

ORPHNINAE. Characteristics

Form elongate oval. Labrum and mandibles prominent, produced beyond apex of clypeus, clypeus with or without horn. Antenna with 10 segments, antennal club with 3 tomentose segments. Anterior coxae transverse. Pronotum with or without horn-like lateral or anterior projections. Scutellum exposed. Metasternum longer than abdominal sternites. Metatibia with apical spines separated by basal metatarsal segment. Tarsal claws on all legs not independently movable, claws equal in length or size. Onychium cylindrical with 2 setae. Pygidium exposed weakly beyond apices of elytra.

Classification Status

The name Orphninae was erected by Erichson (1847). Paulian (1984) elevated the Orphninae to family-level status and created a new subfamily, the Aegidiinae for the New World taxa. We follow Lawrence & Newton (1995) and treat the group as a subfamily of the family Scarabaeidae. The Orphninae resemble members of the Hybosorinae based on the prominent mandibles and labrum, and Arrow (1911) commented that the Orphninae share a pectinate tibial spur (which we have not observed in New World taxa) with the Ochodaeidae. Scholtz & Chown (1995) hypothesized that the Orphninae is a member of the Scarabaeidae and is basal to the clade that includes the subfamilies Melolonthinae, Dynastinae, Rutelinae, Cetoniinae, Trichiinae, and Valginae. Based on larval characters, Paulian & Lumaret (1982) hypothesized that the Orphninae are intermediate between the "Iaparostict" and "pleurostict" scarabs and show some convergences with certain tribes of Melolonthinae. In a more recent phylogenetic analysis based on larval characters Grebennikov & Scholtz (2004) were not able to establish the phylogenetic relationships of the Orphninae. In their phylogeny, Orphninae is part of a polytomy that includes other Scarabaeidae subfamilies, Lucanidae, Hybosoridae, Bolboceratids (considered as family), and Geotrupidae. Preliminary phylogenetic analyses based on molecular data suggest that the Orphninae are sister taxa to the Allidiostomatinae (Scarabaeidae) (Ocampo *et al.* in prep.).

Distribution

The subfamily includes about 80 species worldwide (Arrow 1912, Paulian 1984). The subfamily is divided into two tribes: the Aegidiini and the Orphnini. The tribe Aegidiini is distributed in the New World and includes four genera. The tribe Orphnini is distributed in the Old World and includes 10 genera (Arrow 1912).

New World Genera (click on species names for more information)

Aegidium Westwood 1846

Includes 12 species (Paulian 1984) that occur from southern Mexico to Chile and to the West Indies. Adults have been found feeding on decaying banana stems in coffee-cacao plantations (Morón 1991). Adults have been collected in flight intercept traps. The larva of one species, *A. cribratum* Bates, was found under rotten logs and was described by Morón (1991). Keys to species: Paulian 1984.

Aegidiellus Paulian 1984

A monotypic genus that includes *A. alatus* (Castelnau) from Rio de Janeiro in Brazil. Reference: Paulian 1984.

Aegidinus Arrow 1904

Includes three species from Colombia, Guyana, and Brazil. Key to species: Paulian 1984.

Paraegidium Vulcano, Pereira & Martinez 1966

A monotypic genus, including only *P. costalimai* Vulcano, Pereira & Martinez, from eastern Brazil. Reference: Paulian 1984.

Ecology

Little is known of the ecology and biology of this small group of scarabs. In the New World, adults are collected at low- to mid-elevations. They have been observed on banana and cacao plantations on banana stems and have been collected in flight intercept traps.

Larvae

Morón (1991) described the larva of *Aegidium cribratum*. It was found under rotting logs.

References Cited

ARROW, G.J. 1911. XLVIII. On lamellicorn beetles belonging to the subfamilies Ochodaeinae, Orphninae, Hybosorinae, and Troginae. *Annals and Magazine of Natural History (series 8)* 7: 390-397.

ARROW, G.J. 1912. Scarabaeidae: Pachypodinae, Pleocominae, Aclopininae, Glaphyrinae, Ochodaeinae, Orphninae, Idiostominae, Hybosorinae, Dynamopinae, Acanthocerinae, Troginae. *Coleopterorum Catalogus pars 43*, W. Junk, Berlin. 66 pp.

Key to genera of Orphninae (Scarabaeidae)
By Julia Colby 2007

1. Clypeus (males) reflexed, bifurcate in frontal view (Fig. 1), or slightly reflexed but not bifurcate (females). Pronotum with dense punctures; punctures vermicular to U- shaped, often setigerous (Fig. 2). Elytra with contiguous, U-shaped punctures with a seta in the center (Fig. 3). Length less than 8 mm ***Paraegidium*** Vulcano, Pereira, and Martínez

1'. Clypeus not reflexed in males or females. Pronotum and elytra not as above..... 2



Fig. 1. Head (frontal view) of male *P. costalimai* showing bifurcate clypeus.



Fig. 2. Pronotal sculpturing of *P. costalimai*.



Fig. 3. Elytral sculpturing of *P. costalimai*.

2(1). Labrum semicircular, exerted beyond clypeus. Mandibles with external, lateral lobe (Fig.4) ***Aegidinus*** Arrow

2'. Labrum not exerted beyond clypeus. Mandibles without external, lateral lobe 3



Fig. 4. Head (dorsal view) of *Aegidinus* sp. Arrow on right points to labrum, arrow on left indicates mandibles.

3(2). Mesofemur (ventral view) with ridge along posterior edge; surface posterior to ridge minutely roughened in males (Fig. 5) ***Aegidium*** Westwood

3'. Mesofemur (ventral view) without ridge along posterior distal edge (Fig. 6); surface smooth ***Aegidiellus*** Paulian

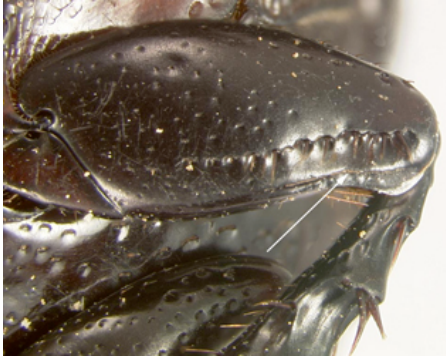


Fig. 5. Mesofemur (ventral view) of *Aegidium* sp. Arrow indicates ridge.



Fig. 6. Mesofemur (ventral view) of *Aegidiellus alatus*. Arrow indicates absence of ridge.

URL: <http://www-museum.unl.edu/research/entomology/Guide/Scarabaeoidea/Scarabaeidae/Orphninae/Orphninae-Key/OrphninaeK.html>

ERICHSON, W. F. 1845-1847. Natureschichte der Insecten Deutschlands. Erste Abtheilung, Coleoptera, Vol. 3: 1-800. Verlag der Nicolaischen Buchhandlung, Berlin.

LAWRENCE, J. F. AND A. F. NEWTON, JR. 1995. Families and subfamilies of Coleoptera (with selected genera, notes, and references and data on family-group names), pp. 779-1006. In J. Pakaluk and S. A. Slipinski (eds.), Biology, Phylogeny, and Classification of Coleoptera. Papers Celebrating the 80th Birthday of Roy A. Crowson. Muzeum i Instytut Zoologii PAN, Warszawa, Poland.

MORON, M. A. 1991. Larva and pupa of *Aegidium cribratum* Bates (Coleoptera: Scarabaeidae: Orphninae). Coleopterists Bulletin 45(4): 360-367.

PAULIAN, R. 1984. Les Orphnidae Americains (Coleopteres, Scarabaeoidea). Annals Société Entomologique de France (N.S.) 20(1): 65-92.

PAULIAN, R. and J.-P. LUMARET. 1982. La larve des Orphnidae. Bulletin de la Société Entomologique de France 87: 263-272.

SCHOLTZ, C. H. and S. L. CHOWN. 1995. The evolution of habitat use and diet in the Scarabaeoidea: a phylogenetic approach, pp. 355-374. In J. Pakaluk and S. A. Slipinski (eds.), Biology, Phylogeny, and Classification of Coleoptera. Papers Celebrating the 80th Birthday of Roy A. Crowson. Muzeum i Instytut Zoologii PAN, Warszawa, Poland.



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Classification*Aegidiellus* Paulian, 1984

Superfamily.....[Scarabaeoidea](#)

Family [Scarabaeidae](#)

Subfamily [Orphninae](#)

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Major male *Aegidiellus alatus*

Minor male *Aegidiellus alatus*



Female *Aegidiellus alatus*

Photos by: [Julia Colby](#)

Distribution: Neotropical realm.
Brazil.



Description: Length 9-11 mm. Pronotum with median, laterally compressed boss or horn at anterior edge. Females with fovea posterior to horn or boss. Major males with erect horns; horns 90° from plane of disc, widely separated, slightly recurved at apices; horns reduced to rounded tubercles in minor males. Area between horns slightly depressed to foveate.

Biology: Life history is unknown.

Larvae: The larval stage is unknown.

Revision or Synopsis:

Paulian, R.1984. Les Orphnidae Américains (Coléoptères, Scarabaeoidea). Annales de la Société Entomologique de France (N.S) 20:65-92.

Composition: 1 species.

Species:

Aegidiellus alatus (Laporte, 1840)

References:

Laporte, F. L. 1840. *Histoire Naturelle des Insectes Coléoptères, avec une Introduction Renfermant l'Anatomie et la Physiologie des Animaux Articulés, par M. Brullé*, volume 2. P. Duménil, Paris. 564 pp.

Paulian, R. 1984. Les Orphnidae Américains (Coléoptères, Scarabaeiodes). *Annales de la Société Entomologique de France (N.S)* 20:65-92.

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Classification *Aegidinus* Arrow, 1904
Superfamily..... [Scarabaeoidea](#)
Family [Scarabaeidae](#)
Subfamily [Orphninae](#)

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Major male *Aegidinus* sp.

Minor male *Aegidinus* sp.



Female *Aegidinus* sp.
Photos by: [Julia Colby](#)

Distribution: Neotropical realm. Trinidad, Colombia, Venezuela, Guyana, Ecuador, Peru, Brazil, Bolivia.



Description: Length 7-12 mm. Color brownish red to reddish brown. Both sexes with exerted, semicircular labrum and external, lateral lobe on mandibles. Major males with medial horn on anterior border of clypeus; females without horn. Anterior margin of pronotum (males) with slightly transverse, median tubercle (may be produced into horn) or not. Pronotum with central fovea, each basolateral edge raised into carina or low, rounded tumosity in males.

Biology: Life history is unknown.

Larvae: The larval stage is unknown.

Revision or Synopsis:
Paulian, R. 1984. Les Orphnidae Américains (Coléoptères,

Scarabaeiodea). Annales de la Société Entomologique de France (N.S) 20:65-92.

Composition: 3 species

Species:

Aegidinus candezei (Preudhomme de Borre, 1886)

Aegidinus brasiliensis Arrow, 1904

Aegidinus guianensis (Westwood, 1846)

References:

Arrow, G. J. 1904. Sound-production in the lamellicorn beetles. Transactions of the Entomological Society of London 1904:709-750.

Arrow, G. J. 1912. Scarabaeidae: Pachypodinae, Pleocominae, Aclopiniae, Glaphyrinae, Ochodaeinae, Orphninae, Idiostominae, Hybosorinae, Dynamopinae, Acanthocerinae, Troginae. *Coleopterorum Catalogus* pars 43. W. Junk, Berlin. 66 pp.

Paulian, R. 1984. Les Orphnidae Américains (Coléoptères, Scarabaeiodea). Annales de la Société Entomologique de France (N.S) 20:65-92.

Preudhomme de Borre, A. 1886. Liste des lamellicorns laparostictiques recueillis par feu Camille van Volxem pendant son voyage au Brésil at a la Plata en 1872 suivie de la description de dix huit espèces nouvelles et un genre nouveau. Annales de la Société Entomologique de Belgique 30:103-120.

Westwood, J. O. 1846. On the lamellicorn beetles which possess exerted mandibles and labrum, and 10 jointed antennæ. Transactions of the Entomological Society of London 4:155-180.

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Classification*Aegidium* Westwood, 1846
Superfamily.....[Scarabaeoidea](#)
Family [Scarabaeidae](#)
Subfamily [Orphninae](#)

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Major male *Aegidium* sp.



Minor male *Aegidium* sp.



Female *Aegidium* sp.

Note that the mandibles are extended in this picture.

Photos by: [Julia Colby](#)

Distribution: Neotropical realm. Mexico, Guatemala, Belize, Honduras, Nicaragua, Costa Rica, Panama, Guadeloupe, Dominica, St. Vincent, Colombia, Venezuela, Guyana, French Guiana, Ecuador, Peru, Brazil, Bolivia.



Description: Length 9-21 mm. Anterior edge of pronotum produced into median anterior boss or horn (males) or not (females). Male majors with erect horns on sides of pronotum; horns subtriangular to triangular, projecting 90° from plane of disc, widely separated, slightly recurved at apices; minor males with horns reduced to rounded tubercles. Area between horns usually slightly depressed in some. Females and minor males with shallow, median groove or fovea on pronotum. Elytra with raised, convex intervals.

Biology: Life history is largely unknown. Adults of *Aegidium cribratum* Bates have been reported feeding on decaying banana stems and have been found in soil under rotting logs (Morón 1991).

Larvae: Larvae: Morón (1991) described the third instar larvae and the

pupae of *Aegidium cribratum*.

Revision or Synopsis:

Paulian, R. 1984. Les Orphnidae Américains (Coléoptères, Scarabaeiodes). Annales de la Société Entomologique de France (N.S) 20:65-92.

Composition: 12 species.

Species:

Aegidium colombianum Westwood, 1846

Aegidium minor Paulian, 1984

Aegidium geayi Paulian, 1984

Aegidium squamatum Bates, 1887

Aegidium borrei Paulian, 1984

Aegidium asperatum Preudhomme de Borre, 1886

Aegidium elongatum Paulian, 1984

Aegidium cribratum Bates, 1887

Aegidium reichei Preudhomme de Borre, 1886

Aegidium parvulum Westwood 1846

Aegidium vincentiae Arrow, 1903

Aegidium dominicense Cartwright and Chalumeau, 1977

References:

Arrow, G. J. 1903. On the laparostict lamellicorn Coleoptera of Grenada and St. Vincent (W. Indies). Transactions of the Entomological Society of London 51:509-520.

Bates, H. W. 1887. Pectinicornia and Lamellicornia. Insecta: Coleoptera. Orphninae. pp 105-108. In Salvin, O. and F.D. Godwin (eds.), *Biologia Centrali- Americana*. Insecta, Coleoptera, Vol. 2 Part 2. 432 pp.

Chalumeau, F. E. 1977. Les scarabées (Insectes, Coléoptères) des îles de l'arc Antillais s'étendant de Guadeloupe à Martinique (Taxonomie, éthologie, biogéographie). Pointe-à-Pitre. 230pp.

Morón, M. A. 1991. Larva and pupa of *Aegidium cribratum* Bates (Coleoptera: Scarabaeidae: Orphnidae). The Coleopterists Bulletin 45:360-371.

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Preudhomme de Borre. A. 1886. Descriptions de deux espèces nouvelles du genre *Aegidium* Westwood suivies de la liste des Orphnides du Musée Royal d'Histoire Naturelle de Belgique. Annales de la Société Entomologique de Belgique 30:24-26.

Westwood, J. O. 1846. On the lamellicorn beetles which possess exerted mandibles and labrum, and 10 jointed antennæ. Transactions of the Entomological Society of London 4:155-180.

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Classification***Paraegidium*** Vulcano, Pereira, and Martínez, 1966
Superfamily.....[Scarabaeoidea](#)
Family [Scarabaeidae](#)
Subfamily [Orphninae](#)

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Major male *P. costalimai*



Minor male *P. costalimai*



Female *P. costalimai*
Photos by: [Julia Colby](#)

Distribution: Neotropical realm.
Brazil and Peru.



Description: Length 8mm or less. Color brown, black, or grey. Males with clypeus reflexed and bifurcate. Females with clypeus slightly reflexed, not bifurcate. Pronotum densely punctate, punctures vermicular to U- shaped. In some males, pronotum on sides produced into two forward projecting horns; females never with horns. Elytra densely punctate; punctures U-shaped, with a single seta at center.

Biology: Life history is unknown.

Larvae: The larval stage is unknown.

Revision or Synopsis:
Paulian, R.1984. Les Orphnidae Américains (Coléoptères, Scarabaeioidea). Annales de la Société Entomologique de France (N.S) 20:65-92.

Composition: 1 species

Species:

Paraegidium costalimai Vulcano, Pereira, and Martínez, 1966

References:

Vulcano, M. A., Pereira, F. S., and A. Martínez. 1966. Notas sôbre Orphninae Neotrópicos com descrição de um gênero e uma espécie novos (Coleoptera). Papéis Avulsos do Departmamento de Zoologia (São Paulo) 18:251-260.

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