

Review of New World Aegialiini
(Coleoptera: Scarabaeidae: Aphodiinae),
with descriptions of two new genera from South America.

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Abstract. Two new taxa of Aegialiini (Coleoptera: Scarabaeidae: Aphodiinae) are described from South America: *Argeremazus neuquen* Stebnicka and Dellacasa, n.gen, n.sp, and *Amerisaprus valdivia* Stebnicka and Skelley, n.gen, n.sp. Both genera are presently monotypic. Discussion on the generic status of *Caelius* Lewis is presented. A key to genera and checklist of aegialiine taxa occurring in the New World are presented.

Key Words. Scarabaeidae, Aphodiinae, Aegialiini, *Argeremazus*, *Amerisaprus*

Introduction

As part of a larger study on New World aphodiine beetles, an author (PES) discovered a new genus of aegialiine scarab. Wishing to get this taxon described, the other authors were contacted for assistance. They had an additional taxon needing description and taxonomic comments to make on the group. It was decided to review the Aegialiini occurring in the New World, describe new genera, and present an updated checklist of taxa.

Materials

Materials studied are deposited in the following collections:

CMN – Canadian Museum of Nature (Martinez collection via H.Howden)

FMNH – Field Museum of Natural History, Chicago, IL-USA

ISEA – Institute of Systematics and Evolution of Animals, PAS, Krakow, Poland

PESC – P. E. Skelley collection, Gainesville, FL-USA

Key to New World Aegialiini genera and subgenera

The following key is based on those of Stebnicka (1977) and Gordon and Cartwright (1988).

1. Head with surface not setose, variously sculptured, may have with setal fringe on clypeus 2
- Head with surface distinctly setose (Fig. 2)
.. *Argeremazus* Stebnicka and Dellacasa, n.gen.

2. Elytral intervals with short hair; abdominal sternites narrowed medially, fifth sternite obliterated at middle by sixth sternite *Micraegialia* Brown
 – Elytral intervals lacking short hair; abdominal sternites not narrowed medially, fifth sternite not obliterated at middle by sixth sternite 3
3. Elytral humerus dentate (Fig. 7); body form parallel-sided 4
 – Elytral humerus not dentate; body form elongate to globose 5
4. Pronotum with posterior angle eroded, bearing several small teeth; apical metatibial spurs not separated at base; Chile
 *Amerisaprus* Stebnicka and Skelley, n.gen.
 – Pronotum with posterior angle not notably eroded, lacking distinct teeth; apical metatibial spurs separated at base by metatarsus; western North America and Japan *Caelius* Lewis
5. Maxillary palpus with terminal segment enlarged, widest at basal third, abruptly narrowed at base; body red-brown, form notably elongate, almost parallel sided; basal marginal line of pronotum indistinct or lacking *Rhysothorax* Bedel
 – Maxillary palpus with terminal segment cylindrical; species with body black, form elongate to globose, but not parallel sided; basal marginal line of pronotum usually distinct, at least laterally [*Aegialia* Latreille] 6
6. Pronotum approximately one third as long as elytron, surface near posterior angle impunctate or feebly so; meso- and metatibia robust or slender, spurs slender or foliaceous
 *Aegialia* (*Aegialia*) Latreille
 – Pronotum approximately half as long as elytron, surface near posterior angle coarsely punctate; meso- and metatibia slender, apical spurs slender *Aegialia* (*Psammoporus*) Thomson

Taxonomic accounts

TRIBE AEGIALIINI Laporte de Castelnau 1840

= Silluviini Landin 1949

Type genus: *Aegialia* Latreille 1807.

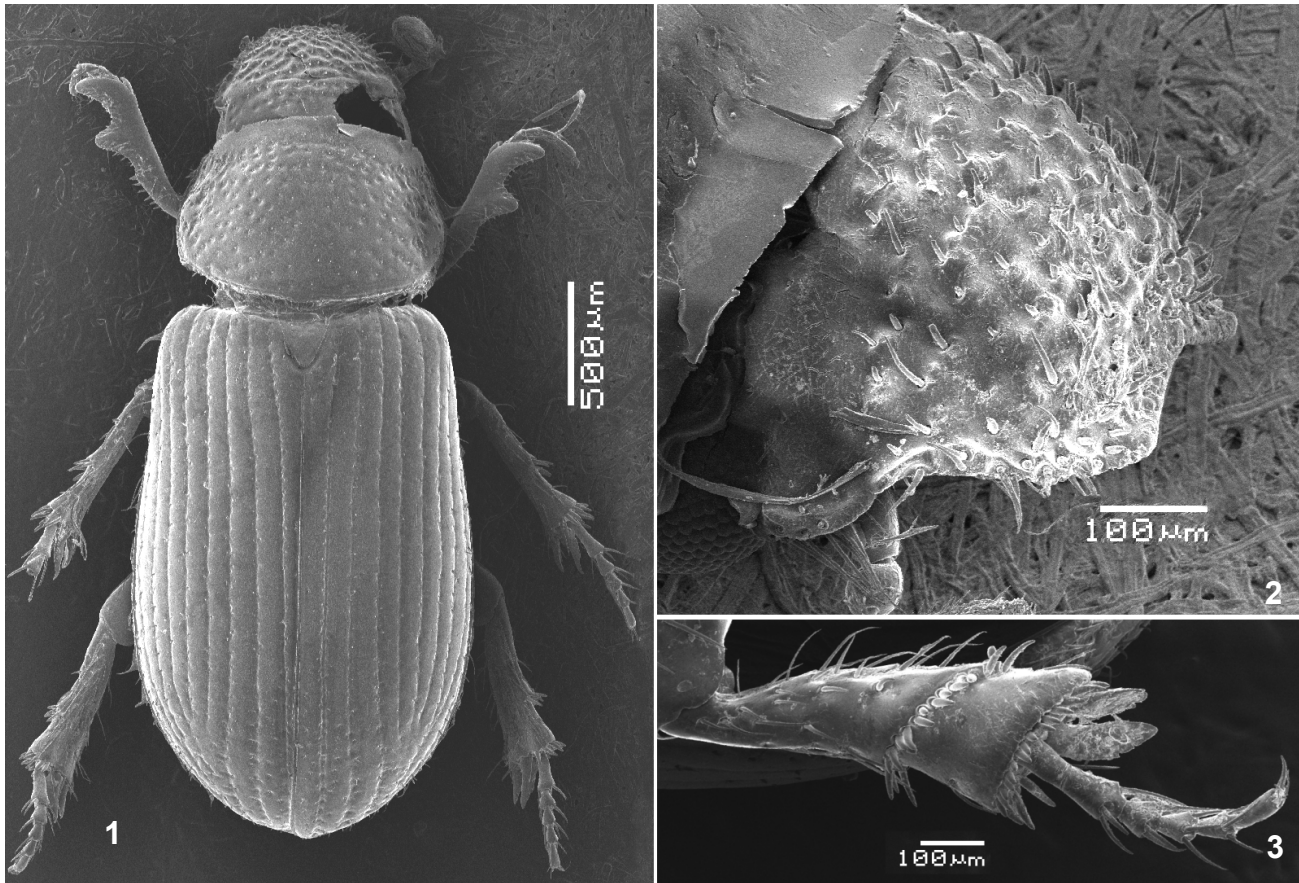
Diagnostic characters. Head flat or slightly convex, surface granulate or punctate. Mandibles with apices exposed, not covered by the clypeus. Pygidium lacking longitudinal groove at base, usually lacking transverse ridge at middle. Tibiae stout, frequently

dilated; metatibial spurs divided by base of hind tarsomere (rarely not divided).

Body medium sized, length 1.8 - 8.8 mm, oblong oval to parallel-sided or globular moderately to strongly convex, glossy, colour yellowish varying to dark brown; margins of head, pronotum and elytra clearly piliferous. Head moderate in size, clypeus shortened exposing mouthparts or anterior of clypeus narrowly prolonged to cover mouthparts (*Argeremazus* n. gen.); surface punctate or granulate-verrucose; clypeo-frontal suture marked between eyes by blackish line or fine carina, terminal segment of maxillary palpus cylindrical. Eyes small to moderate in size, invisible from above. Pronotum subquadrate or transverse, evenly convex, sides and base finely margined, surface punctured. Scutellum small, triangular. Elytra usually with striae, surface smooth or punctate. Ventral surface glabrous or covered with long, pale hair; metasternum elevated; abdomen with five or six sternites visible, sternites coalesced or not, sutures membranous or stiff. Legs slender or robust; meso- and metafemora fusiform; protibia relatively long with three to five widely separated lateral teeth and slender terminal spur; meso- and metatibiae with distinct transverse ridges or with traces of ridges, shortly setaceous or with fringe of thick setae and surface covered with pale hair; terminal spurs of metatibia slender, acute, semifoliaceous or foliaceous, placed separately on each side of tarsal insertion or located close together below tarsal insertion (genera *Saprus* Blackburn and *Amerisaprus* n. gen.); metatarsus short or moderate in length, tarsomeres cylindrical or triangular setaceous. Sexual differences indicated in the length of penultimate abdominal sternite, in the shape and sculpture of pronotum, in the terminal spur of protibia and/or in the length of penultimate abdominal sternite.

Diversity and Distribution. About 65 species are known worldwide, primarily in northern temperate areas. They are the Holarctic *Aegialia* Latreille, *Rhysothorax* Bedel, and *Caelius* Lewis; the Nearctic *Micraegialia* Brown; the Himalayan-Sichuanan *Silluvia* Landin; and the Central Asia and North Africa *Eremazus* Mulsant. The previously known exceptions are the Australian and Tasmanian genus *Saprus* Blackburn (Stebnicka and Howden 1995), and *Aegialia argentina* Martinez *et al.*, in Argentina. Two new genera and species are added to the South American fauna in this paper.

The main references available for the group are Stebnicka's (1977) world revision and Gordon and Cartwright's (1988) Nearctic revision. These refer-



Figures 1-3. *Argeremazus neuquen* Stebnicka and Dellacasa, holotype, 1) dorsal habitus, 2) head, right lateral view, 3) right metatibia.

ences have keys to species and other important information on the Aegialiinae. Readers are urged to consult them for taxa not considered further. Below, we also discuss an apparent change in the status of two subgenera.

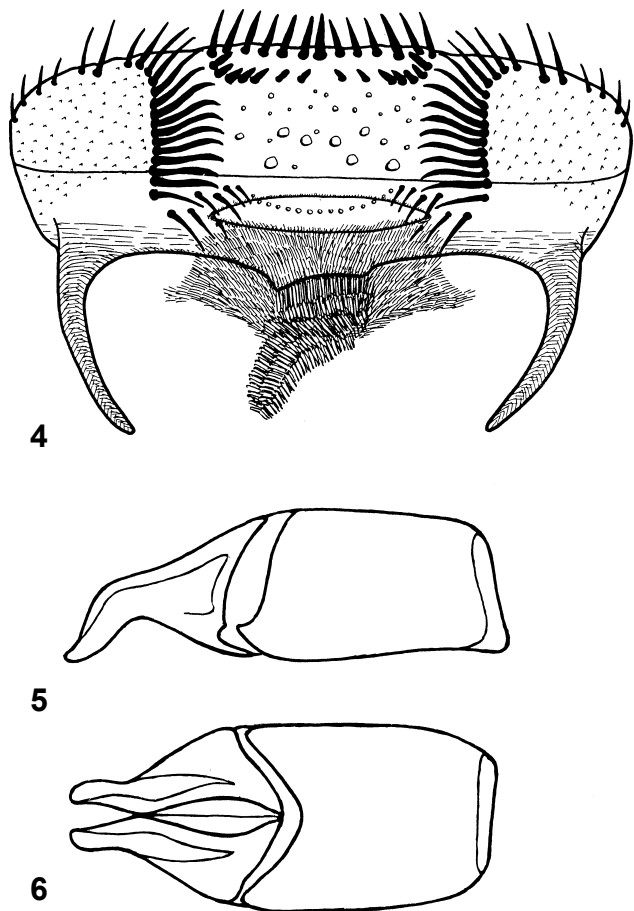
References: Gordon and Cartwright 1988 (revision of North America, illustrate most species). Stebnicka 1977 (world revision), Rust and Hanks 1982 (biology), Jerath and Ritcher 1959 (biology); Porter and Rust 1996, 1997 (phylogenetic and molecular studies), Ritcher 1966 (key to known larvae).

ARGEREMAZUS Stebnicka and Dellacasa, n. gen.

Type species: *Argeremazus neuquen* Stebnicka and Dellacasa sp. n. by present designation.

Diagnosis. Body (Fig. 1) elongate oval, margins fringed with long pale hair. Head convex, anterior of clypeus narrowly prolonged to cover mouthparts, edge finely dentate on each side of deep median emargin-

ation, sides slightly arcuate and excised in front of gena, genae small, setaceous, only slightly exceeding eyes; clypeal surface (Fig. 2) just above median emargination with narrow band of minute granules, median area between genae coarsely transversely wrinkled or granulate with short, erect, hair-like setae; clypeo-genal suture in form of arcuate carina extends around of granulate area, base of head with band of coarse punctures irregularly crenating carina and concentrated near eyes, middle of vertex polished, glabrous. Mouthparts adapted for hard saprophagy, Epipharynx as in fig. 4. Eyes moderate in size, invisible from above; antennal club elongate oval; apical segment of maxillary palpus cylindrical. Pronotum trapezoid, relatively small, anterior angles acutely produced, sides and base finely margined, sides short and broadly rounded to base, margin crenate with close pale hair. Scutellum small, triangular. Elytra convex, sides and apex with short semierect setae, striae impressed, strial punctures distinct; epipleura narrow, outer margin fringed with long pale hair. Ventral surface covered with hair; mesocoxae approximate, metasternum strongly elevated; abdomen with



Figures 4-6. *Argeremazus neuquen* Stebnicka and Dellacasa, 4) epipharynx, 5) left lateral view of male genitalia, 6) dorsal view of male genitalia.

six sternites visible, sternites not coalesced, sutures membranous, pygidium lightly sclerotized with long hair, lacking both transverse ridge and basal groove. Legs moderate in length; profemur narrow, parallel-sided, perimarginal groove lacking; meso- and metafemora fusiform, scarcely piliferous; protibia with two large, widely separated lateral teeth and small tooth posteriorly; meso- and metatibiae subcylindrical, piliferous, mesotibia slightly expanded apically with fine transverse carina; metatibia (Fig. 3) more enlarged than mesotibia, transverse carina oblique with row of short, close setae, apical spurs thick, nearly equal in length, located close together below tarsal articulation; metatarsus short, tarsomeres triangular, claws horn-like.

Affinity. The taxonomic placement of *Argeremazus* is a subject of various interpretations. General external characters would place it in the Didactylini (unsculptured pygidium and metatibial spur place-

ment). However, after examining character states in many genera of Aphodiinae, there is evidence that it may be related to *Eremazus*, which is substantiated by ephipharyngeal characters, as discussed by Stebnicka (1985). A detailed phylogenetic analysis is needed to substantiate this before any conclusive statements are made. For now, it is simply considered a member of the Aegialiini.

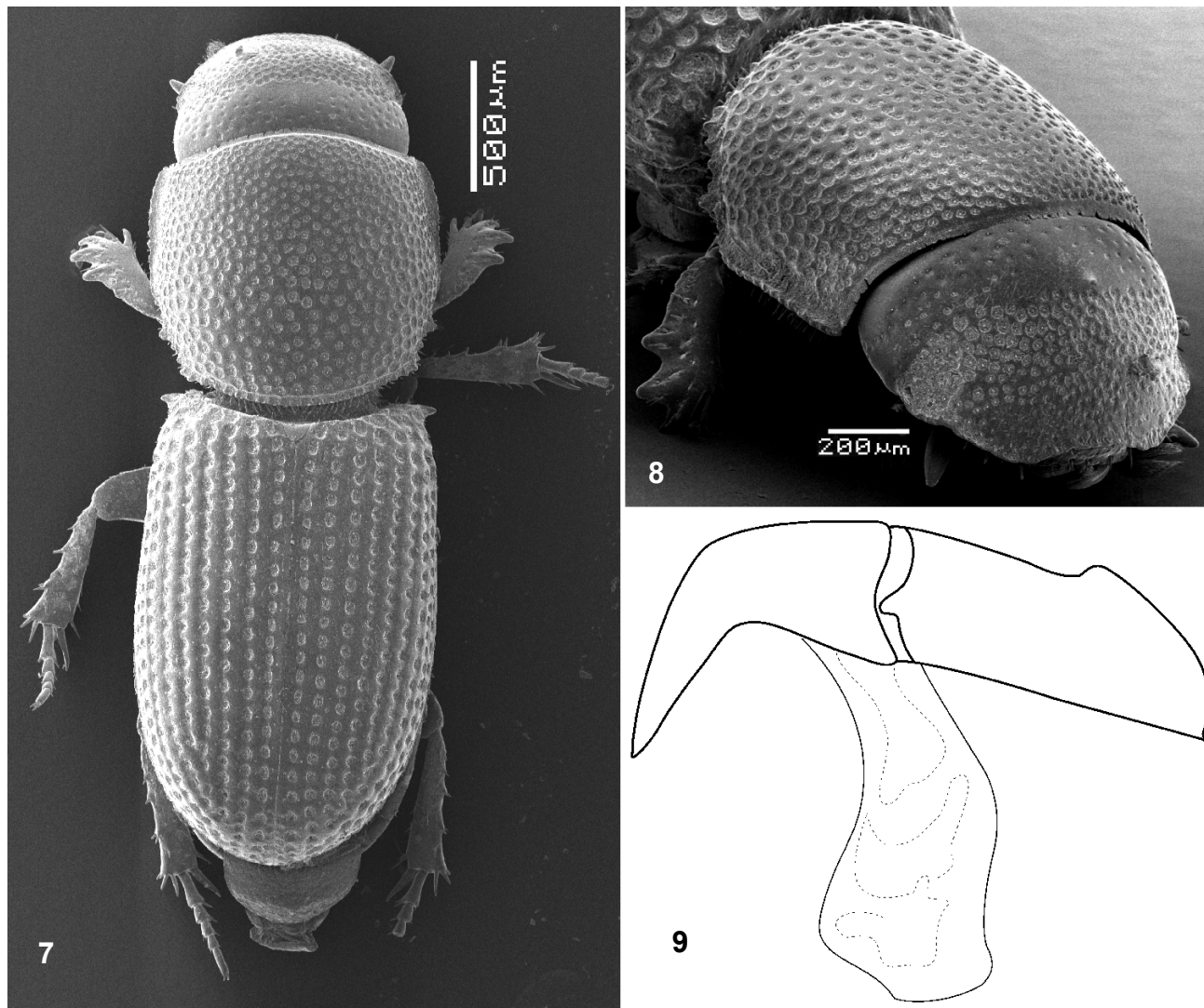
Etymology. (masuline) Name formed from the prefix *Arg-*, from "Argentina", combined with *Eremazus* to show their generic affinities.

Argeremazus neuquen Stebnicka and Dellacasa, sp.n.

Figures 1-6

Material examined. Holotype, male "/ [hand written] ARGENTINA, NEUQUEN, Covunco, Coll. Martinez, [vertical on left side of label] Feb.-976/H. and A. HOWDEN COLLECTION, ex A. Martinez coll. / [red paper] HOLOTYPE *Argeremazus neuquen* g.n. Det. Z. Stebnicka" (dissected, CMN). Two paratypes same data as holotype (CMN, PESC). One paratype "/ EA. COLLUNCO (900 M.S.N.M.), NEUQUEN-ARG. / 19-XII-73, LG.M.GENTILI / H. and A. HOWDEN COLLECTION, ex A. Martinez coll" (dissected, CMN). One paratype, same data as holotype only "... NEUQUEN, Lago Blanca, ..." (female, ISEA).

Description. Length 3.0-3.2 mm. Body (Fig. 1) elongate oval, widest at apical third of elytra, shining; head, pronotum and scutellum brown, elytra and ventral surface lighter, yellowish brown, antennal club dark brown. Clypeus strongly converging anteriorly, clypeal margin denticulate on each side of narrow median emargination, surface granulate-punctate and setigerous (Fig. 2). Pronotum relatively small and short, diverging posteriorly, sides and base finely margined, anterior edge widely membranous; anterior angles acute, sides short and continuously rounded to base, margin crenate-fimbriate; pronotal punctures coarse, irregularly spaced, on disc separated by 1-3 times their diameter, slightly confluent laterally, area from anterior angles to lateral tumosity with finer but very dense punctures, 2-4 long setae in anterior angles. Scutellum with few shallow fine punctures. Elytra moderately convex, sides and apex with short, scarce, semierect setae; striae distinctly impressed from base to apex, strial punctures fine to moderate, shallowly crenating inner margins of intervals, somewhat larger apically; intervals weakly convex, sutural ones narrowed toward apex, each



Figures 7-9. *Amerisaprus valdivia* Stebnicka and Skelley, paratype, 7) dorsal habitus, 8) head and pronotum, lateral-oblique view, 9) male genitalia, left lateral view.

with irregular row of deep punctures separated by 2-3 times their diameter on disc, closer toward apex; the remaining intervals irregularly punctate on apical declivity of elytra. Ventral sclerites shining, partially microreticulate; mesosternum lower than metasternum, metasternal disc elevated, midline feebly marked; abdomen with six sternites visible, each sternite with pale hair. Profemur without perimarginal groove, surface punctate-setose; mesofemur a little wider than profemur with few large setigerous punctures at base; metafemur two times as wide as mesofemur with row of setigerous punctures along posterior margin; protibia tridentate, terminal spur short, slender; meso- and metatibiae hairy, apically fringed with unequal in length, thick setae; apical spurs of metatibia slender, equal in length, placed close to-

gether below tarsal articulation, metatarsus short, tarsomeres triangular, basitarsomere markedly shorter than tibial spurs and subequal in length to following two tarsomeres combined. Epipharynx as in Figure 4. In male, disc of metasternum surrounded by setae-bearing punctures, penultimate abdominal sternite shorter than in female; aedeagus as in Figures 5-6.

Etymology. The species is named after the province it was collected in, Neuquen (noun in apposition).

Remarks. The character states mentioned in the generic description also distinguish the species, since the genus, at present, is monotypic.

CAELIUS Lewis 1895

Caelius Lewis 1895: 382 et Aucutt. Type species: *Caelius denticollis* Lewis 1895 by monotypy.

= *Leptaegialia* Brown 1931:12-13; Hatch 1971:440; Stebnicka 1977:429-430 (as subgenus of *Aegialia*); Gordon and Cartwright 1988:4 (as subgenus of *Aegialia*); Dellacasa 1988:103 (catalogued as synonym of *Caelius*); Porter and Rust 1997:306 (as subgenus of *Aegialia*). Type species: *Aegialia (Leptaegialia) humeralis* Brown 1931, by original designation.

Diagnosis. Body parallel-sided, color rusty brown to dark castaneous, antennae and palpi yellow. Head flattened, punctate and/or granulate, clypeo-frontal suture indicated by line with two darkened spots; clypeus shortened, mouthparts exposed, adapted for hard saprophagy, terminal segment of maxillary palpus widened in basal third. Eyes invisible, concealed under pronotal margin. Pronotum subquadrate, sides and base margined, crenate, side margin fringed with close yellow hair; anterior angles acutely produced, posterior angles broadly rounded, margin sometimes distinctly serrate; pronotal punctures evenly convex with mixed fine and coarse punctures. Scutellum small, triangular. Elytra parallel, disc subdepressed, humeri feebly to strongly dentate, striae with moderate to coarse, crenating punctures. Metathoracic wings functional. Legs moderate in length; meso- and metatibiae moderately stout or slender; apical spurs of metatibia equal in length, acutely pointed or rounded apically, never foliaceous, located on each side of tarsal insertion; metatarsus as long as tibia or shorter, tarsal segments triangular or cylindrical.

External sexual differences: Male: Terminal spur of protibia broad, flattened, hooked inward apically; pronotal punctures usually less close than in female; penultimate abdominal sternite usually equal in length to two preceding sternites. Female: Terminal spur of protibia slender, rounded apically; pronotal punctures usually coarser and closer than in male, elytra somewhat shorter; penultimate abdominal sternite usually equal in length to three preceding sternites or only slightly shorter.

Taxonomic background. The basic features that distinguishes the aegialiines from other tribes of Aphodiinae, chiefly from the Psammodiini and Eupariini, are the shortened clypeus exposing anterior part of labrum and strongly sclerotized scissorlike teeth of mandibles (Stebnicka 1977, Stebnicka and Howden 1995). *Caelius denticollis* described from Japan by Lewis (1895) has not been originally placed

in any tribe of the Aphodiinae and its tribal characters were not emphasized in the original description. Schmidt (1922: 362, "ex Lewis"), assigned *C. denticollis* to the tribe Aphodiini based on its original description. This statement was accepted by Balthasar (1952, 1956) who described three new species of the typical *Aphodius*, placing them in the genus *Caelius*. Nomura and Nakane (1951) and subsequently Nakane (1961) expressed an opinion, that *C. denticollis* should be placed within Aegialiini, however, these suggestions were criticized by Balthasar (1952, 1964) and rejected with no additional evidence and documentation (Landin 1965). This endemic Japanese species, closely related to *C. humeralis* (Brown), was redescribed and assigned to the tribe Aegialiini by Stebnicka (1986) on the basis of five individuals compared with the type-specimen.

Parsimony analysis of morphological characters of the Nearctic Aegialiini (Porter and Rust 1997) supported the monophyly of the four hitherto known American species of *Caelius* (= *Leptaegialia*). The genus constitutes a compact group of species well delimited from *Aegialia-Psammodorus* complex and its generic status is justified. As here documented, the generic name *Caelius* Lewis should be considered as valid in the meaning of Art. 23 of the 'Code' (ICZN 1999).

Dellacasa (1988), in his catalogue, has already recognized *Caelius* and *Rhysothorax* at the generic rank, and lists the species with the correct generic combination. This usage has generally not been followed. Because of this, we are creating no new combinations in our recognizing *Caelius* and *Rhysothorax* as a distinct genera of Aegialiini. To be thorough in our discussion of *Caelius*, the following account of *C. denticollis* Lewis is presented. It must be emphasized that it is not a New World species.

Caelius denticollis Lewis 1895

Caelius denticollis Lewis 1895:382, Fig. 5 (no tribal placement); Schmidt 1922:362 (Aphodiini); Balthasar 1952:234 (Aphodiini); Nakane 1961:63 (Aegialiini); Balthasar 1964:479, 480 (Aphodiini).

Aegialia (Leptaegialia) denticollis (Lewis): Stebnicka 1986:341, figs. 1, 2 (Aegialiini).

Caelius denticollis (Lewis): Dellacasa 1988: 119 (catalogued, Aegialiini).

Distribution: Japan, Honshu (Miyoshita, Kiga, Nikko, Kanagawa Pref. Oyama, 800 m).

Remarks. *Caelius denticollis* Lewis resembles *Caelius humeralis* (Brown) very closely. It differs from *C.*

humeralis by having the head with less dense punctures, the pronotal punctures closer and the pronotal lateral margin distinctly crenulate near anterior angles. Other diagnostic characters are: Body more slender than in *C. humeralis*; surface of head uniformly, finely punctate throughout, punctures separated by about one diameter; posterior angles of pronotum serrate like in *C. humeralis*; pronotal punctures mixed fine and moderately coarse, the latter everywhere distributed, generally separated by their diameter or less; apical spurs of metatibia equal in length, slender, acutely pointed, both spurs equal in length or only slightly longer than basal tarsomere of metatarsus.

AMERISAPRUS Stebnicka and Skelley, n. gen.

Type species: *Amerisaprus valdivia* Stebnicka and Skelley, by present designation.

Description. Body (Fig. 7) elongate oblong, elytra relatively short, metathoracic wings brachypterous. Head weakly convex, clypeus shortened, exposing mouthparts. Antenna 9-segmented, club ovoid, 3-segmented. Eye small, can be concealed under pronotal margin. Pronotum (Figs. 7-8) subquadrate in shape, sides and base margined, crenate; anterior angles acutely produced, posterior angles broadly rounded with two denticles posteriorly, surface closely punctate. Scutellum small, triangular. Elytra suboval, humeral denticles strong, strial punctures coarse. Mesosternum deplanate, lower than metasternum, surface punctate; mesocoxae separated; metasternum relatively short, indicating brachyptery; abdominal sternites finely fluted along sutures, disc of pygidium transversely carinate, scabrous on apical half. Legs moderately long; profemur lacking perimarginal groove, surface punctate; meso- and metafemora fusiform; protibia with three small lateral teeth; meso- and metatibiae slightly widened toward apex with very slight traces of transverse ridges; metatibial apical spurs slender, unequal in length, acutely pointed, located close together below tarsal insertion. The male genitalia (Fig. 9) of the Aegialiini type, phallobase of aedeagus with indicated dorsal hump.

Etymology. (masculine) The generic name was chosen to represent apparent relationship of this genus with the Australian genus *Saprus* Blackburn. Thus, the name is a combined form of "American - *Saprus*".

Comparative notes. *Amerisaprus* is most closely allied to the genus *Saprus* (Stebnicka and Howden 1995). Most of the characters represented in *Saprus* are shared with *Amerisaprus*. The main synapomorphies are: 1/ the shape and sculpture of pronotum; 2/ the heavily punctate elytral striae; 3/ the widely separated mesocoxae; 4/ the apical spurs of metatibia placed below tarsal insertion.

A combination of autapomorphic character states, distinguishing *Amerisaprus* from *Saprus*, are: 1/ metathoracic wings brachypterous (*Saprus* is fully winged); 2/ mesosternum flattened, depressed below level of metasternum (in *Saprus* convex, at same level); 3/ abdominal sternites fluted along sutures (in *Saprus* more or less coarsely punctate along sutures); 4/ pygidium carinate with scabrous, rugose disc (in *Saprus* convex, smooth without carina); 5/ mouthparts exposed as usual in Aegialiini (in *Saprus* labrum and bidentate mandibles are more exposed).

Both genera share a number of synapomorphies with *Caelius* Lewis, that are: 1/ the general shape of body; 2/ the head lacking granular surface (like in *C. denticollis*); 3/ the anterior pronotal angles acutely produced; 4/ a similar sculpture of the pronotum and elytra.

In some respects, the abdominal and tibial spur characters of *Saprus* and *Amerisaprus* are shared with some genera of the Eupariini. However, both genera were apparently isolated in the past from the Holarctic core of the Aegialiini, and may represent a relictual branch from a common ancestor between the more derived Aegialiini and the base of the euparine lineages.

Amerisaprus valdivia Stebnicka and Skelley
n.sp.

Figures 7-9

Material examined. Holotype male: "Chile, Valdivia Prov., 34 km WNW La Union, 700 m, 17.XII.1984 / FMHD#85-921, mixed forest, P#85-36 berlese, S. and J. Peck / [red paper] HOLOTYPE *Amerisaprus valdivia* Stebnicka and Skelley" (FMNH). Paratypes (3), same data as holotype, one each in ISEA (male), FMNH, PESC.

Description. Length 2.8-3.0 mm. Body (Fig. 7) moderately shining, glabrous; color blackish brown, antennae and palpi yellowish; terminal segment of maxillary palpus slender, weakly widened in basal third. Head feebly convex, slightly converging anteriorly with weakly indicated tubercle at middle; genae small, clypeo-frontal suture marked by line; clypeal

surface subopaque, finely closely punctate throughout, punctures separated by less than one diameter, vertical area shining, laterally with slightly larger punctures separated by one diameter. Pronotum (Figs. 7-8) almost quadrate, converging posteriorly; sides and base narrowly margined and crenate; anterior angles acutely produced; posterior angles broadly rounded toward base with distinct tooth at middle that is separated from basolateral denticle by inconspicuous excavation; pronotal surface everywhere closely punctured, fine punctures along anterior margin become increasingly coarser toward base, on disc separated by about one diameter, closer laterally, nearly contiguous and rugose at anterior angles. Elytra suboval, less than 2 times of pronotal length, humeral denticles acute, directed laterad; striae coarsely, closely punctate, lateral striae 6-9 as wide as intervals or wider; intervals flat on disc, narrowly carinate laterally, surface with minute scattered punctures. Ventral surface shining; mesosternum lower than metasternum, deplanate and cordate in shape, irregularly coarsely punctate; mesocoxae separated, space between mesocoxae slightly smaller than width of mesofemur; metasternum relatively short, disc and lateral area coarsely punctate, lateral metasternal triangle lacking; abdominal sternites finely fluted along sutures and finely punctate throughout, pygidium with transverse carina, disc rugosely sculptured. Legs moderate in length; profemur lacking perimarginal groove, surface closely evenly punctate; meso- and metafemora smooth, almost impunctate; protibial lateral teeth small, well separated, terminal spur straight and acute in both sexes; meso- and metatibiae externally with weak traces of transverse ridges; metatibia with apical spurs thin, slender, unequal in length, placed close together below tarsal articulation; metatarsus shorter than tibia, segments subtriangular, basal tarsomere slightly shorter than upper tibial spur and subequal to following two tarsomeres combined. In male, penultimate abdominal sternite shorter than and the pygidium longer than the female. Male genitalia as in Figure 9.

Etymology. The species is named after the province in which it was collected, Valdivia (noun in apposition).

Annotated checklist of Aegialiinae of New World

UNKNOWN TAXA

Aegialia americana Dejean 1833 [1837:163], "Amer. Bor." (*nomen nudum*)

Aegialia clypeata (Say): Dellacasa 1988:359 (*nomen dubium*)

Aphodius clypeatus Say 1824:278, "North-West Territory"

[Say's collection has been almost entirely destroyed (Mawdsley 1993), with no specimen of this taxon in what remains. LeConte (1859:183-183) stated the species is probably an *Aegialia* and Horn (1887:98, 110) stated it is probably a *Psammopus* or *Aegialia*. However, it appears that neither LeConte nor Horn studied a specimen. The species was not mentioned in Cartwright (1955), Gordon and Cartwright (1988), nor Stebnicka (1977). The identity of this species will remain a mystery.]

FOSSIL

Aegialia rupta Scudder 1890:489, pl. 8, Fig. 19; Green River, USA

EXTANT TAXA

AEGIALIA Latreille 1807:96 (28 species in the New World, 12 in the Palaearctic)

Type species: *Scarabaeus arenarius* Fabricius 1787:11, by monotypy

Aegialia (Psammopus) Thomson 1863:72 (7 species in the New World, 8 in the Palaearctic)

Type species: *Scarabaeus sabuleti* Panzer 1797:37, by monotypy

= *Dimalia* Mulsant and Rey 1869:406, Type species: *Scarabaeus sabuleti* Panzer 1797:37, by monotypy

Aegialia (Psammopus) criddlei Brown 1931:42, western North America

Aegialia (Psammopus) cylindrica (Eschscholtz 1822:11), western North America

Aegialia (Psammopus) exarata Mannerheim 1853:219, ? Nearctic

[Horn (1887:101, 110) lists as "? syn of *A. lacustris*". Stebnicka (1977:487) stated it is possibly a misidentification. It is not treated in Gordon and Cartwright (1988)]

Aegialia (Psammopus) lacustris LeConte 1850:225, north and western North America

Aegialia (Psammopus) nana Brown 1931:19, north-eastern North America

Aegialia (Psammopus) opaca Brown 1931:17, north-western North America

Aegialia (Psammopus) terminalis Brown 1931:18, north and western North America

Aegialia (Aegialia) Latreille 1807:96 (21 species in the New World, 4 in the Palearctic)

Type species: *Scarabaeus arenarius* Fabricius 1787:11, by monotypy

Aegialia (Aegialia) amplipunctata Gordon and Cartwright 1988:20, northern North America

Aegialia (Aegialia) argentina Martinez, Pereira, and Vulcano 1970:336, South America (Argentina)

Aegialia (Aegialia) arenaria (Fabricius 1787:11) Europe, northeastern North America (introduced) = *Scarabaeus globosus* Kugelann 1792:514

Aegialia (Aegialia) blanchardi Horn 1887:99, widespread North America

Aegialia (Aegialia) carri Gordon and Cartwright 1988:15, northwestern North America

Aegialia (Aegialia) cartwrighti Stebnicka 1977:454, eastern North America

Aegialia (Aegialia) concinna Gordon and Cartwright 1977:48, western North America

Aegialia (Aegialia) conferta Horn 1871:293, northern and western North America

Aegialia (Aegialia) convexa Fall 1932:183, western North America

Aegialia (Aegialia) crassa LeConte 1857:42, western North America

= *Aegialia (Aegialia) insularis* Brown 1931:49

Aegialia (Aegialia) crescenta Gordon and Cartwright 1977:45, western North America

Aegialia (Aegialia) hardyi Gordon and Cartwright 1977:47, western North America

Aegialia (Aegialia) kelsoi Gordon and Cartwright 1988:24, southwestern North America

Aegialia (Aegialia) knighti Gordon and Rust 1997:168, western North America

Aegialia (Aegialia) latispina LeConte 1878:611, western North America

Aegialia (Aegialia) magnifica Gordon and Cartwright 1977:43, western North America

Aegialia (Aegialia) mcclevei Gordon 1990:271, southwestern North America

Aegialia (Aegialia) nigrella Brown 1931:47, western North America

Aegialia (Aegialia) opifex Horn 1887:104, northeastern North America

Aegialia (Aegialia) punctata Brown 1931:25, western North America

Aegialia (Aegialia) spinosa Gordon and Cartwright 1988:25, western North America

AMERISAPRUS Stebnicka and Skelley (1 species in the World)

Type species: *Amerisaprus valdivia* Stebnicka and Skelley, by monotypy

Amerisaprus valdivia Stebnicka and Skelley, South America (Chile)

ARGEREMAZUS Stebnicka and Dellacasa (1 species in the World)

Type species: *Argeremazus neuquen* Stebnicka and Dellacasa, by monotypy

Argeremazus neuquen Stebnicka and Dellacasa, Argentina

CAELIUS Lewis 1895:381-382 (4 species in the New World, 1 species in Japan)

Type species: *Caelius denticollis* Lewis 1895:382, by monotypy.

= *Leptaegialia* Brown 1931:32, Type species: *Aegialia humeralis* Bown 1931, by original designation.

Caelius browni (Saylor 1934:34), western North America

Caelius humeralis (Brown 1931:13), northeastern North America

Caelius montanus (Brown 1931:14), western North America

Caelius rufescens (Horn 1887:100), northern North America

= *Aegialia rufa* LeConte 1878:610 (not *Scarabaeus rufus* Fabricius 1792:39)

MICRAEGIALIA Brown 1931:11 (1 species in the World)

Type species: *Micraegialia pusilla* (Horn 1887:102), by monotypy

Micraegialia pusilla (Horn 1887:102), northwestern North America

RHYSOTHORAX Bedel 1911:93 (1 species in the World)

Type species: *Scarabaeus rufus* Fabricius 1792:39, by monotypy.

= *Anomalaegialia* Brown 1931:15, Type species: *Aegialia spissipes* LeConte 1878:611, by monotypy.

Aegialia (Rhysothorax) rufa (Fabricius 1792:39), Europe, northern North America (introduced?) [see ICZN 1998]

= *Scarabaeus sabuleti* var β Paykull 1798:27

= *Aegialia spissipes* LeConte 1878:611

= *Aegialia (Rhysothorax) rufina* Silfverberg 1977:91

UNCERTAIN PLACEMENT

ANNEGIALIA Howden 1971:1466

Type species: *Annegialia ataeniformis* Howden 1971, by monotypy.

Annegialia ataeniformis Howden 1971:1468, western North America

[Although presently placed in the Eupariini (Gordon and Cartwright 1988:2), some feel this placement is incorrect and needs to be substantiated by a rigorous morphological study and cladistic analysis. This will be discussed in a separate contribution (ZTS).]

Acknowledgments

For loans of specimens we thank Henry Howden, Canadian Museum of Nature, Ottawa Canada; and Al Newton, Field Museum of Natural History, Chicago, IL-USA.

For reviews of the manuscript or critical conversations we thank: W. B. Warner, Chandler, AZ-USA; R. D. Gordon, Willow City, ND-USA; M. C. Thomas and W. Dixon, Florida Department of Agriculture and Consumer Services, Gainesville, FL-USA.

This project was supported, in part, by an NSF/PEET grant (DEB-0118669) to M. L. Jameson and B. C. Ratcliffe, University of Nebraska State Museum, Lincoln, NE-USA. This is Florida Department of Agriculture and Consumer Services, Entomology Contribution No. 960.

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ERRATA: An error occurred in printing, and the following references were deleted.

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