

Key to Families of Beetles of South Carolina

(Adapted from Ivie 2002)

This key is very long, and attempts to include many aberrant and rare species.

For specimens with pseudotetramerous tarsi (five tarsomeres but tarsomere 4 hidden between lobes of 3), try couplet 22.

For specimens with 5-5-4 tarsi (hind tarsus with only four tarsomeres), try couplet 139 (or couplet 35 if the elytra are very short and leave several abdominal tergites exposed).

For members of the former Scarabaeidae, go to couplet 12.

- 1 Notopleural sutures (suture between prosternum and hypomeron) present 2
Notopleural sutures absent 4
- 2(1) Hind coxa free, first visible abdominal ventrite extended entirely across ventral surface 3
Hind coxae immovably fused to metasternum, completely dividing first abdominal ventrite (Adephaga) 5
- 3(2) Head with rostrum; antennae straight with narrow club; body smooth without scales; length 2-5 mm.... [Nemonychidae](#) (in part)
Head without rostrum; antennae filiform; body reticulate, covered in scales; length 6-14mm..... [Cupedidae](#)
- 4(1) Hind wings spirally rolled in a “cigar” manner; elytra smooth, short, leaving pygidium exposed; body without scales;
length <2.6 mm [Micromalthidae](#)
Hind wings folded, not rolled; other features various (Polyphaga) 10
- 5(2) Metacoxa greatly enlarged, a ventral plate concealing trochanter and basal half of femur, covering most of three
basal ventrites [Haliplidae](#)
Metacoxa enlarged or not, IF metacoxa greatly enlarged, THEN all ventrites visible laterally, coxa not concealing
trochanter or basal half of femur 6
- 6(5) Metacoxa not reaching elytron laterally, metepimeron and first ventrite in contact with elytral margin; antenna usually partly
setose (in addition to scattered long sensory setae); procoxal cavities usually closed 7
Metacoxa reaching elytron laterally; antenna not setose with only long accessory setae; procoxal cavities open 8
- 7(6) Mentum expanded, covering ventral mouthparts completely when mandibles closed; outer angle of protibia with large
inwardly curved uncus; head, pronotum and elytra with deep caniculate grooves [Rhysodidae](#)
Mentum not extended beyond other mouthparts, at least palpi visible; outer angle of protibia with straight or outwardly
curved teeth or spines; head, pronotum, and elytra without deep caniculate grooves..... [Carabidae](#)
- 8(6) Mid- and hind legs very short; eyes usually divided into two isolated parts on each side, rarely with a narrow canthus
extended between upper and lower portions [Gyrinidae](#)
Mid- and hind legs not especially short; eyes not divided 9
- 9(8) Scutellum not visible; protarsus with five distinct tarsomeres; outer margin of protibia evenly curved and bearing a distinct
comb of parallel and contiguous setae; metasternum and hind coxae modified into a flat, wedge-shaped plate.... [Noteridae](#)
Scutellum visible or not; protibia less evenly rounded on outer apical angle, lacking setal comb; metasternum and hind
coxae various [Dytiscidae](#)
- 10(1) Elytra present, complete, short or reduced to flap-like stubs on the mesothorax 11
Elytra totally absent 158
- 11(10) Antenna with strongly asymmetrical usually lamellate club of 3-8 antennomeres; procoxae large, strongly transverse
or conical and projecting below prosternum; protibia flattened with one or more teeth on outer edge; tarsi with
five distinct tarsomeres 12
Antenna not lamellate, OR coxae, tibiae, or tarsi not as above 20
- 12(11) Antennae with 11 antennomeres [Geotrupidae](#)
Antennae with fewer than 11 antennomeres 13
- 13(12) Body capable of being rolled into contractile ball; middle and hind tibiae flattened and dilated [Ceratocanthidae](#)
Body oblong not capable of being rolled into ball; middle and hind tibiae not significantly flattened or dilated..... 14
- 14(13) Longer apical spur of mesotibia pectinate along one edge..... [Ochodaeidae](#)
Longer apical spur of mesotibia simple, not pectinate 15

15(14)	Antennomeres of club not capable of being tightly closed together	16
	Antennomeres of club capable of being closed together	17
16(15)	Mentum with apex deeply emarginate; mesocoxal cavities closed laterally; body distinctly flattened dorsally	Passalidae
	Mentum with apex simple, not deeply emarginate; mesocoxal cavities open laterally; body evenly convex dorsally ...	Lucanidae
17(15)	Antennal club with three antennomeres, first hollowed out to receive second	Hybosoridae
	Antennal club with 3-7 antennomeres, first simple, not hollowed out to receive second	18
18(17)	Abdomen with five ventrites; dorsal surface roughened or tuberculate, not shiny	Trogidae
	Abdomen with six ventrites; dorsal surface variably sculptured, shiny or not	19
19(18)	Elytra short and widely divergent at apex, not covering pygidium; eighth morphological abdominal segment with spiracle	Glaphyridae
	Elytra not shortened or widely divergent at apex; eighth morphological abdominal segment lacking spiracle	Scarabaeidae
20(11)	Tarsi with 2-5 tarsomeres, not pseudotetramerous on ALL legs (i.e., tarsomere 3 not lobed and enclosing 4, any other configuration possible); antennae, mouthparts, femora, and metacoxae various; OR tarsi pseudotetramerous and metacoxa with distinct posterior face set off from ventral surface by a carina or flange; OR tarsi pseudotetramerous, head not at all rostrate, and antennae strongly or weakly clubbed but not geniculate	21
	Tarsi pseudotetramerous on all legs; often with long antennae, rostrate head, or enlarged hind femora; metacoxa without exposed posterior face	22
21(20)	Palpi very short, usually immovably fixed and not very visible; head rostrate, prolonged into a variously developed beak AND/OR antennae geniculate with compact club	22
	Palpi longer, flexible, and usually evident; head usually not prolonged into a beak but, if rostrate or antennae elbowed, then palpi longer and flexible	30
22(20, 21)	Antennae usually without distinct club: filiform, moniliform, serrate or pectinate; IF antenna distinctly clubbed, THEN club of five or more antennomeres and length of head from vertex to clypeus less than or equal to width of head just behind eyes	23
	Antenna distinctly clubbed with four or fewer antennomeres; OR if antenna moniliform, length of head distinctly rostrate, OR if club with five or more antennomeres, length of head from vertex to clypeus greater than width of head just behind eyes	25
23(22)	Antenna usually more than half length of body, often inserted on prominence, capable of being reflexed backward over body; tibiae with two obvious spurs; antennomere 1 usually several times longer than 2; pygidium never sclerotized and exposed; length 3-75 mm	Cerambycidae (in part)
	Antenna usually less than half length of body, seldom inserted on prominence, not reflexible back over body; tibiae without or with one or two apical spurs; antennomere 1 seldom more than 2-3 times length of 3; pygidium of some species sclerotized and exposed; length usually less than 12 mm	24
24(23)	All tibiae with two distinct apical spurs AND frons without "X" grooves; mesonotum with or without stridulatory file; ligula large, membranous, and bilobed	Orsodacnidae
	At least one tibia without two apical spurs OR frons with deep "X" grooves; mesonotum without stridulatory file; ligula normal	Chrysomelidae
25(22)	Antenna geniculate (rarely appearing straight or nearly so), club compact; metatrochanter not cylindrical, femur attached obliquely	Curculionidae
	Antenna straight (very rarely geniculate), club loose or not evident; metatrochanter various but if antenna geniculate, then trochanter cylindrical and squarely attached to femur	26
26(25)	Labrum visible and free; tarsomere 2 not spongy beneath; maxillary palpi normal	27
	Labrum not free; tarsi various; maxillary palpi rigid	28
27(26)	Antenna situated adjacent to eye or laterally near base of short dorsoventrally flat rostrum; apex of antennomere 3 extended well beyond front margin of eye; all tibiae lacking spurs	Anthribidae
	Antenna situated distally on long cylindrical rostrum; apex of antennomere 3 not or barely extended to front margin of eye; all tibiae with spurs	Nemonychidae (in part)

28(26)	Antenna either moniliform and body elongate, OR antenna straight and clubbed, body pear-shaped and metatrochanter cylindrical, squarely joined to femur, OR antenna with 9-10 antennomeres and body elongate-cylindrical	Brentidae	
	Antenna straight, not geniculate, with 11 antennomeres; metatrochanter triangular or diamond-shaped, obliquely joined to femur; body form various		29
29(28)	Gena produced anteriorly on each side, visible in frontal view as a large tooth on each side of apex of rostrum, lateral to mandible; dorsal surface with obvious, recumbent, scale-like setae; body surface not metallic; length 12 mm or more	Ithyceridae	
	Gena not produced anteriorly; dorsal surface glabrous or with fine hair-like setae; body often with metallic sheen; length various, mostly less than 7 mm	Attelabidae	
30(21)	Length 1.2 mm or less; antenna long, thin, with loose to indistinct club; antennomeres each with a whorl of long setae; wing fringed with long setae that are longer than width of wing, or wing absent	Ptiliidae	
	Length various; antenna not as above; wings rarely with fringe longer than width of wings		31
31(30)	Head with paired ocelli		32
	Head without paired ocelli (a single median ocellus may be present)		34
32(31)	Anterior edge of scutellum abruptly and sharply elevated above pronotum; metepisternum extended to mesocoxal cavity and in contact with first ventrite to separate metacoxa from elytron.....	Derodontidae	
	Anterior edge of scutellum not abruptly elevated, continuous with pronotum; metepisternum various		33
33(32)	Elytra completely covering abdomen; antenna short, clubbed, and inconspicuous; but maxillary palpi very long and obvious; ventral surface with hydrofuge pubescence.....	Hydraenidae (in part)	
	Elytra usually exposing one or more abdominal tergites; antenna short to long, extended beyond middle of pronotum in species with long elytra; maxillary palpi shorter than antennae; ventral surface without hydrofuge pubescence	Staphylinidae (in part)	
34(31)	Elytra very short, leaving three or more tergites exposed		35
	Elytra longer, leaving no more than 1 or 2 tergites exposed		49
35(34)	Metatarsus with one fewer tarsomere than mesotarsus		36
	Mesotarsus and metatarsus with same number of tarsomeres		39
36(35)	Body greatly flattened dorsoventrally; abdomen with five ventrites	Salpingidae	
	Body not greatly flattened; abdomen with 6-7 ventrites		37
37(36)	Antenna strongly serrate to pectinate, flabellate, bipectinate, or bilabellate.....	Ripiphoridae (in part)	
	Antenna, at most, very weakly serrate		38
38(37)	Tarsal claw with long, acute process or blade arising from base, usually more than half as long as claw; antenna filiform; body corpulent and soft	Meloidae (in part)	
	Tarsal claw simple; antenna weakly clubbed; body cylindrical, soft or not.....	Staphylinidae (in part)	
39(35)	Antenna with distinct club		40
	Antenna not clubbed		44
40(39)	Mesotarsus with 2, 3, or 4 tarsomeres	Staphylinidae (in part)	
	Mesotarsus with five tarsomeres		41
41(40)	Antenna with asymmetrical club of four antennomeres, first shiny, the other three tomentose; elytra usually black and orange but occasionally all black; length 12 mm or more, usually more than 15 mm	Silphidae (in part)	
	Antenna not as above; color various; length 13 mm or less, usually less than 10 mm		42
42(41)	Antenna with three antennomeres; pronotum with antennal pockets above lateral margins; dorsoventrally flattened, louse-like parasites of beaver	Leiodidae (in part)	
	Antenna with 9-11 antennomeres; pronotum without antennal pockets; body various		43
43(42)	Procoxal cavities open.....	Staphylinidae (in part)	
	Procoxal cavities closed	Nitidulidae (in part)	

44(39)	Mesotarsus with four or fewer tarsomeres	Staphylinidae (in part)	
	Mesotarsus with five tarsomeres		45
45(44)	Antenna with 12 antennomeres; antenna biserrate, bipectinate, or biramose	Phengodidae	
	Antenna with fewer than 12 antennomeres; antenna various		46
46(45)	Head covered above by pronotum; often with luminous organs on abdomen	Lampyridae (in part)	
	Head visible from above; never with luminous organs		47
47(46)	Pronotum with lateral eversible vesicles	Melyridae (in part)	
	Pronotum without eversible vesicles.....		48
48(47)	Elytra individually rounded, not meeting apically at suture; mandible long and narrow	Cantharidae (in part)	
	Elytra truncate, meeting at suture apically; mandible often short and broad	Staphylinidae (in part)	
49(34)	Apices of penultimate 2 or 3 antennomeres each completely ringed with microsetose groove (must be viewed distally, difficult to see in small specimens); antenna with distinct to indistinct loose club, often with antennomere 8 smaller than 7 or 9; prothorax with sharp lateral margins; abdomen with 5 or 6 ventrites.....		50
	Antennae usually lacking periarticular gutters, OR if complete periarticular gutters present, THEN front trochantin hidden, antenna with 11 antennomeres AND antennomere 8 not smaller than 7 and 9; other characters various.....		51
50(49)	Metatibial spurs subequal in length; small (1-6 mm), round to elongate-oval, shiny, granulate or transversely strigulate; elytra glabrous or setose, striate or not; pronotum as broad as elytra; antennomere 8 smaller than 7 or 9	Leiodidae (in part)	
	Metatibial spurs distinctly unequal; moderate-sized (7-12 mm), somewhat flattened, shiny; elytra striate and glabrous; pronotum somewhat narrower than elytra; antennomere 8 not smaller than 7 or 9	Agyrtidae (in part)	
51(49)	Mesotarsus with 3 apparent tarsomeres, either clearly with three tarsomeres, or with 4, the third hidden under lobes of the second		52
	Mesotarsus with 4 or 5 distinct tarsomeres, OR tarsomere 1 distinctly lobed, engulfing ver small 2 and small 3, appearing to have 2 or 3 tarsomeres.....		58
52(51)	Mesotarsus pseudotrimerous, with tarsomere 2 strongly lobed, hiding small tarsomere 3		53
	Mesotarsus truly with 3 tarsomeres, s=tarsomere 2 not greatly lobed		55
53(52)	Procoxal cavities closed (except in <i>Holopsis</i>); head small, usually covered by hood-like pronotum; if head exposed from above, procoxal cavities closed; mostly tiny beetles less than 2 mm	Corylophidae (in part)	
	Head visible from above in front of pronotum; procoxal cavities open; size various, up to 11 mm		54
54(53)	Frontoclypeal suture distinctly impressed; all ventrites free; first ventrite without postcoxal lines; pronotum often with sublateral lines	Endomychidae (in part)	
	Frontoclypeal suture absent; two basal ventrites connate, first ventrite with postcoxal lines; pronotum lacking sublateral lines	Coccinellidae	
55(52)	Eyes absent	Bothrideridae (in part)	
	Eyes present		56
56(55)	Head gradually narrowed behind eyes without distinct temples or neck; procoxal cavities open; body oval or elongate-oval with base of pronotum subequal to elytral base	Endomychidae (in part)	
	Head sharply narrowed behind eyes or temples with distinct neck; procoxal cavities open or closed; body elongate or elongate-oval with base of pronotum distinctly narrower than elytra.....		57
57(56)	Abdomen with 6 ventrites; head narrowed behind eyes, lacking temples; procoxal cavities open; lateral margin of pronotum coarsely dentate; trochantin exposed; mesocoxal cavities open.....	Staphylinidae (in part)	
	Abdomen with 5 ventrites; head behind eyes with distinct temples; procoxal cavities open or closed; lateral margin of pronotum simple, finely dentate, or absent; trochantin concealed; mesocoxal cavities various	Latridiidae	
58(51)	Antenna with 9 antennomeres, last 5 formed into a club; abdomen with 6 or 7 ventrites; maxillary palpi longer than antennae; ventral surface with hydrofuge pubescence	Hydraenidae (in part)	
	Antenna not as above; other characters no in combination above		59

59(58)	Antenna with 7-9 antennomeres, last three usually in a loose, tomentose club, antennomere 6 often forming a cupule at base of club; maxillary palpi often as long as or longer than antenna, always more than 1/2 of antennal length.....	Hydrophilidae	60
	Antenna various but not as above; maxillary palpi usually much shorter than antenna.....		60
60(59)	Metacoxa with distinct posterior face (at least medially) set off from ventral surface by carina or flange; ventral surface of metacoxa not co-planar with first ventrite; procoxal cavities open; meso- and metatarsi with equal number of tarsomeres.....		61
	Metacoxa without distinct posterior face; ventral surface of metacoxa more or less continuous with first ventrite, OR metatarsus with one fewer tarsomere than mesotarsus; procoxal cavities open or closed.....		96
61(60)	Abdomen with 7-8 ventrites; metatarsus with 5 tarsomeres.....		62
	Abdomen with 6 or fewer ventrites; metatarsus with 5 or 4 tarsomeres.....		66
62(61)	Head with a median ocellus.....	Dermestidae (in part)	63
	Head without median ocellus.....		63
63(62)	Mesocoxae distinctly separated; elytra often reticulate at least feebly costate; femur and/or tibia compressed; pronotum with distinct longitudinal carina, groove, or cell.....	Lycidae	64
	Mesocoxae contiguous or nearly so; elytra not reticulate; femur and tibia seldom compressed; pronotum rarely with distinct longitudinal carina groove, or cell.....		64
64(63)	Pronotum extended forward, covering head in dorsal view; one or more ventrites often with luminous organ (most obvious in males); separation of antennal insertions equal to or less than diameter of antennal fossa.....	Lampyridae (in part)	65
	Head exposed in dorsal view when extended, OR if covered by pronotum, antennae separated by nearly twice diameter of antennal fossa; abdomen lacking luminous organs.....		65
65(64)	Labrum not distinct, membranous and often hidden beneath clypeus; tarsomere 4 with bifid ventral lobe; abdomen with paired glandular openings on lateral edge of tergites.....	Cantharidae (in part)	
	Labrum distinct and sclerotized; tarsomeres 3 and 4 with bifid ventral lobes; abdomen lacking paired glandular openings on tergites.....	Omethidae	
66(61)	Hind angles of pronotum acute, embracing elytral humeri; metatarsus with 5 tarsomeres; prosternal process long, notched dorsally, received in deep mesocoxal cavity as a clicking mechanism.....		67
	Hind angles of pronotum not acute, not embracing elytral humeri, or rarely somewhat acute and weakly embracing humeri; metatarsus with 5 or 4 tarsomeres; prosternal process various, but if large and received in deeply emarginated mesosternum, then apex of process not notched dorsally and not capable of clicking.....		69
67(66)	Labrum not externally visible; abdomen with 5 connate ventrites.....	Eucnemidae	
	Labrum free and visible; abdomen with 3, 4, or 5 connate ventrites.....		68
68(67)	Antenna indistinctly to distinctly clubbed, apex received in margined cavity of hypomeron, just anterior to retracted foreleg; metasternum with or without oblique margined groove for mesotarsus; prosternum with click mechanism hidden by plate-like ventral surface of postcoxal intercoxal process which fits tightly against exposed portion of mesosternal cavity; length 1-5 mm.....	Throscidae	
	Antenna various (filiform, serrate, pectinate, etc.) but not clubbed; antennal groove, if present, at or near notopleural suture; metasternum without margined groove for mesotarsus; length 1-60 mm.....	Elateridae	
69(66)	Mesocoxal cavities closed laterally, the mesosternum and metasternum meeting lateral to mesocoxa, OR antenna elongate, antennomeres 3-8 with long rami, 9-11 flattened, elongate-serrate; pronotum often hood-like, covering head from above.....		70
	Mesocoxal cavities open laterally, the mesosternum and metasternum separated lateral to mesocoxa by the mesepimeron or mesepimeron and mesepisternu.; antenna not as above; pronotum various.....		71
70(69)	Metatrochanter cylindrical, short to long, squarely attached to femur, distinctly separating coxa and femur.....	Anobiidae	
	Metatrochanter short, triangular, obliquely attached to femur so that femur and coxa are adjacent to narrowly separated.....	Bostrichidae	
71(69)	Anterior margin of scutellum with abrupt carinate elevation that fits against posterior margin of pronotum, or scutellum absent or not visible.....		72
	Anterior margin of scutellum not abruptly elevated, fitting under overlapping posterior margin of pronotum.....		91

72(71)	Procoxae strongly and distinctly projecting ventrad of prosternum, procoxae usually conical or transversely conical	73
	Procoxae not or weakly projecting ventrad of prosternum; if procoxae conical, then lying longitudinally and not or weakly projecting below intercoxal process	79
73(72)	Tarsi with 4 distinct tarsomeres; metacoxal plates greatly expanded, hiding most of first ventrite; hind wing, when developed, often fringed with long setae; length 0.7-2.0 mm	Clambidae
	Tarsi with 5 distinct tarsomeres; metacoxal plate distinct but not hiding most of first ventrite; wing not fringed; size various	74
74(73)	Antenna with distinct, simple club of 3 compact antennomeres	75
	Antenna various, but without a simple club of 3 compact antennomeres	76
75(74)	Dorsal surface glabrous; body contractile; protibia, when contracted, held anterior to femur, covering antenna in hypomerical cavity.....	Nosodendriidae (in part)
	Dorsal surface variously setose or scaled; body not strongly contractile; protibia, when contracted, held posterior to profemur, antennal club not covered by leg.....	Dermestidae (in part)
76(74)	Base of pronotum crenulate; scutellum usually medially notched on anterior margin; antennal insertions not elevated; labrum large, sclerotized, and dorsal to mandibles	Ptilodactylidae
	Base of pronotum simple; anterior margin of scutellum not notched; antennal insertions elevated and protuberant; labrum either short and membranous or extended between and below mandibles	77
77(76)	Empodium not obvious, hidden between bases of claws or absent; base of pronotum nearly straight	Dascillidae (in part)
	Empodium large, 1/3 length of claw, obviously plurisetose; base of pronotum strongly trisinate around scutellum	78
78(77)	Tarsomeres 1-4 with large, membranous, divided lobes; antenna lamellate (males) or increasingly serrate apically (females).....	Rhipiceridae
	Tarsi simple, without ventral lobes; antennae serrate to pectinate	Callirhipidae
79(72)	Head with single median ocellus	Dermestidae (in part)
	Head without ocellus.....	80
80(79)	Antenna short, not reaching middle of pronotum; scape and pedicel (antennomeres 1 and 2) relatively large, together 1/3 or more of total length; antennomeres 3-10 transverse; body covered in dense tomentum	81
	Antenna short to long, scape and pedicel not 1/3 of total length; antennomeres 3-10 various; body vestiture various	82
81(80)	Head distinctly prognathous, mandibles strongly projected forward; profemur widened medially and armed externally with strong spines; mesotarsus with 4 tarsomeres.....	Heteroceridae
	Head distinctly hypognathous, mandibles either directed ventrad or hidden; profemur simple, neither widened medially or with large spines; mesotarsus with 5 tarsomeres	Dryopidae
82(80)	Scape and pedicel received in deeply excavated pro- and mesosterna between pro- and mesocoxae; body strongly contractile, all legs received in cavities; mesotarsus with 5 tarsomeres, fourth small and difficult to see (pseudotetramerous).....	Chelonariidae
	Antennae not received in excavations between pro- and mesocoxae; mesotarsus usually not pseudotetramerous.....	83
83(82)	Head with subgenal ridges that fit against procoxae when head deflexed.....	Sciirtidae (in part)
	Head without subgenal ridges, genae not in contact with procoxae.....	84
84(83)	Two basal ventrites connate, suture between them partially obliterated medially, OR if suture between ventrites 1 and 2 not medially indistinct, THEN sternopleural sutures at least moderately grooved to receive antennae	85
	Ventrites all free, OR three or five ventrites connate and ventral sutures various	86
85(84)	Suture between two basal ventrites distinct medially; mesotarsus with small bisetose empodium; antenna filiform to distinctly clubbed; body strongly convex	Byrrhidae
	Suture between two basal ventrites weak to absent medially; mesotarsus lacking visible empodium; antenna usually serrate, pectinate, or flabellate; body weakly dorsoventrally flattened	Buprestidae

86(84)	Legs retractile, rotated forward in repose, with protibia held anterior to femur; profemur with flange on posterior face covering tibial excavation, protibia grooved to receive tarsus; usually with margined excavations on hypomerion, mesosternum, and ventrites to receive legs.....	87
	If legs retractile, protibia held posterior to or ventral to femur; profemoral flange, if present, located on anterior face	88
87(86)	Head not deflexible; ventrites 1 and 2 excavated for metathoracic leg; length 4-9 mm.....	Nosodendridae (in part)
	Head usually retractable into pronotum to anterior margin of eyes; excavation of metathoracic leg, if present, limited to ventrite 1; length 1-2 mm	Limnichidae
88(86)	Elytron with thumb-like process on inner lateral surface near subapical curve, locking into ventrite 5 (elytron must be separated from abdomen to view this); elytra distinctly punctate-striate; length 3.5-5.0 mm.....	Artematopodidae
	Elytron without such a locking device; elytra and length various.....	89
89(88)	Hypomerion extended mesad behind procoxa for approximately half length of trochantin; length 10-15 mm	Dascillidae (in part)
	Margin of hypomerion curved laterad posteriorly, not extended mesad to procoxa; length 1-8 mm.....	90
90(89)	Posterior margin of pronotum simple; last tarsomere much longer than others, usually half or more total length of tarsus	Elmidae
	Posterior margin of pronotum crenulate; last tarsomere subequal in length to first.....	Psephenidae (in part)
91(71)	Head with subgenal ridges that fit against procoxae when head deflexed; prosternum in front of coxae narrow, shorter than intercoxal process.....	Scirtidae (in part)
	Head without subgenal ridges, genae usually not in contact with procoxae; prosternum anterior to coxae nearly as long as or longer than intercoxal process.....	92
92(91)	Metacoxal plates large, plate-like, longer medially than metasternum, hiding most of metafemur, even when fully extended	Eucinetidae
	Metacoxal plates narrow, forming either a parallel plate or simple carina, metafemur fully visible	93
93(92)	Length of body 4 or more times maximum width; male maxillary palpus complex, multilobate	Lymexylidae
	Length of body 2.5 or less times maximum width; maxillary palpus not branched.....	94
94(93)	Prosternal process complete, extended behind procoxae to level of mesosternum; elytral epipleuron with an internally carinate edge complete to suture; clypeal margin straight	Psephenidae (in part)
	Prosternal process incomplete, not extended beyond midpoint of procoxae; elytral epipleuron narrowed before reaching suture (complete in one genus); clypeal margin emarginate	95
95(94)	Elytra with 9 or 10 punctate striae; posterior portion of hypomerion extended up to half the distance to mesal edge of procoxa; length 10-11 mm.....	Agyrtidae (in part)
	Elytra without punctate striae, with up to 3 carinate costae; posterior portion of hypomerion not extended behind procoxa or extended only a short distance mesad of lateral edge of procoxa; length 7-27 mm.....	Silphidae (in part)
96(60)	Hind coxae widely separated by broad, intercoxal process of first ventrite truncate	97
	Intercoxal process of first ventrite absent, acute, or rounded.....	98
97(96)	Antenna geniculate, club usually of 3 antennomeres; elytra short and truncate, exposing 3 non-flexing tergites; body compact.....	Histeridae
	Antenna not obviously geniculate, clubbed or not; elytra rarely exposing 2 tergites, IF 2 tergites exposed, THEN exposed abdominal segments flexible, body not oval, or body cylindrical and compact	98
98(96, 97)	Procoxae with exposed trochantin.....	99
	Trochantin concealed or absent.....	116
99(98)	Metacoxa extended laterally to reach elytral epipleuron or side of body, no visible contact between metathorax and first ventrite.....	100
	Metacoxa not reaching elytron, first ventrite and metathorax visibly in contact lateral to coxa	105
100(99)	Hind tarsus with 5 tarsomeres	101
	Hind tarsus with 4 tarsomeres	139

101(100)	Elytron with a strong characteristic sutural stria, no other stria evident; antenna with 11 antennomeres and a gradual club of 3-4 antennomeres; abdomen with 4 (females) or 5 (males) ventrites	Leiodidae (in part)	
	Elytron striate or not, but not as above; antenna various; abdomen with at least 5 ventrites		102
102(101)	Prosternal process between coxae distinctly elevated above level of prosternum, apex strongly curved dorsally, reaching level of postcoxal extensions of hypomerion; antenna not clubbed; elytra glabrous or subglabrous; length 8-20 mm	Cerambycidae (in part)	
	Prosternal process not elevated between coxae nor with apex strongly curved dorsad; antenna clubbed or not; elytra densely to sparsely setose, subglabrous or glabrous; length 1-24 mm		103
103(102)	Procoxae not projected distinctly below intercoxal process, large and transverse; antenna distinctly clubbed; prothorax with sharp lateral margins; IF procoxae slightly projecting, THEN antenna distinctly clubbed and tarsi not lobed beneath; not bright red	Trogossitidae	
	Procoxae distinctly projected below intercoxal process, conical or transverse; antennae various; margins of prothorax various; IF procoxae are only slightly projected, THEN antennae feebly clubbed, tarsi lobed beneath, AND color bright red		104
104(103)	Tarsi not lobed beneath; procoxal cavity strongly transverse; eye not emarginate; pronotum and abdomen sometimes with eversible glands	Melyridae (in part)	
	Tarsi with lobes on multiple tarsomeres; procoxal cavity circular, elongate, or slightly transverse; eye often emarginate; pronotum and abdomen never with eversible glands	Cleridae	
105(99)	Elytra short, completely exposing one or more tergites		106
	Elytra covering all of abdomen or exposing apex of one tergite		109
106(105)	Procoxal cavities broadly open (by more than half width of coxa); abdominal intercoxal process truncate; pygidium and last ventrite longer than preceding 4 combined	Smicripidae	
	Procoxal cavities closed or narrowly open (by less than half width of coxa); abdominal intercoxal process acute to broadly rounded or absent; pygidium various		107
107(106)	Labial palpi non-articulated; prosternal process elevated between procoxae and strongly curved dorsally behind	Kateretidae	
	Labium with 3 palpomeres; prosternal process flat or elevated between procoxae, but not strongly curved dorsally behind		108
108(107)	Antenna with 10 antennomeres, club on only 1 antennomere; elytra more than twice as long as wide	Monotomidae (in part)	
	Antenna with 10 or 11 antennomeres, club of 3 or more antennomeres; elytra less than twice as long as wide	Nitidulidae (in part)	
109(105)	Mesotarsus with 4 tarsomeres; tarsal lobes if present, small not obscuring penultimate tarsomere		110
	Mesotarsus with 5 tarsomeres fourth possibly obscured by enlarged lobe of third (pseudotetramerous)		111
110(109)	Body nearly spherical, capable of being rolled into a ball; mandibles resting against metasternum in retracted position	Nitidulidae (in part)	
	Body flattened-cylindrical, not at all spherical	Mycetophagidae (in part)	
111(109)	Antenna with 10 antennomeres, club with one antennomere	Monotomidae (in part)	
	Antenna with 10 or 11 antennomeres, if clubbed, club with 2 or more antennomeres		112
112(111)	Body extremely flattened; elytra nearly parallel-sided; either large (>10 mm) and red with expanded temples, or small (<5 mm) and dull brown without temples	Cucujidae	
	Body not so distinctly flattened; elytra distinctly transversely arched, not fitting other combinations above		113
113(112)	Elytra with scutellar striole; antenna with 2 or 3 antennomeres in club; body oval to cylindrical	Sphindidae	
	Elytra without scutellar striole; antenna and body shape various		114
114(113)	Antenna with a distinct club AND meso- and metatarsi with equal numbers of tarsomeres		115
	Metatarsus with one fewer tarsomere than mesotarsus; antenna distinctly clubbed or not		139

115(114)	Pygidium at least partially exposed, strongly sclerotized, punctate, distinctly different from other tergites; tibiae usually spinose or denticulate on external margin	Nitidulidae (in part)	
	Pygidium not exposed not strongly sclerotized, similar to other tergites; tibiae smooth on external margin	Byturidae	
116(98)	Antennal insertions concealed from above by lateral expansion of the frons; AND 3 basal ventrites connate, 4 and 5 moveable; AND procoxal cavities closed by the mesad extension of the posterior portion of the hypomeron; AND procoxal process not expanded laterally at apex; antenna usually with 11 antennomeres (rarely with 9 or 10)	Tenebrionidae	
	Without this combination of characters.....		117
117(116)	Abdomen with the first 4 ventrites connate.....	Zopheridae	
	Abdomen with fewer than 4 ventrites connate		118
118(117)	Mesotarsus with 4 distinct tarsomeres.....		119
	Mesotarsus with 5 tarsomeres, or tarsi pseudotetramerous		127
119(118)	Mesocoxal cavities closed laterally		120
	Mesocoxal cavities open laterally		124
120(119)	Antennal insertions concealed from above.....	Colydiidae	
	Antennal insertions exposed from above		121
121(120)	Abdomen with 6 ventrites; pronotum usually large, hood-like, covering or nearly covering head; pygidium usually exposed; epipleuron incomplete; frontoclypeal suture absent; length less than 2 mm.....	Corylophidae (in part)	
	Abdomen with 5 or 6 ventrites; pronotum never hood-like, head visible from above; pygidium, epipleuron, and frontoclypeal suture various; IF with 6 ventrites, THEN length 4 mm or greater and frontoclypeal suture present... 122		
122(121)	Antenna longer, reaching to or beyond middle of pronotum, club loose; pronotum usually with pair of sublateral discal carinae or grooves running from base laterad of basal pits; body usually circular to ovoid	Endomychidae (in part)	
	Antenna shorter, not reaching beyond middle of pronotum, club compact; IF pronotum with discal carinae or grooves, THEN usually pronotum with a median groove or pit and body elongate		123
123(122)	Posterior margin of last ventrite crenulate OR body distinctly oval, length no more than twice maximum width; antenna with 8, 9, or 10 antennomeres; hind trochanter obliquely attached to femur, but distinctly separating coxa from femur.....	Cerylonidae (in part)	
	Posterior margin of last ventrite never crenulate, antenna with 10-11 antennomeres; body elongate at least 2.75 times maximum width; hind trochanter offset so that femur and coxa are in contact or nearly so.....	Bothrideridae	
124(119)	Metacoxae separated by more than 1/2 transverse coxal diameter.....		125
	Metacoxae separated by less than 1/2 transverse coxal diameter.....		126
125(124)	Antenna with 9 antennomeres, last 5 forming club; pronotum not grooved or carinate on disc; small beetles, less than 2 mm in length.....	Corylophidae (in part)	
	Antenna with 8-11 antennomeres, if clubbed, club of 1, 2, or 3 antennomeres; pronotum usually with submarginal grooves or carinae especially basally; length 1-10 mm.....	Endomychidae (in part)	
126(124)	Body elongate-oval and somewhat cylindrical; pronotum without basal pits or impressions; head or pronotum of male often with horns or tubercles; antenna with 8-10 antennomeres and club of 2-3 antennomeres	Ciidae	
	Body oval to elongate-oval, usually somewhat dorsally depressed; pronotum with 2 basal pits or impressions laterad scutellum (sometimes in posterior marginal groove and difficult to discern); head and pronotum without horns or tubercles; antenna with 11 antennomeres, club with 2-5	Mycetophagidae (in part)	
127(118)	Abdomen with 6 ventrites AND metatarsi with 5 tarsomeres; terminal maxillary palpomere shorter and narrower than penultimate; shape rather characteristic; length 0.6-2.7 mm.....	Scydmaenidae	
	Abdomen with 4 or 5 ventrites; tarsi various; terminal maxillary palpomere as wide or wider AND/OR as long or longer than penultimate; size various		128
128(127)	Pregular area on each side with a laterally facing surface bearing a setose pit or cavity near end of distinct antennal groove; first ventrite with postcoxal lines	Biphyllidae	
	Pregular area without laterally facing setose pit; antennal grooves and postcoxal lines various		129

129(128)	First ventrite much longer than second (measured behind coxae); elytra without punctate or impressed striae; epipleuron distinct on basal half, not reaching apex (usually narrowed at level of third ventrite); elytra entire, exposing at most tip of last tergite	Cryptophagidae
	Not fitting this combination of characters, EITHER with first ventrite short, elytra striate, epipleuron complete to apex, OR elytra not covering most of pygidium	130
130(129)	Metatrochanter transversely or obliquely attached to femur, distinctly separating femur from coxa	131
	Metatrochanter obliquely attached to femur, offset so that femur abuts coxa	139
131(130)	Antennal insertions approximate or separated by less than 1/2 width of head between eyes, AND pronotum without lateral carinae; metatarsus with 5 tarsomeres; metatrochanter elongate, cylindrical.....	Ptinidae
	Without combination of narrowly separated antennal insertions and no lateral carina on pronotum; other characters various.....	132
132(131)	Pronotum with sublateral lines or grooves that extend from base anterior to midpoint, often to anterior margin; head usually with sublateral lines from median margin of eye to pronotum; lateral margins of pronotum smooth or wavy, not acutely denticulate or serrate; head not sharply constricted to a distinct neck	Laemophloeidae
	Pronotum usually without sublateral lines that extend from base anterior to midpoint; head various; IF pronotum with sublateral lines that extend from base to or beyond midpoint, THEN lateral margins of pronotum sharply denticulate anterior angles acutely projecting AND/OR head sharply constricted behind small temples.....	133
133(132)	Mesocoxal cavities open laterally	134
	Mesocoxal cavities closed laterally	136
134(133)	Antenna with 10 antennomeres, distinctly clubbed; elytra short, exposing all of pygidium; head abruptly constricted to form neck.....	Monotomidae (in part)
	Not fitting one or more of above characters	135
135(134)	Body elongate, flattened; meso- and metatarsi with same number of tarsomeres; head usually with distinct temples before abruptly constricted neck; antenna filiform, with scape more than 3 times length of pedicel	Silvanidae
	Metatarsus with one tarsomere fewer than mesotarsus; other characters various	139
136(133)	Body shiny, oval, and strongly convex; pronotum tightly embracing elytra, laterobasally with a vaguely transparent, thin flange which slides over a smooth area on base of humeral angle of elytron; pronotum and elytron with wide hypomeron and epipleuron	Phalacridae
	Body usually not so evenly oval; pronotum not coadapted to elytra in the above manner, without described flanged basal angles	137
137(136)	Meso- and metatarsi with same number of tarsomeres; face often with beaded lateral margins.....	138
	Mesotarsus with one or more tarsomere than metatarsus; face without beaded lateral margins	139
138(137)	Gular sutures confluent; genae expanded anteriorly, plate-like, concealing maxillae.....	Passandridae
	Gular sutures separate or absent; genae not so expanded.....	Erotylidae
139(100, 114, 130, 135, 137)	Last visible segment of abdomen forming a terminal spine; body wedge-shaped, humpbacked; head retracted to hypognathous position; metatibia and metatarsus usually with oblique or transverse, comb-like serrate ridges subapically on lateral faces	Mordellidae
	Abdomen not prolonged into a terminal spine; body otherwise various; metatibia and metatarsus without comblike serrate ridges as above IF similar combs are present, THEN they are apical	140
140(139)	Tarsal claw with a ventral blade or elongate lobe beneath; head sharply or gradually constricted behind eyes to distinct neck	141
	Tarsal claw without ventral blade or elongate lobe beneath, if claw toothed or appendiculate, then tooth not extended about 2/3 length of upper blade.....	142
141(140)	Body narrow, nearly 5 times as long as wide; head gradually narrowed behind eyes without distinct temples or neck; length 8-12 mm	Stenotrachelidae
	Body broader, corpulent and soft; head with prominent temples, with or without a neck; length 3-25 mm	Meloidae (in part)

142(140)	Base of pronotum with marginal groove that extends laterally onto hypomerion, ending in a pit near posterior margin of coxa; pronotum narrowed posteriorly, not margined laterally; elytra sparsely to densely setose.....	Anthicidae (in part)
	Basal groove of pronotum, if present, not ending in pit on hypomerion; pronotum and vestiture various	143
143(142)	Mesocoxal cavities closed laterally	Mycteridae
	Mesocoxal cavities open laterally	144
144(143)	Body deep, mildly to distinctly wedge-shaped; antenna serrate, pectinate, or flabellate, often bipectinate or biflabellate; vertex often inflated and narrowed above eyes in frontal view, extended dorsally above plane of pronotum in lateral view	Ripiphoridae (in part)
	Body not usually deep and wedge-shaped, IF so, THEN antenna simple and head coplanar with or slipping under front margin of pronotum.....	145
145(144)	Pronotum lacking lateral carina.....	146
	Pronotum with complete or incomplete lateral carina.....	150
146(145)	Metacoxa extended laterally to elytron or side of body, completely separating metepisternum from first ventrite.....	147
	Metacoxa not reaching elytron or side of body, metepisternum and first ventrite in contact laterally.....	149
147(146)	Tarsi appearing 4-4-3 (actually pseudotetramerous/pseudotrimerous); eyes coarsely faceted appearing hairy; interfacetal setae as coarse, long, and dense as those on frons and sides of head; length 1-4 mm.....	Aderidae
	Tarsi distinctly 5-5-4; eyes with or without interfacetal setae, IF interfacetal setae present, THEN setae not as coarse, long, or obvious as on frons and sides of head; length 4-21 mm	148
148(147)	Head prognathous, not abruptly constricted to a narrow neck, lacking distinct temples; anterior portion of prosternum as long or longer than prosternal process; first 2 ventrites connate.....	Oedemeridae
	Head distinctly declined, abruptly constricted to form narrow neck behind distinct temples; anterior portion of prosternum shorter than prosternal process.....	Anthicidae (in part)
149(146)	Elytra distinctly setose; eye emarginate anteriorly; penultimate tarsomere with large lobe beneath	Pyrochroidae (in part)
	Elytra glabrous; eye not emarginate; penultimate tarsomere simple	Pythidae (in part)
150(145)	Metacoxa extended laterally to elytron or side of body, completely separating metepisternum from first ventrite;	
	mesotibial spurs serrate, pectinate, or pubescent	151
	Metacoxa not reaching elytron or side of body metathorax and first ventrite at least narrowly closing metacoxal cavity laterally; mesotibial spurs various	153
151(150)	Head vertically narrowed behind eyes to form narrow neck, not received into prothorax, either bulging beyond pronotal margin, or fitting closely against pronotal margin so that head in lateral view has a posterior carina or crest meeting anterior margin of pronotum.....	Scraptiidae
	Head gradually narrowed behind eyes, fitting into pronotum in a telescoping manner	152
152(151)	Tarsus without lobes on penultimate tarsomere; sutural stria deeply impressed near apex of elytra, distinctly more so than in basal half; metatibia longer than first metatarsomere; prosternal intercoxal process level with ventral surface of non-projecting procoxae; prosternal process long, parallel-sided reaching behind procoxae; length 7-13 mm	Synchroidae
	Tarsus with penultimate tarsomere lobed beneath, OR metatibia shorter than first metatarsomere; IF sutural stria deeply impressed near apex, THEN also impressed on basal half; prosternal process incomplete, not extended behind procoxae, narrowed apically, resting below ventral surface of usually projecting procoxae; length 2-20 mm	Melandryidae (in part)
153(150)	Procoxal cavities closed behind; first 2 ventrites connate; body strongly rounded; length 1.8-2.1 mm.....	Archeocrypticidae
	Procoxal cavities open behind; ventrites connate or free; body form various, often elongate; length various.....	154
154(153)	Elytra with sutural and epipleural margins elevated; elytron with strongly elevated carina running from humeral angle to near apex resulting in distinct concavity; pronotum with median longitudinal elevated carina on basal third, with deep transverse grooves with pits at each end on either side of carina.....	Ischaliidae
	Elytra and pronotum without strongly elevated carinae, elytral disc convex	155

155(154)	Prosternal intercoxal process complete, fully separating procoxae	Melandryidae (in part)	
	Prosternal intercoxal process incomplete or absent not separating procoxae		156
156(155)	Median longitudinal line of metasternum short, extended from hind margin less than 1/2 total length of metasternum; mesocoxa normal, convex and punctate anterior to trochanteral insertion		157
	Median longitudinal line of metasternum longer, extended from hind margin more than total length of metasternum; mesocoxa with unique, polished, ventral face anterior to trochanteral insertion	Tetratomidae	
157(156)	Antenna short, not extended to middle of pronotum; apical 3 antennomeres forming a distinct rather abrupt club	Boridae	
	Antenna longer, extended to base of elytra; apical antennomeres somewhat wider than basal antennomeres, not forming abrupt club.....	Pythidae (in part)	
158(10)	Tarsi each with two tarsal claws; eye normal compound, reduced, or with single facet	Lampyridae (in part)	
	Tarsi each with one claw; eye reduced to a single facet.....		159
159(158)	Gonopore (opening of oviduct) present.....	Phengodidae (females)	
	Gonopore not present		Larvae

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