

## Superfamily SYRPHOIDEA

### 50. Family PIPUNCULIDAE

By D. Elmo Hardy

**P**ipunculids, or bigheaded flies, are parasites of several families of Homoptera, especially Cicadellidae, Delphacidae, and Cercopidae. Some are important biological control agents of pest species of leafhoppers. In rice growing areas of the Pacific and Oriental regions, over a dozen species have been recorded as parasites of rice leafhoppers (Koizumi 1959, 1960; Hardy 1971; Yano 1979). Perkins (1905) reared 15 species from leafhopper hosts in Australia. In Hawaii most of the 38 known species have been collected in association with en-

dem leafhoppers, but no other biological data are available.

Approximately 600 species have been described worldwide. They are still poorly known throughout the tropics, and at least 1,500 species should eventually be known. Ninety-two species are presently recorded from the Australasian/Oceanian Regions.

*Refs.*: Hardy (1964a, key Australian spp.; 1964b, rev. Hawaiian spp.; 1968b, key Pacific, SE Asian spp.).

#### Subfamily PIPUNCULINAE

##### Tribe PIPUNCULINI

##### Genus PIPUNCULUS Latreille

**PIPUNCULUS** Latreille, 1802: 463. Type species: *Pipunculus campestris* Latreille, 1802, mon. *DORYLAS*, error for *Dorilas*.

##### Subgenus CEPHALOPS Fallén

**CEPHALOPS** Fallén, 1810a: 10 (as gen.). Type species: *Cephalops aeneus* Fallén, 1810, mon.

*COLLINIAS* Aczél, 1940: 151 (as gen.). Type species: *Pipunculus heterostigmus* Perkins, 1905, orig. des. **argutus** Hardy, 1968a: 470. PNG (Bismarck Arch); Burma, China (Hainan I), Malaysia, Philippines, Thailand.

**fraternus** Kertész, 1912b: 289 (*Dorylas*). Taiwan; PNG (Bismarck Arch); Thailand.

**heterostigmus** Perkins, 1905: 149. Australia (Qld); Philippines, Vietnam.

**imparilis** Hardy, 1968b: 474. PNG (Bismarck Arch); Burma.

**microdes** Perkins, 1905: 147. Australia (Qld); "Borneo," Philippines, Thailand, Vietnam.

##### Subgenus CEPHALOSPHERA Enderlein

**CEPHALOSPHERA** Enderlein, 1936f: 129 (as gen.). Type species: *Pipunculus furcatus* Egger, 1860, orig. des. [Type species fixed by orig. des. not mon., see I.C.Z.N., 1961: 230.]

*ANACEPHALOPS* Aczél, 1940: 151 (as gen.). Type species: *Pipunculus amboinalis* Walker, 1860, orig. des.

**amboinalis** Walker, 1860b: 150. Indonesia (Maluku).

**anorhaebus** Hardy, 1968b: 436. PNG (Bismarck Arch).

**xanthosternum** Hardy, 1968b: 438. PNG (Bismarck Arch).

Subgenus **EUDORYLAS** Aczél

- EUDORYLAS** Aczél, 1940: 151 (as gen.). Type species: *Cephalops opacus* Fallén, 1816, orig. des.  
**acroacanthus** Hardy, 1968b: 439. PNG (Bismarck Arch).  
**albus** Hardy, 1968b: 441. PNG (Bismarck Arch).  
**arthurianus** Tonnoir, 1925d: 315. NZ (NZ).  
**beneficiens** Perkins, 1905: 143. Australia (Qld).  
**cinerascens** Perkins, 1905: 142. Australia (Qld).  
**cruciator** Perkins, 1905: 137. Australia (Qld).  
**deansi** Tonnoir, 1925d: 315. NZ (NZ).  
**dolichostigmus** Perkins, 1905: 140. Australia (Qld).  
**erinyes** Perkins, 1905: 138. Australia (Qld).  
**eucalypti** Perkins, 1905: 138. Australia (Qld).  
**eutrichodes** Perkins, 1906: 494. Australia (Qld).  
**fallax** Perkins, 1905: 141. Australia (Qld).  
**fumipennis** Kertész, 1903: 467. PNG (PNG).  
**gressitti** Hardy, 1956b: 7 (*Dorilas*). Guam.  
**harrisi** Tonnoir, 1925d: 315. NZ (NZ).  
**helluo** Perkins, 1905: 144. Australia (Qld).  
**hylaesus** Perkins, 1905: 139. Australia (Qld).  
**infissus** Hardy, 1968b: 450. PNG (Bismarck Arch).  
**javaensis** de Meijere, 1907: 262. Indonesia (Java); PNG (Bismarck Arch); Japan, widesp. Oriental Reg.  
*formosanus* Kertész, 1912b: 298 (*Dorylas*). Taiwan.  
*transversus* Brunetti, 1923b: 13. India.  
*tsuboi* Koizumi, 1959: 40 (*Dorilas*). Japan.  
**koebelei** Perkins, 1905: 144. Australia (NSW).  
**lamellifer** Perkins, 1905: 141. Australia (Qld).  
*agamus* Perkins, 1905: 141. Australia (Qld).  
*comitans* Perkins, 1905: 141. Australia (Qld).  
**macropygus** de Meijere, 1914b: 167. Indonesia (Java); PNG (Bismarck Arch); Philippines.  
**monas** Perkins, 1905: 145. Australia (Qld).  
**monothrix** Hardy, 1968b: 455. PNG (Bismarck Arch).  
**mutillatus** Loew, 1857a: 374 [1860b: 355 (as *mutilatus*)]. South Africa; Belau, Micronesia, PNG (Bismarck Arch), Solomon Is; widesp. Oriental, Palearctic Regs.  
*aequalis* Becker, 1924a: 16. Taiwan.  
*matema* Curran, 1936: 22. Solomon Is.  
*hiatus* Hardy, 1956b: 5 (*Dorilas*). Micronesia.  
*distocruciator* Hardy, 1966: 441. Nepal.  
*cruciator*, Koizumi, 1959, not Perkins, 1905, misid.  
*hepaticolor*, de Meijere, 1907, not Becker, 1900, misid.  
**mutuus** Hardy, 1968b: 459. PNG (Bismarck Arch).  
**orientalis** Koizumi, 1959: 43 (*Dorilas*). Japan; PNG (Bismarck Arch); widesp. Oriental Reg.  
**parvulus** Wulp, 1898a: 124. PNG (PNG).  
**picrodes** Perkins, 1905: 145. Australia (NSW).  
**totoniger** Hardy, 1968b: 463. PNG (Bismarck Arch).

Subgenus **PIPUNCULUS** Latreille

- DORILAS** Meigen, 1800: 31 (as gen.). Suppressed by I.C.Z.N., 1963b: 339.  
**PIPUNCULUS** Latreille, 1802: 463 (as gen.). Type species: *Pipunculus campestris* Latreille, 1802, mon.  
**acrothrix** Perkins, 1910: 698. Hawaiian Is.  
**alienus** Hardy, 1953b: 59 (*Dorilas*). Hawaiian Is.  
 ssp. **alienus** s. str. Hawaiian Is.

- ssp. *koolauensis* Hardy, 1964b: 318. Hawaiian Is.  
*amplus* Hardy, 1964b: 320. Hawaiian Is.  
*anthracias* Perkins, 1905: 146. Australia (Qld).  
     *crypsichalcus* Perkins, 1905: 146. Australia (Qld).  
*apletomeris* Hardy, 1964b: 321. Hawaiian Is.  
*atrifrons* Hardy, 1968b: 471. PNG (Bismarck Arch).  
*bicuspidis* Hardy, 1964b: 323. Hawaiian Is.  
*buclavus* Hardy, 1968b: 472. PNG (Bismarck Arch).  
*canutifrons* Hardy, 1964b: 325. Hawaiian Is.  
*chauliossternum* Hardy, 1964b: 327. Hawaiian Is.  
*cornutus* Hardy, 1953b: 60 (*Dorilas*). Hawaiian Is.  
*delomeris* Hardy, 1964b: 330. Hawaiian Is.  
*euryhymenos* Hardy, 1964b: 332. Hawaiian Is.  
*filicicola* Hardy, 1964b: 332. Hawaiian Is.  
*gnomus* Hardy, 1964b: 336. Hawaiian Is.  
*haleakalae* Hardy, 1953b: 64 (*Dorilas*). Hawaiian Is.  
*hawaiiensis* Perkins, 1905: 155. Hawaiian Is.  
*holomelas* Perkins, 1910: 698. Hawaiian Is.  
*homoeophanes* Perkins, 1905: 148. Australia (Qld).  
*injectivus* Hardy, 1964b: 344. Hawaiian Is.  
*juvator* Perkins, 1905: 152. Hawaiian Is.  
     ssp. *juvator* s. str. Hawaiian Is.  
     ssp. *melanopodis* Hardy, 1953a: 64 (*Dorilas*). Hawaiian Is.  
*juvencus* Hardy, 1964b: 347. Hawaiian Is.  
*laterisutilis* Hardy, 1964b: 348. Hawaiian Is.  
*macrothrix* Hardy, 1964b: 350. Hawaiian Is.  
*megameris* Hardy, 1964b: 352. Hawaiian Is.  
*molokaiensis* Grimshaw, 1901: 17. Hawaiian Is.  
*nigrotarsatus* Grimshaw, 1901: 18. Hawaiian Is.  
     *vulcanus* Perkins, 1910: 697. Hawaiian Is.  
*oahuensis* Perkins, 1905: 153. Hawaiian Is.  
*obscuratus* Hardy, 1953b: 66 (*Dorilas*). Hawaiian Is.  
*obstipus* Hardy, 1964b: 360. Hawaiian Is.  
*perkinsiellae* Hardy, 1953b: 69 (*Dorilas*). Hawaiian Is.  
*proditus* Hardy, 1964b: 363. Hawaiian Is.  
*rotundipennis* Grimshaw, 1901: 18. Hawaiian Is.  
     *pyrophilus* Perkins, 1910: 698. Hawaiian Is.  
*sectus* Hardy, 1964b: 367. Hawaiian Is.  
*swezeyi* Perkins, 1905: 154. Hawaiian Is.  
*terryi* Perkins, 1905: 153. Hawaiian Is.  
*timberlakei* Hardy, 1953b: 70 (*Dorilas*). Hawaiian Is.  
*titanus* Hardy, 1964b: 374. Hawaiian Is.  
*trichostylis* Hardy, 1964b: 376. Hawaiian Is.  
*uluhe* Hardy, 1953a: 72 (*Dorilas*). Hawaiian Is.  
*vitiensis* Muir, 1906: 10. Fiji; Niue.  
*xanthocnemis* Perkins, 1905: 148. Australia (Qld).

### Tribe TOMOSVARYELLINI

#### Genus TOMOSVARYELLA Aczél

TOMOSVARYELLA Aczél, 1939: 22. Type species: *Pipunculus sylvaticus* Meigen, 1824, orig. des. [See I.C.Z.N., 1961: 230.]

- epichalca* Perkins, 1905: 150 (*Pipunculus*). Australia (Qld).  
*leimonias* Perkins, 1905: 151 (*Pipunculus*). Australia (Qld).  
*limitaris* Collin, 1929: 189 (*Pipunculus*). American Samoa.  
*micronesiae* Hardy, 1956*b*: 3. Guam; Micronesia, Northern Marianas.  
*novaezealandiae* Tonnoir, 1925*d*: 314. NZ (NZ).  
*nyctias* Perkins, 1905: 152 (*Pipunculus*). Australia (Qld); PNG (Bismarck Arch); Philippines.  
*pseudophanes* Perkins, 1905: 151 (*Pipunculus*). Australia (Qld).  
*sentis* Hardy, 1968*b*: 486. PNG (Bismarck Arch).  
*subvirescens* Loew, 1872*a*: 87 [1872*b*: 263] (*Pipunculus*). USA; Belau, Northern Marianas; cosmopol.  
*simulans* Becker, 1924*a*: 15. Taiwan.  
*synadelpha* Perkins, 1905: 150 (*Pipunculus*). Australia (Qld); PNG (Bismarck Arch), Solomon Is;  
Philippines.