

REVISION OF THE ASIAN GENERA OF THE TRIBE PLATYNOTINI (COLEOPTERA: TENEBRIONIDAE)

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Abstract. — Asian Platynotini are revised at the generic level. Twelve genera are distinguished, *Adamus* **gen. nov.** (type species: *Platynotus micrositooides* Kaszab, 1975), *Platycolpotus* **gen. nov.** (type species: *Platydendarus dendaroides* Kaszab, 1975) and *Pseudonotocorax* **gen. nov.** (type species: *Pseudonotocorax mroczkowskii* sp. nov.) being new to the science. Five species are described as new to the science: *Colpotinooides bremeri*, *Notocorax phanrangensis*, *N. brancuccii*, *Pseudoblaps merkli*, *Pseudonotocorax mroczkowskii*. *Eucolus* Mulsant et Rey 1853 is synonymized with *Indeucolus* Kaszab, 1975. Keys to genera and species are provided. New characters (especially some provided by the female genitalia) are included in the taxonomic studies, discussed and illustrated; a unique structure present in the bursa copulatrix - a "lock" mechanism - is described.



Key words. — entomology, taxonomy, revision, female genitalia, Coleoptera, Tenebrionidae, Platynotini, Asia.

INTRODUCTION

In 1775 Fabricius described *Blaps excavata* – the first Oriental species of the present tribe Platynotini to be described. More than 25 years later, in 1801, the same author distinguished the genus *Platynotus*, and *Blaps excavata* Fabricius, 1775 was designated as its type species (Gebien 1938: 293 [412]). *Platynotus* Fabricius became then the type genus of the tribe Platynotini which was described in 1953 by Koch.

Prior to the first revision of these beetles by Mulsant and Rey (1853a, 1853b), several authors (Fabricius 1781, Herbst 1797, Wiedemann 1819, Serville 1825, Guérin 1834, Dejean 1834, 1836) had described single new species and genera.

Mulsant and Rey listed three genera under "Platynotaires" (*Platynotus*, *Notocorax* Mulsant et Rey and *Eucolus* Mulsant et Rey) and included 16 species. These authors also provided synonymy, complete diagnoses, descriptions and keys to both species and genera.

In the following years, besides catalogue lists (Geminger and Harold 1870, Gebien 1910, 1938), mainly descriptions of new taxa appeared: Fairmaire (1896, 1898), Carter (1920, 1922), Blair (1922), Kaszab (1941, 1960, 1961, 1970, 1975b), Ardoin (1968) and Medvedev (1968).

In 1955 Koch first outlined a division of the Platynotini into subtribes and generic groups. In his paper of 1956 he discussed the division of the tribe in great detail. All the Oriental species were included in a separate group of platynoid Platynotina (Koch mentioned only 2 genera known to him: *Platynotus* and *Pseudoblaps* Guérin).

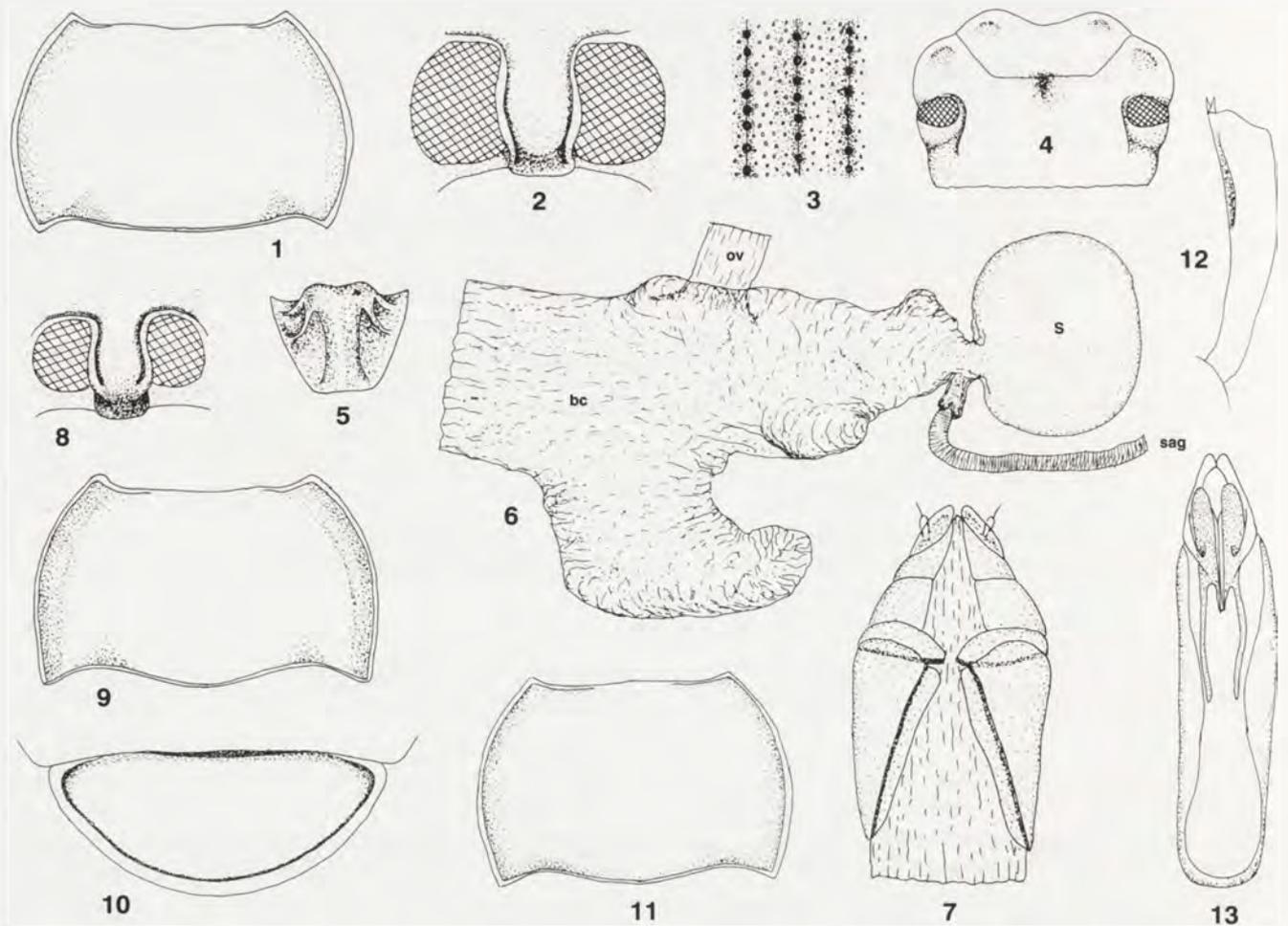
The greatest step towards ordering the knowledge of Asian Platynotini was Kaszab's revision of 1975. The author listed 11 genera (65 species), of which 5 genera and 34 species were described as new to science. Kaszab followed the systematic arrangement of Platynotini proposed by Koch (1956), and included 10 of the 11 genera in the group of platynoid Platynotina. One genus, *Penthicooides* Fairmaire, was placed in opatrinoid Platynotina which previously included only the genus *Opatrinus* Dejean from Africa and the New World.

After Kaszab's (1975a) revision the only taxonomic papers on Oriental Platynotini, were descriptions of new species (Iwan 1989, 1990b) and a revision of the genus *Platyburak* Iwan (Iwan 1990a).

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- MIZPAN – Muzeum i Instytut Zoologii PAN, Warszawa, Poland
- RLAC – Rolf L. Aalbu Collection, Sacramento, USA



Figures 1–13. *Adamus* spp. 1–7. *A. barkudensis*, 8–10. *A. opatroides*, 11–13. *A. sikkimensis*. (1, 9, 11) pronotum, (2, 8) prosternum, (3) elytral puncturation, (4) head, (5) mentum; (6) oviduct (ov), bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag), (7) ovipositor, (10) last abdominal ventrite, (12) male protibia, (13) aedeagus.

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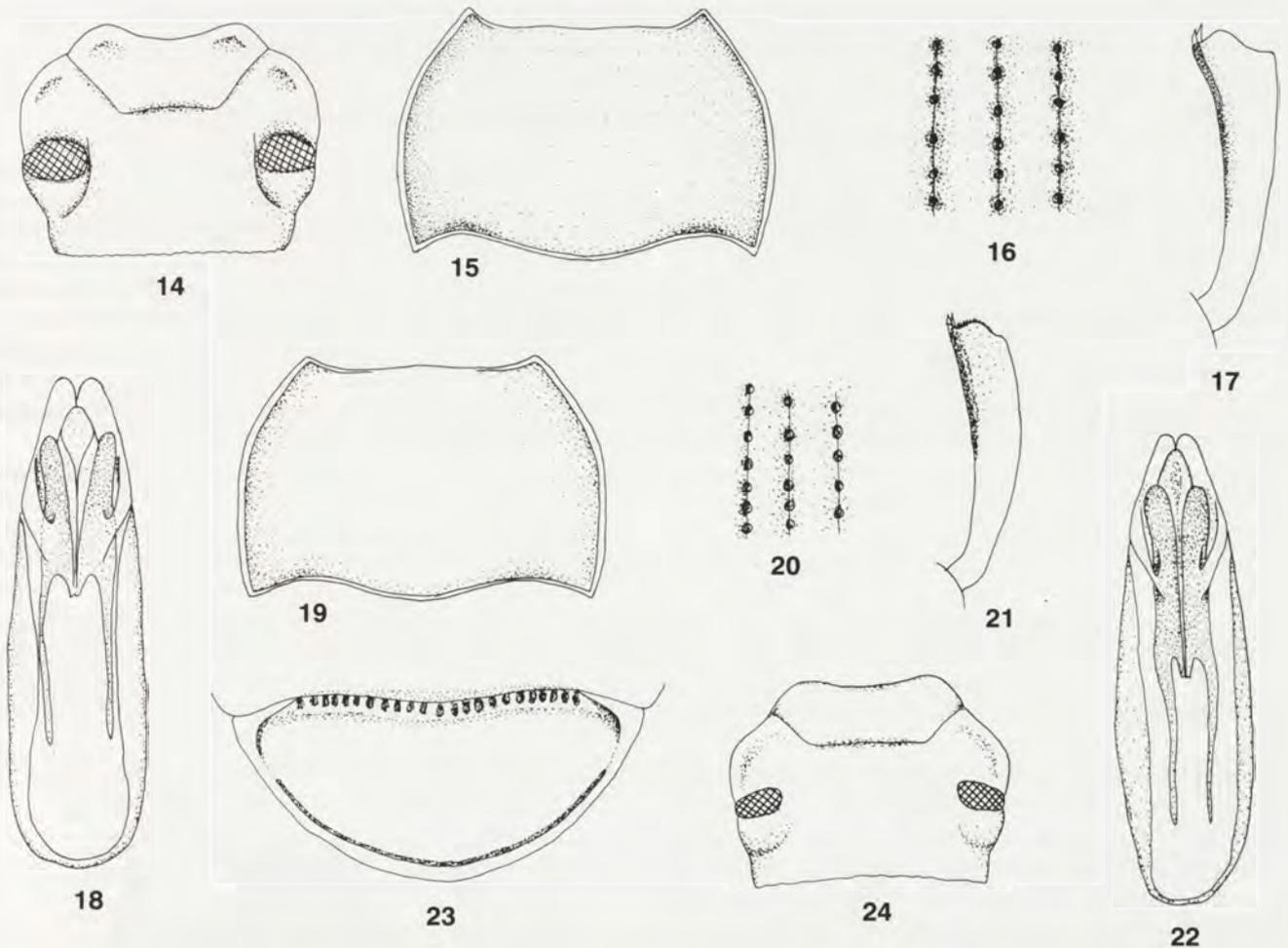
ABBREVIATIONS

pl/pb – pronotum length/breadth ratio;
 el/eb – elytra length/breadth ratio;
 pl/el – length ratio pronotum/elytra;
 pb/eb – breadth ratio pronotum/elytra;

SYSTEMATICS

The generic group of platynoid Platynotina, where Kaszab (1975a) placed almost all the Asian genera (except *Penthicoides*), was proposed by Koch (1956) on the basis of the structure of elytral epipleuron (very narrow, widened only at 1/3 length from humeral angle, and absence of a “tongue” at the apex). The differences

between the terminology of the structure of elytron used by me and by Koch (epipleuron – Koch’s pseudopleuron, “tongue” – Koch’s epipleuron) were explained in my earlier paper, describing the genus *Lechius* Iwan (Iwan 1995c). In the introduction to his revision, Kaszab (1975a) included diagrammatic figures of his interpretation of this character. The structure of epipleuron is associated with gradually increasing convexity of the elytron in such a way that interval IX, and sometimes also a part of intervals VIII and VII become visible from the underside. The development of this character is most advanced in the genus *Platynotus*. *Penthicoides* was excluded from the platynotoid Platynotina because of its flat body and the elytral intervals being invisible from the underside. I think that the modification of the elytral structure discussed above can not be a synapomorphy shared by all the Asian genera of Platynotini (even if *Penthicoides* is excluded). The character is also present in an African subtribe Gonopina (this was also mentioned by Koch) and in several genera of the trigonopoid Platynotina group (southern Africa). Besides,



Figures 14–24. *Adamus* spp. 14–18. *A. bellaryensis*, 19–24. *A. micrositoides*. (14, 24) head, (15, 19) pronotum, (16, 20) elytral puncturation, (17, 21) male protibia, (18, 22) aedeagus, (23) last abdominal ventrite.

particular Asian genera vary essentially in the structure of the humerus and the apical part of the elytron (cf. structure of elytral epipleura).

The generic group of opatrinoid Platynotina, initially including the genus *Opatrinus* (according to Koch 1956), and later also the genus *Penthicoides* (according to Kaszab 1975a), is not acceptable from the viewpoint of cladistic systematics. Koch distinguished the group on the basis of an obvious plesiomorphy (possession of well developed wings and elongated metasternum). Following Iwan's (1995a, 1995b) revisions, the genus *Opatrinus* (sensu Koch) was split into two genera: *Zidalus* Mulsant et Rey from Africa and *Opatrinus*, widespread in the New World. Both these genera turned out to include both winged and completely wingless species, as well as some with wings partly reduced. The wing venation of the Oriental monotypic *Penthicoides* is identical with that of winged members of *Zidalus* and *Opatrinus*, which only confirms the monophyly of the tribe. The interrupted border of pronotal base and the puncturation of the elytral striae place

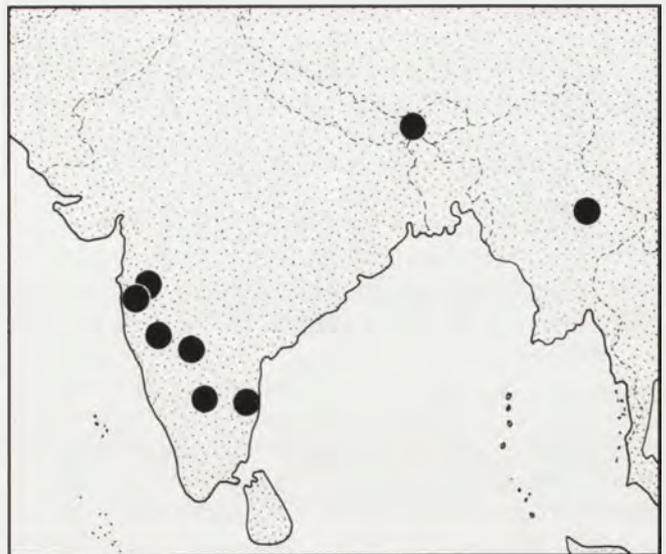


Figure 25. Distribution of *Adamus*.

Penthicoides close to *Opatrinus*, while the presence of a "tongue" in the apical part of elytra and the structure of mentum suggest that it is related to *Zidalus*.

At the present stage of investigation it is difficult to find a character which could be unequivocally interpreted as a synapomorphy of Asian genera of Platynotini, perhaps suggesting polyphyly of the group. Definitive cladistic analysis will be performed in a revision of all the genera of the tribe Platynotini (Iwan in prep.).

The objective of this paper is to interpret the existing genera in accordance with the principles of cladistic systematics i.e. based on apomorphic characters. This is possible due to inclusion of new characters in the studies (structure of the female genitalia, structure of the elytral apex – presence of a "tongue") and a new interpretation of formerly used characters (border of the last abdominal ventrite, elytra "tucked", shape of the humeral angles, border of the pronotal margin).

In most cases (genera *Platynotus*, *Rugoplatynotus* Kaszab, *Pseudoblaps*, *Menearchus* Carter, *Platyburak*, *Platynotoides* Kaszab, *Colpotinoides* Kaszab and *Penthicoides*) it has turned out that interpretations of earlier workers are in accord with my own studies. These genera were based on synapomorphies or at least synapomorphies supporting them could be found.

Indeucolus Kaszab, a monotypic genus, was erected to accommodate *I. costatus*. Characteristic features on which the genus was based (Kaszab 1975a) were: transformations of the pronotum, elytral intervals and elytral epipleura (evident apomorphies). The very closely related *Eucolus* was interpreted by Kaszab on the basis of plesiomorphies, and species included therein formed a paraphyletic group. I think that because of the presence of a unique character (a hypostomal process near the maxillary articulation) in both of these genera, they should be amalgamated and therefore I have placed *Indeucolus* as a junior synonym in this study. My hypothesis – and the synonymy – may be confirmed in the future if the mechanism in *costatus* for closing the outlets of the spermatheca and its accessory gland to the bursa copulatrix (cf. structure of female genitalia) proves to be the same as that found in other members of the genus *Eucolus*.

In his 1975 revision Kaszab interpreted the genus *Platydendarus* Kaszab, 1975 (= *Notocorax* Dejean, 1834) on the basis of the bordered last abdominal ventrite. In the case of the Asian Platynotini the character is plesiomorphic, and its further transformation is its disappearance (cf. bordering of last abdominal ventrite). Characters of female genitalia (structure of the bursa copulatrix and spermatheca) were very helpful in distinguishing groups of species and genera. Regretfully, examination of females of some species (*Platycolpotus dendaroides*, *Adamus mediocris*, *A. sikkimensis* and *A. bellaryensis*) was not possible and therefore I had to include them in their respective groups on the basis of combination of other characters. I hope that the results of this work will facili-

tate future supplementary studies and verify my interpretation of the Asian genera of Platynotini.

ANALYSIS OF SELECTED CHARACTERS

Structure of female genitalia. Details of the structure of the female reproductive system and its modifications in the family Tenebrionidae were described by Tschinkel and Doyen (1980). The authors interpreted the degree of advancement of specialization of its components (ovipositor, bursa copulatrix and spermatheca) and their phylogeny.

Scattered information on the structure of female genitalia in the tribe Platynotini can be found in the papers by Inamdar and Joshi (1984), Marcuzzi (1987, 1989) and Iwan (1990b, 1995a).

According to the criteria adopted by Tschinkel and Doyen (1980), the ovipositor of Asian Platynotini represents an advanced developmental type (Figs 143, 207): paraprocts partly enclosing coxites; orientation of paraproct baculus – oblique; first coxite lobe shorter than any other lobe and fourth lobe disc-like; and dorso-lateral position of gonostyles. In the genera *Menearchus* and *Platynotus*, the fourth coxite lobe has become elongated, and as a result considerably overlaps the third lobe (dis-

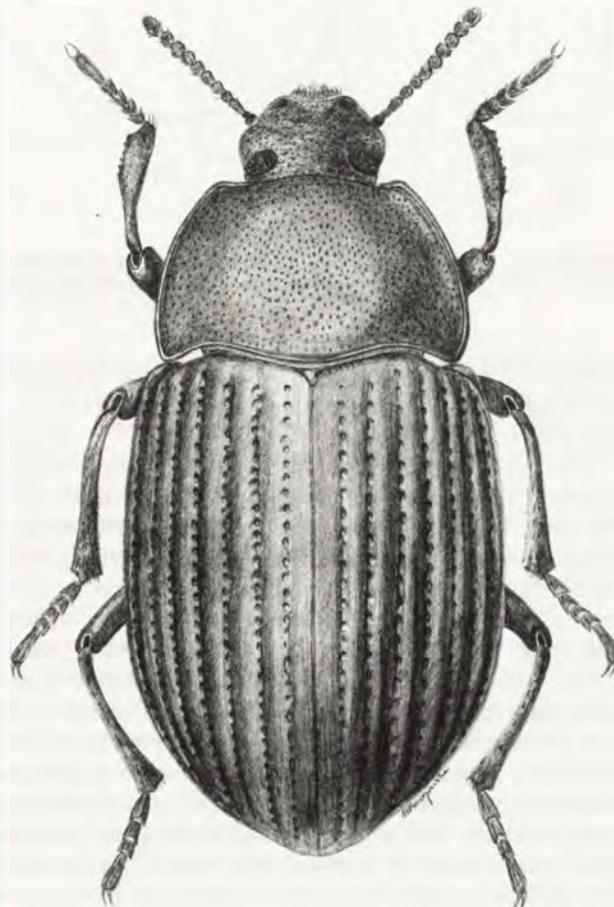
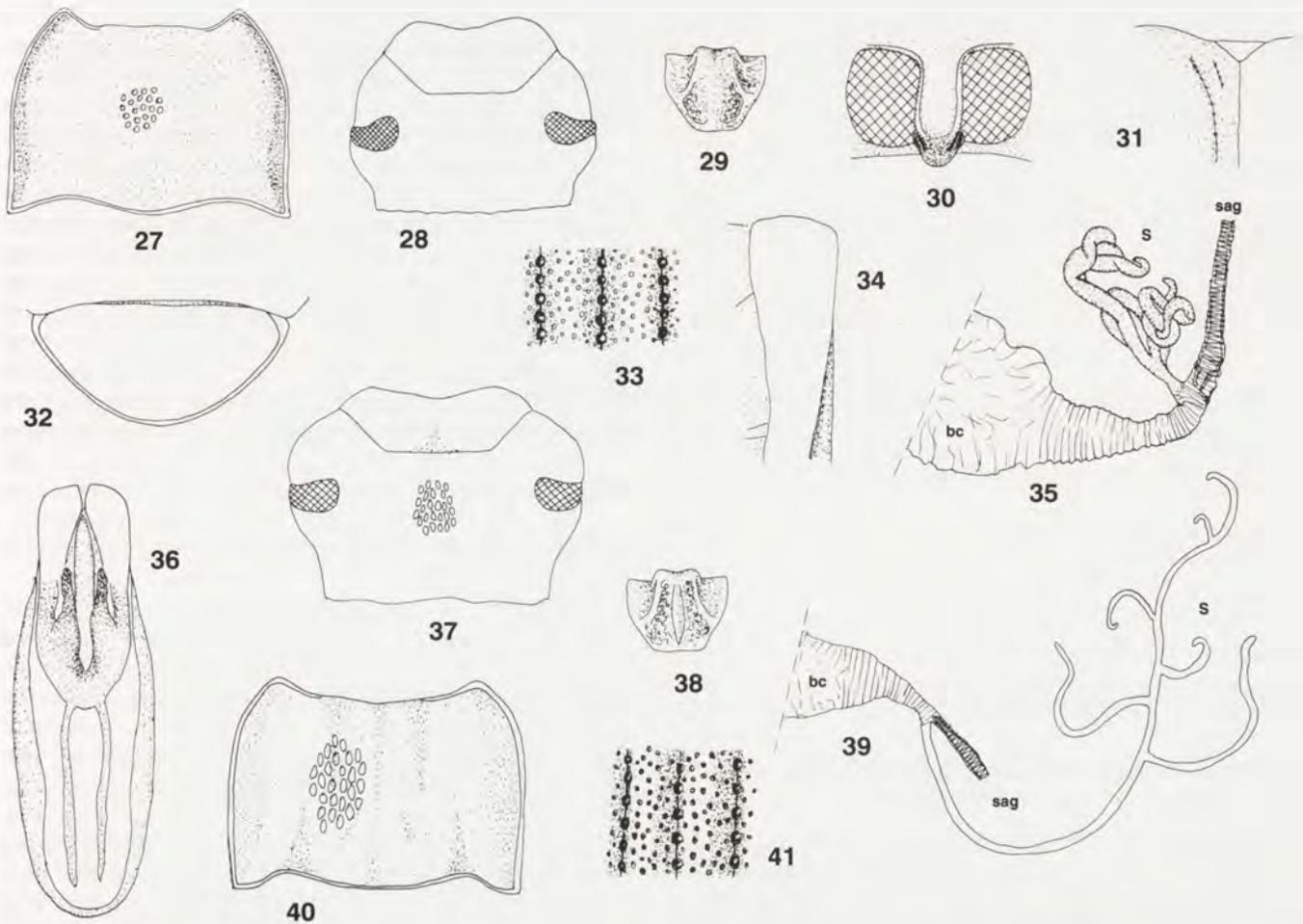


Figure 26. *Adamus microsittoides* (by M. Szczepańska). Male.



Figures 27–41. *Colpotinoides* spp. 27–36. *C. gebieni*, 37–41. *C. bremeri*. (27, 40) pronotum, (28, 37) head, (29, 38) mentum, (30) prosternum, (31) scutellum, (32) last abdominal ventrite, (33, 41) elytral puncturation, (34) basal part of elytral epipleuron, (35, 39) bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag), (36) aedeagus.

tance between bases of lobes 3 and 4 is reduced). Furthermore, anteriorly the fourth lobe strongly protrudes beyond the anterior margin of lobe 3 (Figs 65, 74, 179). A similar change has taken place in some southern African genera of the trigonopoid Platynotina group.

The spermatheca and the duct of spermathecal accessory gland depart together from the bursa copulatrix. I have distinguished 4 types of spermatheca structure: (1) sac-like, membranous (Fig. 6); (2) ducts wide, depart from strongly widened sac, poorly sclerotized (Figs 142, 206); (3) ducts wide, not departing from a strongly widened sac, poorly sclerotized (Figs 79, 168, 178); (4) ducts very narrow, regular, rather strongly sclerotized (Figs 35, 55, 58, 70). In the case of types 2–4, the spermathecal ducts may show degree of multiple dichotomous branching (rather species-specific).

The bursa copulatrix in Asian Platynotini is provided with various sclerites. These are of the following types: (1) fine needle-like spines (Figs 70, 205); (2) two or three sharp denticles (Figs 80, 130); (3) sharp tubercles forming a "radula" (Figs 71–73); (4) three large plates (structures

present on the outside) (Figs 113, 114, 119); (5) sclerites forming a "lock" (Fig. 50). The structure and arrangement of the first three types of sclerites indicate that they prevent escape of spermatophores introduced in the bursa copulatrix during copulation. A similar role, though associated with passage of egg to the bursa copulatrix, is played by fine spines located in the oviduct. The fourth type mentioned probably reinforces the posterior part of the bursa copulatrix. Sclerites of the fifth type form a kind of "lock" – a mechanism closing the outlet of spermatheca and spermathecal accessory gland to the bursa copulatrix. Decrease in the cross-section of the spermathecal ducts and their elongation prevent passive escape of sperm to the bursa copulatrix (Happ and Happ 1975). Perhaps in species of the genus *Eucolus* the mechanism was insufficient and the additional safety mechanism, in the form of a "lock", opening only when the egg passes to the bursa copulatrix, proved more effective. A probable functioning of the mechanism is presented in figures 51–52.

Menearchus, a genus very close to *Eucolus*, includes species in which the structure of bursa copulatrix could

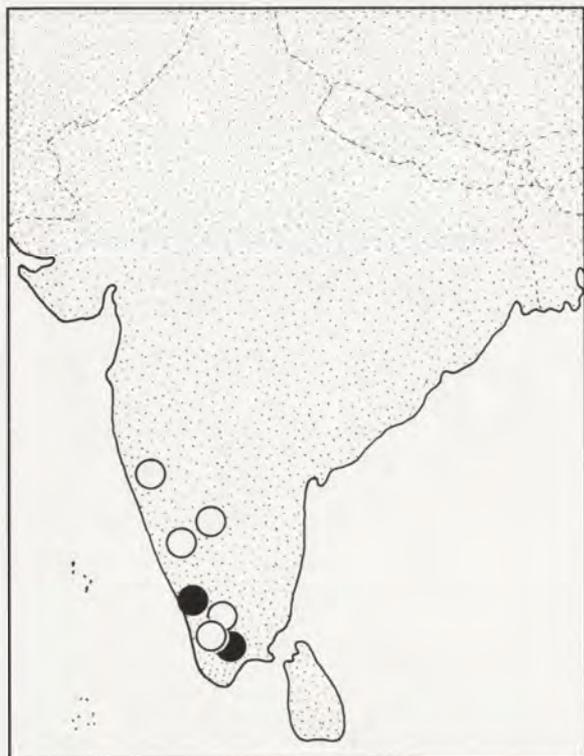


Figure 42. Distribution of *Platycolpotus* (white circles) and *Colpotinoides* (black circles).

explain the origin of the "lock" mechanism. In *M. fortidens*, *M. fortipes* and *M. tenuestriatus* between the spermatheca outlet and the oviduct outlet, there is a sclerite which has probably originated by fusion of fine needle-like spines (Figs 71, 73). A further stage of evolutionary change is observed in *M. dispar* and *M. hirtipes*, where the walls of the bursa copulatrix near the outlet of the spermatheca and accessory gland are very densely covered with triangular tubercles forming a radula (Fig. 72). Fusion of the radula tubercles might lead to the formation of a uniform sclerite, and then to the "lock" mechanism.

Bordering of last abdominal ventrite. The groove that runs along the margin of the last abdominal ventrite forming a border, is of variable development, sometimes it is incomplete or almost disappears. However, there are always remnants of the groove in the form of impressions at each side of the base of the ventrite. These impressions are present even in those species which Kaszab (1975a) regarded as wholly devoid of a border (*Platynotoides*, *Platynotus*, *Eucolus*). All the various stages of disappearance of the border should be regarded as evolutionary tendencies of the character (independent apomorphies), and the border itself as a plesiomorphic character.

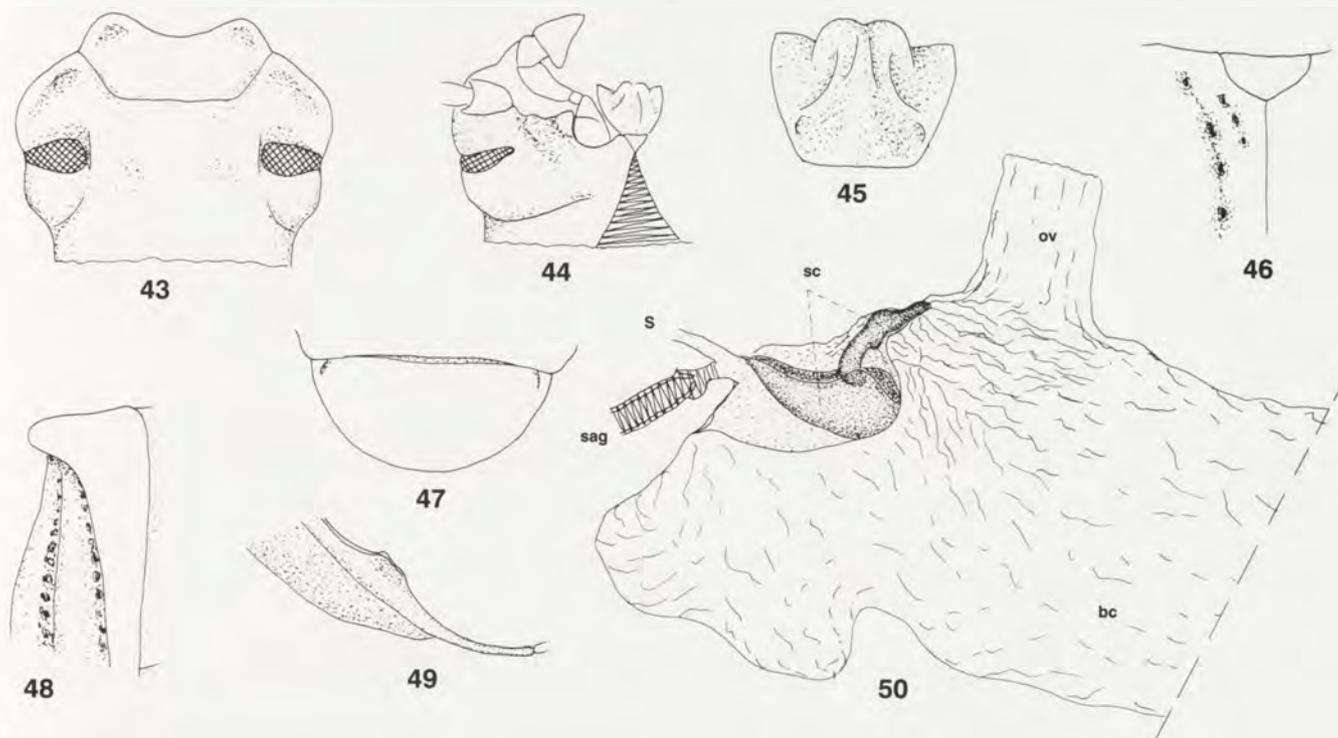
The disappearance of the border may be accompanied by a change in the ventrite shape – absence of the groove (border) at the apex results in a shortening (*Platyburak* and *Platynotoides*) (Figs 136–138, 167). Sometimes the ventrite apex becomes convex – the groove is then very wide (*Notocorax*) (Figs 99, 104).

Structure of elytral epipleura. Increasing convexity of the elytra and their "tucking" (intervals IX, VIII and sometimes VII visible from the underside) have causes a narrowing of the epipleura. At the humeral angles the epipleuron is relatively wide, then it narrows, and from the lower margin of postepisternum to the apex it is rather narrow. This character (narrowing of the epipleura) is expressed to a various degree: the narrowing is most abrupt in the genus *Eucolus* (this is most of all associated with strongly protruding humeral angles) (Fig. 48) and *Platynotus* (which has the most convex elytra); poorly narrowed epipleura occur in *Colpotinoides* (only a fragment of interval IX is visible from the underside) (Fig. 34), and they are the least narrowed in the winged monotypic genus, *Penthicoides* (here elytra are invisible from the underside) (Fig. 123). A simple conclusion about relationship between genera on the basis of the degree of expression of this character does not seem reasonable. Increasing convexity of the elytra may be correlated with wing reduction, which probably took place several times independently in the tribe Platynotini.

The elytral epipleura of some Platynotini have a border, the "tongue". In this paper the border has been classified within three types: (1) reaching the very apex (Figs 109, 126); (2) disappearing before apex, but passing beyond the border of epipleural concavity which occurs at the level of the base of the last abdominal ventrite (Figs 92, 116, 140, 165, 201, 216), (3) disappearing at the epipleural concavity at the level of the base of the last abdominal ventrite (Fig. 49). In spite of numerous studies on this structure (Doyen 1993, Fiori 1977, Iwan 1995c) and its transpose use as a diagnostic character, at the present stage of research it is difficult to interpret its functional significance and to polarize its particular states. Considering the structure of the female and male genitalia and other characters (disappearance of the border of the pronotal base, presence of a denticle on the mid femur of male etc.) and the resulting division of Asian Platynotini in 3 main phylogenetic lineages, the following two interpretation can be made. Assuming that the disappearance of the border is an apomorphic character, it would appear three times in Asian Platynotini (i.e. at least once in each phylogenetic lineage) and should be regarded as homoplasy. On an assumption that the absence of the border is an ancestral condition, and the character is just developing, its presence being thus apomorphic, the condition would appear only once in Asian Platynotini and would unite all those genera whose relationship is also indicated by other characters (see character matrix). I think that the latter interpretation is better.

In the tribe Platynotini the "tongue" is also present in the African *Zidalus*, anchophthalmoid Platynotina and the Madagascan endemic *Lechius*.

The narrowing of the epipleura is present in species of an African subtribe, Gonopina. Strongly convex elytra (fragments of intervals visible from the underside) are found in most African genera of the trigonopoid Platynotina group, Gonopina and the subgenus *Opatrinus* (*Opatrinus*) from the New World.



Figures 43–50. *Eucolus* spp. 43–49. *E. costatus*, 50. *E. indicus*. 43–44. Head: (43) dorsal, (44) ventral. (45) mentum, (46) scutellum, (47) last abdominal ventrite, (48) basal part of elytral epipleuron, (49) apex of elytron, (50) part of bursa copulatrix (bc), spermatheca (s), spermathecal accessory gland (sag), oviduct (ov) and "lock" mechanism (sc).

Puncturation of elytral striae. Puncturation of elytral striae in Asian Platynotini is not uniform. In the genus *Platynotus* alone, practically all the types of puncturation of elytral rows occur that can also be found in various groups of Platynotini. Three main types can be distinguished (the terminology follows Spilman 1971): (1) striae with no punctures, deep elongated concavities (intervals rather convex) i.e. elytral striae grooved or sulcate; (2) striae punctate, punctures located in elongated concavities (intervals convex to a various degree) i.e. elytral striae punctured and grooved or punctate-sulcate; (3) striae formed only by punctures (intervals most often poorly convex or flat) i.e. elytral striae punctate.

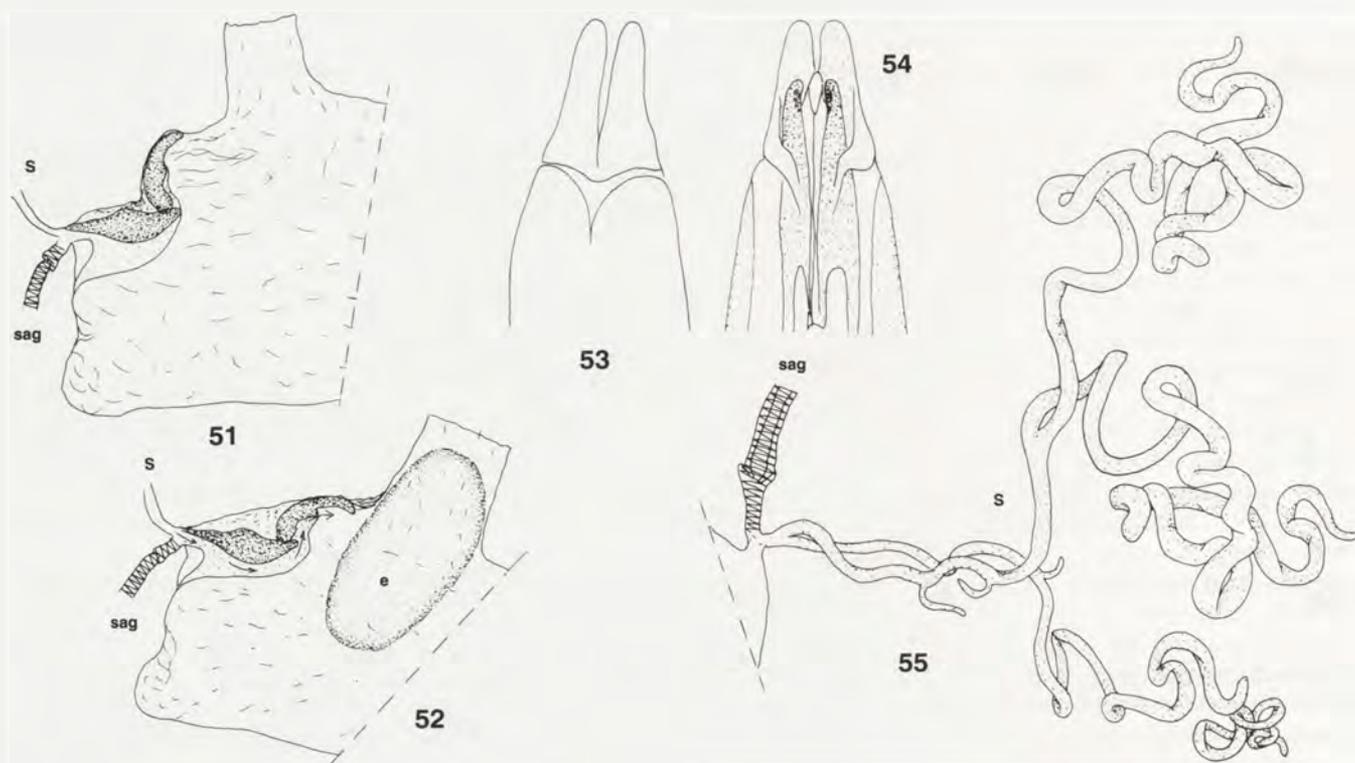
The presence of extreme types of puncturation of elytral striae unites Asian Platynotini with both the African Gonopina (elytra sulcate-striate), and the genus *Opatrinus* from the New World (elytra sulcate-punctate-striate).

Bordering of pronotal base. The tendency for the bordering of pronotal base to be interrupted in the middle is expressed to a various degree in the genera *Opatrinus* (New World), *Cosmogaster* Koch and *Schelodontes* Koch (Africa), as well as *Hovademus* Ardoin, *Hovademulus* Iwan and *Pokryszkiella* Iwan (Madagascar).

LIST OF CHARACTERS AND THEIR POLARIZATION

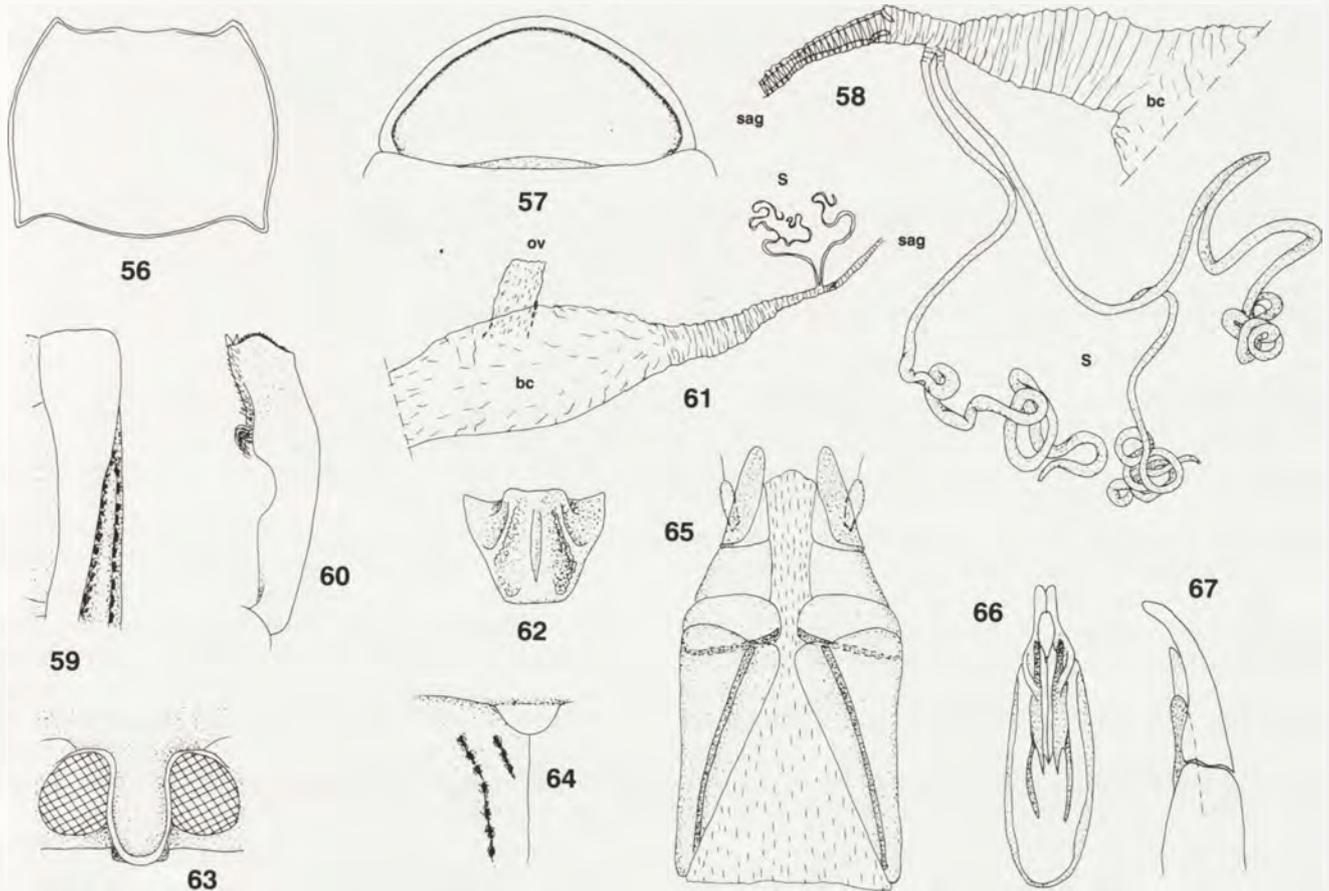
(0 – plesiomorphy, 1–5 – apomorphies, [] – number of the character for the analysis of 23 characters)

0. [-]. Head width anterior to eyes: 0 – exceeding head width at eye level; 1 – equal to or less than head width at eye level.
1. [0]. Eye narrowed laterally (number of facets between temple and gena): 0 – moderate (3–5); 1 – strong (1).
2. [1]. Hypostoma: 0 – simple; 1 – with process near maxillary articulation.
3. [-]. Border of pronotal base: 0 – entire; 1 – interrupted in middle; 2 – absent.
4. [2]. Sinuate emargination of pronotal side just anterior to posterior angle: 0 – present; 1 – absent.
5. [3]. Pronotal sides: 0 – rounded; 1 – almost parallel.
6. [-]. Elytral striae: 0 – punctate-sulcate; 1 – punctate; 2 – sulcate.
7. [4]. "Tucking" of elytra: 0 – absent; 1 – moderate, interval IX visible from the underside; 2 – relatively strong, interval IX and a part of VIII visible from the underside.
8. [-]. Connection of elytral striae in apical part: 0 – 1-9, 2-7, 3-6, 4-5, 8-free; 1 – 1-free, 2-9, 3-6, 4-5, 7-8; 2 – 1-free, 2-9, 3-8, 4-7, 5-6.
9. [5]. Hairs on elytra: 0 – absent; 1 – present.
10. [6]. Humeral angle: 0 – rounded; 1 – strongly protruding.
11. [7]. Apical part of epipleuron: 0 – unbordered; 1 – bordered, with a "tongue".
12. [8]. Scutellum: 0 – wide (distance between humeral angle and scutellum less than 4x scutellum width); 1 – narrow (distance between humeral angle and scutellum 4x scutellum width).



Figures 51–55. *Eucolus polinierii*. (51–52) part of bursa copulatrix, a probable functioning of “lock” mechanism (s – spermatheca, sag – spermathecal accessory gland, e – egg). 53–54. Aedeagus: (53) dorsal, (54) ventral. (55) spermatheca (s).

13. [9]. Surface of pronotum and elytra: 0 – punctate or smooth; 1 – covered with irregular, shiny tubercles.
14. [10]. Upperside of body: 0 – mat; 1 – glossy.
15. [11]. Wings: 0 – well developed; 1 – entirely reduced.
16. [-]. Border of anterior margin of pronotum: 0 – present; 1 – absent.
17. [-]. Border of prosternal process: 0 – entire; 1 – disappearing at apex.
18. [12]. Border of prosternal process: 0 – wide; 1 – narrow.
19. [13]. Elongate, tubercular convexity in middle of prosternum: 0 – absent; 1 – present.
20. [-]. Border of the last abdominal ventrite: 0 – entire; 1 – narrowly interrupted at apex; 2 – widely interrupted, traces of bordering visible only at base.
21. [14]. Underside of body: 0 – glossy; 1 – mat.
22. [15]. Male fore tarsi: 0 – narrow or slightly widened; 1 – wide.
23. [16]. Tuft of hairs on inner margin of male fore tibia: 0 – absent; 1 – present;
24. [-]. Male fore tibia: 0 – simple or slightly widened; 1 – with an emargination on the inside.
25. [-]. Male hind tibia: 0 – simple; 1 – with a ridge in apical part; 2 – arcuate, with a row of hairs on the inside.
26. [-]. Denticle on the inner side of male mid femur: 0 – absent; 1 – present.
27. [17]. Shape of bursa copulatrix: 0 – simple, sac-like; 1 – with an additional convexity at the outlet of spermatheca duct and accessory gland duct; 2 – with a few regular convexities of the wall.
28. [18]. Sclerites in bursa copulatrix: 0 – absent; 1 – thin needle-like spines; 2 – fine needle-like spines fusing into a plate or triangular spines forming a radula; 3 – 2 large denticles; 4 – 3 large denticles; 5 – plates forming a “lock”.
29. [19]. Spermatheca: 0 – sac-like; 1 – initial part sac-like, then branched; 2 – branched from the base, wide ducts; 3 – branched from the base, narrow ducts.
30. [20]. Distance between bases of coxite lobes 3 and 4 in ovipositor: 0 – relatively long (length ratio $c3/c3-c4 = 1.5-2.8$); 1 – rather short (length ratio $c3/c3-c4 = 6.0-8.4$)
31. [21]. Apical part of aedeagus: 0 – tapered; 1 – parallel sided.
32. [22]. Aedeagus parameres: 0 – not protruding beyond lateral margins of apical part; 1 – protruding beyond lateral margins of apical part.



Figures 56–67. *Menearchus arcuatus*. (56) pronotum, (57) last abdominal ventrite, (58) bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag), (59) basal part of elytral epipleuron, (60) male protibia, (61) oviduct (ov), bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag), (62) mentum, (63) prosternum, (64) scutellum, (65) ovipositor. 66–67. Aedeagus: (66) dorsal, (67) apical part, lateral.

CLADISTIC ANALYSIS

Cladistic analysis were used to study 13 taxa i.e. is all the Asian genera of the tribe Platynotini. Preliminary studies made it possible to select 23 characters out of 33 studied initially (multistate characters are excluded). The characters were polarized on the basis of a study of out groups – genera of the Platynotini, mainly African genera belonging to the subtribe Platynotina (Appendix).

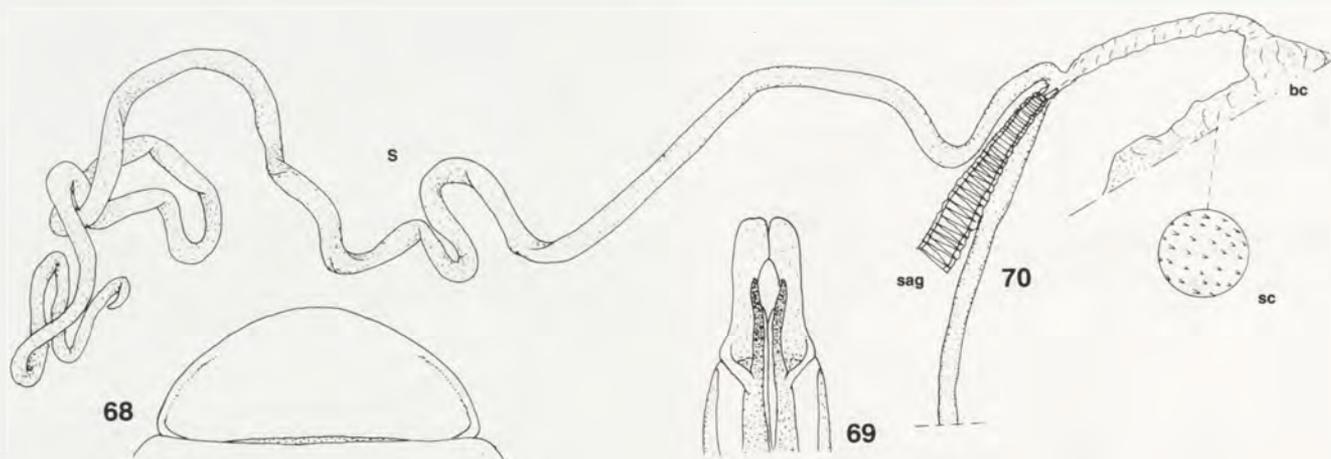
As a result of the analysis with use of Hennig86 (version 1.5) and Clados programmes, 10 cladograms were obtained for 33 characters (L = 81, Ci = 56, Ri = 60), and 4 cladograms for 23 characters (L = 49, Ci = 63, Ri = 63). Two of them (Appendix) were selected to present hypothesis on the relationships between genera of the Asian Platynotini.

ANALYSIS OF RELATIONSHIPS AMONG THE GENERA

The structure of spermatheca is one of the most important characters as it, in combination with others, allows a division of the Asian Platynotini in 3 main phylogenetic lineages.

The first lineage includes only the genus *Adamus*. It is characterized by a sac-like spermatheca, unique shape of bursa copulatrix and the evenly rounded sides of the pronotum (absence of sinuate emargination anterior to humeral angles).

The second lineage ("Platynotus") comprises two groups of genera: *Platynotus*, *Platyburak*, *Pseudoblaps* and *Platynotoides* (connection of elytral striae: 1-free, 2-9, 3-8, 4-7, 5-6; widely bordered prosternal process, interrupted border of the last abdominal ventrite) and *Notocorax* (connection of elytral striae: 1-free, 2-9, 3-6, 4-5, 7-9, except *N. marzenae*; narrowly bordered prosternal process; presence of 3 large sclerites in the bursa copulatrix, entire bordering of the last abdominal ventrite). *Penthicoides* is close to *Notocorax* due to the structure of the bursa copulatrix (presence of large, sharp denticles). Regrettably, I have not succeeded in dissecting spermatheca of *Penthicoides seriatoporus*, hence I can't confirm the appurtenance of *Penthicoides* to the phylogenetic lineage "Platynotus". Characteristic features of all the genera mentioned are: the presence of "tongue" at the apex of the elytral epipleuron, wide spermatheca duct and the widely

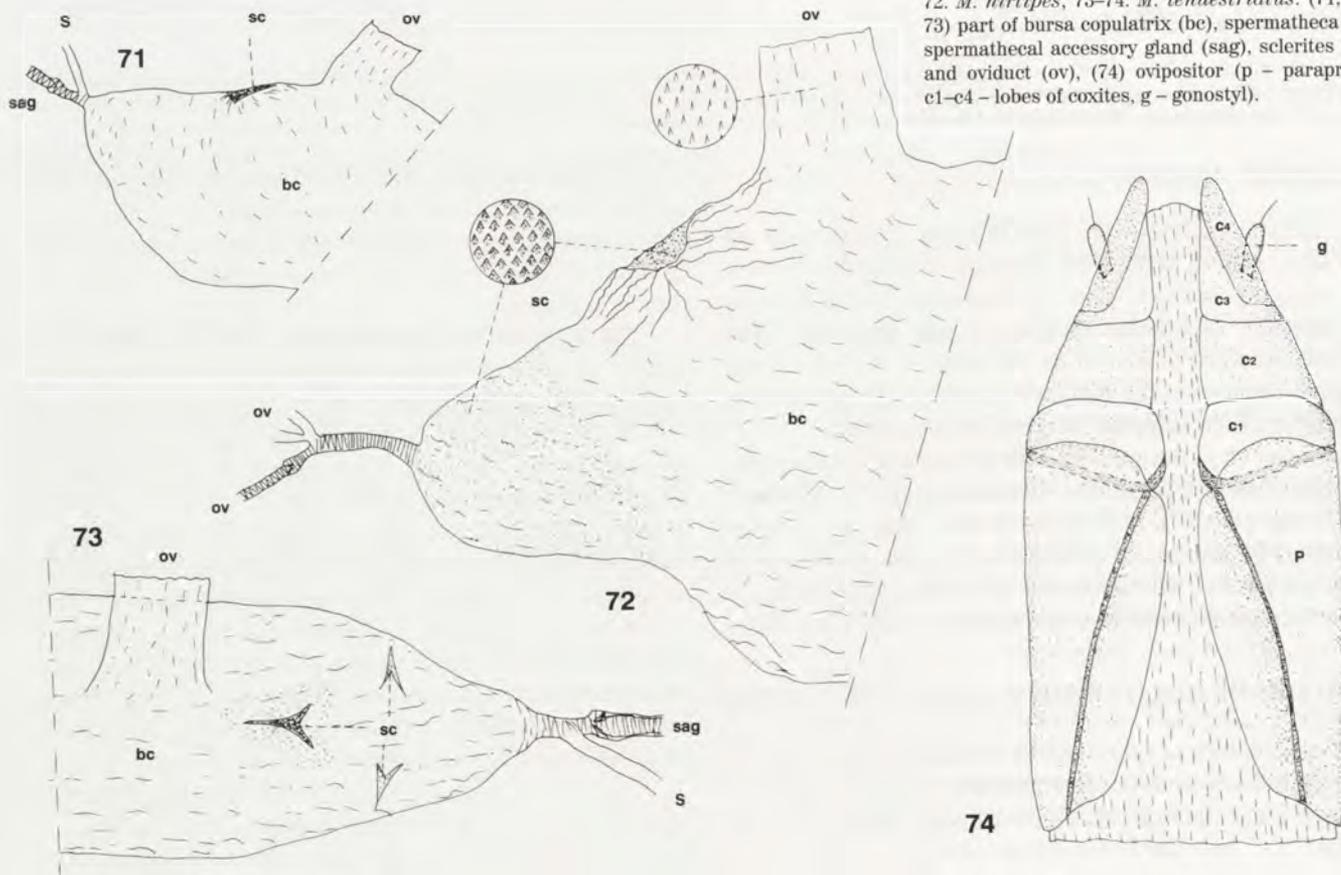


Figures 68-70. *Menearchus dispar*. (68) last abdominal ventrite, (69) apical part of aedeagus, ventral, (70) spermatheca (s), spermathecal accessory gland (sag) and part of bursa copulatrix (bc) with sclerites (sc).

interrupted border of the pronotal base (except *Platylurak* and *Platynotus*).

The third phylogenetic lineage ("Menearchus") includes: *Menearchus*, *Eucolus*, *Colpotinoides* and *Platycolpotus*. These genera are characterized by a spermatheca formed of ducts of small diameter, a fine denticle on the male mid femur (the character disappears secondarily in some of the species of *Menearchus* and *Eucolus*) and the parallel sided apical part of the aedeagus.

Pseudonotocorax also displays male features characteristic of this lineage but the genus is similar to *Notocorax* and *Platynotoides* of the "Platynotus" lineage (structure of the elytral epipleura, last abdominal ventrite and tibia). The above characters and the distribution suggest that this is a "transitory" genus between the lineages "Platynotus" and "Menearchus". Examination of the female genitalia of *Pseudonotocorax*, not possible during the present study, should make it possible to trace the rela-



Figures 71-74. *Menearchus* spp. 71. *M. fortidens*, 72. *M. hirtipes*, 73-74. *M. tenuestriatus*. (71, 72, 73) part of bursa copulatrix (bc), spermatheca (s), spermathecal accessory gland (sag), sclerites (sc) and oviduct (ov), (74) ovipositor (p - paraproct, c1-c4 - lobes of coxites, g - gonostyl).

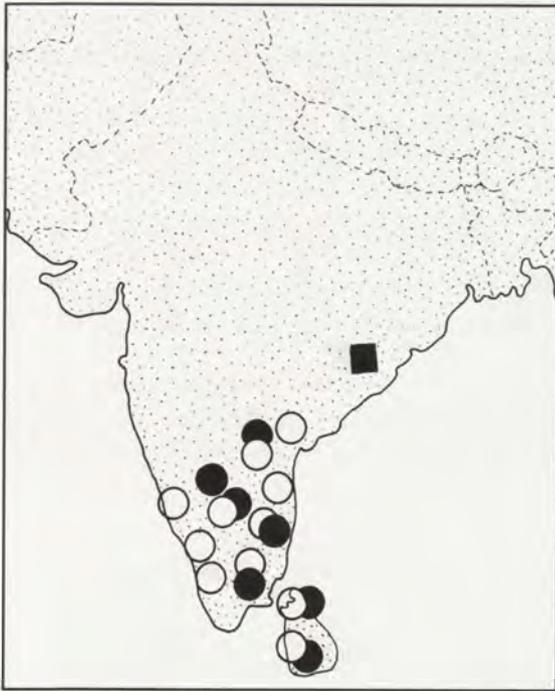
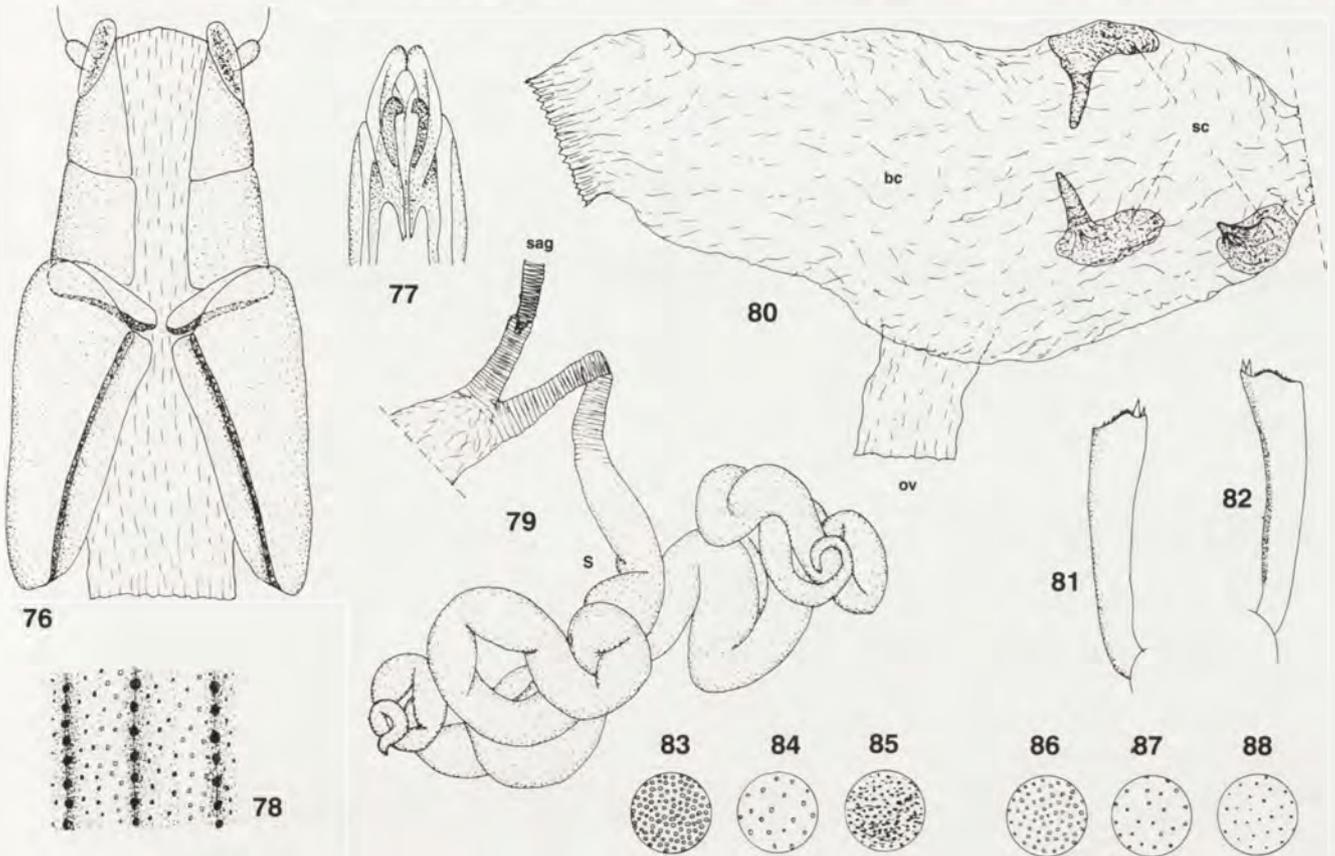


Figure 75. Distribution of *Eucolus* (black circles), *Menearchus* (white circles) and *Pseudonotocorax* (black squares).

tionships and confirm the appurtenance of the genus to one of the phylogenetic lineages. Likewise, examination of the female genitalia of *Rugoplatynotus* was not possible and this prevented me from confirming its appurtenance. However, the presence of a denticle on the male mid femur and the absence of a "tongue" in the apical part of elytral epipleuron would indicate the possibility of attributing this genus to the "Menearchus" lineage, but the structure of the aedeagus (strongly tapered apical part) and the distribution suggest that *Rugoplatynotus* is closer to the "Platynotus" lineage.

Key to the genera of the Asian Platynotini

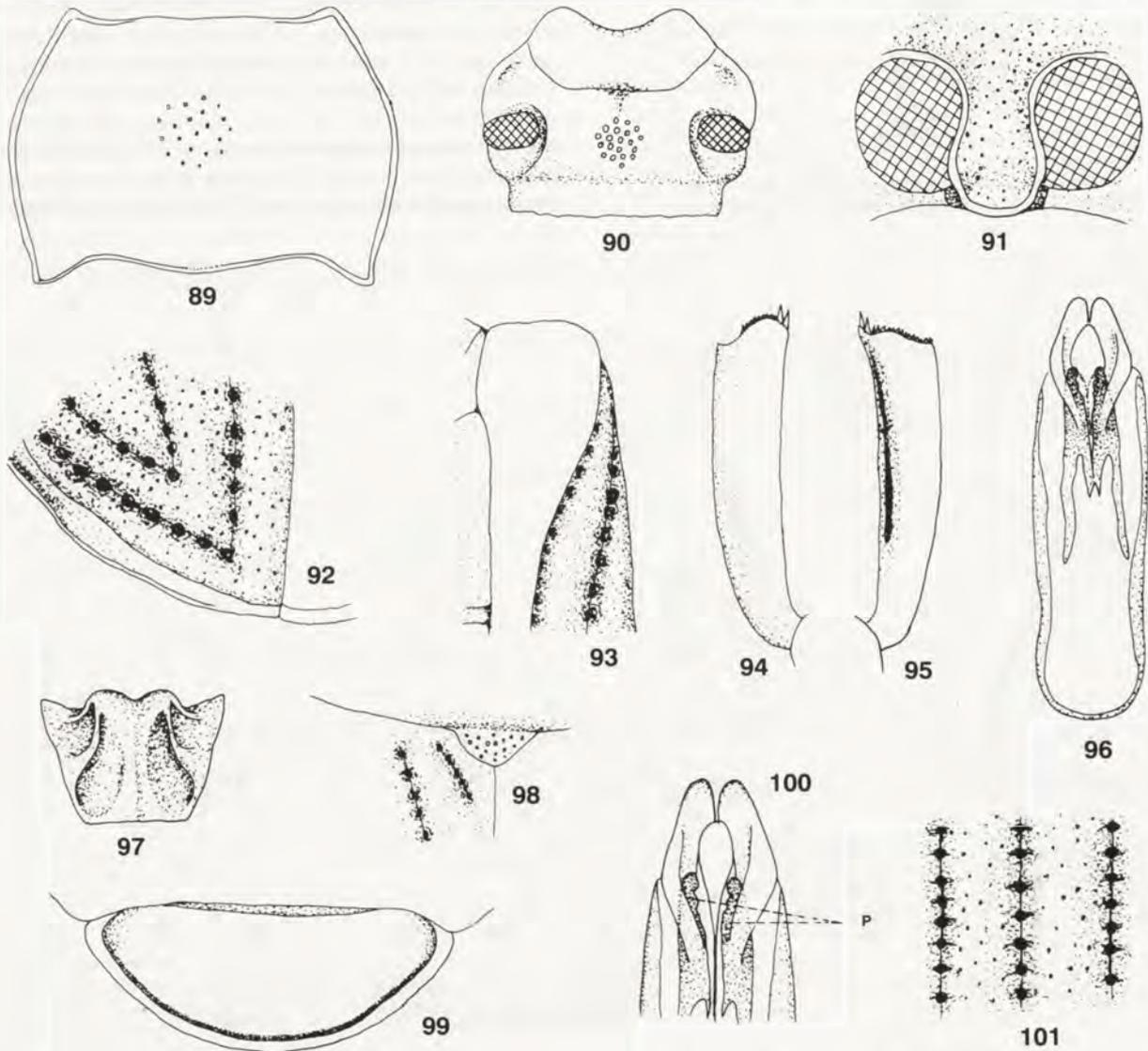
1. Wings well developed; metasternum long, length ratio of metasternum (measured between coxal insertions) to insertion of hind coxae ca. 0.85; eye strongly narrowed laterally, between gena and temple only 1 facet visible; aedeagus with parameres very strongly widened, protruding beyond lateral margins of apical part (Figs 124–125) *Penthicoides*
- Wings reduced; metasternum shortened, length ratio of metasternum (measured between coxal insertions) and insertion of hind coxae ca. 0.30–0.75; eye moderately



Figures 76–88. *Notocorax* spp. 76–85. *N. javanus*, 86–88. *N. brancuccii*. (76) ovipositor, (77) apical part of aedeagus, ventral, (78, 84, 87) elytral punctation, (79) spermatheca (s) and spermathecal accessory gland (sag), (80) bursa copulatrix (bc), oviduct (ov) and sclerites (sc). 81–82. Male protibia: (81) dorsal, (82) ventral. (83, 86) pronotal punctation, (85, 88) prosternal punctation.

- narrowed laterally, between gena and temple 3-5 facets visible; aedeagus parameres narrow, not protruding beyond lateral margins of apical part (Figs 13, 36, 54, 66) 2
2. Hypostoma with a process near maxillary articulation (Fig. 44) *Eucolus*
 - Hypostoma simple 3
3. Pronotum and elytral intervals covered with irregular, shiny tubercles (Fig. 224) *Rugoplatymotus*
 - Pronotum and elytral intervals smooth or punctate 4
4. Anterior margin of prosternum without a border, middle strongly convex forming a longitudinal tubercle (Figs 171-172) *Platymotus*
 - Anterior margin of prosternum bordered, middle evenly convex 5

5. Elytral epipleuron in its apical part, at the level of the last abdominal ventrite, with a border in shape of "tongue" (Figs 109, 116) 6
 - Elytral epipleuron in its apical part, at the level of the last abdominal ventrite, unbordered (Fig. 49) 10
6. Prosternal process widely bordered (Figs 141, 183); elytral striae connected as follows: 1-free, 2-9, 3-8, 4-7, 5-6 7
 - Prosternal process narrowly bordered (Fig. 107); elytral striae connected as follows: 1-free, 2-9, 3-6, 4-5, 7-8 or 1-9, 2-7, 3-6, 4-5, 8-free 9
7. Elytral striae punctate, punctures in striae regular, always well developed (Fig. 162); spermatheca in the form of wide, dichotomously branched ducts (Fig. 168) *Platymotoides*



Figures 89-101. *Notocorax phanrangensis*. (89) pronotum, (90) head, (91) prosternum, (92) apex of elytron, (93) basal part of elytral epipleuron. 94-95. Male protibia: (94) dorsal, (95) ventral, (96) aedeagus, (97) mentum, (98) scutellum, (99) last abdominal ventrite, (100) apical part of aedeagus, parameres (p), (101) elytral puncturation.

- Elytral striae punctate-sulcate, striae may be disturbed and then the punctures blurred; spermatheca sac-like with wide ducts (Figs 142, 206) 8
- 8. Elytral surface delicately hairy; pronotum with base entirely bordered (Fig. 131); bursa copulatrix simple *Platyburak*
- Elytral surface bare; border of pronotal base narrowly interrupted in middle (Fig. 197); bursa copulatrix with a convexity lined with fine needle-like spines (Fig. 205) *Pseudoblaps*
- 9. Border of pronotal base interrupted in middle (Figs 103, 115); prosternal process flat, entirely bordered (Figs 91, 107); last abdominal ventrite entirely bordered (Figs 99, 104, 118); male fore tarsus, fore and mid tibia subparallel (Figs 81-82, 94-95); apical part of aedeagus tapered (Figs 77, 96) *Notocorax*
- Border of pronotal base entire (Fig. 208); prosternal process strongly convex, border interrupted at apex (Fig. 209); border of last abdominal ventrite visible only at base, invisible at apex (Fig. 219); male fore tarsus, fore and mid tibia strongly widened (Figs 211-214, 220-221); apical part of aedeagus parallel sided (Fig. 218) *Pseudonotocorax*
- 10. Sides of pronotum subparallel (Figs 27, 40); elytral epipleura evenly narrowed from humeri posteriad; only elytral interval IX visible from the underside (Fig. 34) *Colpotinoides*
- Sides of pronotum rounded (Figs 1, 9); elytral epipleura abruptly narrowed from humeri to the level of lower margin of postepisternum; elytral interval IX, a part of VIII and sometimes VII visible from the underside (Figs 59, 153) 11
- 11. Sides of pronotum evenly rounded (Figs 11, 15, 19); apical part of aedeagus evenly tapered (Figs 13, 18, 22); spermatheca sac-like (Fig. 6) *Adamus*
- Sides of pronotum with a shallow sinuate emargination just anterior to posterior angles (Figs 56, 145, 151); apical part of aedeagus parallel sided (Figs 66, 150); spermatheca in the form of thin, dichotomously branched ducts (Figs 58, 159) 12
- 12. Surface of pronotum and elytra mat; elytral intervals delicately punctate (Fig. 64); on male fore tibia with a very deep emargination and a tuft of hairs on the inner margin (Fig. 60); bases of coxite lobes 3 and 4 of ovipositor close shortened (Figs 65, 74) *Menearchus*
- Surface of pronotum and elytra glossy; elytral intervals strongly punctate (Figs 148, 155); male fore tibia slightly widened towards apex, without a tuft of hairs on its inner margin (Fig. 147); bases of coxite lobes 3 and 4 of ovipositor far apart (Fig. 154) *Platycolpotus*

Adamus gen. nov.
(Figs 1-26)

Type species. *Platynotus micrositoides* Kaszab, 1975b; gender masculine.

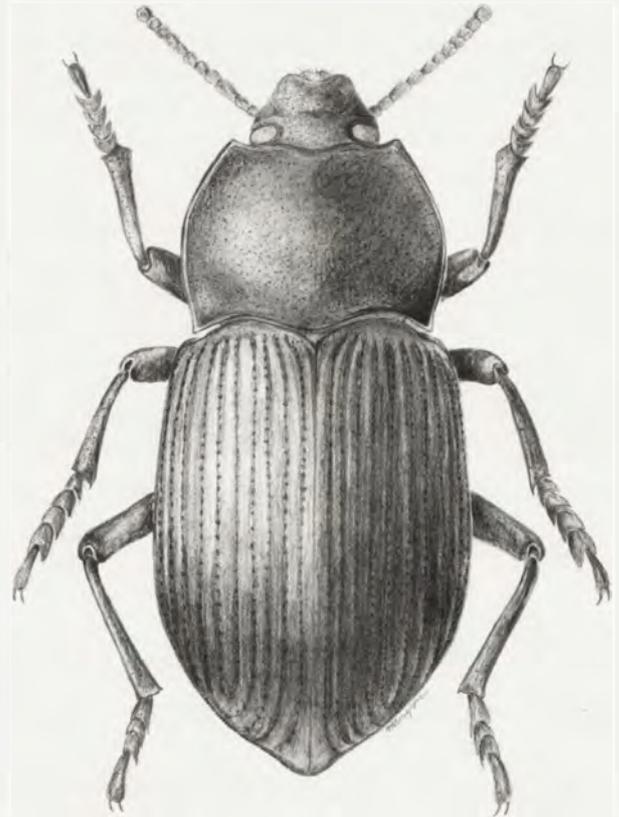


Figure 102. *Notocorax phanrangiensis* (by M. Szczepańska). Male.

Name derivation. In honour of my friend and teacher, Dr. Stanisław Adam Ślipiński.

Diagnosis. *Adamus* is close to *Menearchus*, *Eucolus* and *Colpotinoides* due to the structure of elytral epipleuron (absence of a "tongue" in apical part), entire border of pronotal base, narrow border of prosternal process and connection of elytral striae (1-9, 2-7, 3-6, 4-5, 8-free).

It differs from these genera in the shape of pronotal sides (absence of sinuate emargination just anterior to posterior angles), scutellum size (small, as in *Platynotus* and *Platynotoides*), spermatheca structure and shape of bursa copulatrix.

Description. Length 8.5-12.5 mm, body obviously convex, its surface glossy or mat with a greasy sheen. Head widest anterior to eyes (Fig. 14); on frons, at the inner margin of eye a longitudinal ridge is usually present (in *micrositoides* frons flat); eyes narrowed laterally, between gena and temple 3 facets; clypeus shallowly emarginate anteriorly; mentum as in fig. 5. Pronotum evenly convex; basal border entire, widely interrupted anteriorly; base strongly, bisinuate emarginate, posterior angles not protruding posteriorly beyond the level of mid part; sides evenly rounded, with no emargination anterior to posterior angles. Anterior margin of elytra arcuately convex anteriorly; humeral angles rounded; scutellum relatively small - as wide as or narrower than the first interval, distance between humeral angle and scutellum ca. 4.5-7 × scutel-

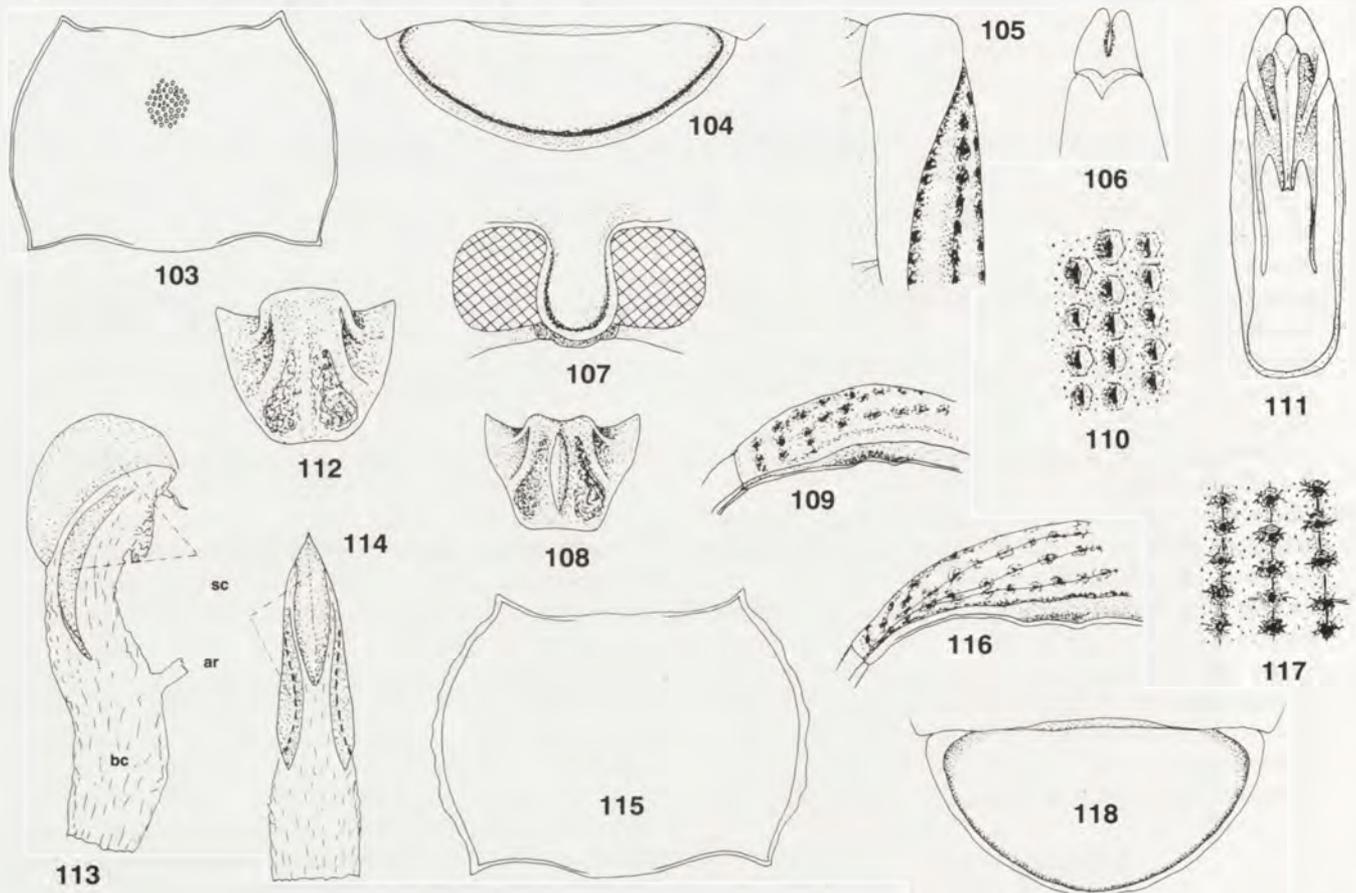
lum width; elytral striae punctate-sulcate, punctures in striae relatively large; intervals almost flat (poorly convex in *barkudensis*); interval IX and a part of VIII and VII visible from the underside. Elytral epipleura wide at humeri, then narrowed to the level of posterior margin of postepisternum; in its apical part relatively wide, dorsally located, unbordered (no "tongue"). Prosternal process narrowly bordered laterally, apex without border, truncate (Fig. 2). Last abdominal ventrite distinctly, moderately widely bordered (Figs 10, 23). Sexual characters poorly marked, visible only in the structure of male fore tibiae (slightly widened). Aedeagus as in figs 13, 18, 22; length ratio of apical to basal parts ca. 2.7–3.6; parameres fairly wide; apical part evenly narrowed towards apex. Ovipositor as in fig. 7; length ratio paraproct/coxites ca. 1.05–1.15. Bursa copulatrix without sclerites, with characteristic convexities; spermatheca sac-like (Fig. 6).

Distribution. SW India, Sikkim, Burma (Fig. 25).

Key to the species

1. Pronotum, base very shallowly bisinuately emarginate, posterior angles straight; puncturation of elytral striae

- very delicate; inner margin of male fore tibia without ridge *mediocris*
 – Pronotum, base deeply bisinuately emarginate, posterior angles sharp; puncturation of elytral striae rather deep, clearly visible; inner margin of male fore tibia with a ridge 2
 2. Body upperside glossy 3
 – Body upperside mat, with a greasy sheen 4
 3. Head with a longitudinal ridge at the inner margin of eye (Fig. 4); elytral puncturation as in fig. 3 *barkudensis*
 – Head flat at inner margin of eye (Fig. 24); elytral puncturation as in fig. 20 *micrositoides*
 4. Lateral margins of pronotum with longitudinal concavities; anterior angles of pronotum rounded (Fig. 9) *opatroides*
 – Pronotum evenly convex; anterior angles of pronotum produced anteriorly (Figs 11, 15) 5
 5. Pronotum as in fig. 15, base deeply, bisinuately emarginate, anterior angles strongly produced anteriorly, sharp; puncturation in elytral striae sparse, punctures small (Fig. 16); male fore tibia as in fig. 17; aedeagus as in fig. 18 *bellaryensis*



Figures 103–118. *Notocorax* spp. 103–111. *N. rondoni*, 112–118. *N. marzenae*. (103, 115) pronotum, (104, 118) last abdominal ventrite, (105) basal part of elytral epipleuron, (106) apical part of aedeagus, dorsal, (107) prosternum, (108, 112) mentum, (109, 116) apex of elytron, (110, 117) elytral puncturation, (111) aedeagus. 113–114. Bursa copulatrix (bc), oviduct (ov) and sclerites (sc): (113) lateral, (114) dorsal.

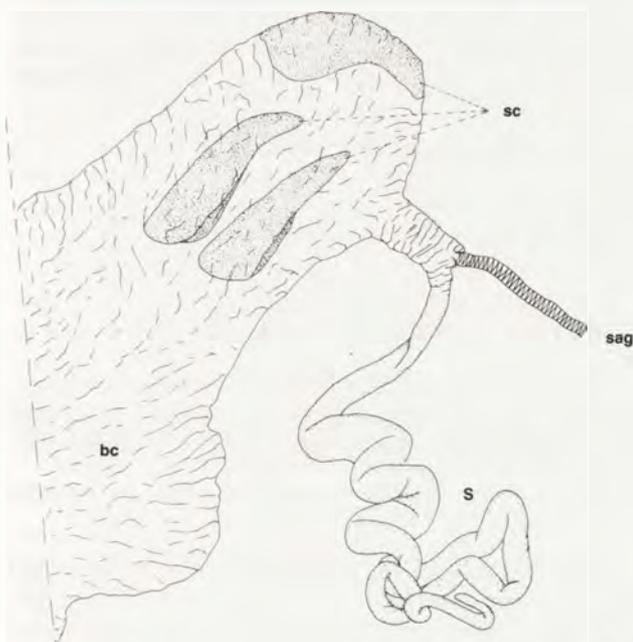


Figure 119. *Notocorax rondoni*. Part of bursa copulatrix (bc) with sclerites (sc), spermatheca (s) and spermathecal accessory gland (sag).

- Pronotum as in fig. 11, base weakly, bisinuately emarginate, anterior angles moderately produced anteriorly, straight; puncturation in elytral striae dense, punctures large; male fore tibia as in fig. 12; aedeagus as in fig. 13
 *sikkimensis*

Species of the genus *Adamus*

1. *A. barkudensis* (Blair) **comb. nov.**
Pseudoblaps barkudensis Blair, 1922
2. *A. bellaryensis* (Kaszab) **comb. nov.**
Platyndendus bellaryensis Kaszab, 1975a
3. *A. mediocris* (Fairmaire) **comb. nov.**
Platynotus mediocris Fairmaire, 1896
4. *A. micrositoides* (Kaszab) **comb. nov.**
Platynotus micrositoides Kaszab, 1975b
5. *A. opatroides* (Kaszab) **comb. nov.**
Platyndendus opatroides Kaszab, 1975a
6. *A. sikkimensis* (Kaszab) **comb. nov.**
Platyndendus sikkimensis Kaszab, 1975a

Colpotinoides Kaszab (Figs 27–42)

Colpotinoides Kaszab, 1975a: 354. Type species, by monotypy:
Pseudoblaps gebieni Kaszab, 1941.

Notes. Besides the characters that allow for inclusion of *Colpotinoides* in the phylogenetic lineage "Menearchus" (spermathecal structure, shape of apical part of aedeagus, presence of denticle on male mid femur), the genus is characterized by a glossy body surface, coarse

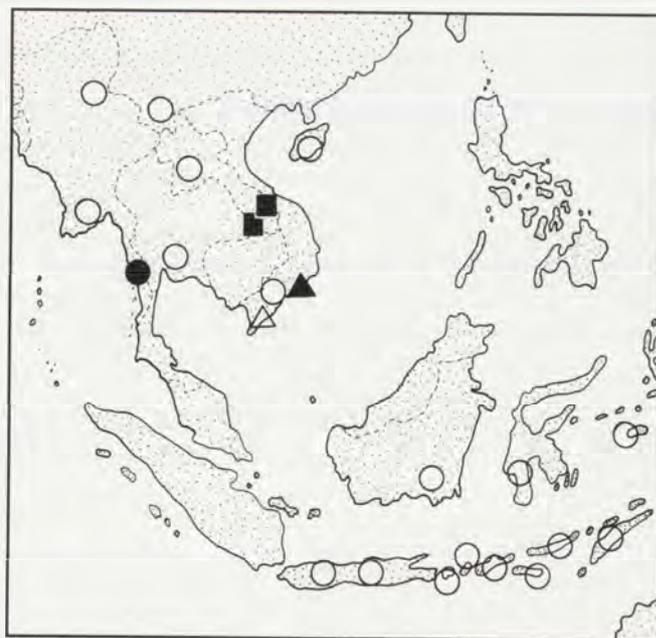


Figure 120. Distribution of *Notocorax javanus* (white circles), *N. marzenae* (black circle), *N. phanrangensis* (black triangles), *N. brancuccii* (white triangles) and *N. rondoni* (black squares).

puncturation of the pronotum and elytral intervals, truncate mesosternal process, a pronotal shape unique among the Asian Platynotini (almost parallel sided), moderately narrowed elytral epipleura and weakly convex elytra (only interval IX visible from the underside).

Distribution. SW India (Fig. 42).

Colpotinoides bremeri sp. nov. (Figs 37–41)

Name derivation. Dedicated to Professor Hans J. Bremer, a friendly colleague and an excellent collector and investigator of beetles.

Locus typicus. Trichur (India).

Diagnosis. *C. bremeri* is close to *gebieni* due to the structure of pronotum, elytra and prosternal process.

The two species differ in the length of antennae (shorter in *bremeri*), puncturation of the upperside of the body and the prosternal puncturation (denser in *bremeri*), scutellum size (smaller in *bremeri*), and the structure of the spermatheca (cf. Figs 39 and 35).

Description. Length 9.5 mm. Body slightly convex; upperside glossy, strongly punctate; pl/pb ca. 0.67, el/eb ca. 1.35, pl/el ca. 0.47, pb/eb ca. 0.88. Head widest anterior to eyes; its upperside with longitudinal concavities, especially distinct at fronto-clypeal suture; eyes weakly narrowed laterally – between tempus and gena 4 facets; clypeus shallowly emarginate anteriorly; mentum as in fig. 38. Pronotum (Fig. 40) unevenly convex, with longitudinal concavities, the deepest along lateral margins; sides subparallel, slightly convergent towards base; base deeply, bisinuately emarginate; anterior angles rounded; posterior angles straight, produced

posterior beyond the level of the middle part; border of anterior margin widely interrupted in middle; base and sides of pronotum entirely bordered. Punctuation of elytra as in fig. 41; intervals strongly convex; elytra weakly convex and slightly "tucked"; humeral angles rounded; anterior margin of elytra arcuately convex; epipleuron gently narrowed posteriorly, at apex situated dorsally, with no "tongue". Prosternal process narrowly bordered, truncate at apex; pronotal hypomeron strongly punctate. Last abdominal ventrite narrowly and delicately bordered. Ovipositor, length ratio paraproct/coxites ca. 1.46; bursa copulatrix with no sclerites, evenly narrowed towards outlet of spermatheca and accessory gland, spermatheca as in fig. 39.

Type. Holotype, female (HNMH): "India: Trichur, Cochinstate".

Key to the species

1. Punctuation of elytra moderately dense (Fig. 33); antennae reaching posterior angles of pronotum; head widest at eye level (Fig. 28); mentum as in fig. 39; pronotum widest at base (Fig. 27); scutellum relatively large (distance between humeral angle and scutellum ca. $3.6 \times$ scutellum width) (Fig. 31); spermatheca as in fig. 35 *gebieni*
- Punctuation of elytra very dense and strong (Fig. 41); antennae reaching basal $\frac{1}{3}$ of pronotum; head widest anterior to eyes (Fig. 37); mentum as in fig. 38; pronotum widest near apical $\frac{1}{3}$ (Fig. 40); scutellum small

(distance between humeral angle and scutellum ca. $5.2 \times$ scutellum width) (Fig. 40); spermatheca as in fig. 39 *bremeri*

Species of the genus *Colpotinoides*

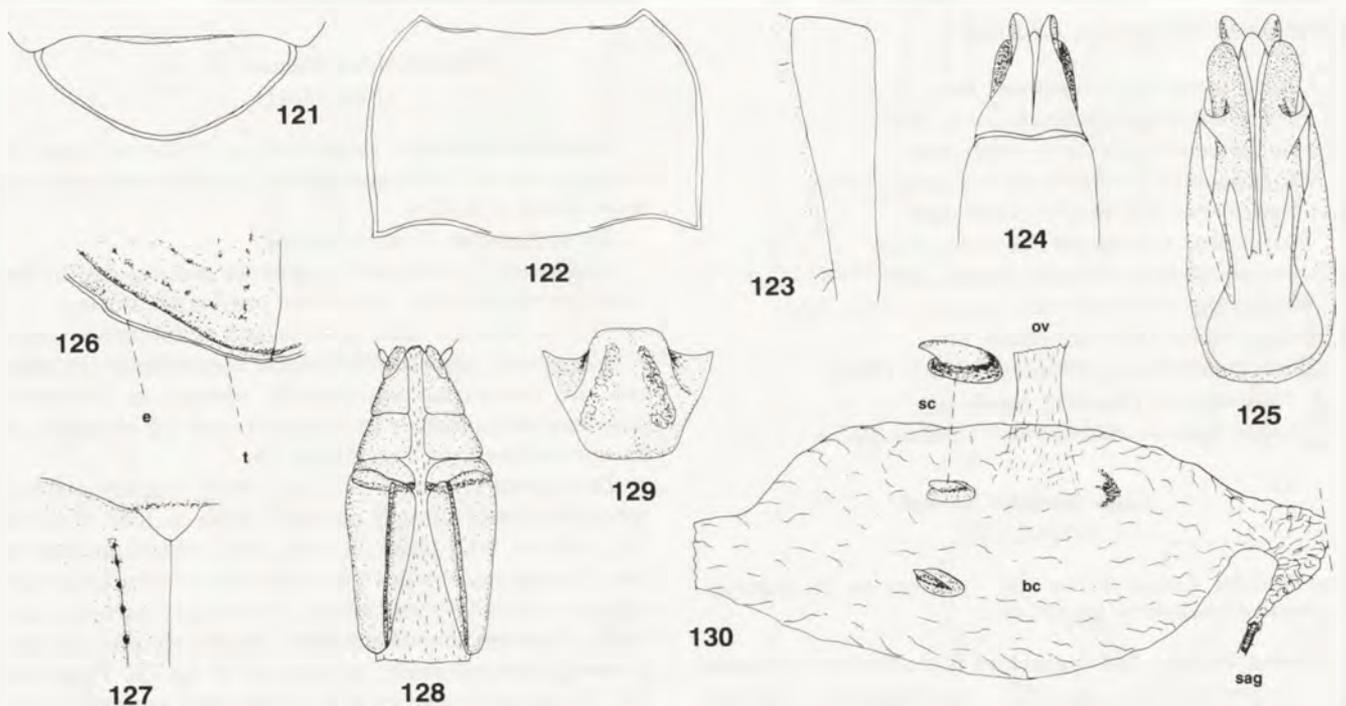
1. *C. bremeri* sp. nov.
2. *C. gebieni* Kaszab, 1941

Eucolus Mulsant et Rey (Figs 43–55, 75)

Eucolus Mulsant et Rey, 1853a: 292; 1853b: 67. Type species, by monotypy: *Eucolus polinierii* Mulsant et Rey, 1853. *Eucolus* Mulsant et Rey; Gemminger et Harold 1870: 1913; Gebien 1910: 272; 1938: 293 [412]; Kaszab 1975a: 283.

Indeucolus Kaszab, 1975a: 282 **syn. nov.** Type species, by monotypy: *Indeucolus costatus* Kaszab, 1975a.

Notes. My interpretation of this genus is somewhat wider than that presented by Kaszab (1975a). I have synonymised *Indeucolus* and included its only species, *costatus*, in the genus *Eucolus*. A synapomorphy of these species is the presence of a hypostomal process near maxillary articulation, mat underside of the body and strongly convex humeral angles (clearly emphasized by the shape of the epipleura). The presence of the "lock" mechanism in the bursa copulatrix is, in my opinion, the most important character of the genus *Eucolus*. The presence of this structure was found in *ardoini*, *indicus* and *polinierii*. In the



Figures 121–130. *Penthicoidea seriatorporus*. (121) last abdominal ventrite, (122) pronotum, (123) basal part of elytral epipleuron. 124–125. Aedeagus: (124) apical part, dorsal, (125) ventral, (126) apex of elytron (e – epipleuron, t – tongue), (127) scutellum, (128) ovipositor, (129) mentum, (130) bursa copulatrix (bc), oviduct (ov), sclerites (sc) and spermathecal accessory gland (sag).

future it should be confirmed in *besucheti* (species known from one specimen – holotype male – only) and *costatus* (the female paratype that I examined was damaged). Kaszab's interpretation of 1975a regarding the genus *Indeucolus* as distinct, resulted in the remaining species forming a paraphyletic assemblage. Furthermore, *polinierii* shares more characters with *costatus* than with the remaining species (stronger convexity of odd elytral intervals, reduction of denticle on male mid femur). The pronotal shape and puncturation, the rib-like alternate intervals of the elytra and the sharp margins of epipleura in *costatus* distinguish it from the remaining species, but in my opinion, considering all the characters of related taxa, placing it in a separate genus is not justified.

Distribution. SE India, Sri Lanka (Fig. 75).

Key to the species (see Kaszab 1975a).

Species of the genus *Eucolus*

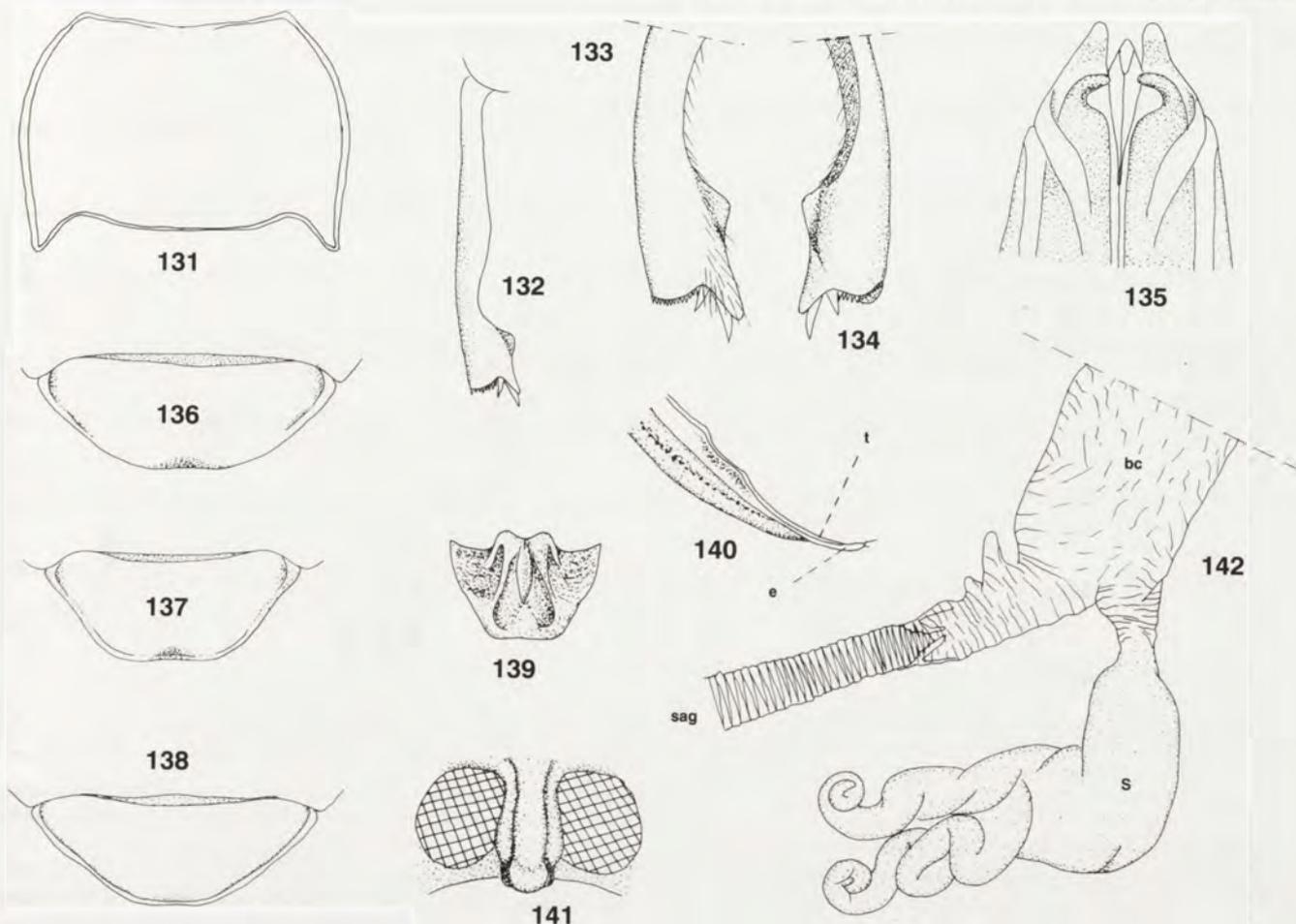
1. *E. ardoini* Kaszab, 1975a

2. *E. besucheti* Kaszab, 1975a
3. *E. costatus* (Kaszab) **comb. nov.**
Indeucolus costatus Kaszab, 1975a
4. *E. indicus* Kaszab, 1975a
5. *E. polinierii* Mulsant et Rey, 1853

***Menearchus* Carter**
(Figs 56–75)

Menearchus Carter, 1920: 229. Type species, by monotypy: *Menearchus impressosulcatus* Carter, 1920 (= *Tenebrio dispar* Herbst, 1797). *Menearchus* Carter: Carter 1922: 72; Gebien 1938: 293 [412]; Kaszab 1975a: 331.

Notes. This is the most speciose genus of the “*Menearchus*” lineage. Synapomorphies of its members are: structure of ovipositor (strongly shortened section between bases of coxite lobes 3 and 4) and of male fore tibiae (strongly bent, with a tuft of hairs on the inner side). *Menearchus* can be divided in two species groups. One (*hirtipes*, *dispar*, *fortidens*, *spinipes*, *tibialis*, *dentitibialis*, *tenuestriatus*, *turbinatus* and *fortipes*) is charac-



Figures 131–142. *Platyburak mandli*. (131) pronotum, (132) male metatibia. 133–134. Apex of male metatibia: (133) dorsal, (134) ventral, (135) apical part of aedeagus, ventral, (136–138) last abdominal ventrite (males from S. India, Madras State, Coimbatore, 420 m), (139) mentum, (140) apex of elytron (e – epipleuron, t – tongue), (141) prosternal process, (142) part of bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag).

terized by the following features: male hind tibia strongly arcuately bent; sclerites present in bursa copulatrix; male mid femur without denticle; another group (*cirratus*, *arcuatus*, *laevipennis*, *curtipennis*, *scutatus*, *longipennis*, *balteatus*, *tenuipes* and *tenuitibia*): male hind tibia weakly bent, nearly straight; without sclerites in bursa copulatrix; male mid femur with denticle. Characters distinguishing the second group are typical plesiomorphies (in the phylogenetic lineage "Menearchus"). Modifications in the ovipositor structure are, in my opinion, the most important evolutionary novelties which justify the distinctness of this genus; this is in agreement with Kaszab's (1975a) interpretation.

Distribution. SE India, Sri Lanka (Fig. 75).

Key to the species (see Kaszab 1975a).

Species of the genus *Menearchus*

1. *M. arcuatus* (Serville)
Pedinus arcuatus Serville, 1825
2. *M. balteatus* Kaszab, 1975a
3. *M. cirratus* Kaszab, 1975a
4. *M. curtipennis* Kaszab, 1975a
5. *M. dentitibialis* Kaszab, 1975a
6. *M. dispar* (Herbst)
Tenebrio dispar Herbst, 1797
7. *M. fortidens* Kaszab, 1975a
8. *M. fortipes* Kaszab, 1975a
9. *M. hirtipes* Kaszab, 1975a
10. *M. laevipennis* Kaszab, 1975a
11. *M. longipennis* Kaszab, 1975a
12. *M. scutatus* Kaszab, 1975a
13. *M. spinipes* Kaszab, 1975a
14. *M. tenuistriatus* (Fairmaire)
Pseudoblaps tenuistriata Fairmaire, 1898
15. *M. tenuipes* Kaszab, 1975a
16. *M. tenuitibia* Kaszab, 1975a
17. *M. tibialis* Kaszab, 1975a
18. *M. turbinatus* Kaszab, 1975a

Notocorax Dejean (Figs 76–120)

Notocorax Dejean, 1834: 191. Type species, by monotypy: *Opatrum javanum* Wiedemann, 1819. *Notocorax* Dejean: Dejean 1836: 212; Mulsant et Rey 1853a: 273; 1853b: 48; Iwan 1990: 123.

Platyndendus Kaszab, 1975a: 312. Type species, by original designation: *Opatrum javanum* Wiedemann, 1819. Synonymized by Iwan 1990: 123.

Notes. As was already mentioned (Iwan 1990a) Mulsant and Rey (1853a, 1853b) described the genus again and used the name *Notocorax*, disregarding Dejean's (1834) designation – their argument was the lack of a diagnosis in the original description. At present, according to the ICZN, Dejean's designation is valid. In his 1975 revision Kaszab used the name *Notocorax* Mulsant et Rey, 1853 for the newly inter-

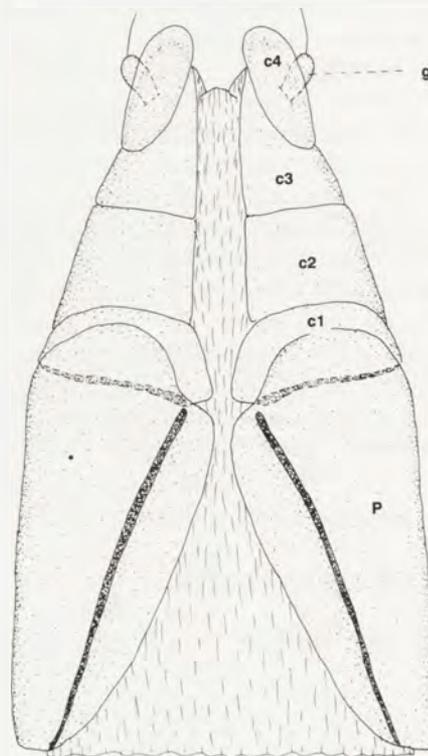


Figure 143. *Platyburak mandli*. Ovipositor (p – paraproct, c1–c4 – lobes of coxites, g – gonostyl).

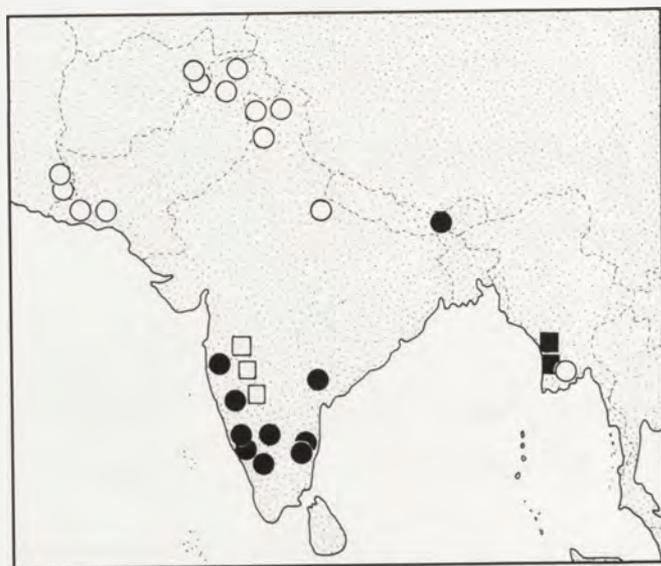
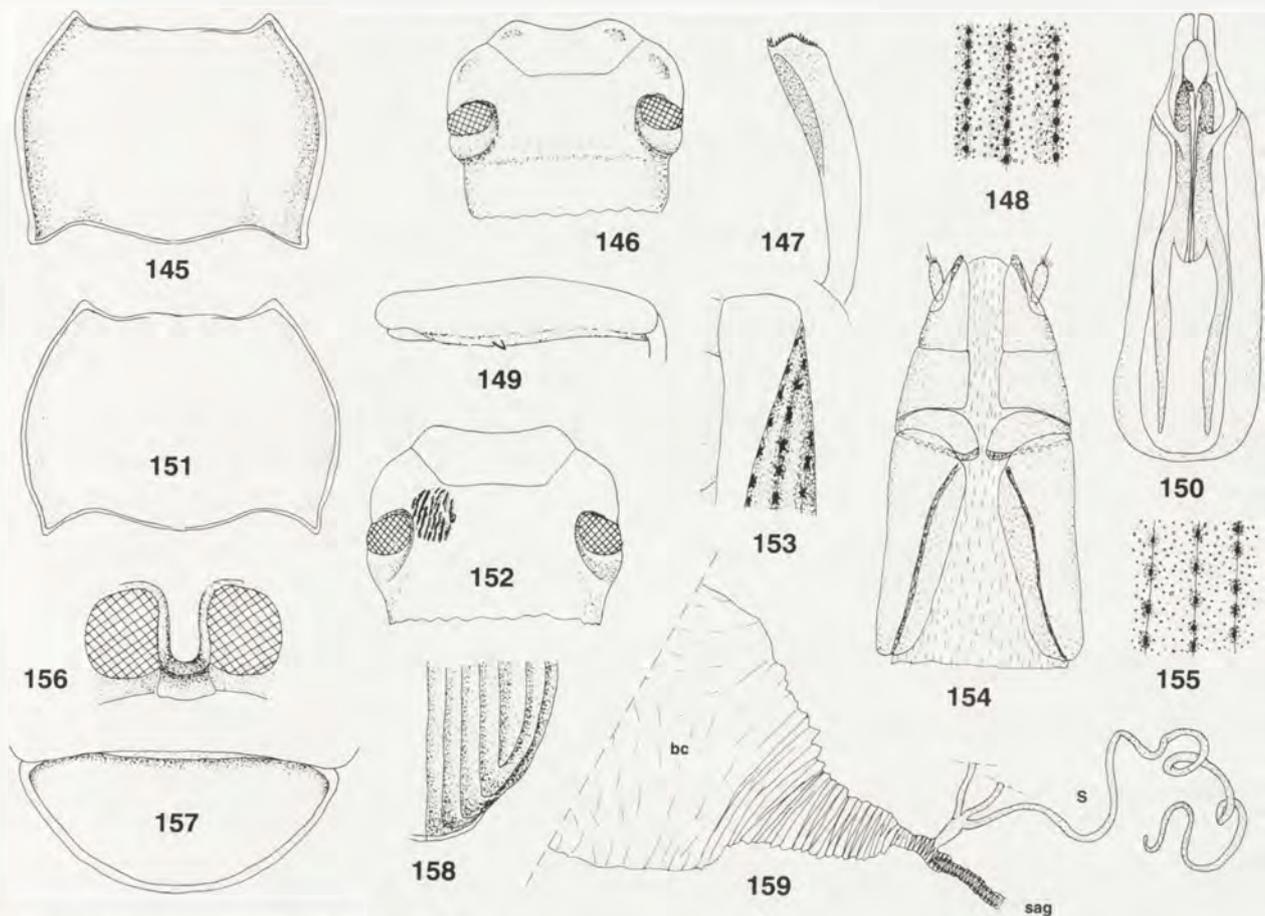


Figure 144. Distribution of *Pseudoblaps* (white circles), *Platyburak* (black circles), *Penthicoides* (white squares) and *Rugoplatynotus* (black squares).

preted genus with *Notocorax nervosus* Mulsant et Rey, 1853 as type species. *Opatrum javanum* Wiedemann, 1819 was placed by Kaszab in his new genus *Platyndendus* Kaszab, 1975. In my 1990 paper I restored the name *Notocorax* Dejean, 1834 to the genus with *Opatrum javanum*



Figures 145–159. *Platycolpotus* spp. 145–150. *P. dendaroides*, 151–159. *P. pandaroides*. (145, 151) pronotum, (146, 152) head, (147) male protibia, ventral, (148, 155) elytral puncturation, (149) male mesotibia, (150) aedeagus, (153) basal part of elytral epipleuron, (154) ovipositor, (156) prosternal process, (157) last abdominal ventrite, (158) apex of elytron, (159) part of bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag).

Wiedemann, 1819 as type species, hence *Platydendarus* Kaszab, 1975 is a junior synonym of *Notocorax* Dejean, 1834.

Notocorax belongs to the phylogenetic lineage "Platynotus". It is characterized by the distinctive connection of elytral striae (1-free, 2-9, 3-6, 4-5, 7-9, in *marzenae* – 1-9, 2-7, 3-6, 4-5, 8-free) and the presence of 3 large sclerites in the bursa copulatrix (synapomorphy of the genus).

Distribution. Completely overlapping that of *N. javanus* (Fig. 120).

Notocorax javanus (Wiedemann)
(Figs 76–85, 120)

Diagnostic characters. Length 11.5–16.0 mm; pl/pb = 0.62–0.66; el/eb = 1.39–1.44; pl/el = 0.35–0.41; pb/eb = 0.83–0.86. Puncturation of the pronotum, elytra and prosternum usually rather coarse (Figs 78, 83–85) but see below. Male fore tibiae without a ridge on the inner margin, only with a shallow concavity (Figs 81–82). Female and male genitalia as in figs 76–77, 79.

Population with more delicate puncturation of pronotum and elytral intervals occur near Bangkok and Pattaya

(Thailand), but in these populations the middle of prosternum is strongly punctate.

Distribution. S. China (Yunnan, Hainan), Burma, Laos, Vietnam, Thailand, Cambodia, Indonesia (Java, Bali, Lombok, Sumbawa, Sumba, Flores, Timor, Tanimbar, Borneo, Celebes, Buru); not recorded from Malaysia and Sumatra but probably occurring there (Fig. 120).

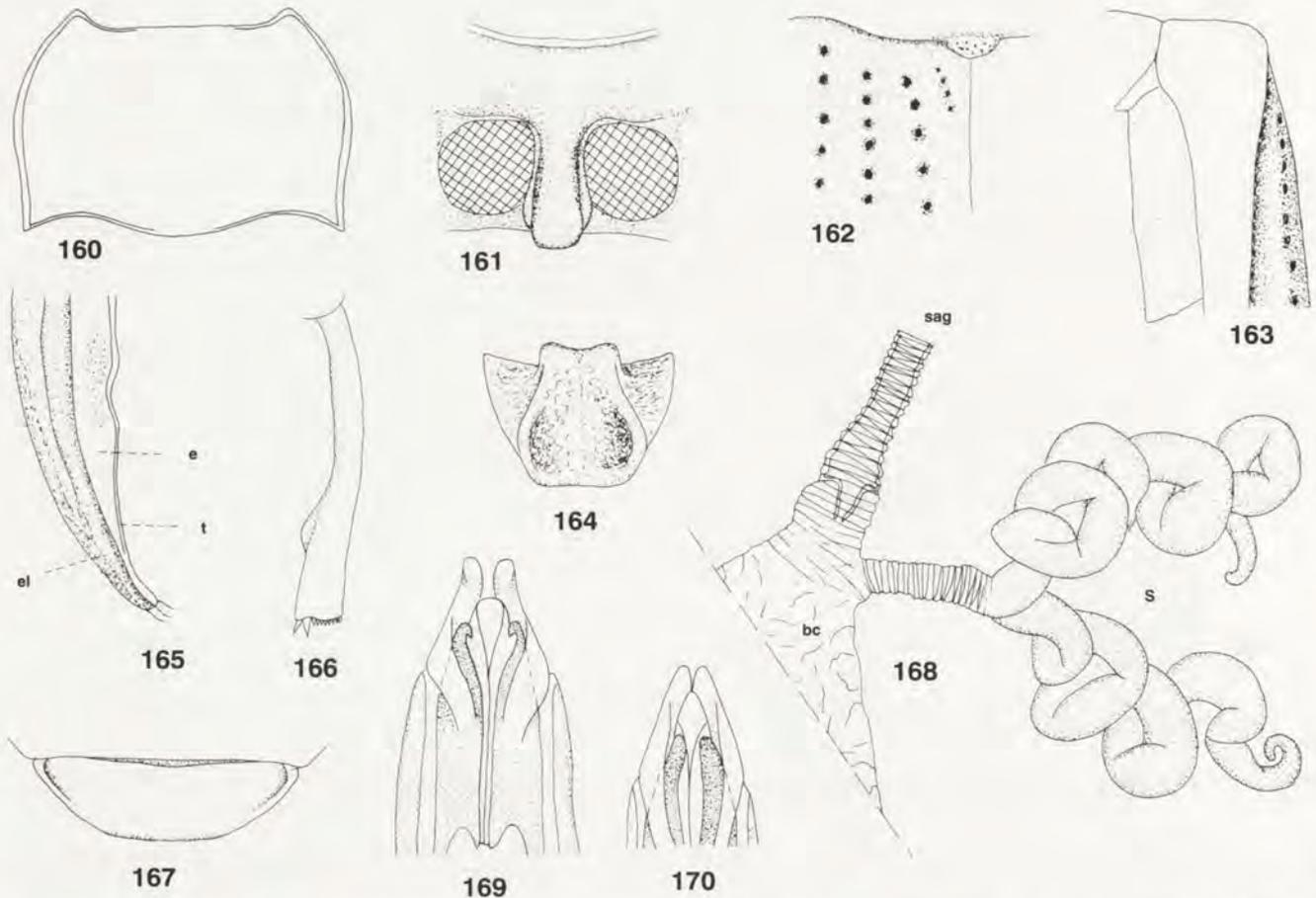
Notocorax phanrangensis sp. nov.
(Figs 89–102, 120)

Name derivation. From the name of the type locality.

Locus typicus. Phan Rang (Vietnam).

Diagnosis. *N. phanrangensis* is close to *javanus* and *brancuccii* due to the structure of the elytra (connection of striae) and pronotum (posterior angles sharp) and like *javanus*, it has 3 large spines in the bursa copulatrix.

It differs from *javanus* in having very convex elytra (especially in their posterior part), more delicate puncturation of the pronotum and elytra, and a more distinct ridge on the inner margin of the male fore tibia. It differs from *brancuccii* in its body size (*phanrangensis* is larger).



Figures 160–170. *Platynotoides* spp. 160–169. *P. belli*; 170. *P. tumidipes*. (160) pronotum, (161) prosternum, (162) scutellum and anterior part of elytron, (163) basal part of elytral epipleuron, (164) mentum, (165) apex of elytron (el – elytron, e – epipleuron, t – tongue), (166) male metatibia, (167) last abdominal ventrite, (168) part of bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag), (169, 170) apical part of aedeagus.

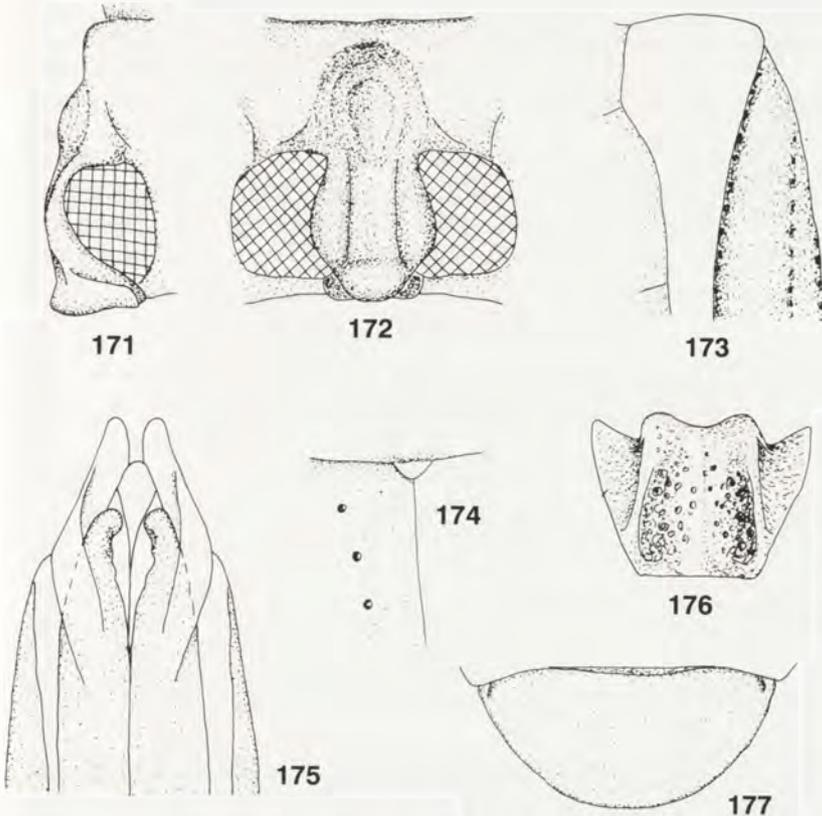
Description. Length 15.0–16.0 mm. Body strongly convex, especially in posterior part of elytra; $pl/pb = 0.61–0.66$, $el/eb = 1.26–1.32$, $pl/el = 0.38–0.45$, $pb/eb = 0.78–0.84$ (Fig. 102). Head as in fig. 90; puncturation dense, distinct, distance between punctures ca. 0.5–1.0 puncture diameter; a deep groove is present along inner margin of eye (Fig. 90); eye moderately narrowed laterally, between gena and temple, 4–5 facets; mentum as in fig. 97. Pronotum with sides evenly rounded, but with an inconspicuous, shallow emargination anterior to posterior angles; disc evenly convex; border of anterior margin widely interrupted in middle; border of base very narrowly interrupted; puncturation delicate and sparse, distances between punctures equal to 3–4 puncture diameters (Fig. 89). Humeral angles rounded (Fig. 93); anterior margin of elytra arcuately convex anteriorly; scutellum glossy, densely and deeply punctate, medium-sized (distance between humeral angles and scutellum ca. 3.5–4.0 scutellum width) (Fig. 98); punctures in elytral striae round, regular, rather small; puncturation of intervals delicate and sparse (distance between punctures equal to 6–7 puncture diameters) (Fig. 101); epipleura strongly narrowed; elytra strongly “tucked” (interval IX and a part of VIII and VII vis-

ible from the underside) (Fig. 93); apical part of epipleuron with a “tongue”, which disappears just before elytral apex (Fig. 92). Prosternal process narrowly bordered, protruding. Prosternum virtually smooth. Last abdominal ventrity widely bordered, the groove rather deep (Fig. 99). Male fore tibia with a shallow but very distinct longitudinal ridge on inner margin (Figs 94–95). Aedeagus as in figs 96, 100; parameres rounded at apex. Ovipositor and internal female genitalia as in *javanus*; bursa copulatrix with 3 large, sharp denticles.

Types. Holotype, male (HNMH): “Tourcham, nr. Phanrang, Phanrang Prov., S. Annam, III & V 1918, C. Boden, Kloss”. Paratypes: Tourcham, nr. Phanrang, Phanrang Prov., S. Annam, III & V 1918, C. Boden, Kloss, (HNMH) 1 female; Viet Nam: 14 km W. Phan Rang, 60', 22.VI.1960, R. E. Leech Collector, Bishop, (BM) 4 males, 1 female.

Notocorax brancuccii sp. nov.
(Figs 86–88, 120)

Name derivation. In honour of Dr. Michael Brancuccii from Naturhistorisches Museum in Basel (Switzerland).
Locus typicus. Dong Nai (Vietnam).



Figures 171–177. *Platymotus punctatipennis*. 171–172. Prosternum: (171) lateral, (172) ventral. (173) basal part of elytral epipleuron, (174) scutellum, (175) aedeagus, (176) mentum, (177) last abdominal ventrite.

Diagnosis. This new species has the connection of the elytral striae and the sharp posterior angles of the pronotum as in *javanus* and *phanrangiensis*.

It differs from *javanus* in a more delicate puncturation of the pronotum and elytra (both striae and intervals), and from *phanrangiensis* in its smaller size and less convex body. It differs from both these species in its more elongate pronotum.

Description. Length 11.0–12.0 mm. Body moderately convex; $pl/pb = 0.68-0.69$, $el/eb = 1.28-1.39$, $pl/el = 0.40-0.43$, $pb/eb = 0.80-0.84$. Shape and puncturation of head and mentum as in *javanus* and *phanrangiensis*. Pronotum somewhat elongate; sides moderately rounded; anterior angles straight; posterior angles sharp; puncturation moderately dense (distance between punctures equal to 1–2 puncture diameter) punctures not very deep (Fig. 86). Scutellum, humeri and elytral epipleura similar to those of *phanrangiensis*. Punctures in striae very fine; striae regular, fairly deep, not distorting convexity of intervals; puncturation of intervals delicate, distances between punctures equal to 4–5 puncture diameters (Fig. 87). Prosternal process protruding, narrowly bordered, puncturation as in fig. 88. Puncturation of abdominal ventrites sparse and very delicate, last abdominal ventrite widely bordered. Male fore tibiae similar to those in *javanus*, slightly arcuately bent, without longitudinal ridge on inner margin.

Types. Holotype, male (HNMH): “Vietnam, Dong Nai, Ma-Da forest, Sample 14, 13.06.95, T. Sergeeva leg.”. Paratypes: Vietnam, Dong Nai, Ma-Da forest, T. Sergeeva leg. (HNMH), Sample 5, 10.05.95 – 1 male, Sample 11, 6.06.95 – 1 male.

Key to the species

1. Posterior angles of pronotum sharp, strongly protruding posteriorly beyond the level of mid part (Fig. 89) 2
- Posterior angles of pronotum almost straight, slightly protruding posteriorly beyond the level of mid part (Figs 103, 115) 4
2. Middle of prosternum strongly punctate, punctures fused into shallow grooves; pronotal puncturation dense, distances between punctures equal to 0.5–1.0 puncture diameter *javanus*
- Middle of prosternum virtually smooth, single, delicate punctures may be present; pronotal puncturation sparse, distances between punctures exceeding puncture diameter 3
3. Body length 11.0–12.0 mm; body moderately convex; pronotum slightly more elongate, ratio pl/pb ca. 0.68–0.69; pronotum moderately densely punctate, distances between punctures ca. 1–2 puncture diame-

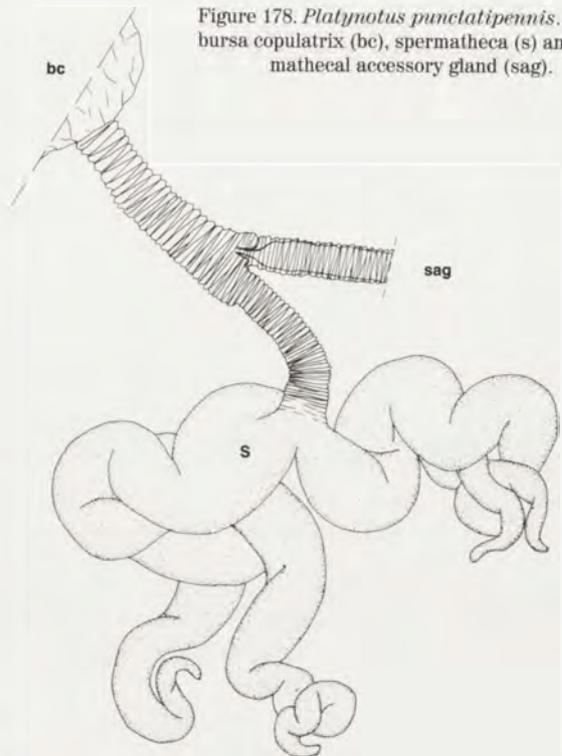


Figure 178. *Platymotus punctatipennis*. Part of bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag).

- ters; punctures in striae small; male fore tibiae without ridge on inner margin *brancuccii*
- Body length 15.0–16.0 mm; body strongly convex; pronotum slightly less elongate, ratio pl/pb ca. 0.61–0.66; pronotum sparsely punctate, distances between punctures ca. 3–4 puncture diameters; punctures in striae medium-sized; male fore tibiae with a ridge on inner margin *phanrangiensis*

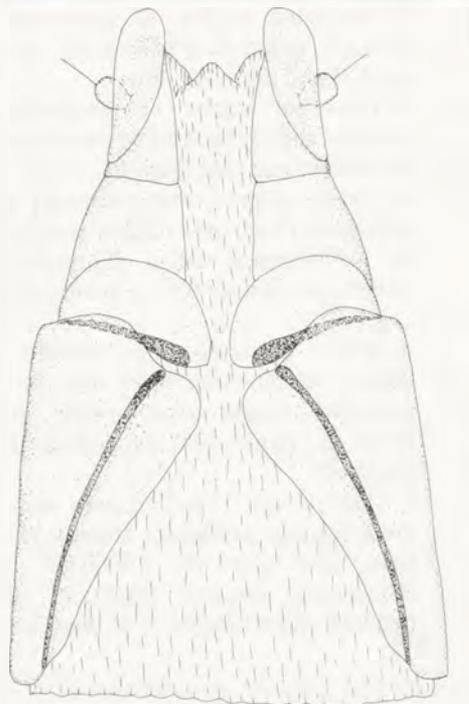


Figure 179. *Platynotus punctatipennis*. Ovipositor.

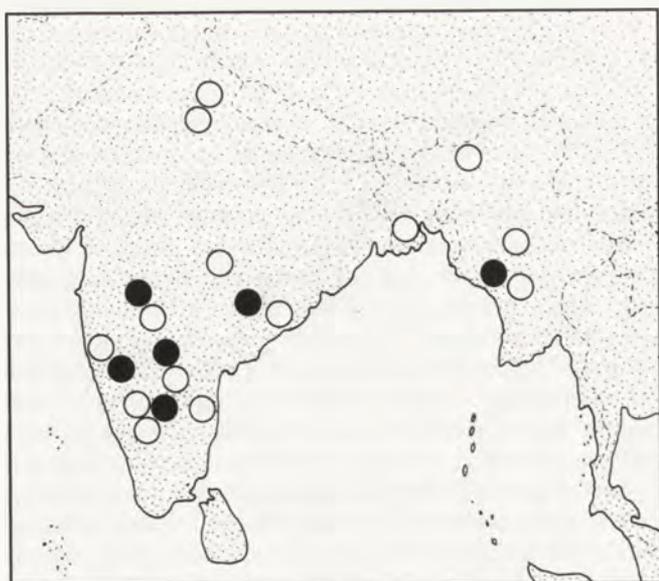


Figure 180. Distribution of *Platynotus* (white circles) and *Platynotoides* (black circles).

4. Lateral margins of pronotum smooth (Fig. 103); anterior margin of mentum shallowly emarginate (Fig. 108); elytral puncturation as in fig. 110; last abdominal ventrite widely bordered; sclerites in bursa copulatrix moderately convex (Fig. 119) *rondoni*
- Lateral margins of pronotum crenulate (Fig. 115); anterior margin of mentum slightly curved (Fig. 112); elytral puncturation as in fig. 117; last abdominal ventrite narrowly bordered (Fig. 118); sclerites in bursa copulatrix strongly convex (Figs 113–114) *marzenae*

Species of the genus *Notocorax*

1. *N. brancuccii* sp. nov.
2. *N. javanus* (Wiedemann)
Opatrum javanum Wiedemann, 1819
3. *N. marzenae* (Iwan) comb. nov.
Platyndarus marzenae Iwan, 1990
4. *N. phanrangiensis* sp. nov.
5. *N. rondoni* (Ardoïn) comb. nov.
Pseudoblaps rondoni Ardoïn, 1968

Penthicoides Fairmaire (Figs 121–130, 144)

Penthicoides Fairmaire, 1896: 20. Type species, by monotypy: *Penthicoides seriatoporus* Fairmaire, 1896. *Penthicoides* Fairmaire: Gebien 1910: 287; 1938: 309 [428]; Kaszab 1975a: 357.

Notes. *Penthicoides* is a monotypic genus, the only one in the Orient with fully developed wings. Like the genera of the phylogenetic lineage “*Platynotus*” it has a “tongue” on the apex of the elytral epipleuron (Fig. 126) and the basal border of the pronotum is interrupted in the middle (Fig. 122). Besides these characters, the presence of large denticles in the bursa copulatrix (Fig. 130) places it close to *Notocorax*.

Its characteristic apomorphic features are: a strong narrowing of the eye (between gena and temple eye width equal to 1 facet) and the structure of aedeagus (strongly widened, spade-shaped parameres) (Figs 124–125).

Distribution. Western part of central India (Fig. 144).

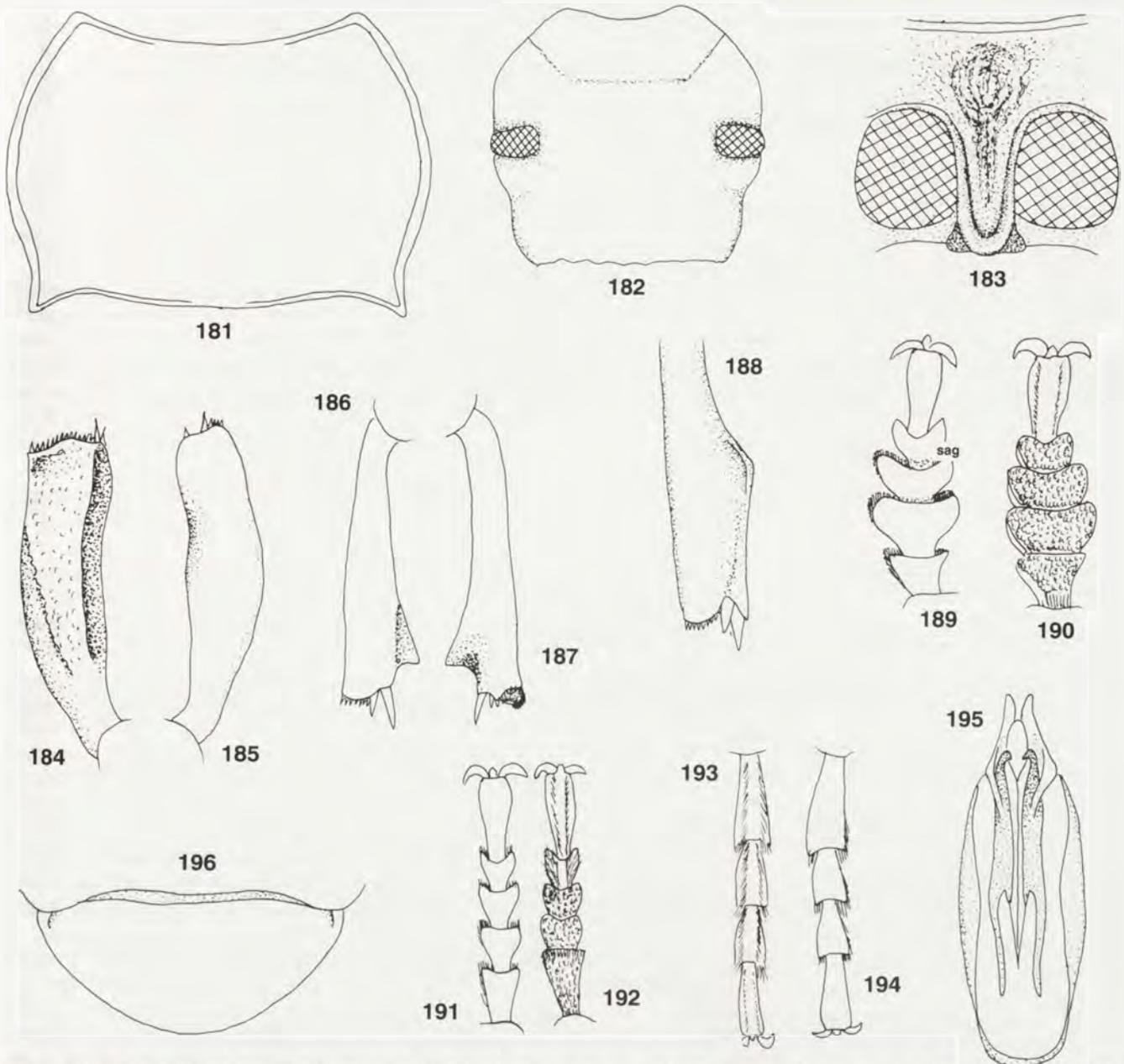
Species of the genus *Penthicoides*

1. *P. seriatoporus* Fairmaire, 1896.

Platylurak Iwan (Figs 131–144)

Notocorax Mulsant et Rey 1853a: 273; 1853b: 48. Type species, designated by Kaszab 1975a: 299; *Notocorax nervosus* Mulsant et Rey, 1853. Junior homonym of *Notocorax* Dejean: Iwan 1990: 123. *Notocorax* Mulsant et Rey: Gemmiger et Harold 1870: 1913; Gebien 1910: 273; 1938: 293 [412]; Kaszab 1975: 298.

Platylurak Iwan, 1990: 124. Type species, original designation: *Notocorax nervosus* Mulsant et Rey, 1853.



Figures 181–196. *Pseudoblaps merkli*. (181) pronotum, (182) head, (183) prosternum. 184–185. Male protibia: (184) ventral, (185) dorsal. 186–187. Male mesotibia: (186) ventral, (187) dorsal. (188) apex of male metatibia. 189–190. Male protarsi: (189) dorsal, (190) ventral. 191–192. Male mesotarsi: (191) dorsal, (192) ventral. 193–194. Male metatarsi: (193) ventral, (194) dorsal. (195) aedeagus, (196) last abdominal ventrite.

Notes. The name *Notocorax*, given by Mulsant and Rey (1853a, 1853b) to a genus, with *Notocorax nervosus* Mulsant et Rey, 1853 designated by these authors as type species, is a junior homonym of *Notocorax* – the name given by Dejean in 1834 to a genus with one species: *Opatrum javanum* Wiedemann, 1819, which automatically became type species by monotypy. Because of this, in my 1990 paper I gave a new name, *Platyburak* (in honour of an outstanding coleopterist, doyen of the Polish entomology Dr. Bolesław Burakowski), to the genus interpreted by Kaszab (1975a) as *Notocorax* Mulsant et Rey, 1853.

The genus is characterized by its spermatheca structure (Fig. 142) and short, but obvious elytral hairs (synapo-

morphies). *Platyburak* is closest to *Pseudoblaps* due to the similar structure of male fore and hind tibiae (cf. Figs 132–134 and 188), the same type of spermatheca, and elytral puncturation.

Distribution. S India, Burma, Sikkim (Fig. 144).

Key to the species (see Iwan 1990a).

Species of the genus *Platyburak*

1. *P. ampliatus* (Fairmaire)
Pseudoblaps ampliata Fairmaire, 1896
2. *P. blapoides* (Kaszab)
Notocorax blapoides Kaszab, 1975a

3. *P. crenatus* (Fabricius)
Blaps crenata Fabricius, 1781
4. *P. frilingeni* (Kaszab)
Notocorax frilingeni Kaszab, 1975a
5. *P. girardi* (Kaszab)
Notocorax girardi Kaszab, 1975a
6. *P. kaszabi* Iwan, 1990
7. *P. kukuczkaei* Iwan, 1990
8. *P. mandli* (Kaszab)
Notocorax mandli Kaszab, 1975a
9. *P. nervosus* (Mulsant et Rey)
Notocorax nervosus Mulsant et Rey, 1853
10. *P. opatroides* (Kaszab)
Notocorax opatroides Kaszab, 1975a
11. *P. ramosus* (Fairmaire)
Pseudoblaps ramosus Fairmaire, 1896
12. *P. simplicipes* (Kaszab)
Notocorax simplicipes Kaszab, 1975a

13. *P. tranquebarensis* (Iwan)
Notocorax tranquebarensis Iwan, 1989

Platycolpotus gen. nov.
(Figs 145–159, 42)

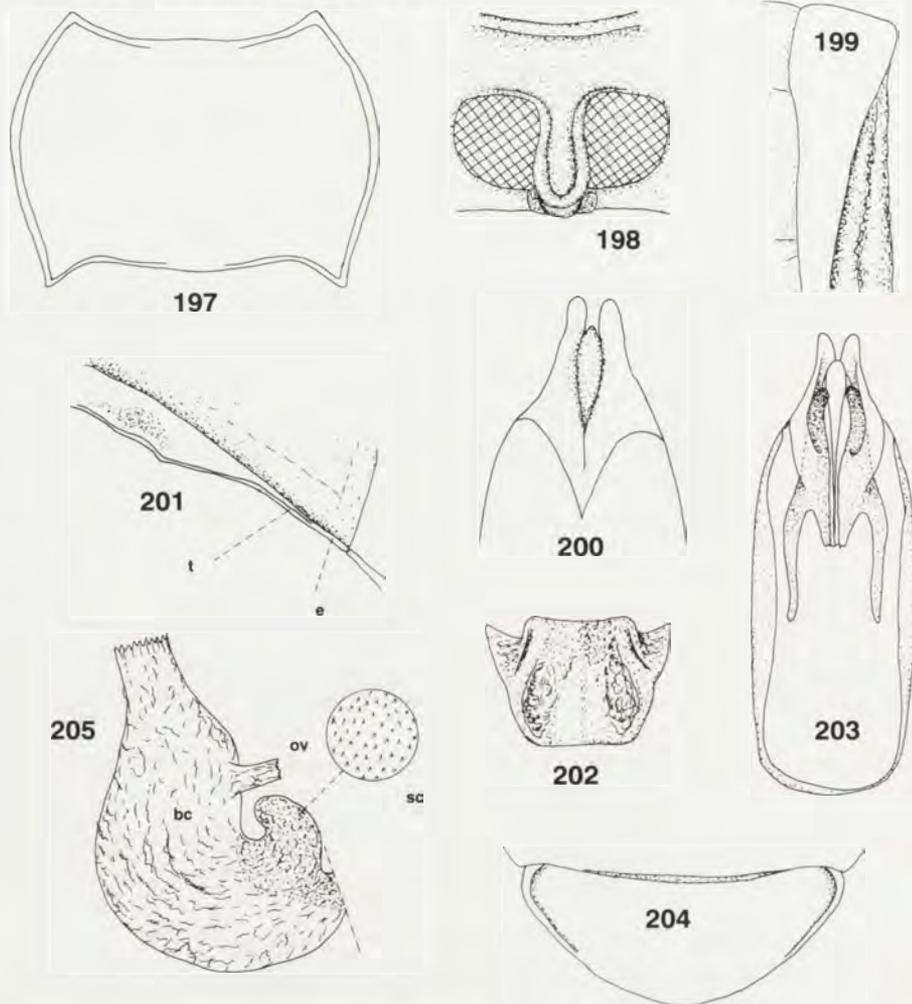
Type species. *Platydendarus dendaroides* Kaszab, 1975; gender masculine.

Name derivation. from the generic name *Colpotus* and the prefix *Platy-* (from the tribal name Platynotini).

Diagnosis. *Platycolpotus* belongs to the phylogenetic lineage "Menearchus". The genus is most closely related to *Colpotinoides* (glossy body surface and rather strong puncturation), from which it differs in the pronotum shape (cf. Figs 145, 151 and 27, 40), epipleura structure (more narrowed in *Platycolpotus*) (cf. Fig. 153 and 34), degree of elytra "tucking" (more "tucked" in *Platycolpotus* – fig. 158) and the structure of male fore tibia (Fig. 147 – *Platycolpotus*).

Description. Length 8.5–11.0 mm. Body rather strongly

convex; head, pronotum and elytra distinctly and densely punctate. Head laterally weakly narrowed, between gena and temple 4–5 facets; a longitudinal ridge present on frons, at inner margin of eye; clypeus shallowly emarginate anteriorly. Pronotum slightly longer than wide, with moderately rounded sides; base distinctly, bisinuate emarginate; bordering of anterior margin widely interrupted in middle; base entirely bordered. Scutellum medium-sized (distance between humeral angle and scutellum ca. 3–4 × scutellum width). Elytral sides "tucked", interval IX and a part of VIII visible from the underside; epipleura strongly narrowed; humeral angles rounded; anterior margin of elytra slightly convex anteriorly; connection of elytral striae: 1-9, 2-7, 3-6, 4-5, 8-free. Prosternal process protruding, narrowly bordered. Last abdominal ventrite narrowly, but entirely bordered (Fig. 157). Male fore tibia slightly widened, with a shallow ridge on the inner margin (Fig. 147); mid femur with a small denticle (Fig. 149). Aedeagus as in fig. 150, apical part parallel sided. Ovipositor as in fig. 154, length ratio paraproct/coxites ca. 1.05–1.15; bursa copulatrix with no sclerites, evenly narrowed towards outlet of spermatheca and accessory gland, spermatheca as in fig. 159.



Figures 197–205. *Pseudoblaps substriata*. (197) pronotum, (198) prosternum, (199) basal part of elytral epipleuron, (200) apical part of aedeagus, dorsal, (201) apex of elytron (e – epipleuron, t – tongue), (202) mentum, (203) aedeagus, (204) last abdominal ventrite, (205) bursa copulatrix (bc) with sclerites (sc) and oviduct (ov).

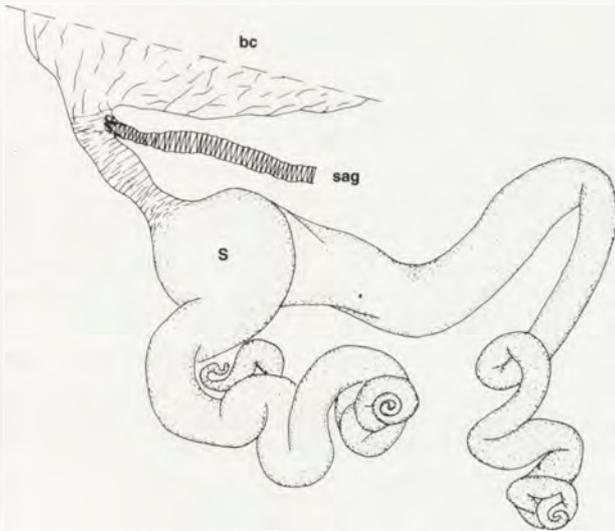


Figure 206. *Pseudoblaps substriata*. Part of bursa copulatrix (bc), spermatheca (s) and spermathecal accessory gland (sag).

Note. Confirmation of my interpretation and a complete description of the genus will be possible only after examining the male characters of *pandaroides* and the female genitalia of *dendaroides*.

Distribution. S India (Fig. 42).

Key to the species

- 1. Head widest anterior to eyes (Fig. 146); punctures on frons separate, not fused; punctures in elytral striae regular, small (ca. 35 punctures in stria IV) (Fig. 148); border of prosternal process disappearing at apex; prosternum distinctly punctate *dendaroides*
- Head widest at eye level (Fig. 152); punctures on frons fused and forming longitudinal grooves; punctures in elytral striae irregular, rather large (ca. 18 punctures in stria IV) (Fig. 155); border of prosternal process complete (Fig. 156); prosternum smooth, only prosternal process distinctly and densely punctate *pandaroides*

Species of the genus *Platycolpotus*

- 1. *P. dendaroides* (Kaszab) **comb. nov.**
Platydendarus dendaroides Kaszab, 1975a
- 2. *P. pandaroides* (Fairmaire) **comb. nov.**
Platynotus pandaroides Fairmaire, 1896

***Platynotoides* Kaszab**
(Figs 160–170, 180)

***Platynotoides* Kaszab, 1975a: 296.** Type species, by original designation: *Platynotus belli* Fairmaire, 1896.

Notes. *Platynotoides* displays a combination of apomorphies characteristic of the remaining genera of the phylogenetic lineage “*Platynotus*”. The structure of the fore and hind tibia (Fig. 166) places *Platynotoides* close to *Platyburak* and *Pseudoblaps*; the small scutellum (Fig.

162), spermathecal structure (Fig. 168) and elytral puncturation – to *Platynotus*. Like *Pseudoblaps*, it has the basal border of the pronotum interrupted (Fig. 160).

It is the closest to *Platynotus*, from which it differs in a widely interrupted border of the pronotal base and structure of male tibiae.

Distribution. Southern and central parts of India, Burma (Fig. 180).

Key to the species (see Kaszab 1975a).

Species of the genus *Platynotoides*

- 1. *P. belli* (Fairmaire)
Platynotus Bellii Fairmaire, 1896
- 2. *P. tumidipes* (Fairmaire)
Platynotus tumidipes Fairmaire, 1896

***Platynotus* Fabricius**
(Figs 171–180)

Platynotus Fabricius, 1801: 138. Type species, designated by Gebien 1938: 293; *Blaps excavata* Fabricius, 1775. *Platynotus* Fabricius: Latreille 1804: 288; Dejean 1836: 211; Mulsant et Rey 1853a: 264; Mulsant et Rey 1853b: 39; Lacordaire 1859: 236; Gemminger et Harold 1870: 1912; Gebien 1910: 273; 1938: 293 [412]; Kaszab 1975a: 290.

Notes. *Platynotus* is a very distinct genus, characterized by the following synapomorphies: presence of a tubercle in the middle of the prosternum (Figs 171–172), shortened distance between bases of coxite lobes 3 and 4 (Fig. 179). The small scutellum (Fig. 174), spermathecal struc-

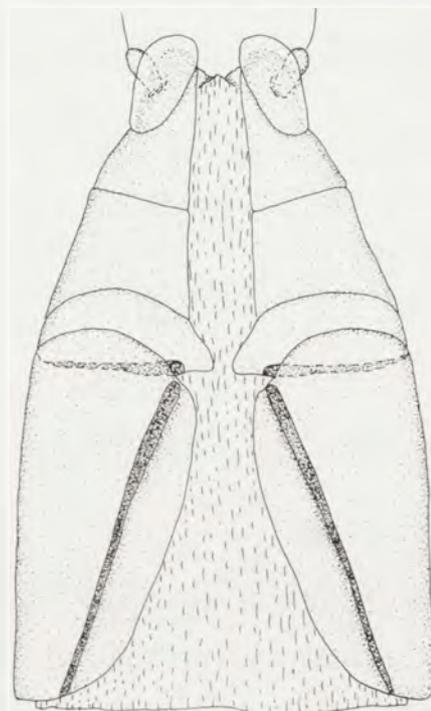


Figure 207. *Pseudoblaps substriata*. Ovipositor.

ture (Fig. 178) and the type of elytral puncturation place this genus close to *Platynotoides*.

Distribution. Central and eastern parts of India, Assam, Bangladesh, Burma (Fig. 180).

Key to the species (see Kaszab 1975a).

Species of the genus *Platynotus*

1. *P. deyrollei* Mulsant et Rey, 1853
2. *P. excavatus* (Fabricius)
Blaps excavata Fabricius 1775
3. *P. hiekei* Kaszab, 1975a
4. *P. perforatus* Mulsant et Rey, 1853
5. *P. punctatipennis* Mulsant et Rey, 1853
6. *P. striatus* (Fabricius)
Blaps striata Fabricius, 1781

***Pseudoblaps* Guérin**
(Figs 144, 181–207)

Pseudoblaps Guérin, 1834: 28. Type species, designated by Gebien 1938: 293: *Pseudoblaps substriata* Guérin, 1834. *Pseudoblaps* Guérin: Lacordaire 1859: 237; Gemminger et Harold 1870: 1913;

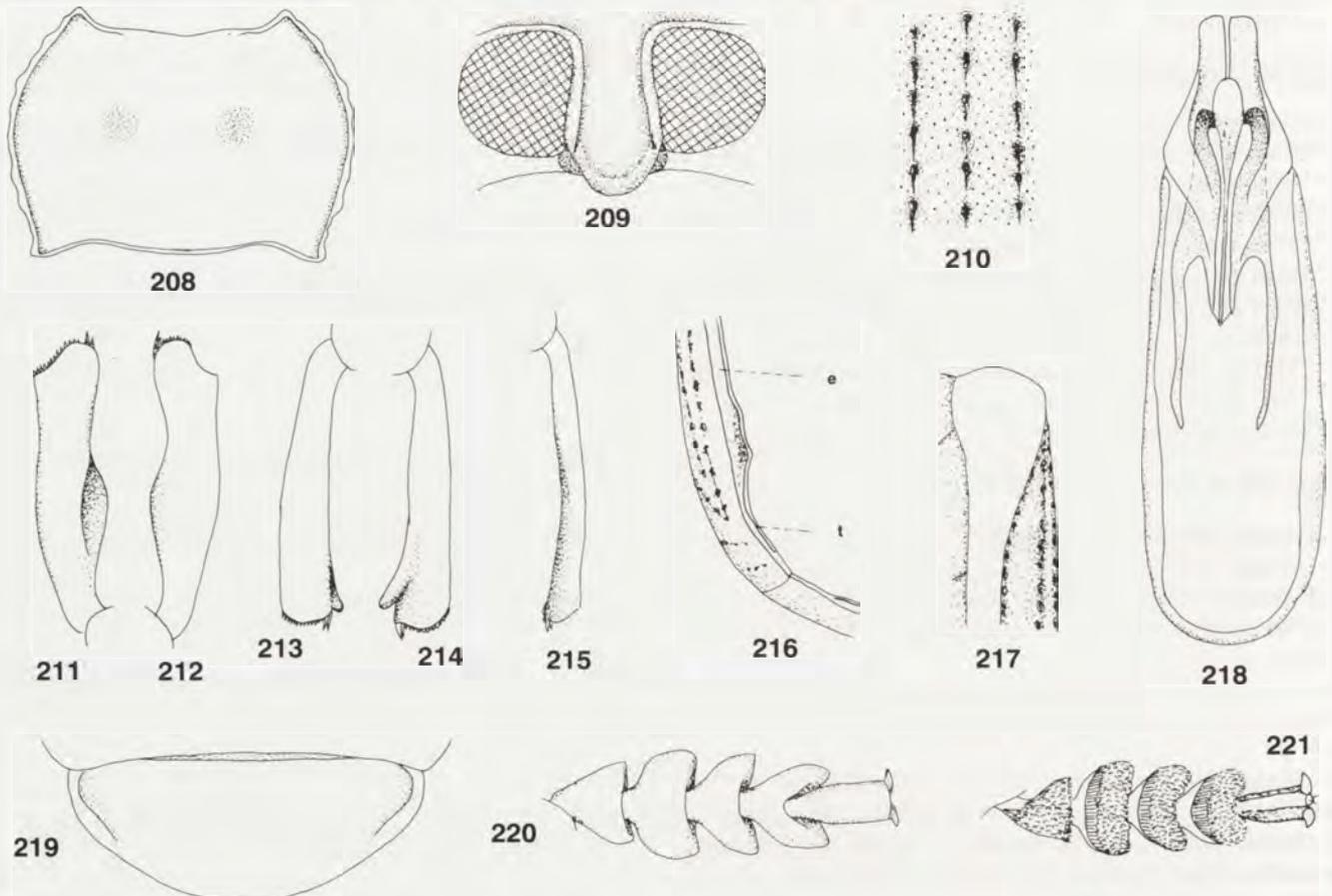
Gebien 1910: 273; 1938: 293 [412]; Kaszab 1960: 128; 1970: 133; 1975a: 321; Medvedev 1968: 87.

Notes. This genus, together with *Platynotus*, *Platyburak* and *Platynotoides*, forms a distinct group in the phylogenetic lineage "Platynotus" (bordered prosternal process (Figs 183, 198), connection of elytral striae). The structure of spermatheca (Fig. 206) and bursa copulatrix (presence of sac-like invagination covered on the inside with fine needle-like spines) (Fig. 205) are evident synapomorphies which distinguish *Pseudoblaps* from the remaining genera. The interrupted border of the pronotum (Figs 181, 197) places it close to *Platynotoides* and *Notocorax*, however, it is most closely related to *Platyburak* (structure of male tibiae, puncturation of elytra and type of spermatheca).

Distribution. SE Iran, E Afghanistan, Pakistan, N India, Burma (Fig. 144).

***Pseudoblaps merkli* sp. nov.**
(Figs 181–196)

Name derivation. Dedicated to Dr. Ottó Merkl, my colleague and a very friendly curator of the beetle collection of the Budapest Museum.



Figures 208–221. *Pseudonotocorax mroczkowskii*. (208) pronotum, (209) prosternal process, (210) elytral puncturation. 211–212. Male protibia: (211) ventral, (212) dorsal. 213–214. Male mesotibia: (213) dorsal, (214) ventral. (215) male metatibia, (216) apex of elytron (e – epipleuron, t – tongue), (217) basal part of elytral epipleuron, (218) aedeagus, (219) last abdominal ventrite. 220–221. Male protarsi: (220) dorsal, (221) ventral.

Terra typica. Rajasthan (India).

Diagnosis. *P. merkli* is very closely related to *zarudnyi* as indicated by the structure of the male hind tibiae which are apically widened.

The species differ in male characters – structure of fore tarsus (wide in *merkli*; narrow in *zarudnyi*), fore tibia (strongly widened, with a wide ridge on the inner side in *merkli*; weakly widened, with a narrow ridge in *zarudnyi*), and mid tibia (with a large preapical denticle in *merkli*; a small, apical denticle in *zarudnyi*).

Description. Length 19.0–20.0 mm; body elongate, oval, moderately convex; pl/pb ca. 0.65, el/eb ca. 1.47–1.50, pl/el ca. 0.35–0.39, pb/eb ca. 0.81–0.88. Body upperside and underside of thorax mat, very delicately punctate; abdominal ventrites glossy, strongly and densely punctate. Head as in fig. 182; widest at eye level; eye laterally narrowed (between temple and gena 3 facets). Pronotum slightly convex, with a wide lateral border; bordering of pronotum base narrowly interrupted in middle; anterior angles rounded, posterior sharp and produced posteriad (Fig. 181). Humeral angles rounded. Scutellum medium-sized (distance between humeral angle and scutellum ca. 4 × scutellum width, transverse, glossy, densely punctate. Anterior margin of elytra slightly convex anteriorly; punctures in striae poorly visible, striae practically sulcate; convexity and shape of intervals irregular; elytra moderately “tucked”, interval IX and a part of VIII visible from the underside. Elytral epipleura evenly narrowed posteriad; in its apical part bordered (a “tongue”), the bordering disappearing just before apex. Middle of prosternum with longitudinal rugosity, prosternal process relatively widely bordered (Fig. 183). Last abdominal sternite unbordered (Fig. 196). Male fore tarsi widened; without glossy median groove on the underside (except claw segment), on mid tarsi a groove on segments 4 and 5, on hind tarsi a groove on all segments (Figs 189–195). Male fore tibiae widened, with a wide longitudinal ridge on the inner margin (Figs 184–185); on mid tibiae a large, sharp preapical denticle (Figs 186–187); hind tibiae arcuately bent inwards, apically widened (character typical for members of *Platyburak*). Aedeagus as in fig. 195. Female internal genitalia and ovipositor typical of the genus *Pseudoblaps* (Figs 206–207).

Types. Holotype, male (HNMH): “India: Rajasthan, Saravan vill, 9.VII.61, Survey parly”. Paratype: India: Rajasthan, Saravan vill, 9.VII.61, Survey parly, (HNMH) 1 female.

Key to the species (see Kaszab 1975a).

Species of the genus *Pseudoblaps*

1. *P. deserticola* Kaszab, 1975a
2. *P. indica* Kaszab, 1975a
3. *P. iranica* Kaszab, 1975a
4. *P. kabuliensis* Kaszab, 1970
5. *P. lindemanna*e Kaszab, 1975a
6. *P. medvedevi* Kaszab, 1975a
7. *P. merkli* sp. nov.
8. *P. nuristanica* Kaszab, 1960
9. *P. pakistana* Kaszab, 1961
10. *P. substriata* Guérin, 1834
11. *P. zarudnyi* Medvedev, 1968

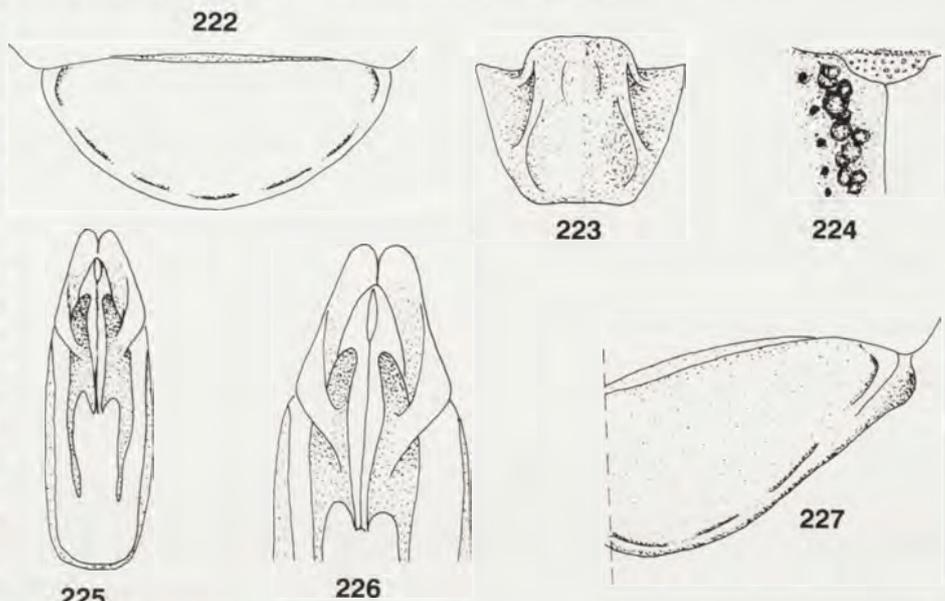
***Pseudonotocorax* gen. nov.**

(Figs 75, 208–221, 228)

Type species. *Pseudonotocorax mroczkowskii* sp. nov.; gender masculine.

Name derivation. From *Notocorax*, to which the new genus is externally very similar.

Diagnosis. Because of the aedeagus structure (apical part parallel sided) and the presence of a denticle on the inner side of the male mid tibia I have included this genus in the “Menearchus” lineage. However, the presence of a border (a “tongue”) on the apex of the elytral epipleuron places it very close to the “Platynotus” lineage, and especially to the genera *Notocorax* which has a similarly shaped pronotum and similar elytral puncturation, and to *Platynotoides* which has similar male fore tibiae and also lacks a border on the last abdominal ventrite.



Figures 222–227. *Rugoplatynotus andreweesi*. (222) last abdominal ventrite, (223) mentum, (224) scutellum and part of elytron, (225) aedeagus, (226) apical part of aedeagus, (227) last abdominal ventrite, semilateral.

Description. See description of *Pseudonotocorax mroczkowskii*.

Pseudonotocorax mroczkowskii sp. nov.

Name derivation. In honour of the Polish coleopterist, an outstanding specialist in zoological nomenclature, Prof. Maciej Mroczkowski.

Locus typicus. Vizagabatam (India).

Diagnosis. See diagnosis of *Pseudonotocorax*.

Description. Length 12.5 mm; upperside mat, underside with a greasy sheen. Body oval, in posterior part of elytra distinctly convex; pl/pb ca. 0.63, el/eb ca. 1.41, pl/el ca. 0.39, pb/eb ca. 0.87 (Fig. 228). Head widest at eye level; eye weakly narrowed laterally (between temple and gena 4 facets). Head and pronotum with puncturation fairly dense, distance between punctures ca. 0.5–1.0 puncture diameter. Pronotum sides rounded; posterior angles straight; border of anterior margin widely interrupted in middle; base entirely bordered, moderately bisinuately emarginate; lateral margins corrugated, as in *Notocorax marzenae* (Fig. 208). Scutellum glossy, strongly punctate, fairly large (distance between humeral angle and scutellum ca. 2.75 × scutellum width). Humeral angles rounded; puncturation in striae irregular, punctures elongate, diffuse; intervals very poorly convex, puncturation barely visible; epipleuron strongly narrowed, its border (a “tongue”) disappearing just before apex (Fig. 216); elytra strongly “tucked” – interval IX and parts of VIII and VII visible from the underside (Fig. 217). Prosterum virtually smooth; prosternal process strongly convex, border narrow, disappearing at apex (Fig. 209). Last abdominal ventrite unbordered, only slight impressions visible at base (Fig. 219). Male fore tarsus very strongly widened (Figs 220–221); fore tibia wide, with a blunt, wide denticle on the inner margin (Figs 211–212); on mid tibia a sharp pre-apical denticle (Figs 213–214), hind tibia slightly bent inwards (Fig. 215); on mid femur a small denticle on the inner side. Aedeagus as in fig. 218, apical part narrowed, but sides parallel.

Type. Holotype, male (HNMH): “India, Vizagabatam”.

Distribution. E India (Fig. 75).

Species of the genus *Pseudonotocorax*

1. *P. mroczkowskii* sp. nov.

Rugoplatynotus Kaszab

(Figs 144, 222–227)

Rugoplatynotus Kaszab, 1975: 288. Type species, by monotypy: *Pseudoblaps Andrewesi* Fairmaire, 1896.

Notes. The genus is well defined by the following apomorphies – complete absence of pronotal border and the presence of shiny tubercles covering pronotum and elytra (Fig. 224).



Figure 228. *Pseudonotocorax mroczkowskii* (by M. Szczepańska). Male.

Mentum as in fig. 223. Border of the last abdominal ventrite narrowly interrupted a few times (Figs 222, 227). Aedeagus as in figs 225–226, apical part tapered.

Distribution. Burma (Fig. 144).

Species of the genus *Rugoplatynotus*

1. *R. andrewesi* (Fairmaire)

Pseudoblaps Andrewesi Fairmaire 1896

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