North American Representatives of the Tribe Aegialiini (Coleoptera: Scarabaeidae: Aphodiinae)

ROBERT D. GORDON

and

OSCAR L. CARTWRIGHT
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(Coleoptera: Scarabaeidae: Aphodiinae)

Robert D. Gordon
and
Oscar L. Cartwright
ABSTRACT

## Contents

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
</tr>
<tr>
<td>Acknowledgments</td>
</tr>
<tr>
<td>Tribe Aegialini</td>
</tr>
<tr>
<td>Key to North American Genera of Aegialini</td>
</tr>
<tr>
<td><em>Micraegialia</em> Brown</td>
</tr>
<tr>
<td><em>Micraegialia pusilla</em> (Horn)</td>
</tr>
<tr>
<td><em>Aegialia</em> Latreille</td>
</tr>
<tr>
<td>Key to North American Subgenera of <em>Aegialia</em></td>
</tr>
<tr>
<td>Subgenus <em>Leptaegialia</em> Brown</td>
</tr>
<tr>
<td>Key to the Species of the Subgenus <em>Leptaegialia</em></td>
</tr>
<tr>
<td><em>Aegialia</em> (Leptaegialia) rufescens Horn</td>
</tr>
<tr>
<td><em>Aegialia</em> (Leptaegialia) humeralis Brown</td>
</tr>
<tr>
<td><em>Aegialia</em> (Leptaegialia) montana Brown</td>
</tr>
<tr>
<td><em>Aegialia</em> (Leptaegialia) browni Saylor</td>
</tr>
<tr>
<td>Subgenus <em>Psammoporus</em> Thomson</td>
</tr>
<tr>
<td>Key to the Species of the Subgenus <em>Psammoporus</em></td>
</tr>
<tr>
<td><em>Aegialia</em> (Psammoporus) lacustris LeConte</td>
</tr>
<tr>
<td><em>Aegialia</em> (Psammoporus) cylindrica (Eschscholtz)</td>
</tr>
<tr>
<td><em>Aegialia</em> (Psammoporus) criddlei Brown</td>
</tr>
<tr>
<td><em>Aegialia</em> (Psammoporus) opaca Brown</td>
</tr>
<tr>
<td><em>Aegialia</em> (Psammoporus) terminalis Brown</td>
</tr>
<tr>
<td><em>Aegialia</em> (Psammoporus) nana Brown</td>
</tr>
<tr>
<td>Subgenus <em>Rhysothorax</em> Bedel</td>
</tr>
<tr>
<td><em>Aegialia</em> (Rhysothorax) rufa (Fabricius)</td>
</tr>
<tr>
<td>Subgenus <em>Aegialia</em> Latreille, sensu stricto</td>
</tr>
<tr>
<td>Key to the Species of the Subgenus <em>Aegialia</em></td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) blanchardi Horn</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) carri, new species</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) arenaria (Fabricius)</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) crassa LeConte</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) magnifica Gordon and Cartwright</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) crescenta Gordon and Cartwright</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) hardyi Gordon and Cartwright</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) concinna Gordon and Cartwright</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) amplipunctata, new species</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) latispina LeConte</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) convexa Fall</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) opifex Horn</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) confera Horn</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) nigrella Brown, new status</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) kelsi, new species</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) punctata Brown</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) cartwrighti Stebnicka</td>
</tr>
<tr>
<td><em>Aegialia</em> (Aegialia) spinosa, new species</td>
</tr>
<tr>
<td>Literature Cited</td>
</tr>
<tr>
<td>Figures 25–85</td>
</tr>
</tbody>
</table>
North American Representatives of the Tribe Aegialiini (Coleoptera: Scarabaeidae: Aphodiinae)

Robert D. Gordon and Oscar L. Cartwright

Introduction

The tribe Aegialiini is composed of 2 subtribes (Stebnicka, 1977), Aegialiina and Eremazina. Aegialiina is the only North American subtribe; 6 of the 9 genera and subgenera recognized for the world are represented. The tribe is composed of cold-adapted species with no truly tropical representatives. Only 2 species are known from the Southern Hemisphere, one from Tasmania and one from Argentina.

Brown (1931) presented the first comprehensive North American treatment of the tribe, in which he described one new genus, 3 new subgenera, and provided keys to all taxa. Eight new North American species have been described since by Fall (1932), Saylor (1934), Gordon and Cartwright (1977), and Stebnicka (1977). Howden (1971) described a new genus and species, which we transfer to another tribe. The treatment by Stebnicka is a world revision of the Aegialiini in which taxonomic history, morphology, zoogeography, and phylogeny of the genera are discussed; for all of which we refer the reader to that publication. Changes made herein are the removal of one genus and species, Annegialia ataeniformis Howden, from the Aegialiini, the description of 4 new species, and some modification of Stebnicka’s (1977) classification. We recognize 6 genera and subgenera and 30 species as occurring in North America. Stebnicka’s 1977 revision is reasonably complete; therefore we have not repeated much of the contents. For example, for the most part Stebnicka has already completed the distribution maps, as well as listed extensive locality records. New locality records, particularly those that extend the known range of a species, are presented; otherwise we give the range in general terms. In addition, where lectotypes have not previously been designated and are needed, we so designate them herein. This contribution is intended as a supplement to Stebnicka (1977), and therefore should be used in conjunction with that publication.

Species of Aegialiini are detritivores as evidenced by the gut contents of dissected specimens and by the nature of the habitats in which they are found. Members of Aegialia, sensu stricto, are psammophiles found on coastal dune systems, inland dunes, or wherever the substrate is essentially sandy. Members of the subgenus Psammoporus are apparently not as strongly psammophilous and often prefer the gravelly shores of streams and ponds. Thus they are not usually found associated with dune systems or areas that are heavily sandy in nature. The biology of Aegialia species is imperfectly known and the only references on this subject are Jerath (1960) and Cornell (1967), in which the larvae of 3 of the North American species are treated. Further speculation along these lines is derived from knowledge of the geography of the areas from which specimens have been collected and habitat data on labels.

ACKNOWLEDGMENTS.—For the loan of type material and other specimens we are indebted to the following institutions and individuals (acronyms are those used in the text); H. Leech and D. Kavanaugh, California Academy of Sciences, San Francisco (CAS); A. Hardy, California Department of Agriculture, Sacramento (CDA); M. Campbell, Canadian National Collection, Ottawa (CNC); J. Carr, Calgary, Alberta (JC); J. Matthews, Geological Survey of Canada, Ottawa; H. Howden, Carleton University, Ottawa (HH); C. Hogue, Los Angeles County Museum, Los Angeles; A. Newton, Museum of Comparative Zoology, Harvard University, Cambridge (MCZ); Robert D. Gordon, Systematic Entomology Laboratory, BBII, Agricultural Research Service, USDA, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560. Oscar L. Cartwright (deceased), Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.

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**Tribe Aegialiini**

Body oval or elongate, sometimes slightly flattened, length range 1.8 to 8.8 mm. Head flat or slightly convex, surface granulate or punctate; clypeus shortened, exposing labrum, mandible; mandible toothed, strongly sclerotized; antenna 9-segmented; terminal maxillary segment usually cylindrical. Base of pronotum with or without marginal line, lateral margin usually crenate, anterior angle produced, posterior angle rounded or obtuse. Surface of elytron smooth, with 10 striae and intervals, rarely with carinae. Humerus in most species with at least some trace of denticulation. Wings well developed or reduced. Abdomen with 6 visible sterna. Hind tarsal claws vary from slender, simple, to flattened, foliaceous.

We here transfer *Annegialia* Howden from the Aegialiini to the Eupariini, and place it near *Euparia* and *Euparixia*. *Annegialia* has long, slender legs; tightly joined, heavily sclerotized abdominal sterna; and a cuneiform mesosternum. All of these characteristics are also found in *Euparia* and *Euparixia* but not in the Aegialiini. In fact, the only reason for placing *Annegialia* in the Aegialiini is the presence of a shortened clypeus that exposes the labrum and mandibles, a condition heretofore considered peculiar to the Aegialiini. We regard this condition as independently derived in *Annegialia* and suspect that it may be a result of psammophily, a habit not usually found in Eupariini but common in Aegialiini. Members of both *Euparia* and *Euparixia* are ant guests and several other genera are guests of either ants or termites. Members of *Ataenius* (Euparini) are mostly detritivores, but usually not psammophilus. Howden (1971) stated that *Annegialia* could well be placed in the Eupariini but elected to put it in Aegialiini pending further investigation.

**Key to North American Genera of Aegialiini**

1. Intervals of elytron without short hairs; abdominal sterna not narrowed medially, 5th sternum not obliterated medially by 6th sternum [Figure 32] — *Aegialia* Latreille
2. Intervals of elytron with short hairs; abdominal sterna narrowed medially, 5th sternum obliterated medially by 6th sternum [Figure 31] — *Micraegialia* Brown

**Micraegialia Brown**


Body small, oblong oval, strongly convex. Terminal segment of maxillary palpus elongate oval; clypeus punctate, lacking granules or rugae, anterior margin fimbriate with flattened hairs. Pronotum with apical angle moderately produced, acute, basal angle rounded; lateral, and basal margins fimbriate with flattened hairs, surface with each punctuation bearing one short seta. Elytron with finely dentate humerus, each punctuation on interval bearing a seta. Middle coxae widely separated, intercoxal process of mesosternum feebly carinate. Abdomen pruinose except last sternum, sterna 2–4 strongly narrowed at middle, 5th sternum with median area concealed by 6th sternum, 6th sternum medially longer than rest (Figure 31). Anterior tibia slender; apex of hind femur with apical flange on hindmargin; middle, and hindfemora elongate, finely pubescent; middle tibia with small, distinct, transverse ridge externally at apical third; hindtibia with transverse ridges; tibial spurs slender; hindtarsus long.

The habitat of the only species of this genus has not been recorded except for fossil data. Fossil elytra of *M. pusilla* have been found at Norwood, Sibley Co., Minnesota, and Johns Lake near McCluskey, Sheridan Co., North Dakota by A. Ashworth. The Norwood elytron was found in basal sediments, 12,400 years B.P. The site was the edge of a stagnated ice sheet with melting ice close to the surface forming pools. The vegetation was sparse, probably northern boreal, and the elytron was found in fresh sediment marking the beginning of plant succession in open ground environment before trees had begun to move in (Ashworth et al., 1981; Ashworth, pers. comm., 1985). The Johns Lake site was probably very similar to the Norwood site, i.e., glacial material overlain by peat dated 10,000 years B.P. The peat layer was full of spruce-inhabiting Scolytidae and the *M. pusilla* elytron probably came from the silt layer below the peat that accumulated at the edge of the retreating ice (Ashworth, pers. comm., 1985).

**Micraegialia pusilla (Horn)**

*Figures* 1, 33

*Aegialia pusilla* Horn, 1887:102.


**Description.**—Length 1.85 to 2.50 mm, greatest width 0.92 to 1.20 mm. Form elongate, widest at middle of elytron, body
convex (Figure 1). Color dark brown to black except clypeal apex and anterolateral angle of pronotum reddish brown, venter light yellowish brown. Head densely punctate, punctations separated by a diameter or less, surface finely alutaceous, lacking granules or rugae; clypeal apex essentially truncate, anterolateral angle broadly rounded, gena not produced. Pronotum shiny, punctations large, separated by a diameter or less except becoming small, sparse on lateral margin, midline narrowly impunctate; feeble lateral fovea present; basal margin sinuate on each side of middle with fine marginal line present. Elytron smooth, shiny, punctations on intervals fine, arranged more or less in a row bordering each stria, stria distinctly impressed, punctations indistinct, separated by 3 times diameter. Metasternum with median area finely, densely punctate in male, sparsely punctate in female. Functional wings present. Female abdomen strongly convex, 6th sternum not alutaceous. Middle tibia with surface denticles sparse, apical spurs slender, outer spur longer than, inner spur shorter than, first tarsal segment; hindfemur with apical flange reduced, hindmargin of flange straight; hindtibia with numerous surface denticles, apical spurs slender, outer spur slightly longer than first tarsal segment, inner spur subequal in length to first tarsal segment. Male genitalia as in Figure 33; female genital plate as figured by Stebnicka (1977, fig. 7).

**Type Locality.**—Washington Territory.

**Type Depository.**—MCZ.

**Remarks.**—Brown (1931) had 8 specimens of this species when he erected his new genus, and Horn had a unique holotype from Washington Territory. The only additional records are from Helena, Montana, and the previously discussed fossil sites. It appears that the modern distribution of *M. pusilla* is extremely relictual with populations widely scattered over the area from Minnesota, North Dakota and Manitoba to British Columbia.


*Aegialia* Latreille


Body elongate oval or elongate, moderately to strongly convex. Head wide, surface punctate, granulate, or rugose. Pronotum more or less punctate, side margin often crenate, fringed with fine, unflattened setae. Elytron distinctly striate, lacking pubescence. Leg robust or slender, tibial spurs slender or foliaceous; anterior tibia with 2 or 3 lateral teeth; middle coxae narrowly separated; hindfemur robust or slender, with apical flange on hindmargin. Abdomen unmodified (Figure 32).

Stebnicka (1977:402) attached a great deal of importance to the shape of the female genital plate, which she refers to as the "stylus." This structure is actually the divided 10th tergum and is of some use in species separation. We illustrate the genital plate only in those instances where Stebnicka did not, as her illustrations are perfectly adequate in most instances. We also consider the apical flange on the hindfemur to be a diagnostic character in the "confera-punctata group"; this is a character not previously used. Another useful character not utilized by Stebnicka is the armature of the internal sac of the male genitalia, which is nearly always diagnostic for each species. We provide illustrations of this sac for all included species.
Key to North American Subgenera of Aegialia

1. Terminal segment of maxillary palpus enlarged, widest at basal third, abruptly narrowed at base; form elongate, parallel sided or nearly so .......................... 2
   Terminal segment of maxillary palpus cylindrical; form elongate, not parallel sided ................................................................. 3

2. Elytron with humerus not dentate; pronotum with indistinct, poorly defined punctations and feebble rugae; spurs at apex of hindtibia foliaceous .......................... Rhysothorax Bedel
   Elytron with humerus dentate; pronotum with distinct punctations, lacking rugae; spurs at apex of hindtibia slender .......................... Leptaegialia Brown

3. Pronotum approximately 1/3 as long as elytron, surface near posterior angle impunctate or feebly so (middle and hindtibiae robust or slender, apical spurs slender or foliaceous) ........................................ Aegialia Latreille, sensu stricto
   Pronotum approximately 1/2 as long as elytron, surface near posterior angle coarsely punctate (middle and hindtibiae slender, apical spurs slender) .......................... Psammoporus Thomson

Subgenus Leptaegialia Brown


Form elongate, flattened, parallel sided. Head densely punctate, appearing granulate; clypeus granulate, without punctations. Terminal segment of maxillary palpus wider in basal third than at base, somewhat securiform. Pronotum with side, base margined, lateral border crenate, surface with intermixed fine, coarse punctations. Elytron flattened, sides parallel, humerus feebly to strongly dentate. Terminal spurs of middle, hindtibiae slender, not foliaceous. Male anterior tibial spur broad, flattened, hooked inward apically; female anterior tibial spur narrow, not hooked apically.

This strictly North American subgenus is composed of 4 species closely similar in appearance with a quite different facies from other subgenera of North American Aegialia. The biology of the group is not well defined; the species are almost certainly detritivores, but are not psammophilous nor restricted to stream or pond margins as are most members of the other subgenera. Saylor (1934) stated that some type specimens of A. browni were collected at dusk flying near a decayed log at 9000 feet (2743 m) in Sequoia National Park. Cornell (1967) described the larva of A. montana (incorrectly identified as A. browni) and discussed the habitat in which they were collected. This was 3600 feet (1097 m) on Mary’s Peak, Benton Co., Oregon; the larvae were found at depths of 4 inches (10 cm) to 2 feet (0.6 m) in soil at the edge of the summit meadow in the ecotone between forest and meadow. Aegialia montana was collected by John Carr (pers. comm.) from “washup” at Ghost Dam, Alberta, and he also collected it under stones on leaf mold at Kananaskis Lakes, Alberta. Aegialia rufescens was also collected by John Carr (pers. comm.) on “sifting leaf mold, willow-poplar thicket” in Alberta. No other biological data are available for members of this subgenus, but they are found in forested areas and the habitat requirements are probably very similar to those described for A. montana and A. rufescens.

Key to the Species of the Subgenus Leptaegialia

1. Hindtibia short, twice as long as wide; hindtibial spurs slightly flattened .................... rufescens Horn
   Hindtibia elongate, 3 times as long as wide; hindtibial spurs slender ................... 2

2. Humeral angle of elytron sharply dentate; northeastern United States and southeastern Canada ........................................ humeralis Brown
   Humeral angle of elytron feebly dentate; not occurring east of the Mississippi River ......................................................... 3

3. Pronotum impunctate or nearly so near posterior angle ........................................ montana Brown
   Pronotum with distinct, fine punctations and some scattered coarse punctuations near posterior angle ........................................ browni Saylor
Aegialia (Leptaegialia) rufescens Horn

FIGURES 2, 34

Aegialia rufescens Horn, 1887:100.
LeConte, 1878:610 [not Scarabaeus rufa Fabricius, 1792].

DESCRIPTION.—Length 4.0 to 5.20 mm, greatest width 1.60 to 2.0 mm (Figure 2). Color yellowish brown to reddish brown. Head granulate; clypeal apex not perceptibly emarginate, gena slightly produced. Pronotum with coarse punctations separated by less than to twice a diameter, absent near anterior and posterior angles, lateral margin crenate near anterior, posterior angles. Elytron with humerus slightly prominent, not dentate; surface slightly alutaceous, interval convex, stria impressed with moderate punctations separated by less than a diameter. Anterior tibia with emargination between external teeth sharp, distinct, apical spur of male truncate, bifurcate at apex, inner angle produced inward, outer angle slightly produced outward; female tibial spur straight, flattened, apex rounded. Hindtibia short, broad, abruptly widened at apex, hindtibial spurs short, slightly spatulate, as long as first 2 tarsal segments. Male genitalia as in Figure 34; female genital plate as figured by Stebnicka (1977, fig. 32).

LECTOTYPE.—Designated herein. LeConte (1878) had 3 type specimens when he described A. rufa. One of these, a female labeled “Marquette, Mich. 8.7/50/Ae. rufa Lec/type 3721 [red paper]/Aegialia rufescens Horn” we designate and label as the lectotype. Another specimen from the same locality as the lectotype is A. humeralis Brown; the third specimen is A. browni Saylor labeled “Cal.”

TYPE LOCALITY.—Marquette, Michigan (lectotype here designated).

TYPE DEPOSITORY.—MCZ.

REMARKS.—The short, wide hindtibia and somewhat spatulate hindtibial spurs make this the most easily recognized member of Leptaegialia.


Aegialia (Leptaegialia) humeralis Brown

FIGURES 3, 35


DESCRIPTION.—Length 3.40 to 4.40 mm, greatest width 1.40 to 1.70 mm (Figure 3). Color yellowish brown to dark reddish brown. Head finely, densely punctate; clypeus finely granulate, apex not perceptibly emarginate, gena not or feebly produced. Pronotum with coarse punctations separated by less than to 3 times a diameter, punctations present throughout, sparse on anteromedian third. Elytron with humerus strongly dentate; surface alutaceous, interval convex, stria impressed with moderate punctuations separated by less than a diameter. Anterior tibia with emargination between external teeth sharp, distinct, apical spur of male feebly emarginate, bifurcate at apex, inner angle produced inward, outer angle produced outward; female tibial spur straight, slender, apex rounded. Hindtibia elongate, 3 times as long as wide, hindtibial spur slender, about as long as first 2 tarsal segments. Male genitalia as in fig. 35; female genital plate as figured by Stebnicka (1977, fig. 34).

TYPE LOCALITY.—Hastings Co., Ontario.

TYPE DEPOSITORY.—CNC.

REMARKS.—The sharply dentate humerus and elongate hindtibia distinguish A. humeralis from A. rufescens, which is the only other species of Leptaegialia that has an eastern distribution.

DISTRIBUTION.—Quebec to Massachusetts and South Caro-

**Aegialia (Leptaegialia) montana** Brown

**Figures 4, 36**


*Aegialia browni*.—Cornell, 1967:189 [misidentification; not *Aegialia browni* Saylor].

**Description.**—Length 3.60 to 4.75 mm, greatest width 1.50 to 2.0 mm (Figure 4). Color reddish brown to dark reddish brown. Head densely, finely punctate; clypeus granulate, apex nearly truncate, gena not or feebly produced. Pronotum with coarse punctations separated by less than to twice a diameter, absent in lateral one-fourth from base to apex, lateral margin crenate near anterior, posterior angles. Elytron with humerus rounded, not dentate; surface shiny, feebly alutaceous, interval convex, stria impressed with moderate punctations separated by about a diameter. Anterior tibia with emargination between external teeth shallow, indistinct, apical spur of male truncate, inner angle produced, outer angle rounded; female tibial spur straight, slender, apex rounded. Hindtibia elongate, 3 times as long as wide, hindtibial spurs slender, about as long as first 2½ tarsal segments. Male genitalia as in Figure 36; female genital plate as figured by Stebnicka (1977, fig. 36).

**Type Locality.**—British Columbia, Revelstoke Mt.

**Type Depository.**—CNC.

**Remarks.**—In addition to the key characters, *A. montana* has the anterior tibial teeth feebly separated by indistinct emarginations. In the other members of *Leptaegialia* the emarginations are sharp and distinct. The Monte Cristo, Utah, specimens were collected in “Alpine fir duff” by G.F. Knowlton. The Torrance Co., New Mexico, specimens were taken in “oak litter.”

**Aegialia (Leptaegialia) browni Saylor**

*Figures 5, 37*


**Description.**—Length 4.0 to 5.0 mm, greatest width 1.60 to 2.0 mm (Figure 5). Color yellowish brown to dark reddish brown. Head densely punctate; clypeus granulate, nearly truncate apically, gena slightly produced. Pronotum with coarse punctations separated by less than a diameter except becoming sparse in lateral fourth, lateral margin crenate near anterior, posterior angles. Elytron with humerus feebly dentate; surface shiny, feebly alutaceous, interval convex, stria impressed with moderate punctations separated by slightly more than a diameter. Anterior tibia with emargination between external teeth rounded, distinct, apical spur of male truncate, inner angle produced, outer angle rounded. Hindtibia elongate, 3 times as long as wide, hindtibial spurs slender, about as long as first 2 1/2 tarsal segments. Male genitalia as in Figure 37; female genital plate as figured by Stebnicka (1977, fig. 35).

**Type Locality.**—California, Wolverton, Sequoia National Park, 7000–9000 ft (2134–2743 m).

**Type Depository.**—CAS.

**Remarks.**—This species resembles *A. montana* except that the average length of *A. browni* is greater, the pronotum has some coarse punctations on the lateral fourth, and the emarginations between the external teeth on the anterior tibia are distinct. The species discussed by Cornell (1967:189) as *A. browni* was incorrectly identified. It is actually *A. montana* and the larval description applies to the latter species.

**Distribution.**—California and Oregon. *New Records:* USA, California: Butte Co., 5 mi (8 km) North Butte Meadows; Lake Tahoe, Carnelia Bay; Tehama Co., Battle Creek Meadow.

**Subgenus Psammoporus Thomson**

*Psammoporus* Thomson, 1863:72.  
*Dimalia* Mulsant and Rey, 1871:406.  

Form oblong, moderately convex. Head punctate, punctations more or less discrete; clypeus granulate, lacking punctations. Terminal segment of maxillary palpus cylindrical. Pronotum with side, base margined, lateral border crenate, surface densely, coarsely punctate including posterior angle. Elytron oblong oval, with humerus not or feebly dentate. Middle and hindtibiala slender, without complete transverse carina, apical spurs slender, never foliaceous. Male with anterior pronotal angle produced, lateral margin straight, last abdominal sternum depressed medially; female with anterior pronotal angle not produced, lateral margin curved, last abdominal sternum not depressed medially.

Brown (1931) and Stebnicka (1977) included 6 species in *Psammoporus*. The larva of *A. lacustris*, described by Jerath (1960:48), is the only species of *Psammoporus* for which there is a larval description. Members of this subgenus are usually collected in damp areas, often near the margins of streams and ponds; they are apparently not as strongly psammophilous as are members of *Aegialia*, sensu stricto, but prefer a gravelly or rocky substrate, an observation based on the available locality data and specimen label data.
Key to the Species of the Subgenus Psammoporus

1. Elytron completely alutaceous, dull; pronotum alutaceous, feeably shiny
   Elytron shiny, at least on disc; pronotum shiny
   opaca Brown

2. Head finely, sparsely punctate; male anterior tibia with 2 apical spurs feebly separated, apical spur hooked inward [Figure 10]
   Brown terminalis
   Head coarsely, densely punctate; male anterior tibial teeth normal
   nana Brown

3. Length 3.50 mm or less; Quebec to Massachusetts
   na Brown
   Length 3.60 mm or more, if less, then occurring west of the Mississippi River
   . . 4

4. Elytron with lateral and apical margins strongly alutaceous
   criddlei Brown
   Elytron with lateral and apical margins shiny or very feebly alutaceous
   . . 5

5. Elytron with intervals punctate
   cylindrica (Eschscholz)
   Elytron with intervals impunctate
   lacustris LeConte

Aegialia (Psammoporus) lacustris LeConte

Figures 6, 38

Aegialia lacustris LeConte, 1850:225.—Horn, 1871:293; 1887:101.
Aegialia (Psammoporus) lacustris.—Brown, 1931:44.—Hatch, 1971:441.—
Stebnicka, 1977:471.

Description.—Length 3.70 to 5.30 mm, greatest width 1.90 to 2.70 mm. Form convex, widest in apical half (Figure 6). Color reddish brown to nearly black except prosternum, leg usually paler. Head coarsely punctate, punctations separated by less than to slightly more than a diameter, or almost contiguous; clypeus coarsely granulate, apex broadly, distinctly emarginate, gena produced. Pronotum shiny, coarsely punctate throughout, punctations separated by less than to a diameter on disc, becoming denser at anterior, posterior angles, basal margin usually with lateral sinuation. Elytron shiny or slightly alutaceous with humerus feebly dentate, interval convex or flat, impunctate, stria impressed with moderate punctations separated by less than to a diameter. Metasternum smooth, very finely punctate medially, alutaceous, impunctate laterally. Anterior tibia with external teeth reduced, not sharply separated, or pronounced, distinctly separated; middle tibia with sparse surface denticles and incomplete transverse carina; hindtibia with surface denticles on inner margin, 2 short, incomplete transverse carinae on outer margin, apical spurs slender, slightly spatulate, as long as first 2½ tarsal segments. Male genitalia as in Figure 38; female genital plate as figured by Stebnicka (1977, fig. 109).

Lectotype.—Designated herein. LeConte (1850) did not state how many type specimens he had. Therefore, we designate a male from his collection labeled "(pale blue disc)/type 3722[red paper]/Aegialia lacustris LeC" as the lectotype. There are 2 additional specimens in the series bearing pale blue discs that may also be type material, but we do not so designate them.

Type Locality.—"Lake Superior."

Type Depository.—MCZ.

Remarks.—The key characters will distinguish A. lacustris from the other species of Psammoporus; however, A. lacustris can be divided into 2 more or less recognizable forms. Form A (typical lacustris) is characterized by the following: head with punctations not contiguous, usually sparse medially, coarser than in form B; pronotal punctations separated by less than to a diameter, slightly coarser than in form B; external teeth on anterior tibia blunt, reduced (not consistent depending on age of specimen); elytron with interval convex; large sclerite in male internal sac apically truncate or somewhat bifurcate; eastern Canada to Alberta and the Colorado Front Range. Form

Figure 6.—Habitus, Aegialia lacustris LeConte.
B is characterized by the following: head with punctations dense, nearly contiguous throughout, finer than in form A; external teeth on anterior tibia pronounced, distinctly separated; elytron with interval flat; large sclerite in male internal sac produced, somewhat acuminate apically; Colorado Front Range to Washington and British Columbia. These differences would normally indicate the presence of 2 closely similar species, especially since both occur in the Front Range of Colorado; however, a large series of specimens collected at Rampart House, Alaska, is intermediate in all respects between forms A and B. We therefore consider _A. lacustris_ to be a widespread, polymorphic species with morphological differences attributable to population disjunctions as figured by Stebnicka (1977, fig. 121).


_Aegialia (Psammoporus) cylindrica_ (Eschscholtz)

**Figures 7, 39**

_Psammocius cylindricus_ Eschscholtz, 1822:11.  
_Oxyopus cylindricus._—Mannerheim, 1843:262.  
_Aegialia cylindrica._—Mannerheim, 1853:220.—_Horn, 1871:293._—_LeConte, 1878:610._—_Horn, 1887:100._  

**DESCRIPTION.**—Length 3.40 to 4.60 mm, greatest width 1.70 to 2.10 mm. Form convex, widest in posterior half (Figure 7). Color dark brown, prosternum, leg slightly paler. Head densely, coarsely punctate, punctations nearly contiguous; clypeus coarsely granulate, apex feebly emarginate, gena feebly produced. Pronotum alutaceous, coarsely punctate throughout, punctations separated by a diameter or less, midline usually impressed in basal third, basal margin often without lateral sinuation. Elytron shiny, humerus not dentate, interval flat, punctate, stria impressed with coarse punctations separated by a diameter. Metasternum smooth, finely punctate medially, alutaceous, impunctate laterally. Anterior tibia with external teeth slender, well separated, apaxes rounded; middle tibia with sparse surface denticles, 2 incomplete transverse carinae; hindtibia with surface denticles in basal third, inner border; 2 short, incomplete transverse carinae on outer margin; apical spurs slender, slightly shorter than first 2 tarsal segments. Male genitalia as in Figure 39; female genital plate as figured by Stebnicka (1977, fig. 113).

**TYPE LOCALITY.**—Alaska, Unalaska.

**TYPE DEPOSITORY.**—Location of type specimen(s) unknown, not examined.

**REMARKS.**—This species is most often confused with _A. lacustris_, but the key characters will separate them. In addition, the basal pronotal margin is often not sinuate on each side of the middle and the lateral pronotal margins more rounded in _A. cylindrica_ than in _A. lacustris_. We have not seen this species from inland localities such as Edmonton, Alberta, Coeur d’Alene, Idaho, and Blue Mountains, Oregon, from which it has been recorded in the literature (Stebnicka, 1977:446). All specimens seen from these localities have proven to be _A. lacustris._

**DISTRIBUTION.**—Alaska to California, as far south as Santa Cruz Co. _New Records:_ Alaska: Dutch Harbor. California: Humboldt Co.; Los Gatos; Marin Co.; Santa Clara Co.; Santa Cruz Mts.; Siskiyou Co., 8 mi (12.9 km) east of Mt. Shasta.
City, Oregon: Lane Co., 20–25 mi (32–40 km) NE Oakridge.
Washington: Kings Co.; Port Angeles.

Aegialia (Psammoporus) criddlei Brown
FIGURES 8, 40


DESCRIPTION.—Length 3.60 to 4.75 mm, greatest width 1.70 to 2.30 mm. Form convex, widest in apical half (Figure 8). Color brown to nearly black, prosternum, leg slightly paler. Head densely, coarsely punctate, punctations nearly contiguous; clypeus coarsely granulate, apex feebly emarginate, gena not or feebly produced. Pronotum shiny, feebly alutaceous, coarsely punctate throughout, punctations separated by a diameter or less, basal margin with lateral sinuation. Elytron shiny, humerus feebly dentate, interval flat, impunctate, stria impressed, coarsely punctate, punctations separated by less than a diameter, external 2 intervals, apex strongly alutaceous. Metasternum polished, impunctate medially, alutaceous, impunctate laterally. Anterior tibia broad with external teeth slender, distinctly, deeply separated, apices acute; middle tibia with sparse surface denticles and an incomplete transverse carina; hindtibia with surface denticles in basal third, on inner border, without transverse carina, apical spurs slender, slightly longer than first 2 tarsal segments. Male genitalia as in Figure 40; female genital plate as figured by Stebnicka (1977, fig. 117).

TYPE LOCALITY.—Manitoba, Aweme.

TYPE DEPOSITORY.—CNC.

REMARKS.—The alutaceous elytral apex and external intervals are the only significant characters for separating A. criddlei from A. cylindrica and A. lacustris. In addition, the hindtibial spurs of A. criddlei are more slender than those of the latter 2 species. Aegialia cylindrica often lacks the lateral sinuation of the pronotal base, and the armature of the male genital sac is different in all 3 species.


Aegialia (Psammoporus) opaca Brown
FIGURES 9, 41


DESCRIPTION.—Length 3.80 to 5.0 mm, greatest width 1.70 to 2.20 mm. Form convex, widest in apical half (Figure 9). Color reddish brown to nearly black, prosternum, leg reddish brown. Head densely punctate, punctations moderate, nearly contiguous; clypeus coarsely granulate, apex strongly emarginate, gena not or feebly produced. Pronotum alutaceous, feebly shiny, punctations coarse throughout, separated by a diameter or less on disc, nearly contiguous near lateral angles, basal margin with lateral sinuation. Elytron strongly alutaceous, dull, interval flat, finely punctate, stria deeply impressed, broad, punctations coarse, separated by less than a diameter. Metasternum impunctate, slightly alutaceous medially, strongly alutaceous laterally. Anterior tibia with external teeth slender, distinctly, deeply separated, apices rounded; middle tibia with sparse surface denticles in basal third, one incomplete transverse carina present in apical half; hindtibia with scattered surface denticles, lacking transverse carina, apical spurs slender, slightly shorter than first 2 tarsal segments. Male genitalia as in Figure 41; female genital plate as figured by Stebnicka (1977, fig. 95).

TYPE LOCALITY.—British Columbia, Copper Ml.

TYPE DEPOSITORY.—CNC.

REMARKS.—Because of the dull dorsal surface and large strial punctations of the elytron, A. opaca is easily distinguished from other species of Psammoporus and is the most distinctive in appearance of all of the currently recognized species.
Aegialia (Psammoporus) terminalis Brown

**Figures 10, 42**


**Description.**—Length 3.80 to 4.50 mm, greatest width 1.70 to 2.0 mm. Form moderately convex, slender, slightly wider in apical half (Figure 10). Color dark reddish brown, pronotum, leg, abdominal apex paler reddish brown. Head finely punctate, punctations separated by one to 2 times a diameter medially, by less than a diameter laterally; clypeus faintly rugose, not granulate, apex rounded, gena not or feebly produced. Pronotum shiny, smooth, coarsely punctate, punctations separated by less than to 3 times a diameter on disc, by less than a diameter on lateral angled, basal margin without lateral sinuation. Elytron shiny, humerus prominent, interval convex, finely punctate, stria impressed, with coarse punctations separated by a diameter. Metasternum shiny, finely punctate medially, alutaceous, impunctate laterally. Anterior tibia wide, external teeth broad, apices acute, apical 2 teeth shallowly separated, apical tooth of male bent inward (Figure 10); middle tibia with scattered surface denticles, one incomplete transverse carina; hindtibia with surface denticles on inner, outer borders, very short, incomplete transverse carina in apical half, apical spurs slender, outer spur as long as first 2 tarsal segments. Male genitalia as in Figure 42; female genital plate as figured by Stebnicka (1977, fig. 102).

**Type Locality.**—Alberta, Edmonton.

**Type Depository.**—CNC.

**Remarks.**—This is a very distinctive member of the subgenus *Psammoporus*. The form of the anterior tibia and the finely punctate head are unique characteristics; the rounded clypeal apex, lack of lateral sinuation on the pronotal base, and slender body form are further distinguishing characters.

**Distribution.**—Labrador to New England, west to Alaska and Colorado. **New Records:** Canada, Alberta: Cochrane; Elbow Falls; Seebe; “Tp. 20 Rge. 3 W. 5 Mer.”; “Tp. 25 Rge. 3 W. 5 Mer”; “Tp. 33 Rge. 6 W. 5 Mer”; Turner Valley.

*Aegialia* (*Psammoporus*) *nana* Brown

### Figures 11, 43


**DESCRIPTION.**—Length 3.40 to 3.50 mm, greatest width 1.60 to 1.80 mm. Form strongly convex, widest in apical half (Figure 11). Color dark reddish brown, prosternum and leg paler reddish brown. Head densely, coarsely punctate, punctations nearly contiguous; clypeus coarsely granulate, apex distinctly emarginate, gena not produced. Pronotum shiny, feebly alutaceous, coarsely punctate throughout, punctations separated by a diameter or less on disc, becoming nearly contiguous near lateral angles, basal margin with lateral sinuation. Elytron shiny, interval convex, finely punctate, stria deeply impressed, coarsely punctate, punctations nearly contiguous. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Anterior tibia with external teeth slender, well separated, apices rounded; middle tibia short, broad, with scattered surface denticles and one incomplete transverse carina, apical spurs slender, outer spur nearly as long as first 2 tarsal segments. Male genitalia as in Figure 43; female genital plate as figured by Stebnicka (1977, fig. 103).

**TYPE LOCALITY.**—Massachusetts, Tyngsboro, Merrimack River.

**TYPE DEPOSITORY.**—MCZ.

**REMARKS.**—This is the smallest species of *Psammoporus* and the size along with the very coarse dorsal punctuation, especially that of the elytral striae, distinguish it from the other members of the subgenus. It is also the most rarely collected species, presently known from only 3 localities as listed below.


### Subgenus Rhysothorax Bedel


Body elongate, nearly parallel sided. Terminal segment of maxillary palpus wider at basal third than at base. Pronotum approximately 1/2 as long as elytron, lateral margin indistinctly crenate, base with marginal line fine, often interrupted at middle; surface with indistinct rugae. Elytron with humerus rounded, not denticulate. Middle tibia without transverse carinae; hindtibia short, robust, without transverse carinae, apical spurs foliaceous.

Stebnicka (1977:418) placed *Anomalaegialia* Brown as a junior synonym of *Rhysothorax* Bedel and synonymized *Aegialia spissipes* LeConte with the older European species *Aegialia rufa* (Fabricius). Landin (1960) had previously indicated that *A. spissipes* was the same species as *A. rufa*, but stopped short of formally synonymizing them. Landin (1961:221) stated that *A. rufa* is "stenotopic, restricted to dune areas and other exposed, sandy habitats." Both Landin (1960:133) and Stebnicka (1977:418) regarded *A. rufa* as a native European species that had been introduced into North America; however, the presence of inland populations in Nebraska, Kansas, and Colorado casts some doubt on the supposition. The 3 localities from which specimens have been collected in these states are all well removed from centers of human activity; the Colorado locality, Big Meadows, 8 miles (13 km) north of Wolf Creek Pass, is particularly troublesome in explaining an adventive distribution. It is entirely possible that this is a naturally holarctic species with the northeastern United States and southeastern Canada populations being wholly or in part the result of introductions.
**Aegialia (Rhysothorax) rufa (Fabricius)**

Figures 12, 44

*Scarabaeus rufus* Fabricius, 1792:39.
*Aphodius rufus*.—Fabricius, 1801:82.
*Aegialia rufa*.—Erichson, 1848:918.—Landin, 1956:223.
*Aegialia spissipes* LeConte, 1878:611.—Horn, 1887:105. [Synonymized by Stebnicka, 1977.]
*Aegialia (Anomalaegialia) spissipes*.—Brown, 1931:15.
*Aegialia (Rhysothorax) rufa*.—Stebnicka, 1977:419.

**DESCRIPTION.**—Length 3.60 to 5.50 mm, greatest width 1.80 to 2.80 mm. Form moderately convex, widest in apical half (Figure 12). Color pale yellowish brown to reddish brown. Head granulate, impunctate; clypeus densely granulate; apex feebly emarginate, gena distinctly produced. Pronotum feebly alutaceous, shiny, surface weakly rugose with fine, nearly imperceptible punctations, base without lateral sinuature. Elytron alutaceous, somewhat dull, interval flat, impunctate, stria impressed, with moderate punctations separated by less than a diameter. Metasternum polished, finely punctate medially, feebly alutaceous, shiny laterally with some coarse punctations. Anterior tibia with external teeth broad, long, widely separated; middle tibia with scattered surface denticles, without transverse carina, apical spurs slender, inner spur as long as first 1/2 tarsal segments, outer spur as long as first tarsal segment; hindtibia short, robust, with many surface denticles, without transverse carina, apical spurs short, foliaceous, as long as first 2 tarsal segments. Male genialia as in Figure 44; female genialia as figured by Stebnicka (1977, fig. 7).

**TYPE LOCALITY.**—of *rufa*, “Suecica” (lectotype designated by Landin, 1956); of *spissipes*, Marquette, Lake Superior.

**TYPE DEPOSITORY.**—Of *rufa*, Zoological Museum, Copenhagen (lectotype not examined); of *spissipes*, MCZ.

**REMARKS.**—LeConte (1878) stated that he had a single type specimen (holotype) of *A. spissipes*. This specimen is labeled “Marquette, Mich. 8.7/20/TYPE 3725 [red paper]/A. spissipes Lee.”


**Subgenus Aegialia Latreille, sensu stricto**

*Aegialia* Latreille, 1807:96.

**Key to the Species of the Subgenus Aegialia**

1. Pronotum with basal marginal line strong, entirely visible [Figure 13] . . . . . . . 2
   Pronotum with basal marginal line absent or interrupted [Figure 14] . . . . . . . 14

Body elongate oval, usually noticeably widest in apical half, moderately to strongly convex. Head, clypeus granulate. Terminal segment of maxillary palpus cylindrical. Pronotum approximately 1/3 as long as elytron, lateral margin not crenate, base with or without marginal line; surface near posterior angle impunctate or feebly so. Elytral humerus rounded, not denticulate. Middle and hindtibiae robust or slender, usually with at least one transverse ridge on each; apical spurs slender or foliaceous. Terminal abdominal sternum in male feebly depressed medially.

Stebnicka's revision of this subgenus appeared in 1977, the same year in which the descriptions of 4 new North American species were published (Gordon and Cartwright, 1977). Thus these species were not included by Stebnicka. We here describe 4 additional species and recognize a total of 18 North American species of *Aegialia*, sensu stricto. Jerath (1960:48) described the larva of *A. blanchardi*, which is the only larval description for this subgenus. Locality data indicate that most members of *Aegialia*, sensu stricto, are psammophilous and are associated with the coastal or inland dune systems or riverine sand deposits.
2. Hindtibial spurs short, broad, foliaceous [Figure 78] .................. 3
Hindtibial spurs slender, somewhat spatulate [Figure 69] .......... 9
3. Elytral striae feebly impressed, indistinct; apex of body broad, convex; hindtibia with single, longitudinal row of tubercles on inner margin; southern California .......................................................... 1
Elytral striae distinctly impressed; apex of body not extremely broad or convex; hindtibia with double row of tubercles or with scattered tubercles; most of United States and southern Canada ...................... 4
4. Pronotum rugose, impunctate in apical half, remainder of surface indistinctly punctate [Figure 24]; female genital plate absent ............ 5
Pronotum not rugose in apical half, distinctly punctate throughout except punctations sometimes absent near anterior angle; female genital plate present ........... 7
5. Apical flange on hindfemur reduced (inner angle rounded) [Figure 80]; New England to Manitoba and New Mexico .................. 11
Apical flange on hindfemur produced (inner angle abrupt or rounded); Idaho to British Columbia and California ..................... 6
6. Apical flange on hindfemur strongly produced, inner angle abrupt [Figure 81]; hindtibia slender, subequal in length to femur [Figure 81]; body elongate oval ................................................................. 9
Apical flange on hindfemur moderately produced, inner angle rounded [Figure 82]; hindtibia robust, distinctly shorter than femur [Figure 82]; body widened apically .......... 8
7. Punctations on pronotum mostly confined to discal area; west of Rocky Mountains ......................................................... 10
Punctations on pronotum extending nearly to anterior angle; South Carolina .......... 6
8. Pronotum surface alutaceous, with punctations separated by less than a diameter on disc; Alberta ..................................................... 9
Pronotum surface shiny, polished, with punctations separated by more than a diameter on disc; Atlantic and Pacific coasts ....................... 12
11. Color pale red; head smooth, lacking tubercles, granules, or coarse punctations [Figure 16] .................................................. 13
Color dark brown to nearly black (except concinna); head rough, with coarse granules, punctations, or rugae ....................... 14
12. Elytral intervals flat; average length 4.50 mm; Nye Co., Nevada ........ 11
Elytral intervals convex; length never more than 4.0 mm; California, North Dakota .............. 8
13. Head roughly granulate with some coarse punctations; California ........ 10
Head rugose, without punctations; North Dakota .......... 13
14. Hindtibial spurs foliaceous (length 3.0 to 3.7 mm) .................. 15
Hindtibial spurs slender, somewhat spatulate [Figure 70] .......... 9
15. Pronotum nearly impunctate (some fine, indistinct punctations on disc) ........ 10
Pronotum coarsely punctate .................................................. 16
16. Hindtibia with complete, strong ridge at apical 2/3 [Figure 73] ........ 11

Hindtibia without complete ridge ........................................ 17
17. Pronotum densely, coarsely punctate throughout .......... latispina LeConte
Pronotum lacking punctations anteriorly and laterally, or punctations, if present, fine
and indistinct .......................................................... crassa LeConte

Aegialia (Aegialia) blanchardi Horn

Aegialia blanchardi Horn, 1887:99.
Aegialia (Aegialia) blanchardi.—Brown, 1931:45.—Hatch, 1971:442.—

DESCRIPTION. — Length 3.80 to 5.25 mm, greatest width 1.80
to 2.60 mm. Form elongate, widest behind middle (Figure 13). Color reddish brown to black; ventral surface variable, fully
mature specimens piceous to black except prosternum, leg,
 apex of abdomen reddish piceous. Head without punctations,
granulate and/or rugose; clypeal apex strongly emarginate
(Pacific Coast) or less so (Atlantic Coast), gena not or slightly
produced. Pronotal surface smooth, polished, punctations fine
(Pacific Coast) or slightly coarser (Atlantic Coast), separated
by a diameter or slightly more on disc; base with distinct
marginal line, slight projection medially. Elytron with interval
convex, impunctate; strial punctations separated by a diameter.
Metasternum polished or somewhat alutaceous medially,
lacking punctations. Functional wings present. Middle tibia
elongate, with surface denticles in basal third, without complete
transverse carina, apical spurs long, slender, inner spur as long
as basal 3 tarsal segments, outer spur as long as basal 2 tarsal
segments; hindtibia elongate, with scattered surface denticles,
single row of denticles present on inner margin from base to
 apex, without complete transverse carina, apical spurs elongate,
length as for middle tibial spurs (Figure 45). Male genitalia as
in Figure 45; female genital plate as figured by Stebnicka
(1977, fig. 50).

LECTOTYPE. — Designated herein. We designate as the
lectotype a female labeled "Mass, Lowell/Type No. 3622
Aegialia blanchardi G.H. Horn [red paper]."

TYPE LOCALITY. — Lowell, Massachusetts (lectotype here
designated).

TYPE DEPOSITORY. — MCZ.

REMARKS. — The distribution of this species could hardly be
more disjunct. It was originally described from the Atlantic
Coast but it occurs more commonly on the Pacific Coast. In
both instances, the bulk of the specimens have been taken from
coastal localities, however, in both instances specimens have
also been collected at inland localities. It is particularly
common on the coastal dune systems from British Columbia
to California. A feeble case could be made for splitting A.
blanchardi into eastern and western species based on the
somewhat different pronotal punctation and the equally
nebulous differential in the clypeal emargination. This split
cannot be supported by any other morphological characters,
including the genitalia, therefore we maintain the status quo.
The larva of this species was described by Jerath (1960) from
specimens collected at Waldport, Oregon, which is, coastal
dune habitat.

DISTRIBUTION. — Eastern North America: Quebec to Georgia.
Western North America: British Columbia to Santa Cruz Co.,
California. New Records: USA, Georgia: Atlanta. Maryland:
Silver Spring.

Aegialia (Aegialia) carri, new species

FIGURES 46, 47

DESCRIPTION. — Holotype: Male, length 4.0 mm, greatest
width 2.0 mm. Form elongate, widest behind middle. Color
black, leg reddish brown. Head granulate, lacking punctations;
clypeal apex distinctly emarginate, gena slightly produced.
Pronotal surface alutaceous, punctations moderately coarse, separated by a diameter or less on disc, becoming sparse on lateral third; base with marginal line. Elytron with interval convex, impunctate; stria distinctly impressed, strial punctations separated by a diameter. Metasternum smooth, impunctate medially, alutaceous and impunctate laterally. Functional wings present. Middle tibia short, strongly expanded at apex, without complete transverse carina, apical spurs long, slender, outer spur as long as first 2/3 tarsal segments, inner spur as long as first 2/3 tarsal segments. Genitalia as in Figure 46.

Allotype: Similar to male except length 4.60 mm, greatest width 2.20 mm; base of pronotum with short, longitudinal furrow medially; genital plate as in Figure 47.

Variation: Length ranges from 3.80 to 4.70 mm, greatest width from 1.90 to 2.25 mm. The short, median basal furrow on the pronotum is present in most specimens but absent or very feeble in some.


Remarks. — *Aegialia carri* is similar to *A. blanchardi* but differs in having the pronotal surface alutaceous and the pronotal punctations separated by a diameter or less; body more slender and average size smaller; elytral intervals more convex; apex of the middle tibia much more abruptly expanded; and the apical spurs of the hindtibia shorter.

**Etymology.**—We name this species for John Carr who collected all of the specimens of the type series described here.

### Aegialia (Aegialia) arenaria (Fabricius)

**Figures 14, 48, 70**

*Scarabaeus arenarius* Fabricius, 1787:11.
*Aphodius arenarius*—Fabricius, 1801:82.
*Aegialia arenaria*—Erichson, 1848:919.—Darlington, 1927.98.
*Scarabaeus globosus* Kugelann, 1794:514.
*Aphodius globosus*—Illiger, 1801:20.
*Aegialia globosa*—Laurieille, 1807:97.

**Description.**—Length 4.50 to 6.0 mm, width 2.75 to 3.10 mm. Form oval, robust, strongly convex, widest in apical half of elytra (Figure 14). Color dark brown to black except prosternum, mesosternum, leg reddish brown. Head densely granulate, lacking punctations; clypeal apex broadly emarginate, gena not or slightly produced. Pronotum feebly alutaceous, essentially impunctate, punctations on disc fine, barely perceptible; base lacking marginal line except on each side of middle. Elytron smooth with interval feebly convex, impunctate, stria feebly impressed, impunctate. Metasternum polished, impunctate medially. Functional wings present. Middle tibia short, with surface denticles in basal third, transverse carina nearly complete, apical spurs slender, outer spur as long as basal 3 tarsal segments, inner spur as long as basal 4 tarsal segments; hindfemur with apical flange produced, inner angle obsolete; hindtibia short, robust, surface denticles dense with a row of denticles on inner margin from base to apex, complete transverse carina in apical third, apical spurs short, spatulate (Figure 70), extending slightly beyond 2nd tarsal segment. Male genitalia as in Figure 48; female genital plate as figured by Stebnicka (1977, fig. 89).

**Type Locality.**—"Suecica" (lectotype designated by Landin, 1956).

**Type Depository.**—Zoological Museum, Kiel (type not examined).

Remarks. — This is a European species first reported from North America by Darlington (1927) that is established in a few Atlantic Coast localities.

Aegialia (Aegialia) crassa LeConte

**FIGURES 15, 49**


*Aegialia crassa var. insularis*—Hatch, 1971:442.

**DESCRIPTION.**—Length 4.0 to 5.0 mm, greatest width 1.90 to 2.60 mm. Form oval, convex, very broad posteriorly (Figure 15). Color black except anterior leg, each femur reddish black. Head densely granulate, impunctate; clypeal apex feebly emarginate medially, gena distinctly produced. Pronotum slightly alutaceous, punctations coarse basomedially, becoming fine, indistinct anteriorly, laterally, or fine basally with apical, lateral areas impunctate; base without marginal line. Elytron feebly alutaceous, interval weakly convex with barely perceptible, fine punctations, stria weakly impressed, feebly punctate, punctations separated by about a diameter. Metasternum smooth with 2 to 4 coarse punctations medially, heavily alutaceous laterally. Wings reduced, probably not functional. Middle tibia short, robust, surface denticles present in apical 1/3, 2 incomplete transverse carinae present, apical spurs slender, outer spur as long as first 3 tarsal segments, inner spur as long as first 4 tarsal segments. Hind femur with apical flange barely evident; hindtibia robust, wide, with numerous surface denticles and 2 rows of denticles on inner margin from base to apex, one incomplete carina in apical 2/3, apical spurs strongly spatulate, both spurs slightly shorter than first 3 tarsal segments combined. Male genitalia as in Figure 49; female genitalia plates as figured by Stebnicka (1977, fig. 88).

**LECTOTYPE.**—Designated herein. It is unclear from the original description how many type specimens LeConte had. Therefore we designate a female from the LeConte collection labeled “[gold disc]/type 3724 [red paper]/J. LeConte Collection” as the lectotype. There are 5 other specimens in the series, 2 of which bear gold discs. The latter 2 specimens may also be type material.

**TYPE LOCALITY.**—San Francisco, California (lectotype here designated).

**TYPE DEPOSITORY.**—MCZ.

**REMARKS.**—*Aegialia crassa* is a common species on some of the coastal dune systems of the Pacific Coast and is readily distinguished from those species lacking a basal pronotal line by the reduced pronotal punctuation and extremely short, robust, middle and hindtibiae.

**DISTRIBUTION.**—Southeastern British Columbia to Baja California.

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*Aegialia (Aegialia) magnifica* Gordon and Cartwright

**FIGURES 16, 25, 28, 71, 72**


**DESCRIPTION.**—Length 4.40 to 5.90 mm, greatest width 2.48 to 3.25 mm. Form oval, convex, very broad posteriorly (Figure 16). Color pale red except mouthparts and ventral surface yellowish red. Head smooth, shiny, finely alutaceous, fine punctations separated by a diameter or less, becoming coarser, denser at anterolateral angle; clypeal apex feebly emarginate, gena slightly produced. Pronotum smooth, shiny, fine punctations separated by less than to 3 times a diameter. Elytron smooth, shiny, interval nearly flat, finely punctate, punctations separated by twice a diameter, stria feebly impressed, finely punctate, punctations separated by twice a diameter. Metasternum polished, impunctate medially, coarsely punctate and alutaceous laterally. Middle tibia with 2 transverse carinae, lacking surface denticles, apical spurs slender, outer spur as long as first 3 tarsal segments, inner spur as long as first 4 tarsal segments; hindfemur densely, coarsely punctate, alutaceous laterally, Middle tibia with 2 transverse carinae, lacking surface denticles, apical spurs slender, outer spur as long as first 3 tarsal segments, inner spur as long as first 4 tarsal segments; hindfemur densely, coarsely punctate, apical flange produced, inner angle obsolete; hindtibia robust, wide, a row of denticles present on inner margin from base to apex, with incomplete transverse carina in basal third, complete carina in apical 2/3 (Figure 71), apical spurs somewhat spatulate, inner spur as long as first 2 tarsal segments, outer spur as long as first 3 tarsal segments (Figure 72). Male genitalia as in Figure 25; female genital plate as in Figure 28.
FIGURE 16.—Habitus, Aegialia magnifica Gordon and Cartwright.


TYPE DEPOSITORY.—USNM.

REMARKS.—This large, red, smooth surfaced species is the most distinctive member of the North American aegialiine fauna and is thus far known only from 2 inland dunes in Nevada.

DISTRIBUTION.—Nevada: type locality and Lava Dune, NW Lathrop Wells.

Aegialia (Aegialia) crescenta Gordon and Cartwright

FIGURES 17, 26, 29, 73, 74

DESCRIPTION.—Length 3.75 to 5.0 mm, greatest width 2.05 to 2.70 mm. Form convex, oval (Figure 17). Color dark reddish brown except ventral surface, legs, and mouthparts pale yellowish brown. Head shiny, sometimes feebly alutaceous, with band of coarse, nearly contiguous punctations from basal portion of clypeus to vertex, apical portion of clypeus less coarsely punctate; clypeal apex feebly emarginate medially. Pronotum smooth, shiny, disc usually with indistinct, feebly impressed furrow extending from base nearly to anterior margin, midline usually narrowly impunctate, rest of pronotum with coarse, sparse punctations separated by less than to 3 times a diameter; base with marginal line. Elytron smooth, shiny, interval flat, punctations on interval in single, slightly irregular, median row, separated by less than to 3 times a diameter, stria distinctly impressed, coarsely punctate, punctations separated by a diameter. Metasternum densely, finely punctate medially, intermixed fine, coarse punctations laterally. Functional wings absent. Middle tibia with 2 transverse carinae, lacking surface denticles, apical spurs as long as first 3 tarsal segments; hindfemur sparsely, coarsely punctate, apical flange slightly produced, inner angle obsolete; hindtibia robust, wide, surface denticles in basal third, with incomplete transverse carina in basal third, complete carina in apical 2/3 (Figure 73), apical spurs somewhat spatulate, inner spur as long as first 2 tarsal segments, outer spur as long as first 2 1/2 tarsal segments (Figure 74). Male genitalia as in Figure 26. Female genitalia plate as in Figure 29.

TYPE LOCALITY.—Nevada, Nye Co., Crescent Dune.

TYPE DEPOSITORY.—USNM.

REMARKS.—This is another inland dune species from Nevada, which is closely related to A. hardyi but not similar to any other described species. See “Remarks” under A. hardyi.

**Aegialia (Aegialia) hardyi** Gordon and Cartwright

*R*FIGURES 18, 27, 30, 75, 76*


**DESCRIPTION.**—Length 3.33 to 5.52 mm, greatest width 1.75 to 1.80 mm (Figure 18). Description as for *A. crescenta* except differences noted as follows: head with vertex punctate; pronotal punctations coarse, dense, separated by a diameter or less, punctations present on midline, basal marginal line not visible in dorsal view; hindfemur with scattered, fine punctations; hindtibia relatively slender, hindtibia, spurs as in Figures 75, 76. Male genitalia as in Figure 27; female genital plate as in Figure 30.

**TYPE LOCALITY.**—Nevada, Churchill Co., Sand Mountain Dunes.

**TYPE DEPOSITORY.**—USNM.

**REMARKS.**—The similarity between *A. hardyi* and *A. crescenta* is striking; however, the differences listed above seem to be constant. The slender hindtibia and finely punctate hindfemur of *A. hardyi* are significantly different from the robust, wide hindtibia and coarsely punctate femur of *A. crescenta.*

**DISTRIBUTION.**—Nevada: type locality.

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**Aegialia (Aegialia) concinna** Gordon and Cartwright

*R*FIGURES 19, 50, 51*


**DESCRIPTION.**—Length 3.25 to 4.0 mm, greatest width 1.70 to 2.0 mm. Form convex, elongate oval (Figure 19). Color pale brownish yellow to reddish brown except ventral surface always paler than dorsum. Head mostly granulate with some close, coarse punctations, vertex smooth; clypeus barely perceptibly emarginate medially. Pronotum smooth, shiny, coarsely punctate, punctations separated by a diameter or less; base with marginal line. Elytron smooth, shiny, interval convex with fine punctations arranged in single, irregular row, stria deeply impressed, coarsely punctate, punctations separated by twice a diameter. Metasternum smooth, shiny medially, alutaceous with coarse punctations laterally. Functional wings absent. Middle tibia strongly enlarged apically with 2 transverse carinae, lacking surface denticles except in basal third, apical spurs slender, outer spur as long as first 2 tarsal segments, inner spur as long as first 3 tarsal segments;
hindfemur with apical flange slightly produced, inner angle obsolete; hindtibia slender, short, row of surface denticles present in basal third near inner margin, with carina in basal third nearly obsolete, carina in apical \( \frac{2}{3} \) complete, lacking surface denticles, apical spurs slender, somewhat spatulate, inner spur as long as first 2 tarsal segments, outer spur as long as first 3 tarsal segments. Male genitalia as in Figure 50; female genital plate as in Figure 51.

**Type Locality.**—California, Fresno Co., 18 mi (29 km) SW Mendota.

**Type Depository.**—USNM.

**Remarks.**—This small, pale species is quite unlike any of the other inland dune species to which it is most similar, and even more unlike the remainder of the Aegialia, sensu stricto, fauna. When it was described by Gordon and Cartwright in 1977, only 4 specimens, all females, were available. Since then, many more specimens have been collected.


**Aegialia (Aegialia) amplipunctata, new species**

**Figures** 20, 52

**Description.**—Holotype: Male, length 3.60 mm, greatest width 1.80 mm. Form elongate oval, convex, widest at middle of elytron (Figure 20). Color reddish brown. Head densely rugose, lacking punctations, rugae pronounced medially on clypeofrontal suture; clypeal apex barely perceptibly emarginate, gena definitely produced. Pronotal surface shiny, feebly alutaceous, punctations extremely coarse on disc, slightly smaller toward lateral margin, separated by less than to twice a diameter; base with strongly impressed marginal line. Elytron with interval strongly convex with fine, irregularly scattered punctations, stria deeply impressed, coarsely punctate, punctations separated by a diameter or slightly less. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Functional wings present. Middle tibia robust, wide, with some surface denticles, single transverse carina in apical \( \frac{2}{3} \) nearly complete, apical spurs slender, inner spur as long as first 3 tarsal segments, outer spur as long as first 2 tarsal segments; hindfemur with apical flange slightly produced, inner angle rounded; hindtibia as described for middle tibia except transverse carina complete, apical spurs somewhat spatulate, subequal in length. Male genitalia as in Figure 52.


**Remarks.**—The holotype is the only specimen we have seen. The overall appearance of *A. amplipunctata* is most like that of *A. latispina* and *A. opifex*, but *A. amplipunctata* has coarser pronotal punctuations, a complete transverse carina on the hindtibia, and the clypeus is rugose rather than granulate. The armature of the male internal sac of *A. amplipunctata* is also unlike that of any described species of *Aegialia*, sensu stricto.

**Etymology.**—The specific name is from the Latin and refers to the large pronotal punctations.

**Aegialia (Aegialia) latispina LeConte**

**Figures** 21, 53


**Description.**—Length 3.50 to 5.0 mm., greatest width 1.75 to 2.50 mm. Form elongate, convex, widest behind middle (Figure 21). Color reddish brown to nearly black except prosternum, leg, apex of abdomen brownish red to yellow. Head densely granulate, lacking punctations; clypeal apex feebly emarginate, gena slightly produced. Pronotum slightly alutaceous, coarsely punctate, punctations separated by \( \frac{1}{2} \) times a diameter or less; base lacking marginal line. Elytron with interval feebly convex, impunctate, striae somewhat separated by less than a diameter. Metasternum polished, impunctate medially. Functional wings present. Middle tibia short, extremely wide at apex, without complete transverse carina, apical spurs slender, outer spur as long as first 3 tarsal segments; hindfemur with apical flange obsolete, hindtibia relatively slender, strongly widened at apex, without complete

**Figure 20.**—Habitus, *Aegialia amplipunctata*, new species.
transverse carina, apical spurs slender, somewhat spatulate, spurs subequal in length. Male genitalia as in Figure 53; female genital plate as figured by Stebnicka (1977, fig. 79).

**LECTOTYPE.**—Designated herein. LeConte (1878:67) stated that he had 2 specimens of *A. latispina*, which he had received from Mr. Crotch. We here designate and label a female in the MCZ collection labeled "Cala. m./ae. latispina LeConte. 3723 [red paper]/!. LeConte collection" as the lectotype. There are 2 additional specimens in the series, one of these is labeled "Cal. m."; we consider this to be the second type specimen mentioned by LeConte and label it as a paralectotype.

**TYPE LOCALITY.**—"Mohave Desert" (lectotype here designated).

**TYPE DEPOSITORY.**—MCZ.

**REMARKS.**—The slender body form, coarsely punctate pronotum, and lack of a basal marginal line on the pronotum distinguish *A. latispina* (see "Remarks" under *A. amplipunctata*). This species has a rather typical Pacific states distribution except for specimens from Arizona, New Mexico, and Colorado that are undoubtedly *A. latispina*.


*Aegialia (Aegialia) convexa* Fall

**FIGURES 22, 54**

*Aegialia convexa* Fall, 1932:183.


**DESCRIPTION.**—Length 3.75 to 5.0 mm, greatest width 2.0 to 2.65 mm. Form oval, convex, strongly widened in apical third (Figure 22). Color reddish brown to nearly black except prosternum, leg always paler than remainder of venter. Head granulate, lacking punctations; clypeal apex distinctly emargined, gena not or feebly produced. Pronotal surface feebly wrinkled medially, becoming smooth laterally, punctuation varies from coarse, distinct punctations over entire discal area to punctations visible only near anteromedian margin; base with marginal line. Elytron smooth, feebly alutaceous, interval nearly flat, stria lightly impressed, strial punctations nearly invisible. Metasternum polished, impunctate medially, alutaceous, impunctate laterally. Wings reduced, probably not functional. Middle tibia slender at base, widened apically, surface denticles present at base, incomplete transverse carina in apical 3/5, spurs slender, inner spur as long as first 4 tarsal segments, outer spur as long as first 2 tarsal segments;
hindfemur with apical flange produced, elongate, inner angle rounded; hindtibia robust, broad, surface denticles scattered except inner margin with 2 more or less regular rows of denticles from base to apex, incomplete transverse carina in apical 2/3, apical spurs short, broad, foliaceous, equal in length to first 2 tarsal segments. Male genitalia as in Figure 54; female genital plate as figured by Stebnicka (1977, fig. 66).

TYPE LOCALITY.—California, Los Angeles Co.

TYPE DEPOSITORY.—MCZ.

REMARKS.—This species is similar to *A. conferta* and other species allied to *conferta* but has the elytral intervals nearly flat, striae feebly impressed, and the elytral apex strongly widened. The distribution of *A. convexa* is limited to the coastal dunes of south-central and southern California. In addition to the holotype, there are 2 paratypes from Redondo and Santa Monica, California, in the MCZ collection.

DISTRIBUTION.—California, San Luis Obispo Co., to Los Angeles Co. New Records: California: Los Angeles Co., El Segundo; Playa del Rey; San Clemente Island; San Luis Obispo Co., Oceano, Dune Lakes; Ventura.

*Aegialia (Aegialia) opifex* Horn

*Figures 23, 55*

*Aegialia opifex* Horn, 1887:104.

DESCRIPTION.—Length 3.25 to 4.0 mm, greatest width 1.60 to 2.0 mm. Form elongate oval, convex, widest in apical third (Figure 23). Color yellowish brown to dark brown except anterolateral angle of pronotum, prosternum, leg, and apex of abdomen paler yellowish brown or reddish brown. Head granulate but not densely so, lacking punctations; clypeal apex distinctly emarginate medially, gena abruptly produced. Pronotum shiny, not alutaceous, moderately coarsely punctate medially, becoming essentially impunctate laterally, discal punctations separated by less than to twice a diameter; base without marginal line. Elytron with interval moderately convex, finely punctate, punctations barely perceptible, striae distinctly impressed, strial punctations coarse, separated by slightly more than a diameter. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Middle tibia slender, sparse surface denticles present, with incomplete transverse carina in apical 2/3, apical spurs slender, inner spur as long as first 3/2 tarsal segments, outer spur as long as basal 2 tarsal segments; hindfemur with apical flange produced, inner angle obsolete; hindtibia slender, sparse surface denticles present, with incomplete apical carina in apical 2/3, apical spurs foliaceous, outer spur as long as first 3 tarsal segments, inner spur slightly shorter. Male genitalia as in Figure 55; female genital plate as figured by Stebnicka (1977, fig. 84).

LECTOTYPE.—Designated herein. We here designate and label a specimen in the MCZ collection labeled "Lowell/Mass/TYPE 3624 G.H. Horn [red paper]/A. opifex Horn" as the lectotype. In addition, there are 18 more specimens labeled "Lowell Mass," which we designate as paralectotypes.

TYPE LOCALITY.—Massachusetts, Lowell (lectotype here designated).

TYPE DEPOSITORY.—MCZ.

REMARKS.—This species is most similar to *A. latispina* and *A. amplipunctata* in overall appearance. The anterior clypeal margin is distinctly emarginate and the pronotal punctations are small in *A. opifex*; *A. latispina* has the clypeal apex feebly emarginate and has coarse pronotal punctations. Also, the armature of the male genital sac is quite different as is the geographic distribution of these 2 species. (See "Remarks" under *A. amplipunctata.*) A long series of this species was collected at Phillipsburg, New Jersey. Stebnicka (1977:459) listed the state as New York, but the labels clearly indicate New Jersey, although there is also a Phillipsburg in Orange Co., New York.

Aegialia (Aegialia) conferta Horn

_Figures 24, 56, 57, 77–80_

* Aegialia (Aegialia) conferta Horn, 1871:293; 1887:103.—Blatchley, 1910:921.—Hatch, 1971:442.

* Aegialia (Aegialia) conferta conferta.—Brown, 1931:46.

* Aegialia (Aegialia) conferta.—Stebnicka, 1977:452.

DESCRIPTION.—Length 3.60 to 4.60 mm, greatest width 2.0 to 2.50 mm. Form elongate oval, somewhat convex, widest in apical third (Figure 24). Color: head, pronotum brown to black, elytron yellowish to dark brown, venter yellowish to dark brown except prosternum, leg, abdomen paler. Head granulate, lacking punctations; clypeal apex feebly emarginate, gena slightly produced. Pronotal surface somewhat wrinkled medially with indistinct, moderately coarse punctations separated by less than to twice a diameter, punctations becoming fine, widely separated laterally; base with marginal line. Elytron with interval convex, nearly impunctate, stria distinctly impressed with fine punctations separated by slightly more than a diameter. Metasternum polished, impunctate medially, alutaceous, impunctate laterally. Functional wings present. Middle tibia slender, with surface denticles in basal third and incomplete transverse carina in apical 2/3, apical spurs slender, inner spur as long as first 4 tarsal segments, outer spur as long as first 3 tarsal segments; hindfemur with apical flange produced, elongate, inner angle rounded or obsolete (Figure 80), hindtibia robust (Figure 77, 79) with numerous surface denticles, lacking transverse carina or carina short, apical spurs short, foliaceous, outer spur as long as first 3 1/2 tarsal segments, inner spur as long as first 3 tarsal segments (Figure 78). Male genitalia as in Figure 56; female genital plate absent, lateral sclerite as in Figure 57.

LECTOTYPE.—Designated herein. There are presently 4 type specimens in the MCZ collection and we designate and label a female bearing the labels "Illotype No. 3623 Aegialia conferta G.H. Horn [red paper]" as the lectotype. The remaining 3 types bearing the same locality data are designated and labeled as paralectotypes.

TYPE LOCALITY.—Illinois (lectotype here designated).

TYPE DEPOSITORY.—MCZ.

REMARKS.—Stebnicka (1977:452) placed _A. conferta nigrella_ Brown as a synonym of _A. conferta conferta_, a decision with which we disagree for the reasons stated in remarks under _A. nigrella_. _Aegialia conferta_ and _A. punctata_ are externally quite similar, but _A. conferta_ females lack genital plates and _A. punctata_ females have them. We find that there are 4 other species closely allied to either _A. punctata_ or _A. conferta_, 2 of which lack genital plates and 2 that possess them. Brown (1931:47) described _A. punctata_ as a subspecies of _A. conferta_, which is clearly not the case, and Stebnicka (1977:455) treated them, as valid species, but not for quite the right reason. Stebnicka did not realize that the female genital plates were lacking in _A. conferta_ and instead figured the lateral sclerite, which is strikingly different from the genital plate, as the genital plate (stylus) (Stebnicka, 1977, fig. 70). However, the resulting change in status was correct. The _conferta_ group is composed of 8 species including _conferta_ and _punctata_, all externally similar except _A. convexa_ and _A. opifex_. The group is characterized by the foliaceous spurs on the hindtibia and all except _A. opifex_ possess a basal line on the pronotum. Horn (1871:294) stated that he had type specimens of _A. conferta_ from the "Middle and Southern States" and Illinois. Horn (1887:103) recorded specimens from Georgia and stated that they were in the LeConte collection. We have not been able to recognize these specimens and suspect that they were probably _A. cartwrighti_ Stebnicka. The 2 New Mexico localities are widely disjunct, but the specimens appear to be rather typical examples of _A. conferta_.

**Figure 24.—Habitus, Aegialia conferta Horn.**
**Aegialia (Aegialia) nigrella Brown, new status**

Figures 58, 59, 81


*Aegialia (Aegialia) conferta var. nigrella*—Hatch, 1971:442.

**DESCRIPTION.**—Length 3.65 to 4.30 mm, greatest width 1.80 to 2.15 mm. Form elongate oval, somewhat convex, widest in apical third. Color: head, pronotum brown to black, elytron yellowish to dark brown, venter yellowish to dark brown except prosternum, leg paler. Head granulate, lacking punctations; clypeal apex feebly emarginate, gena slightly produced. Pronotal surface somewhat wrinkled medially with fine punctations separated by less than a diameter, punctations disappearing laterally; base with marginal line. Elytron with interval convex, nearly impunctate, stria distinctly impressed, with fine punctations separated by slightly more than a diameter. Metasternum polished, impunctate medially, alutaceous, impunctate laterally. Functional wings present. Middle tibia slider, with surface denticles in basal third and incomplete transverse carina in apical 2/3, apical spurs slender, inner spur as long as first 4 tarsal segments, outer spur as long as first 3 tarsal segments; hindfemur with apical flange produced, elongate, inner angle abrupt (Figure 81); hindtibia slider, with numerous surface denticles, short transverse carina in apical 2/3, apical spurs short, foliaceous, outer spur as long as first 3½ tarsal segments, inner spur as long as first 3 tarsal segments. Male genitalia as in Figure 58; female genital plate absent, lateral sclerite as in Figure 59.

**TYPE LOCALITY.**—California, Trinity Co.

**TYPE DEPOSITORY.**—CNC.

**REMARKS.**—*Aegialia nigrella* differs from *A. conferta* in having the pronotal punctations finer, more distinct and spread over more of the pronotal surface; hindfemur more slender with apical flange more pronounced, inner angle of flange abruptly angulate; large sclerite in male internal sac short, broad, curved; and female with apex of lateral sclerite differently shaped (Figure 59). Because of these differences we regard *A. nigrella* as a valid species rather than a synonym of *A. conferta*. (For additional comments, see “Remarks” under the latter species.) The distribution listed below is based on specimens we have seen, exclusive of type material, but we believe that all specimens of "*conferta*" from localities west of North Dakota and Alberta are referable to *A. nigrella*.

**DISTRIBUTION.**—USA, California: Crescent City; Davis; Humboldt Co., Willow Crk.; Lake Co., Cobb; Los Angeles; Monterey Co., Carmel; Napa Co., Pico; Sacramento, Grand Island Dune; San Bernardino Co., Wrightwood; Sonoma Co.; Ventura Co., San Nicolas Island; Yolo Co., Elkhorn Ferry. Oregon: Benton Co., Corvallis; Dayton; Forest Grove; Kiger Island. Utah: Kane Co., Coral Pink Sand Dunes.

**Aegialia (Aegialia) kelsoi, new species**

Figures 60, 61, 82

**DESCRIPTION.**—Holotype: Male, length 4.20 mm, greatest width 2.20 mm. Form oval, somewhat convex, very wide in apical third. Color: head, pronotum, and base of elytron reddish black, nearly black, elytron yellowish brown, venter dark brown except prosternum, leg, and apex of abdomen yellowish brown. Head granulate, lacking punctations; clypeal apex feebly emarginate, gena slightly produced. Pronotal surface wrinkled medially, punctations extremely indistinct, lateral third smooth, impunctate; base with marginal line. Elytron with interval convex, nearly impunctate, stria distinctly impressed, with strong punctations separated by slightly more than a diameter. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Middle tibia slider, surface denticles present in basal 1/2, with incomplete transverse carina in apical 2/3, apical spurs slider, inner spur as long as first 3½ tarsal segments, outer spur as long as first 2½ tarsal segments; hindfemur with apical flange produced, elongate, inner angle rounded (Figure 82); hindtibia extremely robust, wide, with numerous surface denticles, apical spurs equal in length to first 3 tarsal segments. Genitalia as in Figure 60.

Allotype: Similar to male except length 4.25 mm, width 2.40 mm; genital plate lacking, lateral sclerite as in Figure 61.

**Variation:** Length ranges from 3.60 to 4.50 mm, greatest width from 2.10 to 2.50 mm. Color of elytron varies from pale yellowish brown to entirely dark reddish brown.


Allotype: Same data as for holotype (USNM).

**Paratypes:** 25, same data as for holotype; 4, California, San Bern. Co., Kelso Dunes, 10 air mi (16 air km) SW Kelso, 23 Apr 77, J. Doyen, in sand under *Chilopsis linearis* (CDA; USNM).


**REMARKS.**—This species is similar to *A. conferta* except that the armature of the male genital sac is somewhat different and the lateral sclerite of the female genitalia is strikingly different (Figures 59, 61). In addition, the hindtibia is more robust, the pronotal punctuation more indistinct, and the apex of the body noticeably wider than in *A. conferta*. All specimens seen have been from inland dune systems in California and Nevada, and the Colorado River in Arizona.

**ETYMOLOGY.**—This species is named for the sand dune area where the type material was collected.
Aegialia (Aegialia) punctata Brown

DESCRIPTION.—Length 3.60 to 4.75 mm, greatest width 1.80 to 2.50 mm. Form elongate, oval, widest in apical third. Color reddish brown to piceous, prosternum, leg always paler than remainder of venter. Head granulate, lacking punctations; clypeal apex distinctly emarginate, gena not or feebly produced. Pronotum smooth, feebly alutaceous, distinctly punctate except in lateral fourth, discal punctations moderately coarse, separated by less than to twice a diameter, becoming fine and sparse laterally; base with marginal line. Elytron with interval convex, nearly impunctate, stria distinctly impressed, with fine punctations separated by a diameter. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Functional wings present. Middle tibia slender, with surface denticles in basal half, incomplete transverse carina in apical third, apical spurs slender, inner spur as long as first 4 tarsal segments, outer spur as long as first 3 tarsal segments; hindfemur with apical flange produced, inner angle rounded or obsolete; hindtibia slender to slightly robust with some scattered surface denticles, incomplete transverse carina in apical third, apical spurs foliaceous, outer spur as long as first 3½ tarsal segments, inner spur as long as first 3 tarsal segments. Male genitalia as in Figure 62; female genital plate as in Figure 63.

TYPE LOCALITY.—California, Tulare Co., Kaweah.

TYPE DEPOSITORY.—CNC.

REMARKS.—This species and A. spinosa, new species, are very similar in appearance except for the apical flange on the hindfemur which has the inner angle rounded or obsolete in A. punctata, hooked or right-angled in A. spinosa. The male genital armature also differs. (See “Remarks” under A. conferta.) We include populations from the St. Anthony dunes, Idaho, and Churchill and Humboldt counties, Nevada, as being A. punctata, but there are subtle differences in size, pronotal punctuation, width of hindtibia, and genital armature that cause some doubt as to the accuracy of this decision. It is possible that cross breeding trials would indicate that there are actually 2 or more species represented. The distribution listed below is based on specimens actually examined, exclusive of type material.

DISTRIBUTION.—Mexico, Baja California: Ensenada. USA, California: Carmel; Claremont; Kaweah; Kern Co., Walker Pass; Los Angeles; Pasadena; Pico; Pomona; Poway; Mono Co., dunes at north end of Mono Lake; Orange Co.; Riverside Co., Santa Ana River Park near Pedley; San Diego Co.; San Francisco; Santa Barbara Co.; Santa Clara Co.; Sonoma Co., Austin Cr., 3 mi (5 km) south of Cazadero; Tulare Co., Ash Min; Ventura Co., San Nicolas Island; Vista. Idaho: Jefferson Co., St. Anthony dunes. Nevada: Churchill Co., Sand Mountain; Humboldt Co., Silver St. Valley, “BFW Farms dunes”; Humboldt Co., sand dunes near Winnemucca; Mineral Co., 5 mi (8 km) west of Marietta, sand dunes 6300 ft (1920 m), North Dakota: Sheldon. Utah: Kane Co., Coral Pink Sand Dunes.

Aegialia (Aegialia) cartwrighti Stebnicka

DESCRIPTION.—Length 4.0 to 4.60 mm, greatest width 2.0 to 2.50 mm. Form elongate oval, somewhat convex, widest in apical third. Color dark brown to reddish black except prosternum, leg, apex of abdomen paler reddish brown. Head granulate, lacking punctations; clypeal apex distinctly emarginate. Pronotum feebly alutaceous, densely, moderately coarsely punctate medially, punctations separated by a diameter or less, lateral fourth with scattered fine punctations; base with marginal line. Elytron with interval convex, nearly impunctate, stria distinctly impressed, with moderately coarse punctations separated by slightly more than a diameter. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Middle tibia slender, with surface denticles in basal third, incomplete transverse carina in apical third, apical spurs foliaceous, outer spur as long as first 3 tarsal segments, inner spur as long as first 4 tarsal segments. Male genitalia as in Figure 64; female genital plate as in Figure 65.

TYPE LOCALITY.—South Carolina, Clemson College.

TYPE DEPOSITORY.—Field Museum of Natural History, Chicago.

REMARKS.—Aegialia cartwrighti is not strikingly different from A. punctata; the form of the large sclerite in the male genital sac differs in these 2 species, and the pronotal punctations are denser and extend almost to the lateral margin in A. cartwrighti.

DISTRIBUTION.—South Carolina: type locality. New Record: South Carolina: Pickens.

Aegialia (Aegialia) spinosa, new species

DESCRIPTION.—Holotype: Male, length 4.40 mm, greatest width 2.30 mm. Form elongate, oval, widest in apical third.
Color dark brown except prosternum and leg reddish brown. Head granulate, lacking punctations; clypeal apex distinctly emarginate, gena feebly produced. Pronotum smooth, discal punctations coarse, separated by a diameter or less, becoming fine, sparse laterally; base with marginal line. Elytron with interval convex, nearly impunctate, stria distinctly impressed with fine punctations separated by slightly more than a diameter. Metasternum smooth, impunctate medially, alutaceous, impunctate laterally. Functional wings present. Middle tibia slender, with surface denticles in basal third, incomplete transverse carina in apical half, apical spurs slender, inner spur as long as first 4 tarsal segments, outer spur as long as first 3 tarsal segments; hindfemur with apical flange strongly produced, inner angle reflexed, spinose (Figure 84); hindtibia moderately robust, with some scattered surface denticles, incomplete transverse carina in apical third, apical spurs foliaceous, outer spur as long as first 3 tarsal segments, inner spur as long as first 2½ tarsal segments. Male genitalia as in Figure 66.

Allotype: Similar to male except length 4.25 mm, width 2.28 mm; genital plate as in Figure 67.

Variation: Length ranges from 3.40 to 4.80 mm, greatest width from 1.70 to 2.60 mm. Dorsal color varies from brown to nearly black; inner angle of hindfemoral flange varies from reflexed and spinose to abruptly right-angled (Figures 84, 85).


Allotype: Same data as for holotype (USNM).


Other Specimens: California: Antioch; Campbell; Fresno Co., Kingsberg; Mariposa Co., Yosemite; Modesto; Monterey Co., Carmel; Monterey Co., King City; 12 Oct 1972, 24 Feb 1975, John Doyen; Monterey Co., Chualar, 1.5 air mi (2.4 air km) W and 3.5 air mi (5.6 air km) S, 8 May 1975, J. Doyen; Pajaro; Sacramento Co., Grand Island Dune; San Diego; San Francisco; Santa Barbara; Sonoma; Yolo Co., Davis; Yolo Co., Elkhorn Ferry. Idaho: Bruneau Dunes, Owyhee Co., 23 Apr 1979, A. Allen. Oregon: Umatilla Co., 4 mi (6.4 km) west of Irrigon, 25 Feb 1972, N.E. Woodley. Washington: Walla Walla Co., 3 mi (4.8 km) south of Wallula, 2 Apr 1972, N.E. Woodley (CAS, CDA, USNM).

Remarks.—This species and A. punctata are very much alike except that A. spinosa has the apical flange on the hindfemur strongly produced, the inner angle usually spinose. We include as this species specimens from Bruneau Dunes, Idaho, and coastal California dunes, which have the hindapical flange produced and abruptly right-angled. These possibly represent still other undescribed species, but we cannot satisfactorily differentiate them from A. spinosa.

**Etymology.**—The specific name is from the Latin and refers to the form of the hindfemoral flange.
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27
FIGURES 31–38.—Abdomens: 31, Micraegialia pusilla (Horn); 32, Aegialia lacustris LeConte. Male genitalia: 33, Micraegialia pusilla (Horn); 34, Aegialia rufescens Horn; 35, A. humeralis Brown; 36, A. montana Brown; 37, A. browni Saylor; 38, A. lacustris LeConte.
FIGURES 45–49.—Genitalia: 45, Aegialia blanchardi Horn; 46, 47, A. carri, new species, male and female, respectively; 48, A. arenaria (Fabricius); 49, A. crassa LeConte.
Figures 64-67.—Genitalia, male and female, respectively: 64, 65, Aegialia cartwrighti Stobnicka; 66, 67, A. spinosa, new species.

Figures 68-70.—Hindtibiae and spurs: 68, 69, Aegialia blanchardi Horn; 70, A. arenaria (Fabricius).
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