# The New World species of Ataenius HAROLD, 1867. I. Revision of the A. crenator-group, A. nugator-group and A. perforatus-group (Coleoptera: Scarabaeidae: Aphodiinae: Eupariini)\*

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Abstract. The *crenator*-group, *nugator*-group and *perforatus*-group of the New World species of *Ataenius* HAROLD are revised. Twenty seven species are recognized, including 8 species from South America described as new: *A. crenator*-group – *buenavistae* sp.n., *tambopotae* sp.n.; *A. nugator*-group – *bolivari* sp.n., *guayasi* sp.n., *ocumarensis* sp.n., *pseudocommunis* sp.n., *tovarensis* sp.n.; *A. perforatus*-group – *yungasus* sp.n. The 18 previously used names are considered valid, 8 synonoms and one replacement name are proposed as follows: *A. arrowi* HINTON (= *leleupi* PETROVITZ, syn. n.); *A. chapini* HINTON (= *frankorum* DELOYA, syn. n.); *A. crenator* HAROLD (= *nigritus* PETROVITZ, syn. n.), *A. nugator* HAROLD (= *bolivianus* HINTON, syn. n., = *duplex* HINTON, syn. n.); *A. opatrinus* HAROLD (= *narialis* PETROVITZ, syn. n., = *paraperforatus* DELOYA & IBANEZ-BERNAL, syn. n., = *woodruffi* CARTWRIGHT, syn. n.); *A. talpoides* nom. n. (= *talpa* BALTHASAR). A key is provided, each taxon is diagnosed and illustrated, available biological information and distribution data are given. Phylogenetic hypothesis is presented for the relationships among discussed taxa.

Key words: Scarabaeidae, Aphodiinae, Ataenius, species-groups, New World, taxonomy, new species, phylogeny.

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#### I. INTRODUCTION

The present revision of the three species-groups of the genus *Ataenius* HAROLD is the first in the series in which I am attempting to cover several monophyletic groups of approximately 180 Neotropical and Nearctic species of *Ataenius* sensu stricto, representing one of the largest and most morphologically diverse genera of the Aphodiinae. In the present and following revisions of the groups, the detailed data are restricted to the Neotropical representatives of *Ataenius* (Central and

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South America and West Indies) but the Nearctic species are assigned to the particular groups enclosing their closely related congeners.

The New World species of *Ataenius* have received little attention beside SCHMIDT'S (1922) world monograph. Other than isolated species descriptions and contributions covering a limited number of species, the North American members of the genus were revised by CARTWRIGHT (1974), and those of the French Antilles were treated by CHALUMEAU & GRUNER (1973), CARTWRIGHT & CHALUMEAU (1978), and CHALUMEAU (1983).

The Neotropical *Ataenius* sensu stricto currently includes approximately 140 pecies with numerous species recognized as new to science. As stressed by STEBNICKA & HOWDEN (1997), the taxonomy and biogeography of *Ataenius* are very difficult. The intention of intrageneric grouping is to make possible identification of numerous species, and to contribute to a better knowledge of their mutual affinities. A problem of grouping is that some species do not fit easily into any particular group, probably forming a number of monotypic "groups". On the other hand, there are clusters of species sharing a similar combination of the external character states being usually correlated with structures of the male genitalia, but some species within a group have the male genitalia similar to those from any other group of species. The other problems are connected with a north/south vicariance (or substitute) demonstrated by several species, and with extreme ecological (ecophenotypic) and seasonal variation of many species having the larger geographic ranges. Variation is expressed either externally, often in several character states, and/or in the characters of the male genitalia.

The members of *Ataenius* occur in a variety of habitats throughout the American continent and the neighbouring islands. Geographical distributions of numerous species demonstrate certain patterns of historical significance, some species or groups of species exhibit restricted, often relict patterns. The Nearctic species are closely related to the Neotropical forms and show varying degrees of penetration into Central America, whereas the southern species extend variously to the Sonoran province. The Sonoran fauna appears to be more closely allied with Neotropical than with Nearctic fauna, and comprises a group of endemic species which are undoubtedly of the South American origin. The Central American transition zone includes either northern and southern elements and local endemic species as well, therefore the species of this area cannot be treated taxonomically without knowledge of the whole continental fauna.

The leading chapters presented herein, are intended to form a framework upon which the following species-groups revisions will be based. In this connection, several qualifications and limitations should be emphasized in the context of current knowledge of the taxonomy of *Ataenius*. Every student who attempts to identify a specimen using this and subsequent revisions of the groups should consider that: 1/ the specimen may be of a species not previously recorded from a given area; 2/ it may be peripheral representative of a species of northern or southern cohesive range; 3/ it may be from a local population with somewhat different characters than any examined before; 4/ it may be of a species forming a transition link between two groups; 5/ it may be of a species unknown to science. In the latter case, either the external and internal characters should be carefully analysed.

#### II. MATERIAL AND METHODS

In the course of the last four years, most of the larger collections of the New World *Ataenius* were examined, and in addition to the over 15000 individuals identified at present, all the type specimens available in various collections were studied. This number of specimens collected in various habitats and seasons appears to be barely a minimum to outline a general picture of the highly differentiated fauna. In order to have maximum usefulness, the groupings of species are based primarily on external characters and on structures of the male genitalia. In many cases, a separation of species within a group is possible exclusively by dissection of the male aedeagus (e.g. in the *A. nugator*-group), in some species or groups, the male genitalia are not differentiated and do not offer any diagnostic characters.

In a revision dealing with numerous species it is necessary to discard some details, with relatively brief descriptions supplemented with keys and illustrations. Complete data on distribution are given only when less than 50 specimens of a species are known, or when all are from only a few localities, or when a species is known only from its original description. Available biological associations and known seasonality are summarized following data on distribution or under Remarks. Some complex problems concerning geographic variations are mentioned, but many of these need a much more detailed type of study than is presently possible.

The generic description is given below, followed by phylogenetic analysis, definitions of the groups, keys and descriptions. Under species descriptions, all characters defining the group are presumed to apply unless stated otherwise.

BALTHASAR'S Collection, Prague

#### Abbreviations used

BCP	BALTHASAR'S Confection, Frague
BMNH	British Museum of Natural History, London
CAS	California Academy of Sciences, San Francisco
CMN	Canadian Museum of Nature, Ottawa
DEIE	Deutsches Entomologisches Institut, Eberswalde
FMLT	Fundacion MIGUEL LILLO, Tucumán, Argentina
FSCA	Florida State Collection of Arthropods, Gainesville
FVMC	Fernando VAZ-de-MELLO Collection, Viçosa, Brazil
HAHC	Henry & Anne HOWDEN Collection, Ottawa
HNHM	Hungarian Natural History Museum, Budapest
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Bruxelles
ISEA	Institute of Systematics and Evolution of Animals PAS, Krakow
JMC	J. MORRIS Collection, Gainesville
JSC	Joachim SCHULZE Collection, Berlin
MACN	Museo argentino de Ciencias naturales B. RIVADAVIA, Buenos Aires
MHNG	Museum d'histoire naturelle, Geneva
MMU	The Manchester Museum, University of Manchester
MNHN	Museum National d'hitoire naturelle, Paris
MZUSP	Museu de Zoologia, Universidade de São Paulo
NRS	Naturhistoriska Rijksmuseet, Stockholm
PSC	Paul Skelley Collection, Gainesville
RTC	R. TURNBOW Collection, Gainesville
SMNS	Staatliches Museum für Naturkunde, Stuttgart
SMTD	Staatliches Museum für Tierkunde, Dresden
UNSM	University of Nebraska State Museum, Lincoln, Nebraska
USNM	United States National Museum of Natural History, Washington DC
TMP	Transvaal Museum, Pretoria
WWC	William WARNER Collection, Arizona
ZMHB	Zoologisches Museum für Naturkunde der Humboldt Universität, Berlin
ZSM	Zoologische Staatssammlung, Munich

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#### Genus Ataenius HAROLD

Ataenius HAROLD, 1867a: 82.- HAROLD 1867b: 100, et Auctt.

Euparia Saint-Fargeau & Serville, 1828: 357 (partim).

Oxyomus STEPHENS, 1839: 159 (partim).

Auperia Chevrolat, 1864: 413 (partim).

Type species Ataenius scutellaris HAROLD, 1867a, by monotypy.

D i a g n o s i s. Length 1.5-7.0 mm. Body variously shaped and sculptured; dorsum usually unicolorous reddish brown to black, frequently covered with setae and/or argillaceous coating, rarely spotted, occasionally elytra lighter than head and pronotum.

Head moderate in size, rarely large, moderately to strongly gibbose medially, frontal suture usually marked by fine line lacking tubercles, surface variously sculptured, punctate, scabrous, transversely wrinkled, or longitudinally strigose; clypeus with anterior margin rounded, angulate, or denticulate on each side of median emargination. Eye usually well developed, partially visible or not visible from directly above.

Pronotum transverse or subquadrate, usually evenly convex or with fovea and/or tumosity laterally, or with longitudinal depression medially; sides and base margined or not, margins smooth or crenate-fimbriate, posterior angles obtuse, rounded or truncate, frequently excised before base. Scutellum triangular, relatively small, in some species foveate.

Elytra with basal bead, single or double humeral denticles and 10 striae and intervals including marginal one; striae punctate, in some species margined by lines, intervals variously scuptured, punctate, granulate or swollen, in some species or specimens alternate elytral intervals differing in height. Wings functional.

Ventral thoracic sclerites usually uniformly shaped; mesosternum less elevated than metasternum with intercoxal carina; lateral metasternal triangle distinct, rarely vague; mesocoxae contiguous or separated; abdomen with 5-6 visible, coalesced sternites, sternites fluted (longitudinally strigose) along sutures or not fluted; pygidium with median transverse carina, sometimes with longitudinal carina on scabrous apical half.

Legs usually moderate in length; profemur anteriorly with perimarginal groove; protibia usually with three teeth on outer side, rarely teeth placed othetwise; mesotibia and metatibia slightly widened toward apex, sometimes with traces of transverse ridges; apex of metatibia with or without accessory spines and with or without fringe of few setae; apical spurs located close together below tarsal insertion; tarsus short to moderate in length.

External sexual differences usually slight, apparent mostly on ventral sclerites, in the length and sculpture of visible sternites, in length of tarsal segments, and (in some species) in shape of pronotum, and in shape of terminal spur of the protibia.

Male genitalia generally homogenous in shape, moderately to strongly sclerotized; phallobase mostly without hump, equal to length of parameres or shorter; phallobase and parameres fused or not fused; apical portion of internal sac usually membranous, frequently furnished with sclerites and/or spicules.

Labro-epipharyngeal complex (Figs 30, 37, 47) adapted to soft saprophagy (STEBNICKA 1985; STEBNICKA & HOWDEN 1995, fig. 1). Proximal epipharynx generally shorter than distal part; clypeo-labral suture located across or just below the band of mostly plate-like sensilla at suspensorium labrale; chaetoparia (pectines laterales) formed by bristles in 1-3 unequal rows; tormae and lat-

eral tormal process moderately to strongly sclerotized; anterior median process variously shaped, in some species or groups of species with triangular, sclerotized plate on each side; perizygal sensilla concentrated within anterior median process, composed of various kinds of coeloconic pegs, basiconic pegs, plate-like pegs and pores; pecten medianus usually furnished with setae (sensilla trichodea) or few basiconic pegs, usually strongly sclerotized, prominent anteriorly or not prominent.

R e m a r k s. The above diagnosis of *Ataenius* covers almost the entire world fauna. The indigenous Neotropical species are recognizable by the same combination of characters as those of Australia (STEBNICKA & HOWDEN 1997) with the exception of the structural differences in the male genitalia.

# Phylogenetic hypothesis

Analysis concerns a phyletic sequence of taxa within the genus *Ataenius* Har., the cladogram supports the grouping of species. The groups will be treated within the larger context of the entire genus with the pending revisionary work underway.

Table 1

Matrix of characters and taxa used in the cladistic analysis: 0 – body size: medium (0), large (1); 1 – body shape: elongate (0), plump (1); 2 – head size: medium (0), large (1); 3 – head punctation: fine (0), coarse (1); 4 – clypeal transverse wrinkles: present (0), absent (1), both states (2); 5 – pronotum, basal marginal line: contiguous (0), interrupted (1); 6 – pronotum, posterior angle: not excavate (0), excavate (1), both states (2); 7 – pronotum, anterior disc punctures prevailing: fine (0), coarse (1); 8 – scutellum: not foveate (0), foveate (1); 9 – elytral striae: not margined (0), margined (1); 10 – elytral intervals: smooth (0), swollen (1); 11 – elytral intervals 7-10 punctures: scattered (0), dense (1), both states (2); 12 – profemur anterior lobe: absent (0), present (1); 13 – metafemur posterior line; incomplete (0), complete (1); 14 – metatarsus, basal tarsomere: straight (0), curved (1); 15 – metasternum, lateral punctures: scattered (0), dense (1); 16 – metasternum, lateral triangle: narrow (0), broad (1); 17 – male protibial spur: straight (0); curved (1), both states (2); 18 – male genitalia, apices of parameres: rounded (0), lanceolate (1); 19 – male genitalia, basal lobe of parameres: absent (0), present (1).

Taxa	Characters	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
A. picinus HAR.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A. nugator-group		0	0	0	0	2	0	2	0	0	0	0	2	0	0	0	1	0	2	1	0
A. blapoides BALTH.		1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
A. buenavistae sp. N.		1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
A. crenator HAR.		1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
A. crenatostriatus (BLANCH.)		1	0	0	1	0	0	1	1	1	1	0	0	1	1	0	0	1	0	0	0
A. lanei PETR.		1	0	0	1	0	0	0	1	1	0	0	0	1	1	1	0	1	0	0	0
A. opatri	nus HAR.	1	0	0	1	0	0	0	1	1	1	0	0	1	1	0	0	1	0	0	0
A. perfor	atus HAR.	1	0	0	1	0	0	1	1	1	1	0	0	1	1	0	0	1	0	0	0
A. rubrotessellatus (BLANCH.)		1	0	0	1	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0
A. talpoides nom. nov.		1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0
A. tambopatae sp.n.		1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
A. yungasus sp.n.		1	0	0	1	0	0	1	1	1	1	1	0	1	1	0	0	1	0	0	0

The three species-groups in question form the ingroup. Characters were polarized using *Ataenius picinus* HAROLD as outgroup. The characters defined and coded in Table 1 were entered on Hennig86 program combined with Winclada 0.9 (NIXON 1999). Using algorithm ie\* (implicit enumeration), four most and equally parsimonious trees were generated, each with a length of 25 steps, consistency index CI=92, retention index RI=95.

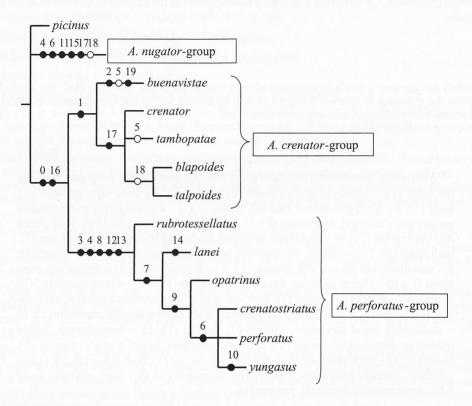


Fig. 1. Cladogram depicting hypothetical relationships among three species-groups of *Ataenius* HAR. Numbering of characters corresponds to that in the character matrix (Table 1).

The cladogram (Fig. 1) suggests a monophyletic origin for these lineages. This hypothesis is supported by synapomorphic characters composed below with the general characterizations of the groups. Autapomorphic characters are introduced to the key.

A. nugator-group. The 15 species included to this group are recognizable almost exclusively on the basis of the male genitalia. The external characters in combination given in the description and in the key are very variable and overlapping. Association of males and females of a species is uncertain. Often definite or supposed associations can be made only by finding both sexes at the same place and time; unassociated females are extremely difficult or even impossible to identify. Distribution of the group as in Fig. 2.

Length 3.5-4.8 mm. Body elongate, shiny, colour castaneous to black; in some species apex of elytra with extremely short setae. Clypeal margin rounded or obtuse on each side of median emargi-

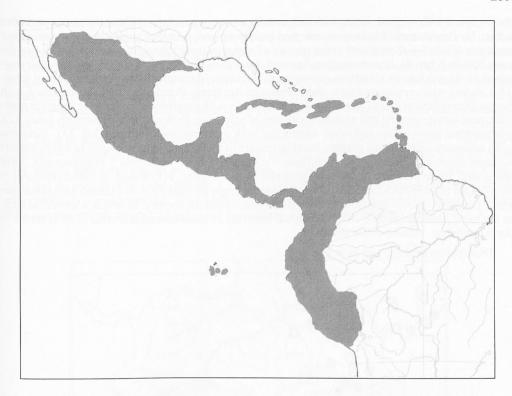


Fig. 2. Known distribution of Ataenius nugator-group of species.

nation, gena obtuse, clypeal surface usually with fine transverse wrinkles, in some species wrinkles absent (char. 4-1 shared with perforatus-group). Pronotum moderately convex, side and base margined, posterior angles obtusely rounded, in some species excised or emarginate (char. 6-1 shared with three species of perforatus-group); pronotal punctures mixed minute and fine to moderate, scattered on disc, strongly concentrated on sides. Scutellum small, smooth. Elytral humeral denticle usually small, striae variably impressed, punctate; intervals convex, lateral intervals 7-10 with dense punctures usually the same size as those on pronotal side or finer (char. 11); apex of elvtra punctate. Mesosternum shagreened with fine appressed hair, intercoxal carina weak; metasternum shining, midline impressed, disc smooth, usually with minute, scattered punctures, disc bordered posteriorly by close coarse punctures turning outward to sides where they merge with rough alutaceous sculpture (char. 15); metasternal triangle rather narrow and shallow, usually smooth; abdominal sternites finely fluted along sutures, 5<sup>th</sup> sternite with longer fluting; surface closely punctate from side to side, in some species punctures a little finer at middle; pygidium roughly eroded in apical half, sometimes with longitudinal costulae or irregular granules, apical lip narrowly shiny. Profemur with perimarginal groove, surface smooth with well separated, moderate punctures; meso- and metafemora smooth, posterior line incomplete, two-four finely setigerous, coarse punctures at knee; metatibia with fringe of setae and strong accessory spine close to bottom spur, apical spurs unequal in length, slender; basal segment of metatarsus usually longer than upper tibial spur and shorter than following tarsal segments combined. External sexual differences slight, sometimes difficult to recognize; usually penultimate abdominal sternite in male shorter than in female and less arcuate, scabrous disc of pygidium broader; in some males terminal spur of protibia curved inwardly (char. 17-1 shared with four species of *crenator*-group).

A. perforatus-group. Six large species are assigned to this group; length 5.0-7.0 mm (char. 0-1 shared with *crenator*-group); form elongate, moderately convex, glabrous, shiny dark castaneous to black with faint tinge of red. Clypeal margin rounded or subangulate on each side of median emargi-

nation, gena wide-angled; clypeal surface usually coarsely punctate, without transverse wrinkles (char. 3). Pronotum feebly convex, side and base margined, posterior angles obtusely rounded or excavate (char. 4-1 shared with some species of *nugator*-group) Scutellum elongate with two foveae basally (char. 8). Elytra elongate, humeral denticle moderate; striae simply impressed or margined by lines (char. 9), intervals convex to subcarinate. Metasternal lateral triangle broad (char. 16-1 shared with *crenator*-group); abdominal sternites finely fluted along sutures, sternite 5 with longer fluting, apical half of pygidium deeply scabrous with longitudinal costulae or irregular granules, penultimate sternite and pygidum with row of pale setae. Profemur lobed anteriorly (char. 12), perimarginal groove wide and deep; metafemur with complete posterior line (char. 13), metatibia with accessory spine; tarsus slender, basal tarsomere of metatarsus long, subequal to following tarsomeres combined. Four species, opatrinus + crenatostriatus + perforatus + yungasus sp.n. have the elytral striae partially or entirely margined by lines (char. 9-1, absent in rubrotessellatus + lanei). Last three species have the pronotal posterior angle excised (char. 6-1 shared with some species of nugator- group) and form in this clad an unresolved trichotomy, in which A. yungasus sp.n. is the most peculiar species, with the elytral intervals swollen-tuberculate (char. 10). It seems to form a separate, monospecific group.

Distribution of the group as in Fig. 3.

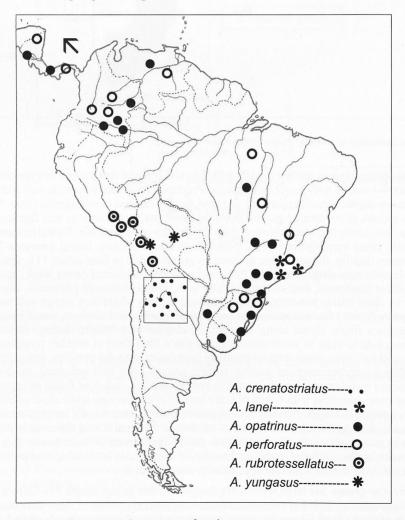


Fig. 3. Known distribution of Ataenius perforatus-group of species.

A. crenator-group. Five large species are included to this group; length 5.0-7.0 mm; body plump (char. 1), glabrous, shiny carbon black. Clypeal margin rounded on each side of median emargination, gena wide-angled; clypeal surface with transverse wrinkles. Pronotum broad, sides and base margined, base straight, posterior angles obtusely rounded. Elytra suboval, humeral denticle moderate, striae usually deep with transverse crenating punctures. Metasternal lateral triangle broad, abdominal sternites finely fluted along sutures, sternite 5 with longer fluting, apical half of pygidium deeply scabrous with longitudinal costulae or granules. Metafemur with incomplete posterior line, meso- and metatibia with accessory spine; tarsus slender, basal tarsomere of metatarsus long, equal or subequal to following tarsomeres combined. Four species, crenator + blapoides+talpoides + tambopatae sp.n. have the males with terminal spur of protibia curved inwardly (char. 17-1, shared with some species of nugator-group), A. buenavistae sp.n. differs in having a large head and the male protibial spur straight. Last two species, blapoides + talpoides are indistinguishable externally; the characters of male genitalia with apices of parameres lanceolate (char. 18 shared with nugator-group) indicate change with homoplasy. Distribution of the group as in Fig. 4.



Fig. 4. Known distribution of Ataenius crenator-group of species.

# Key to the species of Ataenius nugator- A. perforatus- and A. crenator-groups

1.	Length 3.2-4.8 mm. Sides of pronotum and elytral intervals 7-10 usually very densely, finely punctate
	Length 5.0-7.0 mm. Sides of pronotum and elytral intervals 7-10 otherwise sculptured 14
2.	Pronotal posterior angle widely truncate and excavate, discal punctures in anterior two-thirds
	evenly spaced
	Pronotal posterior angle not truncate, rarely excised, discal punctures in anterior two-thirds
	unevenly spaced
3(2)	Parameres of male aedeagus with broad membrane apically
	Parameres of male aedeagus without membrane apically
4(3)	Parameres of male aedeagus in lateral view narrowed apically
-	Parameres of male aedeagus in lateral view widened apically
5(4)	Elytral intervals 7-10 with scattered, scarce punctures
1(9)31	Elytral intervals 7-10 densely, even roughly punctate
6(5)	Elytral striae moderately crenate-punctate, intervals moderately convex A. arrowi HINT.
	Elytral striae fine, not noticeably crenate, intervals very weakly convex A. cavagnaroi CARTW.
7(5)	Pronotal posterior angle usually distinctly excised before base
	Pronotal posterior angle not excised before base, rarely slightly emarginate
8(7)	Pronotal punctures mixed fine and coarse, on disc and on side equal in size A. guayasi sp.n.
	Pronotal punctures mixed fine and moderate, on disc punctures finer than on side 9
9(8)	Side of pronotum with punctures equal in size
	Side of pronotum with punctures unequal in size
10(9)	Pygidium with longitudinal costulae or granules on scabrous disc A. catenulatus (ER.)
	Pygidium without costulae or granules on scabrous disc
	A. borgmeieri HINT. and A. cribrithorax BAT.
11(4)	Head on each side of median convexity finely simply punctate
	Head on each side of median convexity with transverse punctures or lines of united punctures 12
12(11)	Head on each side of median convexity with coarse punctures tending to coalesce into
	transverse lines
 13(12)	Pygidium with distinct longitudinal costulae on scabrous disc
13(12)	Tygididin with district longitudinal costdiae on scapious disc
_	Pygidium without costulae on scabrous disc
14(1)	Body elongate, dark castaneous or black with faint tinge of red; clypeal surface without
- ((-)	transverse wrinkles: scutellum with two foveae: profemur lobed anteriorly; metaformur
	with complete posterior line
	Body plump, carbon black, clypeal surface with more or less distinct transverse wrinkles
15(14)	Elytral striae margined by lines in apical third, in apical half or from base to apex of elytra 16
	Elytral striae not margined by lines
16(15)	Pronotal posterior angle rounded or slightly emarginate, surface punctures medium sized
	Provided to octavious and distinguish and a second to the
 17(16)	Pronotal posterior angle distinctly excised, surface punctures usually large
	Head everywhere uniformly punctured; pronotal disc with median longitudinal depression; elytral intervals swollen-tuberculate
18(17)	Clypeal side continuously rounded toward gena, clypeal surface usually with fine punctures or impunctate
	Clypeal side in front of gena slightly emarginate, clypeal surface usually with coarse punctures
19(15)	Pronotal anterior disc with fine punctures; apical spurs of metatibia straight; basal tarsomere of metatarsus straight
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	Pronotal anterior disc with mixture of fine and moderate punctures; apical spurs of metatibia sinuate; basal tarsomere of metatarsus curved
20(14)	Head large, strongly gibbose; terminal spur of protibia straight in both sexes; parameres of male aedeagus with basal lobe
-	Head medium-sized, moderately gibbose; terminal spur of protibia in male hooked inwardly; parameres of male aedeagus without basal lobe
21(20)	Middle of head and vertex with fine scattered punctures; pronotal anterior disc uniformly
	finely punctured
	Middle of head and vertex with mixed, close punctures; pronotal anterior disc with mixed
	punctures
22(20)	Parameres of male aedeagus excised ventrally
	Parameres of male aedeagus not excised ventrally
23(21)	Basal marginal line of pronotum contiguous; male genitalia with flagellum A. crenator HAR.
-	Basal marginal line of pronotum broken at middle; male genitalia with apical membrane

The A. nugator-group

## Ataenius nugator HAROLD

(Figs 5-6)

*Ataenius nugator* Harold, 1880: 41.- Schmidt 1922: 429; Hinton 1937: 191, fig. 29; Chalumeau 1983: 83; Dellacasa 1988: 278 (catalogue).

Ataenius duplex HINTON, 1936a: 418-421, figs 5-7.- DELOYA 1994: 48 (nota). New synonymy.

Ataenius bolivianus HINTON, 1937: 189-191, figs 25-28.- CHALUMEAU 1983: 83 (? synonym of nugator).

M a t e r i a l e x a m i n e d: *A. nugator*: Lectotype (Medellin, Columbia) designated by Chalumeau (1984), in MNHN. *A. duplex*: holotype male labelled "Mexico, Temascaltepec, Tejupilco, alt. 4000', 19.VI.1933, H. E. HINTON, R. L. USINGER", "*Ataenius duplex* HINTON", No 68188 USNM. *A. bolivianus*: holotype male, labelled "Type", "Cochabamba Bolivia", "*Ataenius bolivianus* HINTON", No 68191 USNM.

Other specimens (210). **Bolivia** – Santa Cruz. **Brazil** – Rondonia. **Columbia** – Cauca; Medellin; Meta river, 25 km NW Villa Vicencio. **Costa Rica** – Puntarenas, Las Cruces, 1400 m; Osa Pen. Cerro Hellado; San Jose; Guanacaste, Cańas; 3 km N Cańas, Hac. La Pacifica; Heredia, nr Puerto Viejo; Heredia, F. La Selva; Cartago Prov., Turrialba. **Ecuador** (numerous specimens) – Pichinda, 16 km E Santo Domingo; Tinalandia; Puerto Quito; Napo; Napo 250 m, Limoncocha; Cotopaxi, Latacunga, 1080'; Quevedo; Rio Palenque 700' nr Sto Domingo; Rio Palenque 47 km S Sto Domingo. **El Salvador** – Los Chorros. **Guatemala** – Panzos; Alta Verapaz, Lanquin 1000'; Alta Verapaz, nr Purulha 1500 m; Purulha, 1500 m; 7 km NE Purulha 1500 m; Alta Verapaz, Tactic; Baja Verapaz, nr Purulha 1600 m; Baja Verapaz, nr Chilasco 1700 m. **Honduras** – Morazan, 6 km SE Zamorano 350 m. **Mexico** – Oaxaca 10 km WNW Pinotepa; Los Tuxtlas; Jacala; Jalisco N Chamela; Chiapas, 1 km W Cinco Cerros. **Panama** – Chiriqui, Las Lagunas 1360 m, nr Hato del Volcan; Colon, Ft. Sherman, Pavon Hill; Bocas d. Toro Miramar; Barro Colorado Is. **Venezuela** – Caracas Valley; Merida, Tovar; Edo Aragua, Cuyagua 10 km W Ocumare.

Months collected: January to August. Specimens are in: FVMC, HAHC (CMN), ISEA, JMC, PSC, RTC, SMTD, UNSM, USNM, ZMHB.

D i a g n o s t i c c o m b i n a t i o n. Clypeus just above median emargination to front of median convexity slightly transversely wrinkled, middle of head and frontal area near eyes with fine punctures separated by about one diameter, vertex with wide band of larger punctures separated by one diameter. Pronotal posterior angles usually more or less excised, base sinuate, lat-

eral and basal margin slightly grooved and distinctly crenate. Pygidium with longitudinal costulae or granules on scabrous apical half.

R e m a r k s. *Ataenius nugator* is fairly common species, widely distributed from Mexico to Peru and Bolivia in the west and to Venezuela in the east. Variation is advanced, specimens differ in several characters including those of the male genitalia (Fig. 5). Several other species of the group, namely *cribrithorax*, *chapini*, *communis*, occur sympatrically with it in some localities. Specimens were collected at light in wet tropical montane and lowland forest, sifted from shrubs litter, coffee forest litter and cacao pod litter.

#### Ataenius cribrithorax BATES

(Figs 7-8)

*Ataenius cribrithorax* Bates, 1887: 95-96.- Schmidt 1922: 423; Chapin 1940: 28-29; Chalumeau 1983: 83 (as synonym of *nugator*).

M a t e r i a l e x a m i n e d: Lectotype (Mexico, Cordova) designated by CARTWRIGHT (1964), in BMNH.

Other specimens (70). **Costa Rica** – Cartago, Turrialba 650 m.; Alajuela, Peńas Blancas; Heredia, 10 km W Puerto Viejo; **El Salvador** – 5 km S Santa Tecla. **Honduras** – Olancho, La Muralla. **Mexico** (numerous specimens) – Veracruz, Lake Catemaco; Veracruz, Poza Rica; Veracruz, Santecomapan; Lagos des Calores; Tuxtla Gutierez; Los Tuxtlas, Station. Biol.; San Luis Potosi, Tamacunhale; Cordova; San Fernando, Tamaulipas. **Panama** – Chiriqui, Las Lagunas 1360 m, 4 km N Hato del Volcan. **West Indies** – Cuba; Jamaica, Kingston; St Thomas, Bath Fountain 500'.

Months collected: January to August. Specimens are in: HAHC (CMN), ISEA, JMC, PSC, UNSM, USNM, ZMHB.

D i a g n o s t i c c o m b i n a t i o n. Body usually brownish. Head with minute, scattered punctures at middle and on vertex. Pronotal posterior angles rounded, punctures on sides distinctly mixed minute and fine, very dense. Pygidum in apical half finely scabrous without costulae or granules. Male genitalia as in Figs 7-8.

R e m a r k s. The species was synonymized with *A. nugator* by CHALUMEAU (1983). Based on a careful study of the external characters and the male genitalia, I am here reestablishing the name *cribrithorax* for the populations occurring in Central America and in the West Indies. The species differs externally from *nugator* by its finer and less sinuate basal marginal line of the pronotum. Specimens were collected at human excrements and at light.

# Ataenius catenulatus (ERICHSON)

(Figs 9-10)

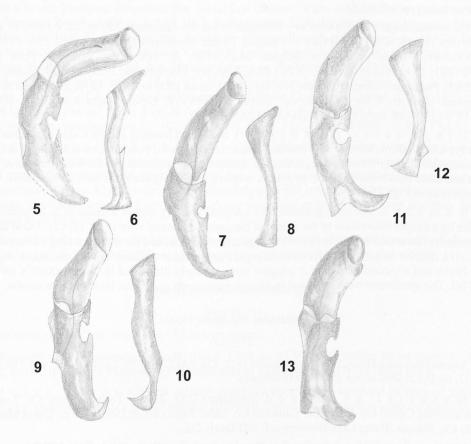
Euparia catenulata ERICHSON, 1847: 110.

Ataenius catenulatus: Gemminger & Harold 1869: 1066; Schmidt 1922: 423; Dellacasa 1988: 107 (catalogue).

Type data. Described from Peru. Type material (ZMHB) probably lost.

M a t e r i a l e x a m i n e d. Specimens (2) from Peru identified by SCHMIDT as 'catenulatus', in ZMHB. **Peru** – (2) Prov. Cuzco, Rio Urubamba 700 m, Koribeni, 15.XI.1994, G. HOLZINGER (ISEA); (10) – Dep. Ayacucho La Mar, Santa Rosa 640 m, 19-25.IX.1976, R. GORDON (ISEA, USNM).

D i a g n o s t i c c o m b i n a t i o n. Clypeal surface in front of median convexity with distinct transverse wrinkles, middle of head with fine punctures separated by one diameter, punctures on vertex slightly coarser but not closer. Pronotal lateral and basal margin grooved, finely crenate, posterior angles obtusely rounded; moderate punctures on each side of disc become



Figs 5-13. Male genitalia, aedeagus in lateral view and left paramera in dorso-caudal view: 5, 6 – *Ataenius nugator* HAR., 7, 8 – *A. cribrithorax* BATES, 9, 10 – *A. catenulatus* (ER.), 11, 12 – *A. chapini* HINT., 13 – *A. inquisitus* HORN.

gradually finer and closer toward lateral margin. Abdominal sternites moderately punctate from side to side; pygidium deeply scabrous in apical half with wide, shiny apical lip and fine granules along transverse carina. Male genitalia as in Figs 9-10.

R e m a r k s. There are some doubts about identity of *Ataenius catenulatus* because of lack of the type specimens. SCHMIDT's identifications (see Material examined) of the specimens of *Ataenius* preserved in Berlin and revised by the author, were often incorrect, based on a very deceptive external characters. The specimens examined are most similar to *A. nugator*; the males differ by structure of their genitalia.

# Ataenius chapini HINTON

(Figs.11-12)

*Ataenius chapini* Hinton, 1938: 3, fig. 6.- Cartwright 1974: 77, figs 24b,d; Deloya 1994: 47 (nota); Deloya 2000: 57, fig 6 (ex Hinton 1937).

Ataenius frankorum DELOYA, 2000: 55-59, figs 1-5. New synonymy.

M a t e r i a l e x a m i n e d. A. chapini: holotype male, labelled "Tejupilco Mex. Temascaltepec 1933", "H. E. HINTON, R. L. USINGER coll", "Ataenius chapini HINTON holotype",

No 68189 USNM. Male genitalia preserved in vial pinned under specimen. Paratypes (3), same data as holotype, in USNM.

Other specimens (50) **Honduras** – Morazan, 6 km SE Zamorano 350 m, 22.V.1994, H. & A. HOWDEN (HAHC-CMN). **Mexico** – Chiapas, Puente Macuilapa nr Los Amates, 29.V.1964, R. WOODRUFF; Parque de Laguna Belgica, 28.IX.1996, R. TURNBOW; Veracruz, Poza Rica, 2.VI.1987, T. MUELLER (FSCA, RTC, PSC, USNM); Los Tuxtlas, 30.III.1985, J. RAZOWSKI (ISEA); **Panama** – Chiriqui, 15 km NW Hato del Volcan 1800 m, 22.V. 1977, S. & J. PECK; Las Lagunas 1360 m, 4 km W Hato del Volcan, 8.VI.1977; Colon, Santa Rita Ridge 300 m, 10-11.VI.1977, H. & A. HOWDEN (HAHC-CMN; ISEA).

D i a g n o s t i c c o m b i n a t i o n. Head laterally (on each side of median convexity) with shallow, transversely confluent punctures. Pronotal punctures on sides rather uniform in size, base slightly sinuate, margin crenate. Abdominal sternites at middle with punctures finer and less close than those on sides; pygidium in apical half finely scabrous with few granules. Male genitalia as in Figs 11-12.

R e m a r k s. The male genitalia of *A. chapinii* are very similar to those of *A. inquisitus* but differ by a deeper excavation of the apices of parameres in lateral view (Figs 11, 13). These details were badly illustrated in HINTON's (1937) original description, and the same drawing was copied by DELOYA (2000). As a matter of fact, the male genitalia of the two closely related species, *A. inquisitus* HORN and a vicarious species *A. chapini* were precisely illustrated in CARTWRIGHT's revision (1974). The specimens were collected in human excrements and from litter of thorn scrubs.

# Ataenius inquisitus HORN

(Fig. 13)

*Ataenius inquisitus* HORN, 1887: 81.- SCHMIDT 1922; 424; FALL 1930: 97; CARTWRIGHT 1948: 149; 1974: 76-77, fig 24 a,c; DELLACASA 1988: 145 (catalogue).

M a t e r i a l e x a m i n e d. Specimens (58). **USA** – Texas, Kinney Co. 7 mi NE Bracketville; Comal Co. Bulverde; Cameron Co. Sabal Palm Grove; Devils River; Davis Mts; Zavalla Co. Nueces River; Lake Brownwoof; Jeff Davis Co.

Months collected: May-July, October. Specimens are in: FSCA, ISEA, PSC, USNM.

D i a g n o s t i c c o m b i n a t i o n. Head above clypeal transverse wrinkles finely, simply punctate, puctures separated by about two diameters. Pronotal posterior angles obtusely rounded, not emarginate. Abdominal sternites coarsely closely punctate from side to side; pygidium with shiny apical lip, disc roughly eroded without costulae or granules. Male genitalia as in Fig. 13.

R e m a r k s. *Ataenius inquisitus* described from "Southwestern Texas" is restricted in distribution to the southern United States (Arizona, Texas). It differs from *A. chapini* by its finer and less close punctures of the head and by less deeply excised apices of the parameres (Figs 11, 13).

#### Ataenius communis HINTON

(Figs 14-15)

Ataenius communis HINTON, 1936a: 421-425, figs 8-10.- DELLACASA 1988: 112 (catalogue); DELOYA 1994: 47 (nota).

M a t e r i a l e x a m i n e d. Holotype male, labelled "Panama, Canal Zone, Ciricito 25.II.1930, R. E. BLACKWELDER", "Ataenius communis HINTON", No 68188 USNM.

Other specimens (76). **Columbia** – N de S. Santiago, 700 m, 13.V.1977, H. & A. HOWDEN. **Costa Rica** – Puntarenas, Monteverde Res. 1500 m, 1.VI.1979; Puntarenas N.P. Manuel Antonio, 8-14.XII.1987, GÉNIER & BERTRAND; Heredia, 10 km W Puerto Viejo, 170 m, 2-5.III.1991; Gua-

nacaste, 3 km N Cañas, 90 m, Hac. La Pacifica, 9-11.viii.1987, H.& A. HOWDEN. El Salvador — Monte Christo, Matapan; Boqueron, Sta Tecla; Los Chorros, 3 km N Santa Tecla. Guatemala — Baja Verapaz, Purulha 1400 m, 4-5.VI.1983, B. RATCLIFFE & W. JAMESON; Baja Verapaz, 8 km S Purulha, 20.V.1991, H.& A. HOWDEN. Panama — Pipeline Road 5-10 km Gamboa, 21.VIII.1983, W. NEUTWIG; Canal Zone, Black Fauk Road, NW Gatun Locks, 17-31.V.1980, B. RATCLIFFE; Canal Zone, Balboa, 3.VI.1977, H. & A. HOWDEN; Panama, Pta Paitilla, 21.V.1970, H. HESPENHEIDE; Colon, Santa Rita Ridge 300 m, 10-11.VI.1977; Chiriqui, Las Lagunas 1360 m, 4 km W Hato del Volcan, 8.VI.1977, H.& A. HOWDEN. Venezuela — Bolivar, Guri, 13.VII.1998, H. & A. HOWDEN. West Indies — Trinidad, Simla 5 km N Arima, 19.VIII.1969; Tunapuna W.I., 11-13.VIII.1969, H. & A. HOWDEN. Specimens are in: HAHC (CMN), ISEA, PSC, RTC, SMNS, UNSM, USNM.

D i a g n o s t i c c o m b i n a t i o n. Head on median gibbosity and on vertex distinctly, simply punctate, on sides punctures forming transverse, shallow lines. Pronotal lateral and basal margin fine, not grooved, slightly sinuate, disc with scattered fine punctures, lateral punctures not confluently dense. Elytral intervals very distinctly punctate apically. Abdomen on sides closely punctate, at middle punctures finer and less close; pygidium in apical half finely scabrous. Male genitalia as in Figs 14-15.

R e m a r k s. The species has a wide range in southern part of Central America and also occurs in Venezuela and Trinidad. Specimens have been taken in human dung and at light.

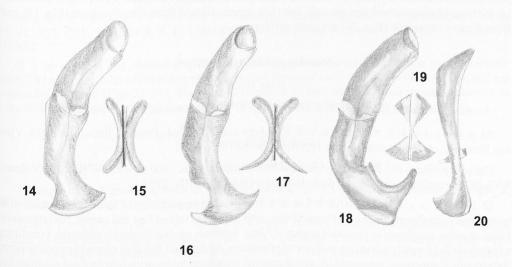
## Ataenius pseudocommunis sp.n.

(Figs 16-17)

? Ataenius thayeri CHALUMEAU, 1983:84 (nomen nudum).

Holotype male, Venezuela, Merida, Tovar 1000 m, 25.VI.1989, coffee forest litter, S. & J. PECK, in HAHC(CMN). Paratypes (37), same data as holotype, in HAHC(CMN), ISEA.

D e s c r i p t i o n. Clypeal surface shallowly transversely wrinkled to front of median convexity, punctures on each side of median convexity united into transverse irregular lines; verti-



Figs 14-20. Male genitalia; 14, 15 – *Ataenius communis* HINT.: 14 – aedeagus in lateral view, 15 – apices of parameres viewed from above; 16, 17 – *A. pseudocommunis* sp.n.: 16 – aedeagus in lateral view, 17 – apices of parameres viewed from above; 18-20 – *A. tovarensis* sp.n.: 18 – aedeagus in lateral view, 19 – apices of parameres viewed from above, 20 – left paramera in dorso-caudal view.

cal area with wide band of fine punctures separated by one diameter. Pronotum with basal margin slightly sinuate, finely grooved and crenate in groove; surface punctures on sides of pronotum mixed minute and moderate, the latter confluent in anterior and posterior angles. Abdominal sternites moderately punctate from side to side; pygidium deeply eroded in apical half, apical lip wide, shiny. Male genitalia as in Figs 16-17.

R e m a r k s. *Ataenius pseudocommunis* is most closely related to *A. communis*; it differs from that species by having the markedly coarser punctures of the head and longer, more sinuate parameres of the male genitalia when viewed from side (Fig. 16).

## Ataenius tovarensis sp.n.

(Figs 18-20)

Holotype male, Venezuela, Tovar, 25.VI.1989, coffee forest litter, S. & J. PECK, in HAHC(CMN). Paratypes (7), same data as holotype, in HAHC(CMN), ISEA.

Description on Clypeal surface in front of median convexity shallowly transversely swollen and subgranulate along anterior margin; middle of head and vertex distinctly simply punctate, punctures separated by about one diameter, lateral area on each side of median convexity with coarse punctures tending to form transverse lines. Pronotal lateral and basal margin grooved and crenate; surface punctures mixed minute and coarse, the latter irregularly spaced on disc, crowded toward sides, laterally minute punctures invisible, coarse punctures close, almost contiguous, confluent at anterior and posterior angles. Elytral intervals 7-10 coarsely closely punctate, punctures nearly same size as those on pronotum. Abdominal sternites coarsely punctate from side to side, punctures slightly longitudinally confluent; pygidium deeply scabrous in apical half with longitudinal, irregular costulae, apical lip narrowly shining. Metatibia with accessory spine strong, located close to bottom spur, external spine long. In male, costulae on pygidium less distinct than in female, apical lip narrower; genitalia as in Figs 18-20.

R e m a r k s. *Ataenius tovarensis* is externally close to *A. communis* and *A. pseudocommunis*, but it differs from both these species by its relatively larger size and coarser punctation of the head and of the lateral elytral intervals. The parameres of aedeagus in lateral view (Fig. 18) are similar to those of *chapini* and *panamensis*, but their apices viewed from directly above (Fig. 19) and from dorso-caudal side (Fig. 20) are quite different.

# Ataenius panamensis HINTON

(Figs 21-22)

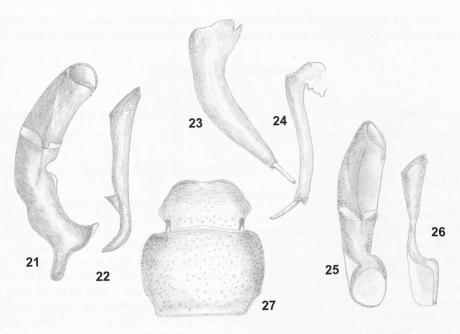
Ataenius panamensis Hinton, 1936a: 425-428, figs 11-13.- Dellacasa, 1988: 176 (catalogue).

M a t e r i a l e x a m i n e d. Holotype male, labelled "Panama, Potrelillos 1934, Vinson Brown", "Ataenius panamensis HINTON", No 68190 USNM.

Other specimens (8) **Panama** – Chiriqui Prov., Las Lagunas 1360 m, 4 km W Hato del Volcan, 8.VI.1977, evening sweeping, H. & A. HOWDEN (HAHC- CMN, ISEA).

D i a g n o s t i c c o m b i n a t i o n. Head on each side of median convexity with transversely confluent punctures. Pronotal disc with punctures mixed fine and coarse, the latter very close on sides, confluent at posterior angles. Elytral intervals on disc distinctly punctate, punctures of intervals 7-10 nearly same size as those of pronotum. Abdominal sternites coarsely punctate from side to side, punctures separated by one diameter; pygidium wide, with longitudinal costulae on scabrous disc. Male genitalia as in Figs 21-22.

R e m a r k s. *Ataenius panamensis* is most close to *A. tovarensis*, and cannot be recognized with certainty by external characters. The species is known up to now only from Panama.



Figs 21-27. 21-26 – male genitalia, aedeagus in lateral view and left paramera in dorso-caudal view: 21, 22 – Ataenius panamensis HINT.; 23, 24 – A. borgmeieri HINT.; 25, 26 – A. bolivari sp.n.; 27 – A. icanus BALTH., head and pronotum.

## Ataenius borgmeieri HINTON

(Figs 23-24)

Ataenius borgmeieri Hinton, 1936b: 472-474, figs 1-3.- Dellacasa 1988: 273 (catalogue); Deloya 1994: 47 (nota).

Material examined. Holotype male, labelled "Temascaltepec Mex., 19.VI.1933, H. E. HINTON & R. L. USINGER coll.", "Ataenius borgmeieri HINTON", No 68187 USNM.

R e m a r k s. No additional specimens of *A. borgmeieri* were found in the material examined. The male genitalia of the holotype are glued on the same card together with specimen and are markedly damaged (Figs 23-24). The species seems to be rare and restricted in distribution; it is very similar externally to *A. panamensis* (see diagnosis under that species).

#### Ataenius bolivari sp.n.

(Figs 25-26)

Holotype male, Venezuela, Bolivar, 80 km S Calcara, 16.VI.1987, open woodland, UV light, S. & J. PECK, in HAHC(CMN). Paratype male, same data as holotype, in ISEA.

Description of male. Clypeal surface shallowly transversely wrinkled, middle of head finely simply punctate, vertex with wide band of slightly coarser punctures separated by less than one diameter. Pronotal marginal line finely crenate, posterior angles obtusely rounded; surface punctures mixed minute and moderate, the latter very close on sides, forming slightly scabrous wrinkles at anterior and posterior angles. Abdominal sternites punctate from side to side, punctures finer at middle; pygidium deeply scabrous in apical half with longitudinal, irregular costulae. Genitalia as in Figs 25-26.

R e m a r k s. *Ataenius bolivari* is very similar externally to *A. communis*, *A. pseudocommunis* and to all other species in the group, but the male genitalia are quite different in shape.

#### Ataenius icanus BALTHASAR

(Fig. 27)

Ataenius icanus Balthasar, 1951: 340.- Dellacasa 1988: 275 (catalogue); Chalumeau 1992: 197, fig. 11.

Type data. Holotype female, labelled 'Sudperu, Ica, 19.iii.1936 Hamb. Sudperu-Exped.', in BCP.

M a t e r i a l e x a m i n e d. Specimens (2 females). **Peru** – Lima (no additional data) (ISEA).

D i a g n o s t i c c o m b i n a t i o n. Body elongate, shiny reddish-black. Clypeal surface distinctly transversely wrinkled up to median convexity, the latter with fine punctures blending into vertical band of coarser punctures separated by 1-2 diameter. Pronotum relatively short, transverse, sides and base strongly margined, margin grooved and crenate; posterior angle truncate and excised before base; pronotal punctures fine and coarse, the former everywhere distributed, on median anterior disc separated by 2-3 diameters, coarse punctures scattered in posterior two-thirds of pronotum, crowded on sides, confluent at posterior angle. Elytra relatively long, intervals moderately convex, finely punctate, punctures of intervals 7-10 dense and slightly rugose. Abdominal sternites coarsely punctate laterally, punctures at middle finer; pygidium deeply scabrous in apical half. Terminal spur of protibia slightly sinuate; basal segment of metatarsus equal in length to following tarsal segments together.

R e m a r k s. The species is very similar externally to A. guayasi sp.n.; it differs from that species by excavation of the pronotal posterior angle. Unfortunately, the females only were available for study.

## Ataenius ocumarensis sp.n.

(Figs 28-29)

Holotype male, Venezuela, Edo Aragua, Cuyagua, 20 km W Ocumare, 10 m elev., 20.XI.1971 (Ber. 195, 16 kg, 36 l, cacao pod litter), S. &. J. PECK, in HAHC (CMN). Paratypes (4): 1 female same data as holotype; 3 males – Venezuela, Edo Aragua, 10 mi E Ocumare, Feb. 20. 1971, H. &. A. HOWDEN (HAHC-CMN, ISEA).

D e s c r i p t i o n. Body reddish black. Clypeal surface distinctly transversely wrinkled, middle of head to vertex with deep punctures united into transverse lines, vertex with band of simple punctures separated by one diameter. Pronotal base slightly sinuate, minutely crenate; punctures on sides of pronotum nearly equal in size, very dense but not confluent. Abdominal sternites moderately punctate from side to side; pygidium in apical half deeply scabrous, finely granulate along transverse carina. Male genitalia as in Figs 28-29.

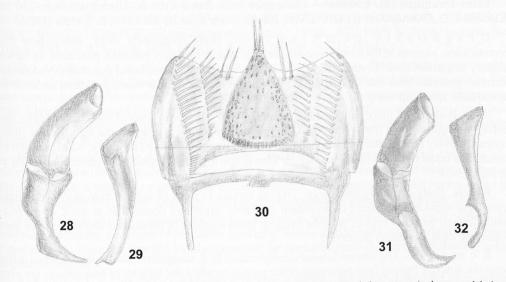
R e m a r k s. Only a dissection of the male genitalia makes it possible to recognize A. ocumarensis.

# Ataenius guayasi sp.n.

(Figs 30-32)

Holotype male, Ecuador, Guayas Prov., Guayaquil 50 m, 21-22.II.1981, H.& A. HOWDEN, in HAHC(CMN). Paratypes (20), same data as holotype, in HAHC(CMN), ISEA.

Description. Body dark rufo-piceous. Clypeal surface from anterior margin to median convexity with transverse wrinkles; punctures on median convexity fine but distinct, blending



Figs 28-32. 28, 29 – *Ataenius ocumarensis* sp.n.: 28 – aedeagus in lateral view, 29 – left paramera in dorso-caudal view; 30-32 – *A. guayasi* sp.n.: 30 – epipharynx, 31 – aedeagus in lateral view, 32 – left paramera in dorso-caudal view.

into vertical band of coarse punctures separated by one diameter. Pronotum with lateral and basal margin finely crenate, posterior angles obtusely rounded, base not sinuate; surface punctures mixed very fine and coarse, punctures of median anterior disc same size as those on middle of head, posterior disc with coarse punctures becoming gradually denser toward sides and here very dense, contiguous at anterior and posterior angles. Elytra slightly microreticulate, discal intervals 1-4 flat, lateral intervals 7-10 convex, finely closely punctate but not rugose. Abdominal sternites with moderate punctures extending from side to side; pygidium deeply scabrous to subgranulate in apical half, transverse carina strong. Epipharynx as in Fig. 30.

Male. Terminal spur of protibia curved inwardly; genitalia as in Figs 31-32.

Female. Pronotum more closely punctate than in male; terminal spur of protibia straight.

R e m a r k s. The species is most closely related to A. icanus and to A. arrowi; it differs from the latter by its significantly larger punctures of the pronotum; the females of A. guayasi compared directly with females of icanus differ by having the pronotal posterior angle with no trace of excavation and the marginal line finer. The male genitalia of arrowi and guayasi are of the same type.

#### Ataenius arrowi HINTON

(Figs 33-34)

*Ataenius arrowi* HINTON, 1936a: 415-418, figs 1-4,- CARTWRIGHT 1970: 55, fig. 1; DELLACASA 1988: 90 (catalogue).

Ataenius leleupi PETROVITZ, 1976: 286-288. New synonymy.

M a t e r i a l e x a m i n e d. *A. arrowi*: holotype male, labelled "Galapagos Is. James Is. [Isla Santiago] 20-22.II.1925, G. BATESON", "*Ataenius arrowi* HINTON, Type", in BMNH.

A. leleupi: holotype female, labelled 'Galapagos Isl. Santa Cruz, Vrst. S.E. basse altitude, 11.1965, N. & J. LELEUP', 'Ataenius leleupi PETROVITZ', in IRSNB. Paratypes (2 females), same data as holotype, in MHNG.

Other specimens (8). **Ecuador** – Galapagos Arch. Santa Cruz Is. Horneman Farm 230 m, 5.IV.1964, D. CAVAGNARO (HAHC-CMN; ISEA); Santa Cruz Is. XII.1971, B. LANZA (ISEA).

D i a g n o s t i c c o m b i n a t i o n. Body moderately shiny, everywhere microreticulate, piceous to dark rufo-piceous. Head at middle minutely punctate, punctures on vertex slightly larger, not close. Elytral intervals 7-10 with fine, scarcely distributed punctures. Abdominal sternites punctate from side to side, punctures finer at middle than on sides; pygidium scabrous in apical half, apical lip shiny.

Male. Body much more shiny than in female; clypeal surface in front of median convexity minutely punctate without transverse wrinkles; pronotal punctures less dense and significantly finer; elytra relatively shorter than in female; terminal spur of protibia curved inwardly; basal segment of metatarsus equal in length or slightly longer than following tarsal segments combined; genitalia as in Figs 33-34.

Female. Body distinctly alutaceous; clypeal surface in front of median convexity with slight transverse wrinkles; punctures of pronotum markedly larger and denser than in male, elytra relatively longer; terminal spur of protibia straight, basal segment of metatarsus slightly shorter than following tarsal segments combined.

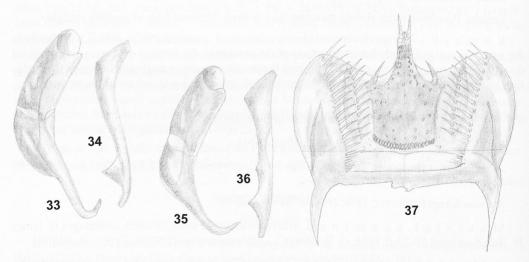
R e m a r k s. The species is most closely related to *A. cavagnaroi*; the males of *arrowi* differ from the latter by having finer punctures of the pronotum while the females of both species are very similar externally. Both species have the sexual dimorphic characters much more advanced than the mainland species of the *nugator*-group, but they are undoubtedly of South American origin, having their closest relatives in Ecuador and Peru. *A. arrowi* is endemic to Galapagos Archipelago; CARTWRIGHT (1970) recorded it from Isla Santa Cruz, Isla Pinta and Isla Isabella.

# Ataenius cavagnaroi CARTWRIGHT

(Figs 35-36)

Ataenius cavagnaroi Cartwright, 1970:55-57, fig. 2. - Dellacasa 1988: 273 (catalogue).

Type data. Holotype (Galapagos Arch. Fernandina Isl.) in CAS.



Figs 33-37. 33, 34 – *Ataenius arrowi* HINT.: 33 – aedeagus in lateral view, 34 – left paramera in dorso-caudal view; 35, 36 – *A. cavagnaroi* CARTW.: 35 – aedeagus in lateral view, 36 – left paramera in dorso-caudal view; 37 – *A. opatrinus* HAR., epipharynx.

M a t e r i a l e x a m i n e d. Specimens (124). **Ecuador** — Galapagos Arch. Isabella Is. Sierra Negra Pampas, 1000 m, 15-27.IV.1996, IX.1987, 99 ex. S. ABEDRABBO, 4.III.1989, S. PECK; Isabella, 12 km NW Villamil, Jaboncillo forest, 150 m, 6.III.1989, S. PECK; Isabella, Sto Tomaz 300-350 m, 8-12.III.1989, LANDRY & PECK (HAHC-CMN, ISEA).

D i a g n o s t i c c o m b i n a t i o n. Body piceous, finely alutaceous, weakly shining. Head at middle finely punctate, frontal punctures coarser. Pronotal punctures mixed fine and coarse, fine punctures usually half or more diameter of the larger, separated by one diameter or less. Elytral striae fine with moderate, slightly crenating punctures; intervals weakly convex, lateral intervals with scarcely distributed fine punctures. Abdominal sternites punctate from side to side, punctures finer at middle than on sides; pygidium scabrous in apical half, apical lip shiny.

Male. Body much more shiny than in female; clypeal surface in front of median convexity minutely punctate without transverse wrinkles; pronotal punctures less dense; elytra relatively shorter than in female; terminal spur of protibia curved inwardly; basal segment of metatarsus equal in length or slightly longer than following tarsal segments combined; genitalia as in Figs 35-36.

Female. Body distinctly alutaceous; clypeal surface in front of median convexity with slight transverse wrinkles; punctures of pronotum markedly denser than in male, elytra relatively longer; terminal spur of protibia straight, basal segment of metatarsus slightly shorter than following tarsal segments combined.

R e m a r k s. This species is closely related to *A. arrowi*; the parameres of the male aedeagus of both species are similarly shaped, but those in *cavagnaroi* show a distinct lateral tooth (Fig. 36) which is lacking in *arrowi*. Specimens were collected from forest litter, in horse dung and at light.

#### Additional material

The females (106 ex.) unassociated with males, identified as belonging to the *A. nugator*-group: Bolivia; Brazil; Costa Rica; Dominican Rep; Ecuador; Honduras; Mexico; Panama; Peru; Puerto Rico (La Parguera); Venezuela. Specimens are in most collections studied.

The A. perforatus-group

# Ataenius opatrinus HAROLD

(Figs 3, 37-38, 52)

Ataenius opatrinus HAROLD, 1867a: 82.-1876: 96; SCHMIDT 1922: 427; DELLACASA 1988: 277 (catalogue).

Ataenius narialis Petrovitz, 1973: 173-174. New synonymy.

Ataenius woodruffi Cartwright, 1974: 72. New synonymy.

Ataenius paraperforatus Deloya & Ibaňez-Bernal, 2000: 318-320, figs 1-6. New synonymy.

M a t e r i a l e x a m i n e d. A. opatrinus: lectotype with handwritten label "Ataenius opatrinus/talpa REICH. HAR., "Bahia" [Brazil], designated by CARTWRIGHT (1973) in MNHN.

A. narialis: holotype male, labelled 'Brasil SP Faz. Pau d'Alho, Itu, 9-10.IX.1961, L. R. SILVA', 'Ataenius narialis Petr.' in MHNG. Paratypes (3): 1, same data as holotype; 1, 'Brasil, Sao Paulo, Est. Biol. Boraceia, Salesopolis, 17.X.1960, K. Lenko'; 1, 'Brasil MG, Serra de Caraca, Sta Barbara 23.XI.1960, Araujo & Martinez', in MHNG.

A. woodruffi: holotype female, labelled 'Flagler Bch, Florida, 18.V. 1954, R. E.WOODRUFF coll.', Ataenius woodruffi Cartw., "Ataenius perforatus det. Chalumeau", 'No 71746 USNM'.

Other specimens (66). **Argentina** (no additional data). **Brazil** – (SP) Sao Paulo, Barueri; Piracicaba; Campos Jordao; Campinas; Aguas Vermelhas; (MG) Pocinhos. (Sc) Nova Teutonia, Santa

Catarina; (RS) Rio Grande do Sul, Porto Alegre. **Columbia** – Leticia, Amazonas; Curdinamarca, Sapo 2900 m; Rio Jamundi, 10 km S Cali Valle. **Costa Rica** – Puntarenas, Monteverde area. **Mexico** – San Andres Tuxtla .**Uruguay** – Rocha, Cerro de Lehichuana, Castillos. **Venezuela** – Edo Aragua, Tiara 50 km SW Caracas; Cauca.

Months collected. January - March, June - December. Specimens are in: HAHC (CMN), ISEA, MHNG, SMTD, USNM, ZMHB.

D e s c r i p t i o n. Length 5.0-6.0 mm, body (Fig. 52) shiny, colour usually black, sometimes with faint tinge of red. Clypeus finely punctate, middle of head and vertex with variably spaced moderate to coarse punctures. Pronotum subquadrate, posterior angles rounded, base more or less sinuate; lateral and basal margin fringed with short pale setae; pronotal surface with shallow fovea laterally, minute punctures more or less visible, mixed with coarser, variably spaced punctures, usually on disc separated by 1-3 diameters, closer toward sides. Elytral striae margined by lines with subcarinate adjacent intervals usually occur in posterior half of elytra, in some specimens in posterior 3/4 of elytra, rarely elytra from base to apex with margined striae and subcarinate intervals. Abdominal sternites finely, densely punctate, on sides scabrous. Metatibia and apical spurs slender; basal tarsomere of metatarsus longer than upper tibial spur and subequal to following three tarsomeres combined. Epipharynx as in Fig. 37. Male genitalia as in Fig. 38.

R e m a r k s. *Ataenius opatrinus* is closely related to *A. perforatus* but is more black in colour, has the pronotal posterior angles rounded, basal marginal line finer and the pronotal punctures smaller than in *perforatus*. Subtle differences also occur in the shape of parameres of the male aedeagus (Fig. 38). The species is little known and not very common in the collections, distributed from the central South America (Fig. 3) to Mexico, however, further collecting is needed on its possible ocurrence in USA (Florida). As indicated on the labels, the specimens were collected at light in forest and in human excrements.

The lectotype of *A. opatrinus* labelled "*A. opatrinus/talpa*" has been most probably named in litteris by REICHE and subsequently described by HAROLD under the name *opatrinus* (see Remarks under *A. talpoides*).

# Ataenius crenatostriatus (BLANCHARD)

(Fig. 3)

Oxyomus crenatostriatus BLANCHARD, 1843: 184.

Ataenius crenatostriatus: Gemminger & Harold 1869: 1066.- Schmidt 1922: 456; Dellacasa 1988: 116 (catalogue).

Type data. Described from Argentina, Santa Cruz. Type specimen not available for study, probably in MNHN.

M a t e r i a l e x a m i n e d. Specimens (282). **Argentina** - Prov. Salta: Rosario de Lerma 1325 m, 9.II.1982, H.& A. HOWDEN (CMN); 20 km N La Caldera; Alto de la Sierra, 1550 m, 7-10.I.1991, S. ENDRŐDI-YOUNGA (TMP); El Ucumar, 780 m, XI. 1944, coll. MARTINEZ (CMN); El Corralito, 15 km S Campo Quijano, 7.I.1991, S. ENDRŐDI-YOUNGA (TMP); Los Laurales, 1450 m., Pocitos; Pampa Grande (MHNG); Prov. Tucuman: El Infiernillo, 900 m, XI.1905 (HNHM); Cerro San Bernardino, 20.I.1948, VILLINK & MONROS (FMLT); Verbabuena; Siambon, Dpto Tafi, I. 1944 (ZSM); Prov. Cordoba: Capilla del Monte, 1000 m, 20.II.1982, H.& A. HOWDEN (CMN); Prov. Jujuy: Jujuy; Cerro Perales, 27.I.1948, VILLINK & MONROS (FMLT).

Description. Length 5.0-6.5 mm, colour usually dark castaneous. Clypeal margin widely rounded on each side of shallow median emargination, surface punctures fine and shallow or absent, middle of head and vertex with variably spaced, usually moderate punctures. Pronotum transverse, sides slightly arcuate toward emarginate posterior angles, basal marginal line grooved, lateral margin fringed with short, fine setae; surface punctures minute and coarse, the latter variable in distribution, usually irregularly spaced on disc, crowded toward sides. Scutellum bifoveate at

base. Elytra in apical half with striae margined by lines and subcarinate to carinate adjacent intervals, striae in anterior half of elytra not margined, punctate, intervals slightly convex. Abdominal sternites shining, punctate from side to side; apical half of pygidium scabrous, logitudinally wrinkled. Metatibia and apical spurs slender; basal tarsomere of metatarsus longer than upper tibial spur and slightly shorter than following 3 tarsomeres combined.

R e m a r k s. *Ataenius crenatostriatus* is obviously very close to *A. perforatus* and similar externally; the differences given in the key are small but apparently consistent. The male genitalia of both species do not show any constant differences (Fig. 39). The species is known at present only from Argentina (Fig. 3); numerous specimens were collected at light in the subtropical humid rain forest, and in horse dung.

# Ataenius perforatus HAROLD

(Figs 3, 39)

Ataenius perforatus HAROLD, 1867a: 98.- SCHMIDT 1922: 457; DELLACASA 1988: 279 (catalogue).

Material examined. Lectotype (Columbia) designated by CARTWRIGHT (1973), in MNHN.

Other specimens (144). **Brazil** – (SP) Campos do Jordao, Curitiba; (To) Salinopolis; (Go) Cabeceiras, (Lagoa Formosa); (RJ) Itatiaia; (PR) Guarauna; (MG) Serra do Caraca, Sta Barbara. **Columbia** – Bogota; Cundinamarca, Sapo 2300 m; Honda, Rio Magdalena. **Costa Rica** – Puntarenas, Pension Monteverde, 1350 m; Santa Cruz, Turialba, 1600 m; Cartago 650 m; Heredia, Finca La Selva. **El Salvador** – Boqueron near Santa Tecla. **Guatemala** – Baja Verapaz 7 km W Chilasco 1600 m; 7 km NE Purulha 1500 m. **Honduras** – Morazan; Cerro Uruca; Tegucigalpa; Paraiso. **Mexico** – Tepic. **Panama** - Chiriqui 2 km N Cerro Punta 1720 m.; Chiriqui, Hartman's Finca; Renacimiento, Santa Clara 4000'. **Venezuela** – El Junquito, Petaquire 1600 m.

Months collected. January-March, May- July, October - December. Specimens are in: HAHC (CMN), ISEA, MHNG, RTC, SMTD, UNSM, USNM, ZMHB.

Description on Length 5.0-6.8 mm, colour dark castaneous or black with faint tinge of red. Clypeal margin rounded to subangulate on each side of median emargination, side slightly emarginate before wide-angled gena; surface of head usually coarsely, irregularly punctate. Pronotum transverse, posterior angles usually distinctly emarginate, in some specimens emargination shallow; surface punctures mixed minute and coarse, the latter variably spaced, usually dense to contiguous on sides of pronotum. Elytra in apical half or in apical 3/4 with striae margined by lines and with subcarinate to carinate adjacent intervals, striae in anterior half of elytra not margined, punctate, intervals slightly convex. Legs as in *A. crenatostriatus*. Male genitalia as in Fig. 39.

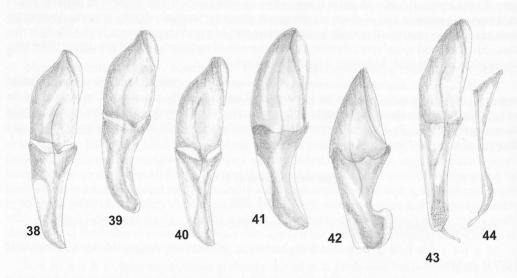
R e m a r k s. HAROLD's original description is as follows: "A... perforatus (REICHE). Similis A. opatrino, at thorace profundus punctato distinguendus....." This very variable species is most similar in general appearance to A. crenatostriatus and only slightly differs from that species by the shape of head. It is widely distributed in South and Central America (Fig. 3), collected in horse dung, and at light in subtropical forests.

# Ataenius yungasus sp. nov.

(Figs 3, 40, 53)

Holotype male, Bolivia, Santa Cruz, 16 km NE Mairana, Yungas de Mairana 2300 m, 18.03S, 63.54W, 29.I.1999, *Yungas* litter, R. ANDERSON, in HAHC (CMN). Paratype female, Bolivia, Cochabamba at Rio Vinto 2300 m, 17.12S, 65.51W, 3.II.1999, mixed alder litter, R. ANDERSON, in ISEA.

Z. STEBNICKA



Figs 38-44. 38-42 – male genitalia, aedeagus in lateral view: 38 – *Ataenius opatrinus* HAR.; 39 – *A. perforatus* HAR.; 40 – *A. yungasus* sp.n.; 41 – *A. rubrotessellatus* (BLANCH.); 42 – *A. lanei* PETR.; 43, 44 – *A. crenator* HAR.: 43 – aedeagus in lateral view, 44 – left paramera in dorso-caudal view.

Description. Length 5.1-5.2 mm, greatest width 2.0-2.1 mm. Body (Fig. 52) oblong, moderately convex, shiny; colour black with faint tinge of red, antennal club brown. Head feebly convex, clypeal margin subangulate on each side of wide, shallow median emargination, side straight to wide-angled, prominent gena; clypeal anterior face finely punctate, surface above coarsely punctate throughout, punctures generally separated by their diameter, vertex with closer punctures separated by less than one diameter. Pronotum weakly convex, anterior angles widely obtuse, side margin arcuate, reflexed, posterior angles in both sexes deeply excavate toward obtuse basal angulation; side and base margined, crenate-fimbriate, setae short, separated by about their length; surface with slight longitudinal depression on disc and shallow fovea on each side, punctures mixed minute and coarse, the latter irregularly spaced on disc, crowded in median depression and in lateral fovea, on sides separated by less than one diameter, contiguous along lateral margin. Scutellum narrowly triangular with two elongate pits basally. Elytra elongate, weakly arcuate in apical third, humeral denticle small, sharp; elytral surface from base to apex slightly swollen; striae moderately impressed, wide, each margined by slightly undulate lines and shallowly punctate inside lines; intervals narrow, elevated, swollen in anterior half of disc, in posterior half and on sides of elytra broken into irregular tubercles and swellings; epipleuron from base to apex nearly equal in width, surface feebly transversely wrinkled. Mesosternum shagreened with very fine appressed hair, meso-metasternal carina long, narrow; metasternum with impressed midline, disc moderately closely punctate, outward to sides scabrously punctate, metasternal triangle more finely scabrous; abdominal sternites 1-4 with moderate fluting along sutures, fluting of sternite 5 coarse and deep, surface closely punctate from side to side and finely alutaceous even in shallow punctures, penultimate sternite and pygidium with row of pale setae; pygidium deeply eroded in apical half and here finely granulate. Profemur lobed anteriorly with deep perimarginal groove, surface with moderate, dense punctures; meso- and metafemur closely punctate, posterior femoral lines complete; metatibia with fringe of 5-6 setae and with accessory spine; basal tarsomere of metatarsus longer than upper tibial spur and subequal to four tarsomeres combined. Sexual dimorphic characters slight; in male penultimate abdominal sternite shorter than in female, genitalia as in Fig. 40.

R e m a r k s. An unusual sculpture of the elytra of *Ataenius yungasus* resembles that of termitophilous *Napoa peckorum* STEBNICKA (1999). This species is easily recognized among *A. perforatus*-group by its uniform in size, dense punctures of the head, the presence of pronotal median depression and elytral swellings.

## Ataenius rubrotessellatus (BLANCHARD)

(Figs 3, 41)

Oxyomus rubrotessellatus Blanchard, 1843: 185.

Ataenius rubrotessellatus: Gemminger & Harold 1869: 1067; Schmidt 1922: 458 (ex Blanchard); Dellacasa 1988: 280 (catalogue).

Type data. Described from Bolivia, Chuquisaca; type material probably in MNHN.

M a t e r i a l e x a m i n e d. Specimen labelled "Syntype", 'Bolivia, Cochabamba', 'Oxyomus rubrotessellatus", in MZUSP.

Other specimens (12). **Bolivia** – Cochabamba, 2800 m, coll. Martinez (CMN). **Peru** – Tarma 3000 m, XI. 1954 (FMLT, ISEA); Prov. Cuzco, Ollantaytambo 2800 m, 28.XI.1994, HACZ & HOLTZINGER; Huambutio, 2.II.1979, W. E. STEINER (USNM).

Description. Length 6.8-7.0 mm. Elongate, dark castaneous, shiny. Clypeal margin widely rounded, median emargination moderate, surface shallowly, irregularly punctate; middle of head and vertex with deep, moderate to coarse punctures. Pronotum transverse, side and base margined, side margin grooved, crenate-fmbriate; anterior angle rounded, side arcuate toward obtuse posterior angles; surface with mixed minute and coarse punctures, the latter scattered along base. closer approaching anterior and posterior angles, absent on lateral tumosity and on median anterior disc. Scutellum concave at base. Elytra elongate, moderately convex, humeral denticle very small. obtuse; striae simply impressed, moderate strial punctures slightly irregularly crenating margins of intervals; intervals flat on disc, convex apically, minute punctures scattered. Metasternum with midline and minute scattered punctures, laterally scabrous, metasternal triangle weakly developed: abdominal sternites finely fluted, penultimate sternite with longer fluting and few upright setae, pygidium deeply eroded and granulate in apical half. Profemur lobed anteriorly, perimarginal groove deep; all femora minutely to finely punctate; metatibia with accessory spine and fringe of 5-6 short setae; basal tarsomere of metatarsus longer than upper tibial spur and subequal to following four tarsomeres combined. Sexual dimorphic characters slight; in male penultimate abdominal sternite shorter than in female, genitalia as in Fig. 41.

R e m a r k s. This distinct species is most close to A. lanei and similar in appearance. It differs from lanei by the characters given in the key.

#### Ataenius lanei PETROVITZ

(Figs 3, 42)

Ataenius lanei Petrovitz, 1973: 157-158.- Dellacasa 1988: 276 (catalogue).

M a t e r i a l e x a m i n e d. Holotype male, labelled 'Sao Paulo, Campos do Jordao, 14.XII.1944, F. LANE coll.', '*Ataenius lanei* PETROVITZ', in MZUSP; paratype female, same data as holotype, in MHNG.

Other specimens (6). **Brazil** – (RJ) Nova Friburgo, XI.1998, P. & E. GROSSI (FVMC); (SP) Campos do Jordao, 29.IX.1962, coll. HALIK (ISEA, USNM); (SP) Serra de Bocaraima, IX.1972, F. PLAUMANN (USNM).

Description. Length 6.8-7.0 mm. Elongate, dark castaneous, shiny. Clypeal margin reflexed, surface of head with coarse punctures becoming closer on vertex. Pronotum convex, marginal fringe of setae absent.; surface punctures mixed minute to fine and moderate, on disc irregularly spaced, separated by 1-3 diameters, on sides separated by one diameter, crowded at anterior

angles. Scutellum distinctly foveate. Elytra elongate, moderately convex, humeral denticle very small, obtuse; striae simply impressed, moderate strial punctures slightly irregularly crenating margins of intervals; intervals flat on disc, convex apically, minute punctures scattered. Ventral sclerites with moderate to coarse punctures, penultimate abdominal sternite without setae. Protibial terminal spur in both sexes elongate, slightly sinuate; metatibia with strong accessory spine and fringe of close setae, apical spurs slightly flattened and sinuate; basal tarsomere of metatarsus curved, distinctly shorter than upper tibial spur and shorter than following tarsomeres combined. Male genitalia as in Fig. 42.

R e m a r k s. *Ataenius lanei* is most close to *A. rubrotessellatus* but differs by its unique characters of the hind legs, by coarser punctures of the head, and finer and closer punctation of the pronotum. Distribution as in Fig. 3.

The A. crenator-group

#### Ataenius crenator HAROLD

(Figs 4, 43-44, 54)

Ataenius crenator Harold, 1876: 97.- Schmidt 1922: 456 (ex Harold); Dellacasa 1988: 116 (catalogue); Stebnicka 1998: 201-202, fig. 4.

Ataenius nigritus Petrovitz, 1973: 171-172.- Dellacasa 1988: 278 (catalogue). New synonymy.

M a t e r i a l e x a m i n e d. *A. crenator*: Lectotype (Brazil, S. Joao del Rey) designated by STEBNICKA (1998), in. IRSNB. *A. nigritus*: holotype male, labelled "Brazil, MG Unai (Faz. Bolivia), 22-24. X.1964", "Exp. Dep. Zoologia", in MHNG; paratypes (2 females) same data as holotype, in MHNG.

D e s c r i p t i o n. Length 5.5-6.0 mm. Body (Fig. 54) plump, moderately shiny, carbon black. Clypeal surface with very fine and close punctures and fine transverse rugae, middle of head and vertex finely punctate. Pronotal punctures everywhere distributed, mixed minute and moderate, on disc separated by one diameter or less, confluently crowded toward sides. Elytra convex, humeral denticle conical, acute; striae deep with coarse transverse punctures strongly crenating inner margins of intervals; intervals convex, subcarinate apically with minute scattered punctures. Basal tarsomere of metatarsus longer than upper tibial spur and subequal to following tarsomeres together.

Male. Terminal spur of protibia hooked inwardly at the tip; genitalia as in Fig. 43-44.

Female. Punctures of head denser than in male, pronotal punctures more uniform in size; terminal spur of protibia straight.

R e m a r k s. No additional specimens of this species were found in the material examined. *Ataenius crenator* is most closely related to the following three species of the group, but it differs externally by its significantly denser punctation of the pronotal disc.

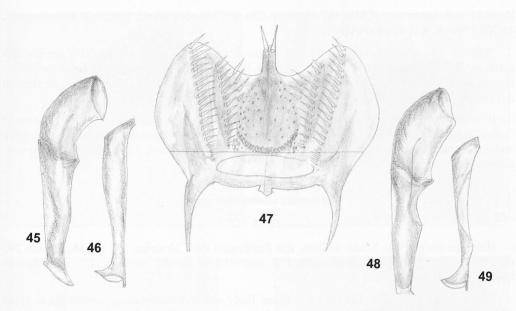
# Ataenius blapoides BALTHASAR

(Figs 4, 45-47)

Ataenius blapoides Balthasar, 1947: 51.- Dellacasa 1988: 273 (catalogue); Chalumeau 1992: 204, fig. 5.

M a t e r i a l e x a m i n e d. Holotype female, labelled 'Brasil, Rio Grande do Sul, San Francisco da Paule 940 m, 1935', (seen in 1973) in BCP.

Other specimens (41). **Brazil** – (RS) Rio Grande do Sul, Caracol 250 m; (SP) Piracicaba, 12.II.1966, C. TRIPLEHORN (USNM); (ES) Linhares; (MG) Tres Lagoas; (Pr) Rio Azul, XI.1972, F. PLAUMANN (MHNG, USNM). **Paraguay** – Villa Hayes, 50 km N Asuncion; Caraguazu, Rio Yo-



Figs 45-49. 45-47 – *Ataenius blapoides* BALTH.: 45 – aedeagus in lateral view, 46 – left paramera in dorso-caudal view, 47 – epipharynx; 48, 49 – *A. talpoides* STEBN.: 48 – aedeagus in lateral view, 49 – left paramera in dorso caudal view.

bai, 28.XI.1951, FOERSTER coll. (ZMHB). Cordillera del Irytyrusu E Villarica, 25.45S, 56.10 W; San Pedro, 24.35S, 56.35W, 180 m; Guayra; Dep. San Pedro, vicinity of Vaca Ihu, 1-6.XI.1995, F. Bretzendorfer (SMNS); Villarica, 2 km E Independentia, 25.15S, 56.35W, Est. Triangulo, 21.I.1991, S. Endr.-Younga (ISEA, TMP); San Lorenzo, 23-24.XI.1996, J. KOCHALKA (USNM).

D e s c r i p t i o n. Length 5.0-7.0 mm. Body plump, shiny, carbon black. Clypeal surface in both sexes with distinct transverse rugae, middle of head minutely punctate, vertex usually with scattered fine punctures forming irregular band. Pronotal anterior disc usually minutely punctate, sometimes with few moderate punctures intermixed, posterior disc with moderate punctures becoming gradually larger and closer toward sides, slightly confluent at anterior and posterior angles. Basal tarsomere of metatarsus longer than upper tibial spur and equal to following tarsomeres combined. Epipharynx as in Fig. 47.

Male. Body usually smaller than in female, elytra shorter; terminal spur of protibia hooked inwardly at the tip; genitalia as in Figs 45-46.

Female. Punctures of pronotum usually denser than in male.

R e m a r k s. The species is very similar to A. talpoides (see Remarks under that species) distributed as in Fig. 4. Specimens were collected under logs in rain forest, and at light.

# Ataenius talpoides nom. nov.

(Figs 4, 48-49)

Ataenius talpa Balthasar, 1947: 52 [(non lectotype of A. opatrinus/talpa Harold, 1867a)].-Dellacasa 1988: 282 (catalogue); Chalumeau 1992: 204 (as synonym of blapoides).

M a t e r i a l e x a m i n e d. Holotype female, labelled 'San Bernardino [Argentina] A. FISCHER S. G., V. 1912', (studied in 1973), in BCP.

Other specimens (5). **Argentina** – Prov. Jujuy, Jujuy, 16.I.1966, H. & M. TOWNES (ISEA); Prov. Salta, 4 km S Campo Quijano, 9.II.1982, H. & A. HOWDEN; Dpto Lavińa, La Merced,

IX.1953, coll. MARTINEZ (CMN, ISEA); Prov. Chaco, Chaco Nat. Park, 100 km NW Resistencia, 16.XII.1990, S. & J. PECK (HAHC).

Affinity. The species is very similar to *A. blapoides* and can be separated from that species with certainty only by comparison of the male genitalia. In *talpoides*, the punctures on sides of the pronotum are usually larger than in *blapoides*, but this character may be variable. Both species are close to *A. crenator* and *A. tambopatae* sp.n. (see Remarks under the latter species).

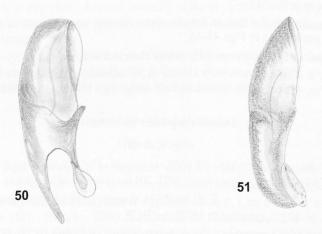
R e m a r k s. I have not been able to find any bibliographical data concerning the name "talpa" associated with valid name Ataenius opatrinus HAROLD on the lectotype label (see Remarks under that species). In order to avoid a possible confusion in the future, I propose the new name A. talpoides.

## Ataenius tambopatae sp.n.

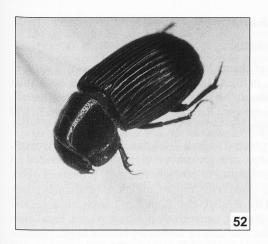
(Figs 4, 51)

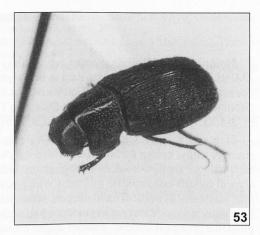
Holotype male, Peru, Madre de Dios, Rio Tambopata Res., 30 air km SW Pto Maldonado 290 m, 2-5.XI.1979, subtropical moist forest, J. B. HEPPNER, in USNM. Paratypes (3), same data as holotype, in ISEA, USNM.

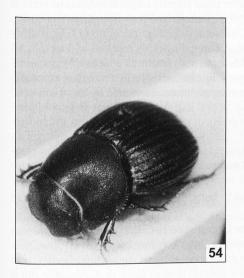
D e s c r i p t i o n. Length 5.0-5.1 mm. Body plump, strongly shiny, carbon black. Head gibbose medially, clypeal margin widely rounded on each side of moderate median emargination, side arcuate toward wide-angled gena; clypeal surface up to median convexity with distinct transverse rugae, middle of head finely but distinctly punctate, punctures separated by one diameter or slightly more, area between eyes with wide band of larger punctures separated by less than one diameter. Pronotum transverse, sides and base margined, side margin with extremely short setae, basal marginal line interrupted at middle; anterior angles rounded, side arcuate to obtuse posterior angles; surface evenly convex, discal punctures minute with widely scattered, fine and moderate punctures, the latter become closer along base, gradually larger toward sides and here almost contiguous. Scutellum elongate, smooth. Elytra semioval, humeral denticle acute; striae moderately deep, strial punctures strongly transversely crenate inner margins of intervals; intervals convex, strongly shiny, impunctate. Mesosternum minutely shagreened and pubescent; metacoxae approximate; metasternum shiny, midline impressed, punctures fine, scattered; abdominal sternites dis-

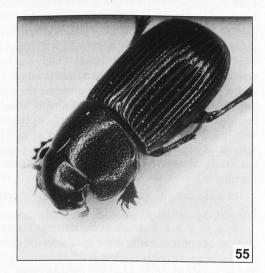


Figs 50-51. Male genitalia, aedeagus in lateral view: 50 - Ataenius buenavistae sp.n.; 51 - A. tambopatae sp.n.









Figs 52-55. Habitus: 52 – Ataenius opatrinus HAR.; 53 – A. yungasus sp.n.; 54 – A. crenator HAR.; 55 – A. buenavistae sp.n.

tinctly, closely punctate from side to side or punctures at middle finer than those laterally, pygidium in apical half deeply eroded with longitudinal wrinkles.

Legs moderate in length; perimarginal groove of profemur fine, surface shiny, punctate; mesoand metafemora with posterior lines; protibia tridentate; meso- and metatibiae with longitudinal, setigerous lines and strong accessory spine apically, apical spurs slender; metatarsus slender, basal tarsomere 1/4 longer than upper tibial spur and subequal to following tarsomeres combined.

Male. Terminal spur of protibia hooked inwardly; penultimate abdominal sternite shorter than in female, pygidium longer. Genitalia as in Fig. 51.

Female. Punctures of pronotum slightly denser than in male.

R e m a r k s. *Ataenius tambopatae* is most close to *A. crenator*; it differs from that species by the basal marginal line of pronotum broken at middle and the pronotal punctures less dense, being on disc finer and widely spaced. In both these species the strial punctures of the elytra are more transverse and more strongly crenating than in the remained species of the group. Distribution as in Fig. 4.

#### Ataenius buenavistae sp. nov.

(Figs 4, 50, 55)

Holotype male, Bolivia, Santa Cruz, vicinity of Buena Vista, 28 Nov. 1998, leg. V. TICHY, in ZMHB. Paratypes (6): 3 – same data as holotype, in ISEA, JSC; 1 – Cochabamba 67,5 km E Villa Tunari, Valle Sajta 300 m, Est. Biol. Univ. San Simon , 7-9.II.1999, lowland rain forest, ex litter, F. GÉNIER, in CMN; 2 – Peru, Madre de Dios, Rio Tambopata Res., 30 air km SW Pto Maldonado 290 m, 2-5.XI.1979, subtropical moist forest, J. B. HEPPNER, in USNM.

Description. Length 7.0-8.0 mm, greatest width 2.7-2.8 mm. Body (Fig. 55) robust, strongly shiny, colour carbon black. Head very large, strongly convex; clypeal margin rounded on each side of shallow median emargination, sides arcuate to obtusely rounded, prominent gena; clypeal surface up to median gibbosity with coarse transverse wrinkles, middle of head finely punctate, punctures of vertical band deeper, separated by one diameter. Pronotum transverse; sides and base margined, side margin in posterior half with distinct, transversely punctate groove, basal marginal line broken at middle; anterior angles rounded, side arcuate to obtuse posterior angles; surface evenly convex, punctures mixed minute and moderate, the latter slightly larger than those of vertical band, on disc separated by 1-3 diameters, on sides by one diameter and less. Scutellum triangular, shining. Elytra convex, slightly widened before apex, humeral denticles moderate in size, sharply pointed; striae moderately impressed with round punctures crenating inner margins of intervals; all intervals shining, minute punctures widely scattered. Mesosternum scabrous with fine longitudinal wrinkles; metacoxae approximate, metasternum shiny, midline indicated, punctures fine. not close: abdominal sternites shiny, finely punctate from side to side, punctures separated by two diameters: pygidium deeply eroded and longitudinally wrinkled in apical half. Legs moderate in length; perimarginal groove of profemur fine, surface opaque, shagreened; meso- and metafemora with posterior lines; protibia tridentate, terminal spur straight; meso- and metatibiae with longitudinal, setigerous lines and strong accessory spine apically, apical spurs slightly sinuate; metatarsus slender, basal tarsomere 1/4 longer than upper tibial spur and subequal to following tarsomeres combined.

In male, penultimate abdominal sternite shorter than in female, pygidium longer. Genitalia as in Fig. 50.

R e m a r k s. *Ataenius buenavistae* is one of the largest species of the Neotropical Ataenius and can be confused with some species of the genus *Auperia* CHEVR. (=*Phalangochaeta*) characterized by large, strongly convex head, but it differs from these species by its approximate mesocoxae and by scuplture of the head and mesosternum. The new species is most close to *A. crenator* but it may be easily distinguished by the characters given in the key.

#### REFERENCES

BALTHASAR V. 1947. De novis generis Ataenius HAR. speciebus. Acta entomologica Musei nationalis Pragae, 25: 49-54.

BALTHASAR V. 1951. Scarabaeidae laparostictae. [In:] Beiträge zur Fauna Perus, Vol. 2: 322-344.

BLANCHARD E. 1843. Insectes. Voyage dans l'Amerique meridionale (...) executé pendant les années 1826-1833. Paris & Strasbourg 6, 222 pp.

BATES H. W. 1887. Col.: Lam. (Copridae, Aphodiidae, Orphnidae, Hybosoridae, Geotrupidae, Trogidae, Aclopidae, Chasmatopteridae, Melolonthidae). – [In:] Biologia Centrali-Americana. Insecta, 2: 26-160.

CARTWRIGHT O. L. 1948. *Ataenius strigatus* (SAY) and allied species in the United States. *Transactions of the American entomological Society*, 74: 147-153.

CARTWRIGHT O. L. 1970. A review of the Aphodiinae of the Galapagos Islands. *Proceedings of the Biological Society of Washington*, **83**: 51-58.

CARTWRIGHT O.L. 1973. Additional lectotype designations in the Aphodiinae. *The Coleopterist Bulletin*, 27: 41-43.

CARTWRIGHT O. L. 1974. Ataenius, Aphotaenius and Pseudataenius of the United States and Canada. Smithsonian Contributions to Zoology, 154: 1-106.

- CARTWRIGHT O. L., CHALUMEAU F. 1978. Bredin-Archibold-Smithsonian Biological Survey of Dominica: The superfamily Scarabaeoidea. *Smithsonian Contributions to Zoology*, **279**: 1-32.
- CHALUMEAU F. 1983. Les Coléoptères Scarabeides des Petites Antilles (Guadeloupe à Martinique). Taxonomie, Ethologie, Biogeographie. *Encyclopédie entomologique*, **44**: 1-300.
- CHALUMEAU F. 1992. Eupariini de nouveau monde: un mise au point. *Nouvelle Revue d'Entomologie*, 9: 189-206.
- CHALUMEAU F., GRUNER L. 1974. Scarabaeoidea des Antilles Françaises. *Annales de la Societé entomologique de France*, **10**: 781-819.
- CHAPIN E. A. 1940. A revision of the West Indian beetles of the Scarabaeid subfamily Aphodiinae. *Proceedings of the United States national Museum*, **89**: 1-41.
- CHEVROLAT A. 1864. Coléoptères de l'Ile de Cuba. Notes, synonymies et descriptions d'éspèces nouvelles. V. Annales de la Societé entomologique de France, 4: 405-418.
- DELLACASA M. 1988. Contribution to a world-wide catalogue of Aegialiidae, Aphodiidae, Aulonocnemidae, Termitotrogidae (Coleoptera, Scarabaeoidea). *Memorie della Societa entomologica italiana*, **67**: 3-455.
- DELOYA C. 1994. Distribucion del genero *Ataenius* HAROLD, 1867 en Mexico (Col. Scarab. Aphodiinae, Eupariini). *Acta zoologica mexicana*, **61**: 43-56.
- DELOYA C. 2000. Una nueva especies de *Ataenius* HAROLD de Mexico (Col. Scarab. Aphodiinae). *Folia ento-mologica mexicana*, **109:** 55-59.
- DELOYA C., IBANEZ-BERNAL S. 2000. New species of Aphodiinae from Mexico and a key to species of Cephalocyclus DELLACASA et al. (Col. Scarabaeidae). The Coleopterist's Bulletin, 54: 318-324.
- ERICHSON W. F. 1847. Conspectus Insectorum Coleopterorum quae in Republica Peruana observata sunt. *Archiv für Naturgeschichte*, **13**: 67-185.
- FALL H. C. 1930. On *Ataenius strigatus* SAY and allied species. *Journal of the New York entomological Society*, **40**: 183-204.
- HAROLD E. 1867a. Diagnosen neuer Coprophagen. Coleopterologische Hefte, 1: 76-83.
- HAROLD E. 1867b. Diagnosen neuer Coprophagen. Coleopterologische Hefte 2: 94-100.
- GEMMINGER M., HAROLD E. 1869. Catalogus Coleopterorum hucusque descriptorum synonymicus et systematicus. Scarabaeidae. *Monachia*, 4: 979-1346.
- HAROLD E. 1876. Notice sur les Aphodiides recuéillis par M. Camille van Volxem dans l'Amerique du Sud. *Annales de la Societé entomologique de Belgique*, **19**: 93-99.
- HAROLD E. 1880. Verzeichniss der VON E. STEINHEIL in Nev-Granada gesammelten coprophagen Lamellicornien. Stettiner entomologische Zeitung, 41: 13-43.
- HINTON H. E. 1936a. New species of *Ataenius* allied to *A. cribrithorax* BATES. *The Annals and Magazine of Natural History*, **17:** 413-428.
- HINTON H. E. 1936b. A new species of Ataenius from Mexico. Revista de Entomologia, 6: 472-474.
- HINTON H. E. 1937. Descriptions of new American *Ataenius*, with Notes on others. *The Annals and Magazine of Natural History*, **10**: 177-196.
- HINTON H. E. 1938. Ataenius chapini sp.n., from Mexico. Proceedings of the entomological Society of Washington, 39: 3-8.
- HORN G. H. 1887. A monograph of the Aphodiini inhabiting the United States. *Transactions of the American entomological Society*, **14**: 1-110.
- PETROVITZ R. 1973. Neue Aphodiinae, Hybosorinae und Acanthocerinae aus der Neotropischen Region. *Studia entomologica*, **16**: 141-202.
- SAINT-FARGEAU, LEPELETIER DE [A], SERVILLE [J. C.]. 1828. [In:] LATREILLE: *Encyclopédie Méthodique*. Histoire Naturelle. Entomologie ou Histoire Naturelle des Crustacés, des Arachnides et des insectes. Vol. X, Pt.2, pp. 348-388.
- SCHMIDT A. 1922. Coleoptera, Aphodiinae. [In:] Das Tierreich, Vol. 45, 614 pp.
- STEBNICKA Z. 1985. A new genus and species of Aulonocneminae from India with notes on comparative morphology (Coleoptera, Scarabaeidae). Revue suisse Zool., 93(3): 649-658, 24 figs, Geneva.
- STEBNICKA Z. 1998. Lectotype designations, new snonymies and distribution records of the Neotropical Eupariini (Coleoptera: Scarabaeidae: Aphodiinae). *Acta zoologica cracoviensia*, **41**: 199-205.
- STEBNICKA Z. 1999. A new genus and species of termitophilous Eupariini from Ecuador with checklist of the Neotropical genera (Coleoptera: Scarabaeoidea: Aphodiinae). *Acta zoologica cracoviensia*, **42**: 289-295.
- STEBNICKA Z., HOWDEN H. F. 1995. Revision of Australian Genera in the Tribes Aphodiini, Aegialiini and Proctophanini nov. (Coleoptera: Scarabaeoidea: Aphodiinae). *Invertebrate Taxonomy*, **9**: 709-766.
- STEBNICKA Z., HOWDEN H. F. 1997. Revision of the Australian Species of *Ataenius* HAROLD (Coleoptera: Scarabaeoidea, Aphodiinae, Eupariini). *Invertebrate Taxonomy*, **11**: 735-821.
- STEPHENS J. F. 1830. A manual of British Coleoptera, or beetles; containing a brief description of all the species of beetles hitherto ascertained to inhabit Great Britain. London, 3: 1-443.