily Perisphaeriinae

Five characters were found: in male genitalia (two), in female genitalia (two), and in external morphology (one) which defined a group comprising most genera cited as Perisphaeriinae. They are indicated on the Figs 1–6 with the numbers in brackets.

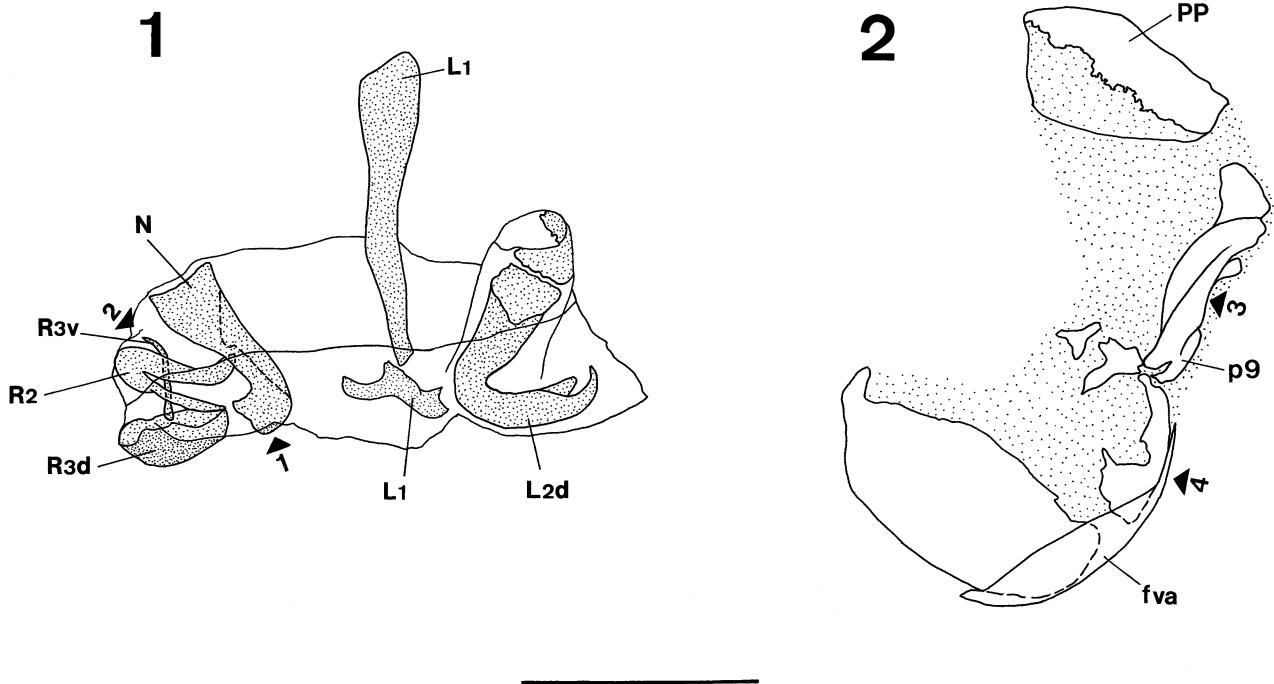
First, in male genitalia, the sclerite R3v is most often absent, or if not absent, extremely reduced in the genus *Bantua* and in some species of the genus *Laxta* (Fig. 1, [1]). In all other blaberid genera, R3v is a medium-sized and conspicuous sclerite; it is entirely invaginated in the ventral membranous fold of the genitalia, just ventral of the sclerite 'cleft' R2.

Secondly, the sclerite N is caudally protruding and grooved to receive the tip of the cleft R2 (Fig. 1, [2]). In most other blaberids, this sclerite is either very reduced or does not surpass the related sclerites, and is never grooved.

Thirdly, the paratergites of the female genitalia form an unusual groove (Fig. 2, [3]). Ventrally, they form a lip which is curved up dorsally.

Fourthly, the arm of the first valvifer (Fig. 2, [4]) has a small sclerotized fold on the right side, often separated from the remainder of the arm.

Fifth, there is a scrobe on the head of both sexes (Figs 3 and 4, [5]). It could be described as a groove extending from the base of the antennal socket toward the gena. It does not extend up to the mandibular articulation. This scrobe is sometimes less distinct, and could be seen as a small ridge lateral to a plane surface in *Compsagis*, *Cyrtotria*, *Elliptoblatta*, *Pilema* and *Poeciloblatta*.



Figs 1–2. 1, Dorsal view of male genitalia of *Bantua robusta*; 2, caudal view of female genitalia of *Poeciloblatta angusta*. Synapomorphic features are indicated with an arrow and a number. R3v, N, R3d, R2, L1 and L2d are male sclerites (terminology of McKittrick, 1964; modified by Grandcolas, 1996). In female genitalia: fva, first valvifer arm; p9, paratergite IX; PP, paraproct. Scale bar corresponds to 1 mm.

These five characters defined a group comprising the following genera: *Bantua*, *Compsagis*, *Cyrtotria*, *Derocalymma*, *Ellipsica*, *Elliptoblatta*, *Gymnonyx*, *Hostilia*, *Laxta*, *Neolaxta*, *Perisphaeria*, *Perisphaerus*, *Pilema*, *Platysilpha*, *Poeciloblatta*, *Pseudoglomeris*, *Trichoblatta*, *Zuluia*.

Laxta and *Neolaxta* are new to the subfamily Perisphaeriinae. Four genera have been removed from the subfamily Perisphaeriinae because they do not show these five characters: *Aptera*, *Blepharodera*, *Eustegasta*, *Isoniscus*. *Aptera* and *Blepharodera* showed one character which defined the subfamily Epilamprinae (R2 cleft less long on its inner side, Grandcolas, 1993b) and they are thus preliminary placed in this group.

Only one character is retained after the critical review of previous studies (form of subgenital plate) as this could possibly define a subgroup among the nineteen genera considered above.

Two species are described in the genus *Pronaonota* Saussure & Zehntner, 1895, (Saussure & Zehntner, 1895; Princis, 1963). Roth (1973) placed *Pronaonota cribrosa* Saussure & Zehntner, 1895, without comments, in the genus *Pilema*. The only character which could distinguish the two genera is the length of the lateral pronotal carena in the female. This character has two states: (i) lateral pronotal carena is long enough to reach the caudal margin; (ii) carena is not long enough to reach the caudal margin. This character can be found in either state in other Perisphaeriinae genera. It does not justify the maintenance of the genus *Pronaonota*. I therefore propose the following synonymy: *Pilema* Saussure, 1873, *Pronaonota* Saussure & Zehntner, 1895, **syn.n.**

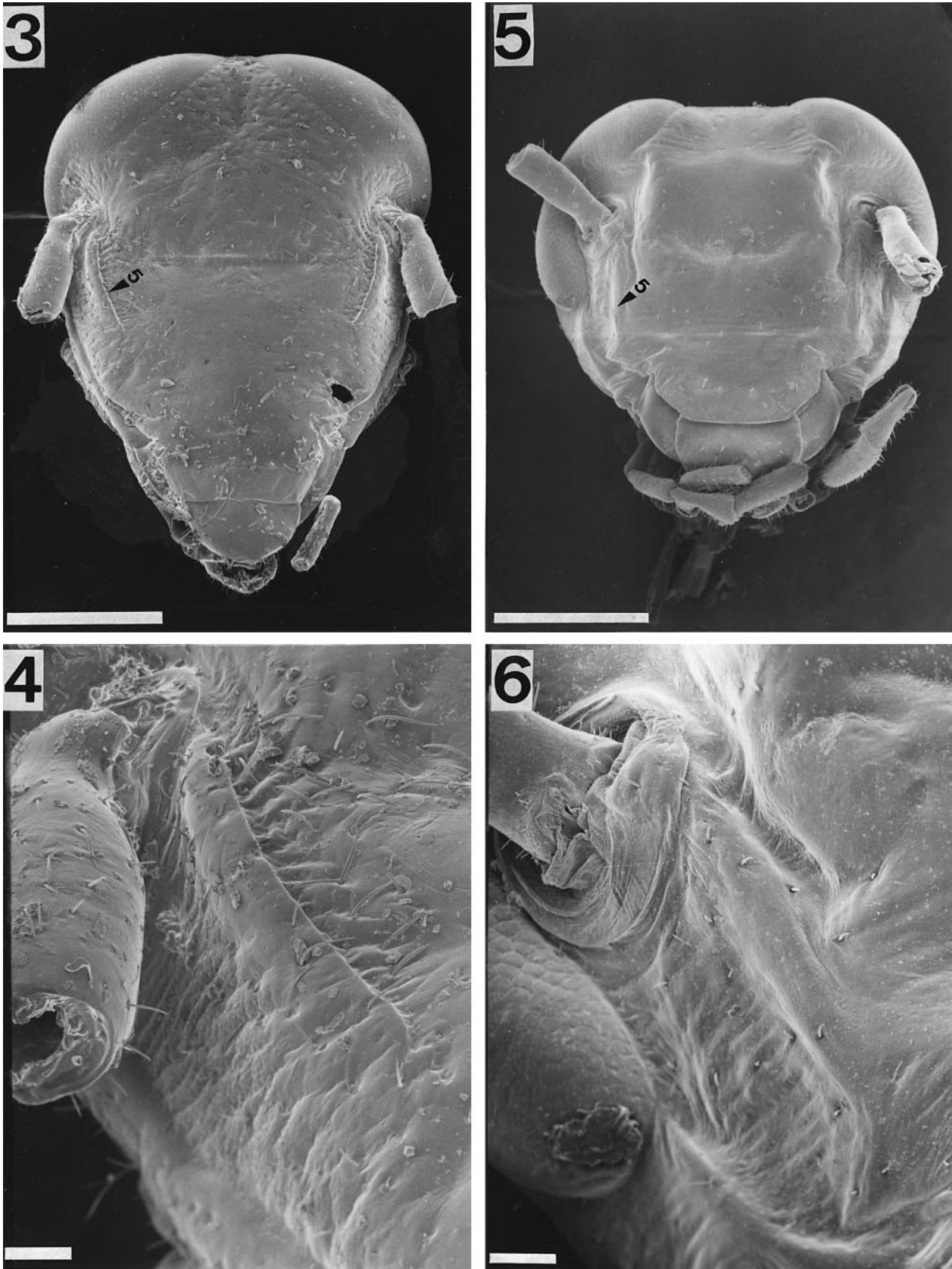
Discussion

The subfamily Perisphaeriinae is newly defined with five synapomorphic characters. This subfamily comprises nineteen genera, most of which were considered to belong to a Perisphaeroid group by one of the previous authors (Brunner von Wattenwyl, 1865; Saussure, 1891; Princis, 1960; McKittrick, 1964; Roth, 1973).

Several changes are, however, not congruent with some important former proposals. The genus *Aptera* has autapomorphic features which led Princis to create the subfamily Apterinae. This subfamily was not considered either by McKittrick (1964) or by Roth (1973), because autapomorphies were obviously not useful to describe the relationships of this genus to other Blaberid taxa. *Aptera* does not show the characters of the subfamily Perisphaeriinae and seems to belong to the subfamily Epilamprinae. The Australian genera *Laxta* and *Neolaxta* were preliminary placed in the subfamily Laxtinae by Princis (1960, 1963) and then moved to the subfamily Epilamprinae by McKittrick (1964) (for *Laxta* only) and Roth (1987, 1992) with no arguments. Both genera show the characters of the subfamily Perisphaeriinae clearly.

The placement of the subfamily itself in the family Blaberidae is not discussed here. McKittrick (1964) placed it in her epilamproid complex. But a re-examination of this placement is now necessary.

A description and some considerations concerning the geographical and ecological ranges of the subfamily Perisphaeriinae are provided below.



Figs 3–6. 3, Head of the male of *Derocalymma versicolor*; 4, Scrobe of *D.versicolor*; 5, Head of the male of *Laxta granicollis*; 6, Scrobe of *L.granicollis*. Scale bars corresponds to 1 mm for heads and to 100 μ m for scrobes. Scrobes are indicated on heads (Figs 3 and 5) by black arrows.

Subfamily Perisphaeriinae

Derocalymmidae Princis, 1960, **syn.n.**

Apterinae Princis, 1960, **syn.n.**

Derocalymminae Princis, 1960, **syn.n.**

Laxtinae Princis, 1960, **syn.n.**

Type-Genus: *Perisphaeria* Burmeister, 1838.

Size medium to small in the family Blaberidae; body very flattened or completely rounded or with all intermediate shapes.

Head (Figs 3, 5) of different forms; eyes protruding or reduced to the fore margin of the head; frons most often smooth, sometimes depressed; ocelli and maculae obvious; scrobe extending from base of antennal sockets down to middle of genae, shaped as a sharp ridge (low or high) beside a plane; clypeus undivided, except sometimes for its colour (darker toward the frons); maxillary palpi sometimes with an enlarged last joint.

Pronotum of different forms, very flat or rounded; fore margin with a large and prominent edge, showing glandular (?) openings (Princis, 1963). Male wings often longer or even much longer than body; female wings often lacking. Legs of different forms; coxae with coxal suture not sinuous and coxal apophysis stout; post tibiae most often with 6 spurs on caudal and cephalic rows, and often less than 6 on outer row.

Abdomen of different forms, very flat, rounded or cylindrical; no obvious glandular structures on tergites, sternites or pleural membranes; supra-anal plate convex or quadrangular; male subgenital plate convex, sometimes very asymmetrical, with right stylus located forward (perisphaeroid type after Princis, 1960); cerci moderately long.

Cuticle with diverse protuberances or sense organs. Several are particularly remarkable, such as tubercles bearing sensilla in *Gymnonyx* (similar to those of *Gromphadorhina* which belong to the subfamily Oxyhaloinae, personal observation) or *Laxta* (similar to those found in the subfamily Zetoborinae, Grandcolas, 1993a), lying and refringent sensilla in *Derocalymma*, *Platysilpha* (and to a lesser degree in *Hostilia* and *Zuluia* on clypeus), large cuticular protuberances in *Ellipsica*.

Male genitalia (Fig. 1) of the blaberid type (McKittrick, 1964; Grandcolas 1993a,b); N and sometimes R3d caudally protruding, shaped as grooves which joined with N, rather small; R3v lacking or extremely small (*Bantua*); L1 often large and widened apically; L2d hook often strong and short.

Female genitalia (Fig. 2) of the blaberid type (McKittrick, 1964); paratergite IX very thick and short with shape of a groove; posterior lobe of valvifer II often triangular; arm of first valvifer most often divided on the right, with a sclerotized fold.

Distribution

Most Perisphaeriidae are known from south-eastern and southern Africa and from Madagascar, although the subfamily

is distributed also in the Far East and in Australia. *Trichoblatta* and *Derocalymma* also comprise species in central Africa (Princis, 1964). The genera *Perisphaeria*, *Poeciloblatta*, *Pronaonota* and *Zuluia* seem to be endemic to South Africa (Princis, 1963, 1964). The genera *Ellipsica*, *Elliptoblatta*, and *Gymnonyx* are exclusively Malagasy (Princis, 1964). *Trichoblatta* is the only genus distributed both in Asia and in Africa (Princis, 1964). A *Derocalymma* species was found in Saudi Arabia (unpublished observation). *Perisphaerus* and *Pseudoglomeris* are distributed, respectively, in Asia and India (Princis, 1964). One *Perisphaerus* species occurred also in Australia (Cape York, after Roth, 1981). *Laxta* and *Neolaxta* are known only from Australia (MacKerras, 1968; Roth, 1987, 1992).

Ecology and behaviour

The species of Perisphaeriinae inhabit very different biomes. They were found in tropical rain forest as well as in open woodlands and bushes. Their life habits, although poorly known (Roth & Willis, 1960), seem to be highly diversified. Some species live in dead wood (some *Compsagis* or *Cyrtotria* species) where they were burrow galleries (Chopard, 1952). Many species of the genus *Perisphaeria* inhabit the ground litter (Saito, 1976). In Gabon, females of *Trichoblatta oniscina* were seen to perch nightly on the bark of large trees or on small plants. I observed *Derocalymma scruposa* forming scarce and dispersed colonies on large trees in the Gabonese rain forest: individuals grasped on the bark of trunk and branches during the day. *Laxta* and *Neolaxta* species live under (or on) loose bark of dead trees (MacKerras, 1968; Roth, 1987, 1992), in a similar way to the Neotropical Zetoborinae (Grandcolas, 1993a,c). *Platysilpha* and *Gymnonyx* species are morphologically very similar to these latter species and it is possible that they have the same life habits.

Geographical and ecological ranges may be compared: many different types of life habits are represented in Africa where the subfamily is mostly diversified. In Asia, most species belong to genera which inhabit ground litter or perch on trunks, while in Australia all perisphaeriine species live under loose bark.

The social behaviour of these cockroaches is poorly known; larvae and adults of some species are sometimes found clumped. Some *Perisphaerus* species have striking mother-offspring relationships: young larvae have modified mouthparts with which they grasp the female when it shows its escape behaviour (rolling up in a ball position, Roth, 1981). They perhaps receive nourishment from the mother (Reuben, 1988).

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Appendix 1. Material examined (genera are placed according to the results found in this paper).

Subfamily Perisphaeriinae	<i>oniscina</i> (Gerstaecker, 1883)
<i>Bantua</i> Shelford, 1908	<i>Zuluia</i> Rehn, 1922
<i>robusta</i> Shelford, 1908	<i>lithostrata</i> Rehn, 1931
<i>scabra</i> (Walker, 1868)	
<i>Compsagis</i> Chopard, 1952	Subfamily Epilamprinae
<i>lesnei</i> Chopard, 1952	<i>Aptera</i> Saussure, 1864
<i>Cyrtotria</i> Stål, 1871	<i>fusca</i> (Thunberg, 1784)
<i>angustissima</i> Chopard, 1958	<i>munda</i> (Walker, 1868)
<i>capucina</i> (Gerstaecker, 1869)	<i>Blepharodera</i> Burmeister, 1838
<i>gracilis</i> (Burmeister, 1838)	<i>discoidalis</i> (Brunner von Wattenwyl, 1865)
<i>pusilla</i> Rehn, 1937	<i>Epilampra</i> Burmeister, 1838
<i>orientalis</i> Chopard, 1954	<i>Galiblatia</i> Hebard, 1926
<i>Derocalymma</i> Burmeister, 1838	<i>Miroblatta</i> Shelford, 1906
<i>dasyopus</i> (Rehn, 1933)	<i>Morphna</i> Shelford, 1910
<i>granulata</i> Saussure & Zehntner, 1895	<i>Molytria</i> Stål, 1874
<i>kalahari</i> Rehn, 1933	<i>Notolampra</i> Saussure, 1862
<i>lampyrina</i> Gerstaecker, 1869	<i>Opisthopteria</i> Brunner von Wattenwyl, 1865
<i>porcellio</i> Gerstaecker, 1869	<i>Poroblatta</i> Hebard, 1919
<i>scruposa</i> Rehn, 1933	<i>Rhabdoblatta</i> Kirby, 1903
<i>silphoides</i> Bolivar, 1889	<i>Stictolampra</i> Hanitsch, 1930
<i>versicolor</i> Burmeister, 1838	<i>Thorax</i> Saussure, 1862
<i>Ellipsica</i> Saussure & Zehntner, 1895	
<i>insculpta</i> Saussure & Zehntner, 1895	Subfamily Oxhyhaloinae
<i>rugosa</i> Shelford, 1907	<i>Ateloblatta</i> Saussure, 1891
<i>Elliptoblatta</i> Saussure, 1891	<i>Gromphadorhina</i> Brunner von Wattenwyl, 1865
<i>caelebs</i> Saussure & Zehntner, 1895	<i>Henschoutedenia</i> Princis, 1954
<i>madecassa</i> (Saussure, 1869)	<i>Jagrehnia</i> Princis, 1954
<i>marginalis</i> Saussure & Zehntner, 1895	<i>Oxyhaloa</i> Brunner von Wattenwyl, 1885
<i>parallela</i> Chopard, 1952	
<i>punctulata</i> Saussure & Zehntner, 1895	Subfamily Panaesthiinae
<i>semilimbata</i> Saussure & Zehntner, 1895	<i>Panesthia</i> Serville, 1831
<i>Gymnonyx</i> Saussure & Zehntner, 1895	<i>Salganea</i> Stål, 1877
<i>grandidieri</i> Saussure & Zehntner, 1895	
<i>scabra</i> Saussure & Zehntner, 1895	Subfamily Pycnoscelinae
<i>Hostilia</i> Stål, 1871	<i>Pycnoscelus</i> Scudder, 1862
<i>proterva</i> (Stål, 1856)	<i>Stilpnoblatta</i> Saussure & Zehntner, 1895
sp.	
<i>Laxta</i> Walker, 1868	Subfamily Blaberinae
<i>granicolis</i> (Saussure, 1862)	<i>Archimandrita</i> Saussure, 1893
<i>jeanneae</i> Roth, 1992	<i>Bionoblatta</i> Rehn, 1940
<i>Perisphaeria</i> Burmeister, 1838	<i>Blaberus</i> Serville, 1831
<i>micans</i> Burmeister, 1838	<i>Blaptica</i> Stål, 1874
<i>saxicola</i> (Eschscholtz, 1822)	<i>Brachycola</i> Serville, 1839
<i>stylifera</i> Burmeister, 1838	<i>Byrsotria</i> Stål, 1874
<i>virescens</i> (Brunner von Wattenwyl, 1865)	<i>Eublaberus</i> Hebard, 1920
<i>Perisphaerus</i> Serville, 1831	<i>Hemiblabea</i> Saussure, 1893
<i>armadillo</i> Serville, 1831	<i>Hiereoblatta</i> Rehn, 1822
<i>flavicornis</i> (Burmeister, 1838)	<i>Hormetica</i> Burmeister, 1838
<i>glomeriformis</i> (Lucas, 1862)	<i>Hyporhichnoda</i> Hebard, 1920
<i>Pilema</i> Saussure, 1873 (= <i>Pronaonota</i> Saussure & Zehntner, 1895)	<i>Monachoda</i> Burmeister, 1838
<i>cribrosa</i> (Saussure & Zehntner, 1895)	<i>Monastria</i> Saussure, 1864
<i>thoracica</i> (Walker, 1868)	<i>Neorhichnoda</i> Grandcolas, 1992
<i>reflexa</i> (Walker, 1868)	<i>Paradicta</i> Grandcolas, 1992
sp.	<i>Parahormetica</i> Brunner von Wattenwyl, 1865
<i>Platysilpha</i> Shelford, 1908	<i>Petasodes</i> Saussure, 1864
sp.	<i>Phoetalia</i> Stål, 1874
<i>Poeciloblatta</i> Saussure & Zehntner, 1895	
<i>angusta</i> Saussure & Zehntner, 1895	Subfamily Zetoborinae
<i>Pseudoglomeris</i> Brunner von Wattenwyl, 1865	<i>Capucina</i> Saussure, 1893,
<i>glomeris</i> (Saussure, 1863)	<i>Lanxoblatta</i> Hebard, 1931
<i>Trichoblatta</i> Saussure & Zehntner, 1895	<i>Parasphaeria</i> Brunner von Wattenwyl, 1865
<i>magnifica</i> (Shelford, 1907)	<i>Phortioeca</i> Saussure, 1862

Schizopilia Saussure, 1864
Schultesia Roth, 1973
Thanatophyllum Grandcolas, 1991
Tribonium Saussure, 1862,
Zetobora Burmeister, 1838
Zetoborella Hebard, 1921

Subfamily Gyninae

Alloblatta Grandcolas, 1993
Gyna Brunner von Wattenwyl, 1865
Paraprincisaria Grandcolas, 1993
Princisaria Kumar, 1975
Pseudocalolampra Roth & Princis, 1971

Subfamily Diplopterinae

Calolampra Saussure, 1893
Diploptera Saussure, 1864

Incertae sedis (out of Perisphaeriinae)

Apotrogia Kirby, 1900
Diplopterina Princis, 1963
Eustegasta Gerstaecker, 1883
Gynopeltis Gerstaecker, 1869
Hedaia Saussure & Zehntner, 1895
Isoniscus Borg, 1902
Phenacisma Karsch, 1896
