

# A Key to Domestic and PPQ-Intercepted Genera of Dryophthorinae<sup>1</sup> (Coleoptera: Curculionidae)

Adapted from R. S. Anderson (2002)<sup>2,3,4</sup>  
Drawings by C. F. Brodel

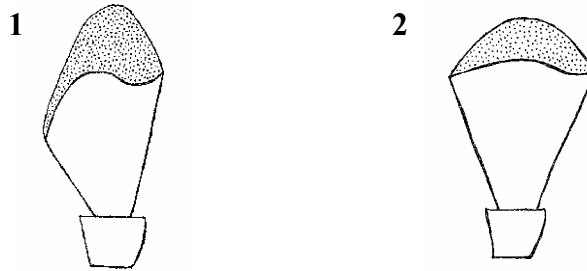
**Charles F. Brodel**  
**Coleoptera Specialist**  
**USDA-APHIS-PPQ**  
**Miami, Florida**  
**December, 2002**

## Some Subfamily Characteristics:

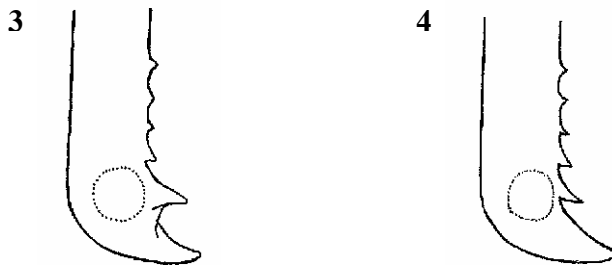
- **Antennal club with basal segment glabrous and glossy**
- **Long antennal scape that usually extends beyond posterior margin of eye**
- **Dermal flaps on dorsal and ventral surfaces of tarsal claw segment that fold over each other between the claws**
- **A tropical group associated with monocotyledons**
- **Includes some serious pests of bananas, bromeliads, palms, corn, turf grass and stored products**

- |       |  |
|-------|--|
| 1.    | Antenna with funicle of 4 segments; tarsus with 5 distinct segments; size variable, <4 mm in body length (as measured from anterior margin of eye to elytral apex) on U.S. mainland, and up to 7.75 mm in Hawaii; associated with moist, dead wood; parts of all continents, West Indies, and the Pacific, including Hawaii..... <i>Dryophthorus</i>   |
| ---   | Antenna with funicle of 6 segments; tarsus with 5 segments but with segment 4 small and difficult to see at base of segment 5; size various ..... 2  |
| 2(1). | Pygidium covered by apex of elytra; antenna with scape not reaching or barely reaching anterior margin of eye ..... 3  |
| ---   | Pygidium exposed at apex of elytra; antenna with scape reaching at least past anterior margin of eye ..... 7   |
| 3(2). | Has following combination of characters: mandible with 3 teeth on exterior face; tarsal segment 3 bilobed; front coxae separated by prosternum ..... 4   |
| ---   | Lacks above combination of characters ..... 5  |
| 4(3). | Eyes, viewed dorsally, separated by less than width of rostrum at base; usually with <u>either</u> upward-facing teeth anywhere along rostrum between head and base of <u>antenna</u> <u>or</u> tubercles, each with a hair or scale-like seta, on interstriae of elytra; 7 spp. associated with palms; Central and South America, West Indies, Africa, Madagascar, and SE Asia ..... <i>Rhinostomus</i> |

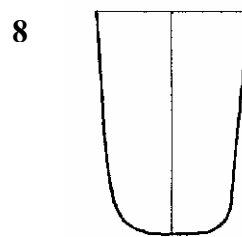
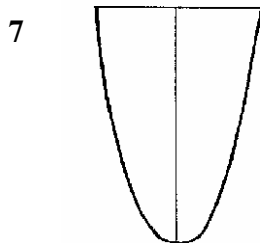
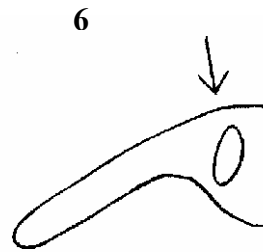
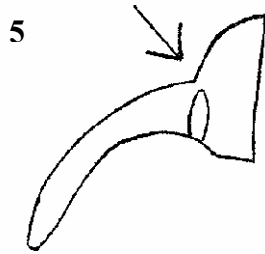
- Eyes, viewed dorsally, separated by about width of rostrum at base; without teeth or tubercles, as described above; associated with *Yucca*; Mexico, NW and SW USA ..... *Yuccaborus*
- 5(3). Hind tibia markedly expanded and with broad apical bevel; Central and South America, SW USA ..... *Orthognathus*
- Hind tibia not expanded apically and without broad apical bevel ..... 6
- 6(5). Antennal club obliquely truncated (Fig. 1); abdominal sternite 2 separated from sternite 1 by a curved suture; pronotum with large, deep, and dense punctures, and with large tubercles resembling mounds, at least in lateral areas; elytral striae with large, deeply impressed punctures; sometimes with surface deposit; Africa, Eurasia, Australia ..... *Sipalinus*
- Antennal club evenly truncated or rounded (Fig. 2); abdominal sternite 2 separated from sternite 1 by a straight suture; pronotum with uniformly sized, dense, usually shallowly impressed punctures; striae more apparent than their constituent punctures; mostly without surface deposit; 2 spp. associated with palms; Central and South America, West Indies ..... *Mesocordylus*



- 7(2). Tibiae (especially protibiae) with distinct subapical tooth on inner margin from one third to two thirds length of large apical tooth (each tooth measured from its base) (Fig. 3), often giving the appearance of pincers ..... 8
- Tibiae (especially protibiae) without a distinct subapical tooth on inner margin but, in many cases, either a rounded swelling or indistinct tooth one third or less the length of large apical tooth (Fig. 4) ..... 11

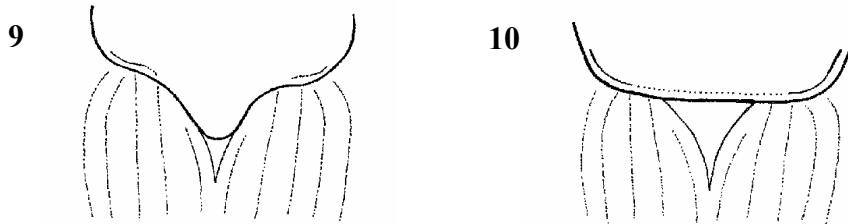


- 8(7). Total body length (as measured from anterior margin of eye to elytral apex) less than 5 mm ..... 9  
 --- Total body length more than 5 mm (Caution: if measurement at threshold of 5, pursue both couplets 9 and 10) ..... 10
- 9(8). Indentation at juncture of rostrum and head (Fig. 5); rostrum strongly curved; elytra strongly tapered from base to apex, with apex narrowly rounded (Fig. 7); metepimeron visible; length:width ratio for body= 2.5; Central America, South America, Madagascar, Asia, Pacific ..... ***Polytus***  
 --- No indentation at juncture of rostrum and head (Fig. 6); rostrum weakly curved or almost straight; elytra gradually tapered from base to apex, with apex broadly rounded (Fig. 8); metepimeron visible, but sometimes obscure; length:width ratio for body= 2.9; cosmopolitan..... ***Sitophilus***

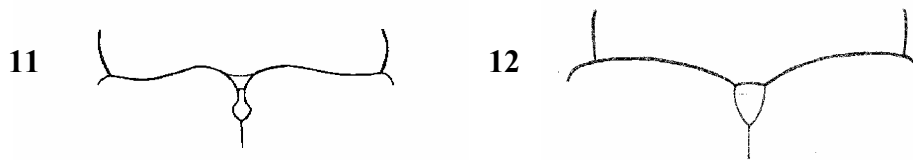


- 10(8). Indentation present at juncture of rostrum and head (Fig. 5); rostrum strongly curved and about 3 times longer than antennal scape; metepimeron visible; elytra very gradually tapered from base to apex (Fig. 8) and, at least in one species (*taitensis*), emarginated at apices; length: width ratio for body= 3.0; 2 spp. associated with palms; Asia, Pacific, introduced into Hawaii, Ecuador, and Africa ..... ***Diocalandra***  
 --- Indentation not present at juncture of rostrum and head (Fig. 6); rostrum not strongly curved and about 4-6 times longer than antennal scape; PPQ interceptions with seeds (Fabaceae, *Archidendron*, *Castanea*, and *Parkia*) from Thailand and Indonesia; China, Myanmar, Java ..... ***Trypsetus***

- 11(7). Metepisternum very broad, length about twice width; antennal club transverse, wider than long, lateral margins at base widely divergent, shape sub-triangular; body size very large, body length usually greater than 25 mm ... 12  
 --- Metepisternum narrow, length 3 or more times width; antennal club elongate, longer than wide, lateral margins at base sub-parallel to slightly divergent, shape sub-quadrate or sub-oval; body size moderate to large, total body length greater than 5 mm but less than 25 mm ..... 13
- 12(11). Pronotum with base produced posteriorly (covering basal portion of scutellum) and not margined, except near each side (Fig. 9); associated with palms; Central and South America ..... ***Dynamis***  
 --- Pronotum with base not produced posteriorly (scutellum fully exposed) and margined (Fig. 10); associated primarily with palms, but also sugar cane, pineapple, and bananas; all continents except Australia..... ***Rhynchophorus***



- 13(11). Pygidium (measured from its apex to apex of elytral suture) approximately one half the length of elytra (Caution: abdominal segments will be distended in some specimens); northern South America ..... ***Belopoeus***  
 --- Pygidium less than one half the length of elytra, except for some ***Temnoschoita*** from western and southern Africa ..... 14
- 14(13). Base of elytra bisinuate (Fig. 11); associated with orchids; Bangladesh, Myanmar, China, India, Sri Lanka ..... ***Nassophasis***  
 --- Base of elytra not bisinuate, but might be emarginate at scutellum (Fig. 12) ..... 15



- 15(14). Scutellum (exposed portion) widest at or near middle, shape rhomboidal or sub-circular, and about as long as wide ..... 16

- Scutellum (exposed portion) widest at or near base, shape triangular or sub-triangular, and generally longer than wide ..... 17
- 16(15). Pronotum and elytra with erect and recumbent scales or scale-like setae; Central and South America ..... ***Eucalandra***
- Pronotum and elytra without scales or scale-like setae; associated with bananas; practically cosmopolitan in tropical regions ..... ***Cosmopolites***
- 17(15). Tarsal segment 3 with ventral pilosity long, confined to apical margin as a continuous fringe, ventral surface otherwise glabrous; antennal club obliquely truncate at apex with apical pilose part very short, appearing recessed within glabrous part, visible only as a narrow line in lateral view; associated with ***Agave*** and ***Yucca***; Central and South America, West Indies, USA, Old World (introduced) and Hawaii (introduced) ..... ***Scyphophorus***
- Tarsal segment 3 with ventral pilosity long or short, uniformly covering one third or more of ventral surface, or with pilosity sparse and confined to anterolateral angle or lateral margins; ventral surface otherwise glabrous; antenna with apex evenly rounded or truncate, with apical pilose part long, distinctly visible as more than a narrow line in lateral view ..... 18
- 18(17). Claw segment of tarsus excavated ventrally between the claws; usually, rostrum hump-like at base, directed posteroventrally; most species have some red dorsally, but some are gray and/or black; associated with Compositae, Asteraceae, Asclepiadaceae; USA, Central and South America . ***Rhodobaenus***
- Claw segment of tarsus evenly rounded ventrally between the claws (Caution: some ***Rhodobaenus*** satisfy this condition, but might have a hump-like rostrum and/or a widened, compressed antennal scape with carina on upper edge); rostrum straight (few) or evenly rounded at base (many), directed anteroventrally; associated with monocotyledons ..... 19
- 19(18). Hind tibia denticulate on at least posterior half of inner margin (except ***congoanus***); associated with palms, bananas, and sugarcane; western and southern Africa ..... ***Temnoschoita***
- Hind tibia without denticles or teeth on inner margin, but rows or combs of spines are common ..... 20
- 20(19). Tarsal segment 3 with ventral pilosity restricted to anterolateral areas, median area largely glabrous, segment 3 narrow, subequal in width to segment 2 (many) or broad, wider than segment 2 (few); associated with grasses and corn; almost cosmopolitan ..... ***Sphenophorus***
- Tarsal segment 3 with ventral pilosity extensive, covering nearly all of ventral surface except near base at middle, segment 3 broad, wider than segment 2 ..... 21
- 21(20). Elytral suture and alternate intervals more elevated and wider than other intervals; base of pronotum, viewed dorsally, usually with depression at center

- and to each side; hind tibia usually curved; 2 spp. associated with palms;  
 Central America and northern South America ..... *Paramasius*  
 --- Elytral suture and all intervals about equally elevated and wide ..... 22
- 22(21). Central and South America, West Indies, Florida (USA), parts of western  
 Africa (introduced), and Java (introduced); scutellum triangular or  
 subtriangular, widest at base; associated with palms, sugar cane, bananas, and  
 bromeliads ..... *Metamasius*<sup>5</sup>  
 --- Asia, Pacific, and Australia; scutellum narrow throughout its length, usually  
 widest at middle; associated with sugar cane, ornamental palms, bananas, and  
*Strelitzia* ..... *Rhabdoscelus*<sup>5</sup>  
 --- SW USA, Mexico south to Brazil; usually larger at 15-25 mm in length;  
 associated with Cactaceae (*Opuntia* and *Cereus*) ..... *Cactophagus*<sup>5</sup>

<sup>1</sup>Formerly known as Rhynchophorinae, and elevated to the family Dryophthoridae by some authorities.

<sup>2</sup>Anderson, R. S. 2002. 131. Curculionidae Latreille 1802, pp. 722-815. In R. H. Arnett, Jr., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.) American beetles, vol. 2: Polyphaga: Scarabaeoidea through Curculionoidea. CRC Press, Boca Raton, Florida.

<sup>3</sup>Host information taken from Anderson<sup>2</sup> and from Giblin-Davis, R. M. 2001. Borers of palms, p. 267-305. In Howard, F. W., D. Moore, R. Giblin-Davis, and R. Abad. Insects on palms. CABI Publishing.

<sup>4</sup>Distributional information mainly taken from Alonso-Zarazaga, M. A. and C. H. C. Lyal. 1999. A world catalogue of families and genera of Curculionoidea (Insecta: Coleoptera) (excepting Scolytidae and Platypodidae). Entomopraxis, Barcelona, Spain. 315 pp.

<sup>5</sup>Genera whose external morphological character differences are so minimal, and so inconsistent, that primarily biology and geographic origin are used here to distinguish among them.

**Acknowledgments:** Thanks are conveyed to Dr. Mike Thomas (Florida State Collection of Arthropods, Gainesville) for providing me free access to the weevil collection, space and equipment to examine specimens, and use of library facilities. Thanks also to Dr. Steven Lingafelter (National Museum, Systematic Entomology Laboratory, Washington, DC) for loaning me specimens of *Nassophasis*, *Rhabdoscelus*, *Temnoschoita*, and *Tryphetus*, and to Dr. Charles O'Brien (Florida A & M University, Tallahassee) for critiquing the key and donating specimens of several dryophthorine genera to the PPQ national weevil collection. Many thanks are also extended to Fernando Lenis (PPQ Entomology Identifier, Miami) for expertly importing, positioning, and numbering drawings within the document.