

Subfamily Alleculinae: Keys

(underlined terms are defined to the right)

Key EE

Key to the Florida genera [including species] of Alleculini

1. Penultimate tarsomeres of anterior and intermediate tarsi with distinct membranous ventral lobes.....2

1'. All tarsomeres without lobes. But often densely pubescent ventrally.....3

2 (1). Apical palpomeres of maxillary palpus expanded, oblong-ovate; prosternum short, nearly vertical; eyes oblique in position with inner margins distinctly closer to each other anteriorly than posteriorly.....*Lobopoda* Solier (see Key FF)

2'. Apical palpomeres of maxillary palpus triangular; prosternum longer, nearly horizontal; eyes more transverse with inner margins only slightly closer to each other anteriorly than posteriorly.....*Hymenorus* Mulsant (see Key GG)

3 (1'). Tarsal claws elongate, nearly as long as basal two tarsomeres of protarsus combined; length of row of teeth of tarsal claws reduced, restricted to basal third of claws.....*Onychomira* Campbell [*floridensis* Campbell] (Fig. 12)

3'. Length of tarsal claws normal, usually no longer than basal tarsomeres of protarsus; row of teeth of tarsal claws extending well beyond middle of claws.....4

4 (3'). Antennae with antennomeres three and four generally subequal in length, if antennomere three shorter than four then elytra lacking rows of impressed striae and length less than 10 mm.....6

4'. Antennae with antennomere three half or less as long as antennomere four in male or two-thirds or less as long as four in female; elytral striae distinctly impressed; length usually greater than 10 mm.....5

5 (4'). Sides of pronotum subparallel or sinuate basally; basal angles rectangular.....*Androchirus* LeConte [*femoralis* Olivier] (Fig. 2)

5'. Sides of pronotum convergent anteriorly from base; basal angles slightly to strongly acute.....*Andrimus* Casey [*murrayi* LeConte] (Fig. 1)

6 (4). Elytra with striae completely unimpressed or rarely, vaguely impressed and without distinct rows of strial punctures; with procoxae widely separated and without red humeral markings on elytra.....*Isomira* Mulsant (see Key HH)

6'. Elytra usually with striae distinctly impressed and with distinct rows of strial punctures; if unimpressed, species with

Antennomeres-subunits of the antennae

Elytra-the forewings of beetles

Humeral-relating to the shoulder; located in the anterior portion of the wing

Maxillary palpus-tactile, segmented (fingerlike) structures on the maxillae (second pair of jaws)

Oblique-slanting

Palpomeres-individual segment segments of the palps

Penultimate-next to last

Procoxae-basal segment of forelegs

Pronotum-upper dorsal plate of the first thoracic segment

Prosternum-ventrally, the first thoracic segment

Protarsus-tarsal segment on forelegs

Striae-longitudinal depressed lines or furrows, frequently punctured

Tarsi-distal leg segments often bearing claws

Tarsomeres-subdivisions of the tarsus

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procoxae contiguous to narrowly separated or with distinct red humeral markings on elytra.....7

7 (6'). Procoxae widely separated by broad prosternal process*Hymenochara* Campbell [*rufipes* (LeConte)] (Fig. 3)

7'. Procoxae contiguous or separated by thin lamella of prosternum.....*Mycetochara* Berthold [*haldemani* (LeConte)] (Fig. 11)

Key FF

Key to the Florida species of *Lobopoda* Solier

(this key needs to be updated to include *L. socia* (LeConte) (Fig. 10) and *L. opacicollis* Champion which also occur in FL) (see Campbell 1966)

1. Eyes small, widely separated in male, separated by distance approximately equal to diameter of an eye in female; pronotum smooth, strongly shining; length 6.5 to 8.5 mm

.....*nigrans* (Melshiemer)

1'. Eyes larger, touching or very narrowly separated dorsally in male, separated by distance distinctly less than diameter of an eye in female; pronotum only moderately shining; sides straight in basal half; length 8 to 11.5 mm.....2

2 (1'). Legs normally red; pronotal punctation moderately fine, shallowly impressed; surface finely granulate; eyes of male separated by very narrow ridge; posterior margin of eight sternal lobes of male broadly, evenly rounded.....

.....*erythrocnemis* Germar

2'. Legs brown to black; pronotal punctures coarse, deeply impressed; eyes of male touching dorsally, rarely separated by narrow ridge; posterior margin of eighth sternal lobes of male narrowly, acutely rounded...*punctulata* Melsheimer (Fig. 9)

Key GG

Key to the Florida species of *Hymenorus* Mulsant

(modified from Fall 1931) (many *Hymenorus* spp. are morphologically similar, thus only two species are represented in photographs; this group needs revision)

1. Entire upper surface polished or at least strongly shining, the pronotal punctuation never very dense; eyes as a rule widely separated, nearly always by a distance equal to or greater than their own width.....2

1'. Upper surface generally more or less dull, the pronotal punctuation closer, often very dense; eyes as a rule much more approximate, rarely distant by as much as their own width5

2 (1). Third antennal joint equal or subequal in length to the fourth.....3

Elytra-the forewings of beetles

Granulate-covered with or made of very small grains

Humeral-relating to the shoulder; located in the anterior portion of the wing

Procoxae-basal segment of forelegs

Pronotum-upper dorsal plate of the first thoracic segment

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2'. Third antennal joint distinctly shorter than the fourth.....*illusus* Fall

3 (2). Elytral striae obsolete toward the apex.
 a. Elytra with humeral red spot, size very small (about 4.5 mm).....*humeralis* LeConte

b. Elytra without distinct humeral spot, the base diffusely rufescent in some examples of *niger*
 -All elytral intervals with more than a single row punctures, eyes separated by rather more than their own width.....
*niger* Melsheimer

3'. Elytral striae distinct throughout their length.
 a. From elongate subdepressed, size small (rarely in excess of 5 mm); aedeagus at apex broad, vertically compressed and strongly curved downward.....*distinctus* Fall
 b. From normally convex, generally larger and less elongate; aedeagus not apically compressed, finely attenuate and feebly deflexed at tip.....4

4 (3b). Propleural strigosity (best viewed posteriorly) fine; genital forceps well developed.
 a. Prothorax more than two-thirds wider than long, its surface distinctly finely alutaceous, punctuation somewhat finer and sparser.....*melsheimeri* Casey
 b. Prothorax not over one-half wider than long, its surface polished, the punctuation coarser and closer.....*arkansanus* Fall

4'. Propleural strigosity coarser; genital segment of male without forcep like process.
 a. Size larger (6.3 – 8.2 mm), rarely under 7 mm.....*obesus* Casey
 b. Size smaller (5.25 – 8.2 mm); pronotal punctuation a little closer as rule, aedeagus more finely attenuate at tip.....*dubius* Fall

5 (1'). Eyes in male separated by three-eighths to one-half their own width.....6

5'. Eyes in the male separated by three-fifths to five sixths their own width.....8

5''. Eyes in male separated by a distance equal to or greater than their own width.....9

6 (5). Comb of protarsal claw of male with 18 to 20 or more teeth.....*semirufus* Fall (**Fig. 5**)

6'. Comb of protarsal claw of male with about 10 to 13 teeth (only eight in *fuscipennis*).....7

Aedeagus-male genitalia

Alutaceous-pale leather-brown; covered with cracks like human skin

Deflexed-abruptly bent downward

Propleural strigosity-fine, transverse, raised lines on the subcoxal sclerotizations above, before and behind the coxae on the forelegs

Protarsal claw-claw on the tarsi on the foreleg

Rufescent-somewhat reddish

Striae-longitudinal depressed lines or furrows, frequently punctured

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- 7 (4a).** Comb of protarsal claw of male with about 8 teeth; head and thorax rufous, elytra dark brown; size small (4.6 mm).....*fuscipennis* Fall
- 7'.** Comb of protarsal claw with about 14 teeth in the male and 8 in the female.
- a. Head, thorax and basal third of elytra more or less reddish, apical two-thirds of elytra piceous.....*dorsalis* Schwarz (Fig. 4)
 - b. Color above uniformly brown or piceous.....*caducus* Fall

- 8 (5').** Color throughout deep black; form elongate; above coarsely sculptured, the elytral interspaces granulately rugose; third antennal joint but little more than half the length of the fourth.....*granulatus* Blatchley
- 8'.** Color nearly as *dorsalis*, the head, thorax and basal third of the elytra dark red or castaneous, the apical two-thirds of elytra blackish; second and third antennal joints subequal.....*dichrous* Blatchley
- 8''.** Color variable but never black, legs concolorous or paler; elytra not granulate; third antennal joint at least as long as the fourth.

- a. Form elongate oval.
 - Prothorax usually rufous, elytra darker, brown or piceous, rarely upper surface throughout brown or piceous; antennae blackish except at base; elytral striae finer and not coarsely punctured.....*densus* LeConte
 - Upper surface entirely dark brown or piceous; antennae rufo-ferruginous; elytral striae unusually deep and coarsely punctate; size larger.....*convexus* Casey
- b. Form parallel elongate; elytral striae and stria punctures very fine.
 - Size larger (6 mm); form convex; color above uniformly brown; antennae a little more slender.....*tenuistriatus* Fall
 - Size smaller (4.8 – 5.5 mm); less convex; color rufo-ferruginous, the elytra and posterior ventral segments usually darker.....*tenellus* Casey

9 (5''). Size larger (7.3 mm); prothorax distinctly more transverse, sides normally rounded; legs pale rufo-ferruginous to brownish red.....*quietus* Fall

9'. Size smaller, length rarely but little more than 6 mm; elytra with a tendency toward a feeble inflation posteriorly.

- a. Third antennal joint a little longer than the fourth.
 - Apical margin of pygidium in female entire.....*floridanus* Casey
 - Apical margin of pygidium in female triangularly notched.....*heteropygus* Fall

Castaneous-chestnut-brown; bright red-brown

Convex-curved or rounded outward

Elytra-the forewings of beetles

Granulate-covered with or made of very small grains

Granulately rugose-covered with small grains and wrinkles

Piceous-black

Protarsal claw-claw on the tarsi on the foreleg

Prothorax-first segment (behind the head) of the thorax

Pygidium-the tergum (upper or dorsal surface of body segment) of the last visible segment of the abdomen

Rufo-ferruginous-reddish to rusty reddish-brown

Rufous-reddish

Striae-longitudinal depressed lines or furrows, frequently punctured

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- b. Third and fourth antennal joints equal or very nearly so; apical margin of pygidium in female entire.....*inopiatus* Fall
 9''. Size smaller (4.8 – 5.5 mm); prothorax more transverse; legs piceous brown.....*sobrinus* Casey

Key HH

Key to the Florida species of *Isomira* Mulsant
 (modified from Marshall 1970)

1. Third antennal segment two-thirds as long as fourth.....
*oblongula* Casey (**Fig. 6**)
 1'. Third antennal segment as long as fourth.....2
- 2 (1'). Size moderately large, robust (over 8.5 mm long); strongly convex in cross-section.....*valida* Schwarz (**Fig. 8**)
 2'. Size smaller, not robust (less than 8.5 mm long); feebly or moderately convex in cross-section.....3
- 3 (2'). Ocular index (see below) less than 44.....
*iowensis* Casey (males)
 3'. Ocular index greater than 44.....4
- 4 (3'). Ocular index less than 55.....5
 4'. Ocular index greater than 55.....
*pulla* Melsheimer (**Fig. 7**)
- 5 (4). Eyes prominent; head narrowed suddenly at clypeus, sides of clypeus parallel throughout; color usually brown*iowensis* Casey (females)
 5'. Eyes not prominent; clypeus tapering gradually to labrum; color usually yellowish.....*sericea* Say

Convex-curved or rounded outward

Clypeus-the part of the insect head below the frons, to which the labrum (upper lip) is attached anteriorly

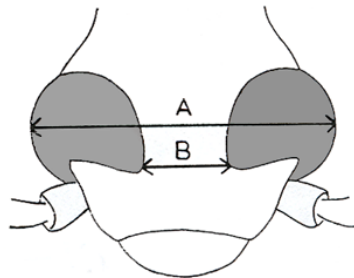
Labrum-upper lip

Piceous-black

Pygidium-the tergum (upper or dorsal surface of body segment) of the last visible segment of the abdomen

Ocular index: (from Campbell and Marshall 1964)

$\frac{\text{minimum distance between eyes (B)}}{\text{maximum dorsal width across eyes (A)}} \times 100 = \text{Ocular index}$



Subfamily Alleculinae-Species Profiles



Fig. 1: *Andrimus murrayi* LeConte

Length: 6.0-7.5 mm

Habitat: ---

Comments: There are 7 *Andrimus* spp. in southeaster U.S.; this group needs revision



Fig. 2: *Androchirus femoralis* Olivier

Length: 9.0-10 mm

Habitat: Amongst rotting logs

Comments: Sexual behavior has been recorded by Campbell 1966a



Fig. 3: *Hymenochara rufipes* (LeConte)

Length: 3.8-4.9 mm

Habitat: ---

Comments: There are only 2 known *Hymenochara* spp. in N.A.



Fig. 4: *Hymenorus dorsalis* Schwarz

Length: ~5.5 mm

Habitat: ---

Comments: There are nearly 100 *Hymenorus* spp. in the U.S.



Fig. 5: *Hymenorus semirufus* Fall

Length: 4,2-5.2 mm

Habitat: ---

Comments: May be precinctive to FL



Fig. 6: *Isomira oblongula* Casey

Length: 5.9-8.3 mm

Habitat: On deciduous tree spp.

Comments: ---



Fig. 7: *Isomira pulla* (Melsheimer)

Length: 5.6-7.7 mm

Habitat: On various deciduous tree spp.; under organic debris

Comments: ---



Fig. 8: *Isomira valida* Schwarz

Length: 8.5-9.4 mm

Habitat: ---

Comments: ---



Fig. 9: *Lobopoda punctulata* (Melsheimer)

Length: 8.0-11.5 mm

Habitat: On deciduous tree spp. (oak, hickory)

Comments: Adults can be collected by beating foliage, at lights



Fig. 10: *Lobopoda socia* (LeConte)

Length: ~8.5 mm

Habitat: ---

Comments: ---



Fig. 11: *Mycetochara haldemani* LeConte

Length: 3.5-5.0 mm

Habitat: ---

Comments: Only 1 of 10 N.A. *Mycetochara* spp. is known in FL



Fig. 12: *Onychomira floridensis* Campbell

Length: 5.0-7.0 mm

Habitat: Sandy, scrub areas

Comments: Precinctive to FL (Highlands Co.); adults have been collected in blacklight traps