INTRODUCTION. Brachistinae are cosmopolitan endoparasitoids with about 38 genera (18 of which are found in the New World) and over 750 described species. It consists of the former Helconinae s.l. minus the Helconinae s.s., i.e., Blacini, Brachistini, and Diospilini (Sharanowski et al. 2011, Yan et al. 2017).

PHYLOGENY. Van Achterberg (2002)) showed that Urosigalphus is not a member of the Brachistinae; this was corroborated by Sharanowski et al. (2011) who also demonstrated that the traditional concept of Helconinae is polyphyletic. We therefore treat the Brachistinae (minus Urosigalphus but plus Blacini and Diospilini) as a subfamily distinct from Helconinae.

BIOLOGY. Blacini: Van Achterberg (1976) summarized the biological information on members of Blacini. Members of the Brachistini are known to be egg-larval endoparasitoids of Coleoptera, usually in the families Curculionidae or Bruchidae (Clausen, 1954; Haeselbarth, 1962; Parnell, 1964; Čapek, 1971; Alauzet, 1987; Shaw and Huddleston, 1991). There is one report (Charlet, 1994) of Nealiolus curculionis (Fitch) depositing eggs into the early first instar larvae of the sunflower stem weevil Cylindrocopturus adspersus (LeConte). Fairly complete biological studies have been published on Eubazus semirugosus (Nees), a parasite of Pissodes spp. (Curculionidae). Several less detailed biologies have been described for species of Triaspis (Beirne, 1946; Berry, 1947; Obrtel, 1960). Shaw and Huddleston (1991) summarized the known biological information.

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Diospilini: Diospilini are known to be endoparasites of coleopteran larvae, especially those of the families Anobiidae, Curculionidae and Nitidulidae (Williams et al.,1984; Billqvist and Ekbom, 2001). The biology of one species of Diospilus has been described in some detail (Osborne, 1960), and although the stage of the host attacked was not noted, egg-larval parasitism does occur in at least one other species (Parrott and Glasgow, 1916). Sanchez-Garcia et al. (2912) reported on a species of Diospilus attacking Anthonomus sisyphus Clark (Curculionidae). Shaw and Huddleston (1991) summarized the known biological information.

COMMON GENERA. Nealiolus, Diospilus, Eubazus, Triaspis and Blacus are common genera in the New World. Each has more than 100 species (including undescribed forms).

DISTRIBUTION. Cosmopolitan.

DISTINGUISHING FEATURES. The closest subfamily morphologically is the Orgilinae. Orgilinae almost always have the occipital carina absent dorsally or more rarely completely absent. It is rather difficult to distinguish Brachistinae s.l. from other non-cyclostome braconids and in any subfamily key member genera come out in multiple places. Therefore, the list of defining characters is rather long, as follows. 1. RS vein of forewing complete to wing margin. Occipital carina complete dorsally. Metasoma not attached high above the metasomal foramen. If a carapace is present, then the second submarginal cell
of the forewing is absent. If the metasoma is rather petiolate the first metasomal tergum does not form a complete tube enveloping or fused to the sternum and it does not widen rapidly distally. Clypeus not on two distinct plains as in Helconinae s.s. Hind wing lacking vein Cub.
Key to the New World genera of Brachistinae

1. A. 2nd submarginal cell of forewing present ................................................................. 2
   - B. 2nd submarginal cell of forewing absent ............................................................... 7

2(1). A. Second submarginal cell dorsal margin subequal to or longer than ventral margin  Diospilus
   - B. Second submarginal cell dorsal margin shorter than ventral margin ....................... 3

3(2). A. 2nd submarginal cell quadrate ................................................................................. 4
   - B. 2nd submarginal cell pentagonal .............................................................................  Dyscoletes

4(3). A. Anterior margin of clypeus with two submedial teeth ............................................. 5
   - B. Anterior margin of clypeus lacking teeth ................................................................  6
5(4).  A. Female flagellum with a white band; labial palpi 3-segmented; Neotropical ..........................
       ................................................................................................................................... n. gen. near *Diospilus*
 - B. Female flagellum lacking a white band; labial palpi 4-segmented; Holarctic ..........................
       ................................................................................................................................... *Vadumasonium*

6(4).  A. Forewing with 1 a crossvein; frons with irregular medio-longitudinal crest and distinctly concave; first tergite not contracted behind spiracles and its dorsal carinae straight basally ................................................................. *Aspicolpus*
 - B. Forewing with 2 a crossveins; frons without medial carina and slightly concave; first tergite contracted behind spiracles and its dorsal carinae curved basally ......................... *Taphaeus*

7(1).  A. Metasomal terga 1 and 2 not articulating, fused................................................................. 8
 - B. Metasomal terga 1 and 2 articulating, not fused................................................................. 9
8(7). A. Metasomal carapace with 2 complete transverse grooves, or anterior groove complete and posterior groove present at least laterally .................................................. *Triaspis*  
- B. Metasomal carapace without 2 complete transverse grooves, at most with anterior transverse groove complete and posterior groove absent ........................................... *Schizoprymnus*

9(7). A. Forewing crossvein cu-a present, sometimes as a small squared stump ....................... 10  
- B. Forewing crossvein cu-a absent, Cu curving smoothly ................................................................. 16

10(9). A. Frons with median horn, Chile ................................................................. *Grypokeros*  
- B. Frons lacking median horn, widespread ................................................................. 11

11(10). A. Pronotum deeply and uniformly punctate; Argentina ........................................... *Blacozona*  
- B. Pronotum otherwise sculptured, often partly to completely smooth; widespread .......... 12
12(11). A. First three metasomal terga forming a carapace covering, or almost covering tergum 4 and remaining terga remaining terga .......................................................... 13
- B. First three metasomal terga not forming a carapace covering tergum 4 and remaining terga 14

13(12). A. Acute or squared basal lobe of tarsal claws present ........................................... Nealiolus
- B. Acute or squared basal lobe of tarsal claws absent ................................. Aliolus

14(12). A. Tarsal claws exceptionally long. AA. Females with white band on flagellum.........................
............................................................................................................. new genus near Eubazus
- B. Tarsal claws not long; BB. females lacking white band on flagellum............... 15
15(14). A. Melanic band of forewing present. ................................................................. Glyptoblacus  
B. Melanic band of forewing absent, forewing clear to evenly infuscate .................... Eubazus

16(9). A. Metasomal tergum 2 extending ventrally and completely encompassing sterna, Chile........  
B. Metasomal tergum 2 not extending ventrally and not completely encompassing sterna, widespread .................................................................................................................. 17

17(16). A. RS vein of forewing ending about 1/2 way between apex of stigma and apex of wing. ..........  
B. RS vein of forewing ending much closer to wing apex ................................................. n. gen. near Diospilus1

18(17). A. Forewing vein 1RS present, Chile .............................................................................. Chalarope  
B. Forewing vein 1RS often absent, if present then specimen not from Chile, widespread ... 19
19(18). A. First subdiscal cell of fore wing nearly completely closed apically; basal part of 2Cu relatively vertical; Chile .................................................................................................................. Stegnocella

- B. First subdiscal cell of fore wing widely open apically; basal part of 2Cu relatively horizontal; widespread .................................................................................................................. 20

20(19). A. Anteromedian carina of propodeum ½ as long as propodeum and ending in a pentagonal cell; Chile ............................................................................................................................................ Mesoxiphium

- B. Anteromedian carina of propodeum, if present, less than ½ as long as propodeum and not ending in a pentagonal cell; widespread ................................................................. Blacus
Generic Treatments

Aliolus Say, 1836.

Diagnosis. First 3 metasomal terga forming a sculptured carapace. Terga 1 articulating with tergum 2. Suture between laterotergites 2 and three well-developed.

Biology. Parasitoids of Cerambycidae, Curculionidae and Mordellidae.

Diversity. 15 Nearctic species, perhaps 10 or more yet to be described.

Distribution. Holarctic, common in America north of Mexico, apparently restricted to temperate regions.


Figure 1. Aliolus sp.
Aspicolpus Wesmael, 1838.

Diagnosis. Forewing with 1 a crossvein. Anterior margin of clypeus lacking teeth. Second submarginal cell dorsal margin shorter than ventral margin.

Biology. Parasitoids of Cerambycidae, Scolytidae and Bostrychidae.

Diversity. 23 species described worldwide. The species below is the first record for the New World (California), and the only New World species known to the authors.

Distribution. Possibly cosmopolitan, but unknown from Neotropical region.

Publications. None.

Figure 2. Aspicolpus sp.
**Apoblacus** van Achterberg, 1976

**Diagnosis.** Syntergum 2+3 curving ventrally and enveloping the entire second and third metasomal segments.

**Biology.** Unknown.

**Diversity.** One described species.

**Distribution.** Chile.

**Publications.** Van Achterberg (1976) erected the genus and described the sole species.

![Figure 3. *Apoblacus* sp.](image)
**Blacozona** van Achterberg, 1976

**Diagnosis.** Fore wing 2cu-a present; pronotum punctate; frons excavated; second submarginal cell of forewing absent.

**Biology.** Unknown.

**Diversity.** one described species

**Distribution.** Argentina.

**Publications.** Van Achterberg (1976) erected the genus and described the sole species.

![Figure 4. Blacozona sp.](image)
**Blacus** Nees, 1819

**Diagnosis.** Metasoma with six exposed segments.

**Biology.** Endoparasitoids of Coleoptera larvae and perhaps Diptera; Van Achterberg (1976) summarized what is known about host use.

**Diversity.** About 200 species described worldwide, about 50 of these are found in the New World. Hundreds more are undescribed.

**Distribution.** Cosmopolitan.

**Publications.** Van Achterberg revised the world species (1976, 1988).

![Image of Blacus sp.](image-url)

*Figure 5. Blacus sp.*
*Chalarope* van Achterberg, 1988

**Diagnosis.** The combination of 1RS present in the forewing and occurrence in Chile separate this genus from all others in the subfamily.

**Biology.** Unknown.

**Diversity.** One described species.

**Publications.** Van Achterberg (1988) erected the genus and described the sole species.

Figure 6. *Chalarope* sp.
*Diospilus* Haliday, 1833

**Diagnosis.** Clypeus lacking apical teeth or with two teeth; dorsal margin of second submarginal cell subequal to or longer than ventral margin.

**Biology.** Endoparasitoids of Coleoptera including Anobiidae, Nitidulidae, Curculionidae and perhaps other families.

**Diversity.** 56 species described worldwide, 6 in the Nearctic and 4 in the Neotropics. Perhaps a hundred or more undescribed species in the New World.

**Distribution.** Cosmopolitan.

**Publications.** There are no comprehensive treatments of the New World fauna.

**Note.** We do not consider *Baeacis* to be present in the Nearctic.

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Figure 7. *Diospilus* sp.
**Dyscoletes** Westwood, 1840

**Diagnosis.** 2nd submarginal cell of forewing pentagonal.

**Biology.** Parasitoids of *Boreus* (Mecoptera).

**Diversity.** Two species described, few if any undescribed

**Distribution.** Two described species, one Nearctic and one Palaearctic.

**Publications.** Van Achterberg (1988) distinguished the two species.

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*Figure 8. Dyscoletes sp.*
**Eubazus** Nees, 1812

**Diagnosis.** Metasomal terga 1-3 not forming a carapace. Border between metasomal tergum 3 and lateral tergite 3 mostly smooth, sharply defined in anterior 0.4 or less. Suture between laterotergites 2 and 3 present.

**Biology.** Parasitoids of Curculionidae and Bruchidae and perhaps other families of Coleoptera.

**Diversity.** About 150 described species worldwide, 48 Nearctic and 14 Neotropical. Hundreds more are likely undescribed.

**Distribution.** Cosmopolitan.

**Publications.** Papp (2005) described 11 Neotropical species and presented a key to the 14 described Neotropical species. There is no key to the Nearctic species. Mason (1974) discussed nomenclatorial issues and generic concepts.

**Note.** *Eubazus* is morphologically diverse and likely to be found to be a polyphyletic assemblage.

![Figure 9. Eubazus sp.](image-url)
**Glyptoblacus** van Achterberg, 1995

**Diagnosis.** 2cu-a of forewing present; frons lacking median horn; pronotum mostly rugosostriate.

**Biology.** Unknown.

**Diversity.** One described species.

**Distribution:** Honduras.

**Publications.** Van Achterberg (1995) erected the genus and described the sole species.

Figure 10. *Glyptoblacus* sp.
**Grypokeros** van Achterberg, 1988

**Diagnosis.** 2cu-a of forewing present; frons lacking median horn; pronotum mostly rugosostriate.

**Biology.** Unknown.

**Diversity.** Two described species.

**Distribution:** Chile.

**Publications.** Van Achterberg (1988) erected the genus and described the sole species.

![Figure 11. Grypokeros sp.](image)
Mesoxiphium van Achterberg, 1976

**Diagnosis.** 2a or forewing absent; scutellum lacking lateral carinae; syntergum 2+3 not completely enveloping their respective sterna.

**Biology.** Unknown.

**Diversity.** Two described species.

**Distribution:** Chile.

**Publications.** Van Achterberg (1976) erected the genus and treated the species.

Figure 12. *Mesoxiphium* sp.
**Nealiolus** Mason, 1974

**Diagnosis.** Terga 1 and 2 articulating. Tarsal claws with acute or squared basal lobes. Suture between laterotergites 2 and 3 reduced or absent.

**Biology.** Parasitoids of weevils (Curculionidae).

**Diversity.** Common and diverse. Nine described species and a few hundred undescribed.

**Distribution.** Restricted to the New World and primarily Neotropical.

**Publications.** Martin’s (1956) key to *Aliolus* species includes 9 Nearctic species of *Nealiolus*. Mason (1974) separated *Nealiolus* from *Aliolus* and listed the included species.

Figure 13. *Nealiolus* sp.
New genus near *Diospilus* 1

**Diagnosis.** RS vein of forewing ending halfway between apex of stigma and apex of wing.

**Biology.** Unknown.

**Diversity.** No described but perhaps a dozen of more undescribed species

**Distribution.** Neotropical.

**Publications.** None

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**Figure 14.** New genus sp.
New genus near *Diospilus* 2

**Diagnosis.** RS vein of forewing ending halfway between apex of stigma and apex of wing.

**Biology.** Unknown.

**Diversity.** No described but perhaps a dozen of more undescribed species

**Distribution.** Neotropical.

**Publications.** None
**New genus near *Eubazus***

**Diagnosis.** Female with white band on flagellum; tarsal claws long and lacking a basal lobe.

**Biology.** Unknown.

**Diversity.** 100 or more undescribed species.

**Distribution.** Neotropical.

**Publications.** None

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Figure 16. New genus, n. sp.
**Schizoprymnus** Foerster, 1862

**Diagnosis.** Metasoma in the form of a complete carapace without articulating segments and the sutures between terga one and two are absent or extremely reduced.

**Biology.** Parasitoids of Mordellidae and perhaps other Coleoptera.

**Diversity.** About 120 species described worldwide, only 4 in the Nearctic. Not commonly collected in the Nearctic but undoubtedly there are more species to be found.

**Distribution.** Cosmopolitan except the Neotropical region, undoubtedly a few species will be found there.

**Publications.** Martin (1956) revised the Nearctic species.

![Figure 17. Schizoprymnus sp.](image-url)
**Stegnocella** van Achterberg, 1976

**Diagnosis.** 2cu-a of forewing absent; 2a of forewing present; scutellum lacking lateral carinae.

**Biology.** Unknown.

**Diversity.** One described species.

**Distribution:** Chile.

**Publications.** Van Achterberg (1976) erected the genus and described the sole species.

Figure 18. *Stegnocella* sp.
**Taphaeus** Wesmael, 1835

**Diagnosis.** Apex of clypeus straight or evenly rounded; second submarginal cell dorsal margin shorter than ventral margin.

**Biology.** Recorded as a parasitoid of Melandryidae in Europe.

**Diversity.** Twenty described species, three in the Nearctic (none of which the authors here have seen).

**Distribution.** Holarctic.

**Publications.** None other than the original descriptions.

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![Figure 19. Taphaeus sp.](image)
**Triaspis** Haliday, 1835.

**Diagnosis.** Metasoma in the form or a complete carapace without articulating segments and the sutures between terga one and two are present and mostly complete.

**Biology.** Parasitoids of Curculionidae, Anthribidae and Bruchidae.

**Diversity.** 114 species described worldwide, 18 in the Neartic and 14 in the Neotropics. Perhaps a hundred or more undescribed species in the New World.

**Distribution.** Cosmopolitan.

**Publications.** López-Martínez and Romero-Napoles (2004) revised the Mexican and Central American species and provided a key to the 13 known species. Martin (1956) revised the species north of Mexico.

**Figure 20. Triaspis sp.**
**Vadumasonium** Kammerer, 2006

**Diagnosis.** Anterior margin of clypeus with two submedial teeth; second submarginal cell dorsal margin shorter than ventral margin (note: the European species lacks the teeth on the anterior margin of the clypeus).

**Biology.** The European species was reared from *Ptilinus pectinicornis* (Coleoptera: Anobiidae: Ptilininae) (van Achterberg and Broad, 2013).

**Diversity.** One described species from the Nearctic. Van Achterberg and Broad (2013) described a second species from Europe.

**Distribution.** Holarctic.

**Publications.** Kammerer (2006) discovered that Mason’s name *Vadum* was preoccupied and proposed a new generic name.

![Figure 21. Vadumasonium sp.](image)
References


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