

Acritosomatinae, a new subfamily of *Endomychidae* for *Acritosoma*
new genus based upon two new species from Mexico and Peru*
(*Coleoptera: Cucujoidea*)

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ABSTRACT. A new subfamily of *Endomychidae*, *Acritosomatinae*, is described. It is based on a new Neotropical genus, *Acritosoma*, with two new species, *A. elongatum* known from Peru and *A. ovatum* known from Mexico. The classification of *Endomychidae* is summarized and some useful characters for placing this genus within *Endomychidae* are discussed. Based upon the closed mesocoxal cavities *Acritosoma* appears to be closely related to *Anamorphinae* (= *Mychotheninae*). The externally closed procoxal cavities of *Acritosoma* are unique in the family, and this is the basis for establishing a new subfamily. Relevant morphological features are illustrated, new taxa are described, and diagnoses are included to distinguish these new taxa.

Key words: entomology, taxonomy, new genus, new species, *Coleoptera*, *Endomychidae*.

INTRODUCTION

The *Endomychidae* are a relatively large and diverse family of *Cucujoidea* with about 1300 species described in approximately 120 genera (LAWRENCE 1982). The most recent classification of subfamilies was published by PAKALUK et al. (1994), and LAWRENCE and NEWTON (1995) summarized important works on the family. This family presently consists of 11 subfamilies. *Holoparamecinae* and *Merophysinae* are sometimes treated as a distinct family, the *Merophysidae* (CROWSON 1955, 1981), although LAWRENCE (1982), LAWRENCE and NEWTON (1995), PAKALUK et al. (1994), ŚLIPIŃSKI (1990), and ŚLIPIŃSKI and PAKALUK (1992) have included them

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within an expanded *Endomychidae*. Most of the remaining subfamilies, *Leiestinae*, *Eupsilobiinae*, *Endomychinae*, *Epipocinae* (= *Stenotarsinae*), *Lycoperdininae* (= *Eumorphinae*), *Mycetaeinae*, *Anamorphinae* (= *Mychotheninae*), *Pleganophorinae* (= *Trochoidiinae*), and *Xenomycetinae*, have traditionally been included within *Endomychidae* (STROHECKER 1953). The exceptions are eupsilobiines, which were moved from *Cerylonidae* by SEN GUPTA and CROWSON (1973) and redefined and expanded by PAKALUK and ŚLIPIŃSKI (1990), and anamorphines, which were recently elevated to family status as *Mychothenidae* (SASAJI 1987, 1990). Some of the currently recognized subfamilies have been based solely upon a combination of characters or overall appearance and are probably polyphyletic (ŚLIPIŃSKI and PAKALUK 1992). A phylogenetic classification of this diverse group is desperately needed since there are serious problems with the limits and relationships of endomychid subfamilies as well as their relationship to *Coccinellidae* which are usually considered closely related (see LAWRENCE et al. 1995). Members of the endomychid subfamily *Eupsilobiinae*, at least partially, combine characters historically considered unique for endomychids and coccinellids (e.g., loss of frontoclypeal suture and a characteristic median lobe) (PAKALUK & ŚLIPIŃSKI 1990, ŚLIPIŃSKI & PAKALUK 1992), which suggests that the limits of these families should be reconsidered in a much broader context.

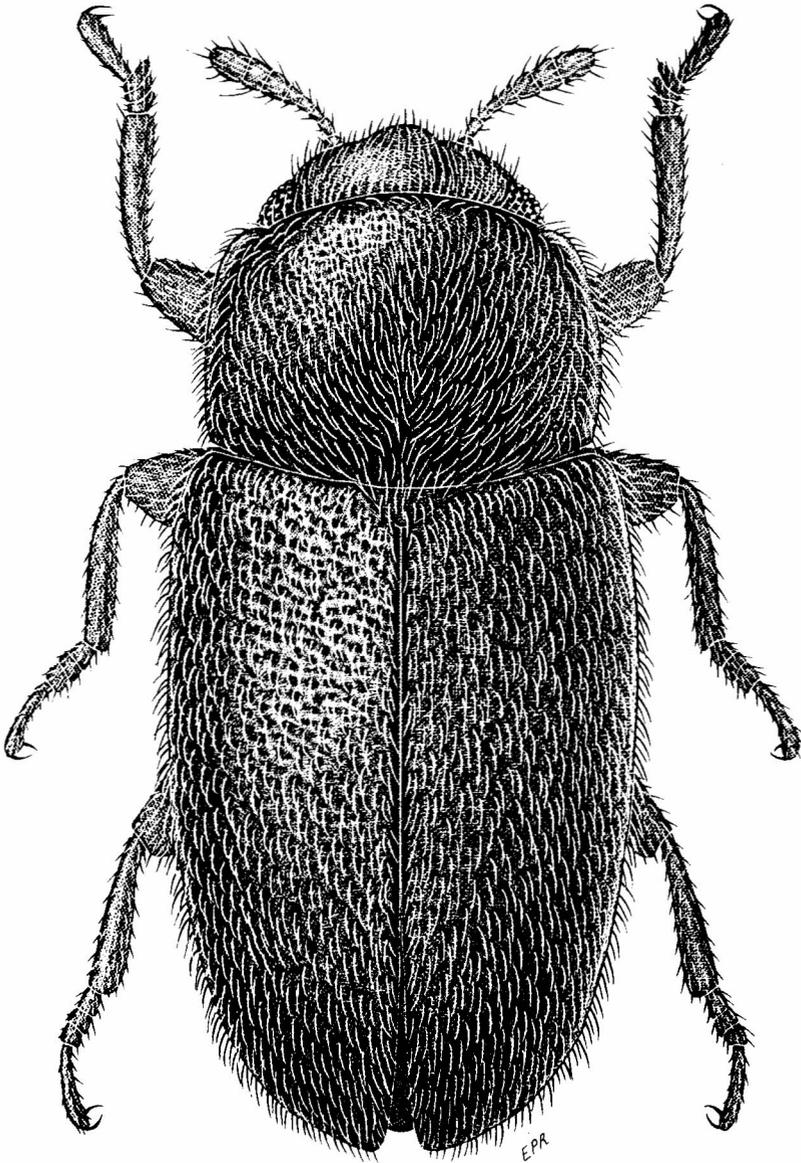
These problems with the current classification of endomychids suggest that it is prudent to establish a new subfamily for the new genus described below, as placing it in one of the existing subfamilies would almost certainly result in a polyphyletic grouping. This genus could be included within an expanded *Anamorphinae* based upon their laterally closed mesocoxal cavities, a feature we feel is derived within *Endomychidae* (PAKALUK & ŚLIPIŃSKI 1990, ŚLIPIŃSKI & PAKALUK 1992), yet as there is no recognized tribal system for the family (PAKALUK et al. 1994) we feel it is more reasonable to treat these new taxa within a new subfamily. Moreover, including *Acritosoma* as a tribe of anamorphines suggests a sister-group relationship between this genus and all other anamorphines, a position we are unable to defend. By describing this new subfamily we not only emphasize this unique and unusual character for the family (closed procoxal cavities) but also make these data available for others interested in the higher-level relationships within *Endomychidae*.

Acronyms for depositories of type material are: CASC, California Academy of Sciences, San Francisco, USA; MJPL, Museo de Historia Natural "Javier Prado", Universidad Nacional Mayor de San Marcos, Lima Peru; USNM, National Museum of Natural History, Smithsonian Institution, Washington, USA.

Acritosomatinae, new subfamily

Type genus. *Acritosoma*, new genus.

This monogeneric subfamily can be distinguished by its externally closed procoxal and mesocoxal cavities. The only other subfamily of endomychids with closed mesocoxal cavities is *Anamorphinae* (= *Mychotheninae*) (PAKALUK et al.



1. *Acritosoma elongatum*, habitus

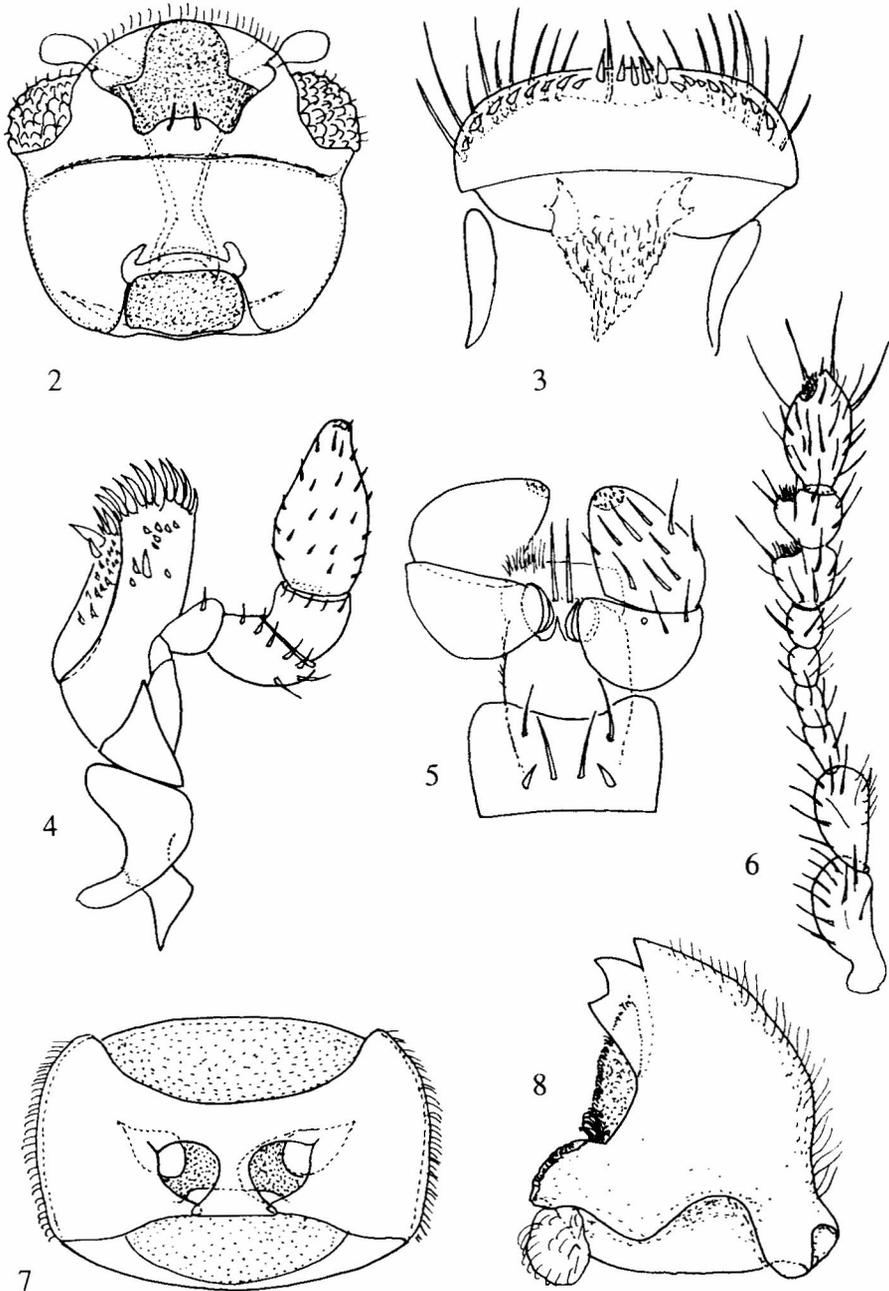
1994). *Acritosoma* differs from *Anamorphinae* and all other endomychids in having the procoxal cavities externally closed by a laterally expanded intercoxal process and notal projections. An unusual feature within the group is a well-developed ovipositor which is usually, perhaps always, strongly reduced to form hemisternites in *Anamorphinae* and other endomychids.

Acritosoma, new genus

(Figs. 1-15)

DESCRIPTION.

Length 1.76-1.98 mm. Body (Fig. 1) elongate to weakly ovate; punctation distinct, dense, confused; pubescence dense, vestiture consisting of moderately long hairs. Head (Fig. 2) strongly deflexed, slightly transverse. Eye large, prominent, coarsely faceted. Frontoclypeal suture present. Antenna (Fig. 6) 9 or 10-segmented; club distinct, 3-segmented, each segment with an apical patch of setose sensilla. Labrum (Fig. 3) strongly transverse, anterior edge truncate medially; tormae elongate; labral rods convergent, fused posteriorly, emarginate anteriorly. Mandible (Fig. 8) bifid apically, with large, prominent subapical tooth; mola strongly transverse, with small teeth; prostheca blade-like, with tuft of setae at its base; submola distinct, membranous. Maxilla (Fig. 4) with 4-segmented palp; galea blunt apically; lacinia with several stout subapical spines. Labium (Fig. 5) with 3-segmented palp, apical segment conical; submentum transverse, anterior edge emarginate medially; mentum elongate. Gular sutures absent. Tentorium (Fig. 2) not fused, with distinct basal bridge, anterior arms divergent. Pronotum transverse; anterior edge emarginate, with small medial lobe; posterior edge with weak lobe medially; lateral edge weakly denticulate, distinctly margined, weakly explanate. Prosternum (Fig. 7) emarginate anteriorly; intercoxal process truncate apically, expanded laterally. Procoxa round, trochantin concealed, its cavity closed internally and externally. Mesosternum (Fig. 9) with intercoxal process slightly rounded apically, its width less than diameter of mesocoxa; junction of meso- and metasternum straight-line type, without internal knobs. Mesocoxa round, trochantin concealed, its cavity closed laterally. Metasternum (Fig. 9) transverse, about 2x as wide as long, without postcoxal pits, with medial line extending from posterior for about 0.75 its length; femoral lines present, sometimes indistinct; intercoxal process broadly emarginate. Metacoxa transverse, coxae separated by about 0.67x their width. Metendosternite (Fig. 9) with basal lamina well developed; anterior tendons elongate, approximate; lateral arms widely separated, each with an elongate anterior process. Leg with trochanterofemoral attachment weakly heteromeroid; femur swollen, excavate to receive tibia; tibia subcylindrical, gradually widening apically; tibial spurs 2-2-2, small, inconspicuous; tarsi (Fig. 11) 4-4-4 in both sexes, tarsomeres I-III short, IV long, about 1.5x longer than I-III, tarsomeres II, III expanded anteriorly; claws (Fig. 11) with a distinct tooth basally; empodium reduced, without setae. Scutellum subtriangular, weakly rounded apically. Elytron without scutellary striole; epipleuron incomplete.



2-8. *Acritosoma elongatum*. 2 - Head, ventral. 3 - Labrum, ventral. 4 - Maxilla, ventral. 5 - Labium, ventral. 6 - Antenna. 7 - Prothorax, ventral. 8 - Mandible, ventral

Wing without radial cell; subcubital fleck present; one anal vein subparallel to cubitus, almost reaching subcubital fleck; anal lobe present. Abdomen (Fig. 10) with 6 ventrites; ventrite I longer than II-IV, with broad, truncate intercoxal process; femoral lines short, incomplete; II-IV subequal in length; II-V with internal, anterolateral apodemes. Aedeagus (Figs. 12-14) with median lobe well sclerotized, weakly curved; internal sac with complex armature, median orifice ventral; tegmen reduced, ring-shaped, with elongate tegminal strut; parameres present, fused. Female genitalia (Fig. 15) with ovipositor short; coxite large, with admedial ventral lobe; stylus subterminal, stout, densely setose; spermatheca sclerotized, terminal, sperm duct attached to apex of bursa; sternite VIII without spiculum gastrale.

Type species. *Acritosoma elongatum*, new species.

ETYMOLOGY.

The generic name is a combination of the Greek akritos, meaning mixed, and the Greek soma, for body, referring to the mixture of characters unknown in other *Endomychidae*. The gender is neuter.

Acritosoma elongatum, new species

(Figs. 1-14)

DIAGNOSIS.

This species can be distinguished from *Acritosoma ovatum* by its less convex, more elongate body, 9-segmented antennae, lighter-colored elytra that are unicolor, and poorly defined femoral lines on the metasternum.

DESCRIPTION.

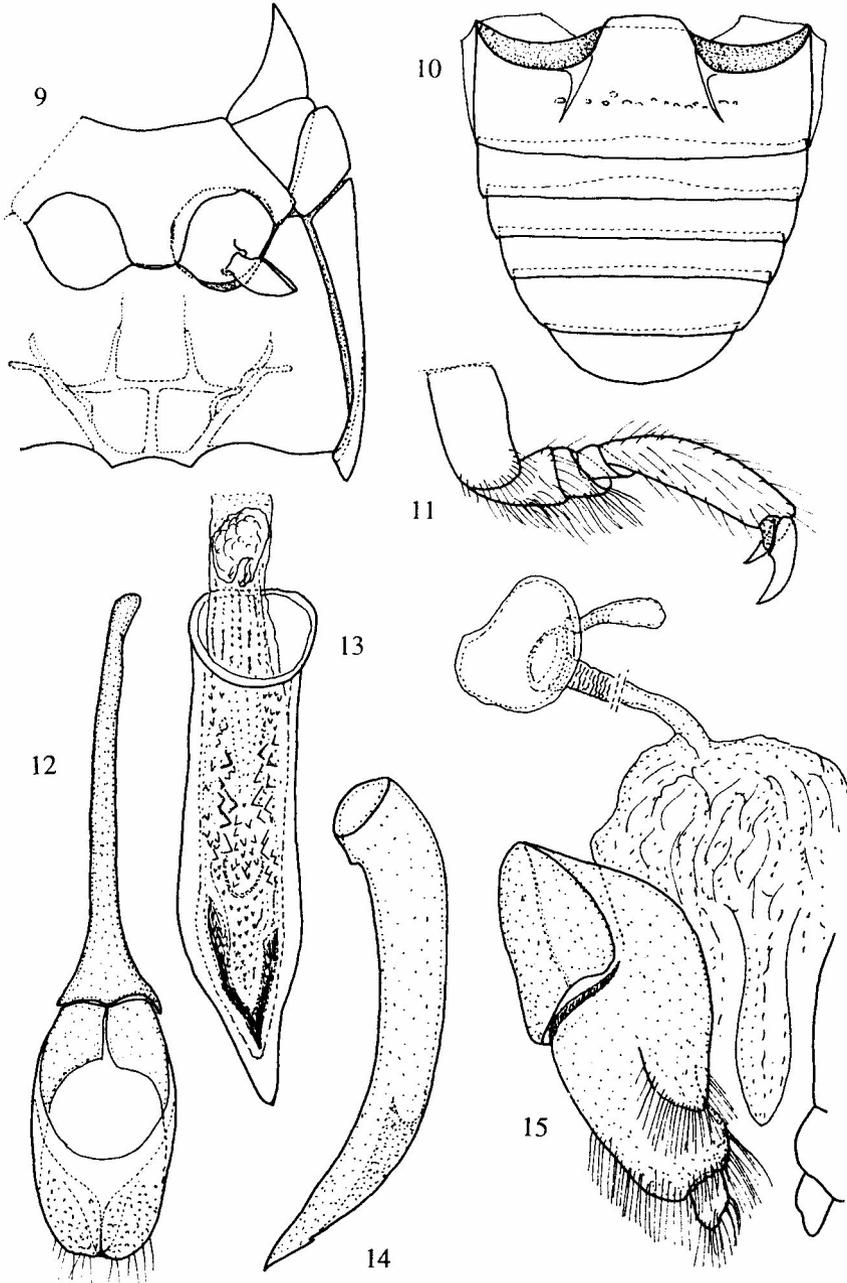
Length 1.83-1.98 mm. Body elongate (Fig. 1), lateral edges subparallel, about 2.2x longer than wide. Dorsum light brown to light reddish brown. Antenna 9-segmented. Elytra unicolor. Venter and legs light brown to light reddish brown. Pronotum about 1.4x wider than long. Elytra about 2.4x longer than pronotum. Metasternum with femoral lines poorly defined, close to mesocoxal cavity. Aedeagus as in figs. 12-14.

TYPES.

Holotype (sex undetermined). PERU. Madre de Dios: Rio Tambopata Res., 30 Km. (air) SW Pto. Maldonado, 290 m., 12°50'S 069°20'W, Smithsonian Institution Canopy Fogging Project, T. L. ERWIN et al. colls., 07 Nov 83, 01/02/055, Fogging 0034628 (MJPL). Paratypes (1 male, completely dissected; 1 sex undetermined). Same data as holotype except Fogging 0035910 (USNM); same data as holotype except 14 Sep 84, 01/02/055, Fogging 00019266 (USNM).

ETYMOLOGY.

The name *elongatum* is from the Latin referring to the elongate body.



9-15. *Acritosoma* spp., 9-14 - *A. elongatum*, 15 - *A. ovatum*. 9 - Pterothorax, ventral. 10 - Abdomen, ventral. 11 - Hind tarsus. 12 - Tegmen, ventral. 13 - Median lobe, ventral. 14 - Median lobe, lateral. 15 - Female genitalia, ventral

Acritosoma ovatum, new species

(Fig. 15)

DIAGNOSIS.

This species can be distinguished from the only other species in this genus by the characters listed under *Acritosoma elongatum*. The most striking difference is the 9-segmented versus 10-segmented antennae in *Acritosoma elongatum* and *A. ovatum*, respectively. Historically, such a difference was sufficient to use as a distinguishing character between genera. There are some genera of endomychids, however, such as *Geoendomychus* LEA and *Rhybomicrus* CASEY, that have a variable number of antennal segments among their species (STROHECKER 1953). We see little value in describing a new genus for this species at this time, although this may be desirable as more species of acritosomatines are discovered and their phylogenetic relationships elucidated.

DESCRIPTION.

Length 1.76-1.95 mm. Body weakly ovate, widest at middle, about 1.5x longer than wide. Dorsum dark brown to dark reddish brown. Antenna 10-segmented. Elytra lighter apically. Venter reddish brown. Legs light brown to light reddish brown. Pronotum about 1.5x wider than long. Elytra about 2.5x longer than pronotum. Metasternum with femoral lines distinct, arcuate. Male unknown.

TYPES.

Holotype (female). MEX: San Luis Potosi, 26 mi. E of Ciudad del Maiz, XI-19-1948, E. S. ROSS, Collector (CASC). Paratype (female). same data as holotype (CASC).

ETYMOLOGY.

The name *ovatum* is from the Latin referring to its shape in dorsal view.

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