

Superfamily SYRPHOIDEA

50. Family PIPUNCULIDAE

By D. Elmo Hardy

Pipunculids, 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-

demic 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).
hylaeus 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 *mutillatus*)]. 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, 1964*b*: 318. Hawaiian Is.
amplus Hardy, 1964*b*: 320. Hawaiian Is.
anthracias Perkins, 1905: 146. Australia (Qld).
 crypsichalcus Perkins, 1905: 146. Australia (Qld).
apletomeris Hardy, 1964*b*: 321. Hawaiian Is.
atrifrons Hardy, 1968*b*: 471. PNG (Bismarck Arch).
bicuspidis Hardy, 1964*b*: 323. Hawaiian Is.
buclavus Hardy, 1968*b*: 472. PNG (Bismarck Arch).
canutifrons Hardy, 1964*b*: 325. Hawaiian Is.
chauliosternum Hardy, 1964*b*: 327. Hawaiian Is.
cornutus Hardy, 1953*b*: 60 (*Dorilas*). Hawaiian Is.
delomeris Hardy, 1964*b*: 330. Hawaiian Is.
euryhymenos Hardy, 1964*b*: 332. Hawaiian Is.
filicicola Hardy, 1964*b*: 332. Hawaiian Is.
gnomus Hardy, 1964*b*: 336. Hawaiian Is.
haleakalae Hardy, 1953*b*: 64 (*Dorilas*). Hawaiian Is.
hawaiiensis Perkins, 1905: 155. Hawaiian Is.
holomelas Perkins, 1910: 698. Hawaiian Is.
homoeophanes Perkins, 1905: 148. Australia (Qld).
injectivus Hardy, 1964*b*: 344. Hawaiian Is.
juvator Perkins, 1905: 152. Hawaiian Is.
 ssp. *juvator* s. str. Hawaiian Is.
 ssp. *melanopodis* Hardy, 1953*a*: 64 (*Dorilas*). Hawaiian Is.
juvencus Hardy, 1964*b*: 347. Hawaiian Is.
laterisutilis Hardy, 1964*b*: 348. Hawaiian Is.
macrothrix Hardy, 1964*b*: 350. Hawaiian Is.
megameris Hardy, 1964*b*: 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, 1953*b*: 66 (*Dorilas*). Hawaiian Is.
obstipus Hardy, 1964*b*: 360. Hawaiian Is.
perkinsiellae Hardy, 1953*b*: 69 (*Dorilas*). Hawaiian Is.
proditus Hardy, 1964*b*: 363. Hawaiian Is.
rotundipennis Grimshaw, 1901: 18. Hawaiian Is.
 pyrophilus Perkins, 1910: 698. Hawaiian Is.
sectus Hardy, 1964*b*: 367. Hawaiian Is.
swezeyi Perkins, 1905: 154. Hawaiian Is.
terryi Perkins, 1905: 153. Hawaiian Is.
timberlakei Hardy, 1953*b*: 70 (*Dorilas*). Hawaiian Is.
titanus Hardy, 1964*b*: 374. Hawaiian Is.
trichostylis Hardy, 1964*b*: 376. Hawaiian Is.
uluhe Hardy, 1953*a*: 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, 1956b: 3. Guam; Micronesia, Northern Marianas.
novaezealandiae Tonnoir, 1925d: 314. NZ (NZ).
nyctias Perkins, 1905: 152 (*Pipunculus*). Australia (Qld); PNG (Bismarck Arch); Philippines.
pseudophanes Perkins, 1905: 151 (*Pipunculus*). Australia (Qld).
sentis Hardy, 1968b: 486. PNG (Bismarck Arch).
subvirescens Loew, 1872a: 87 [1872b: 263] (*Pipunculus*). USA; Belau, Northern Marianas; cosmopol.
simulans Becker, 1924a: 15. Taiwan.
synadelpha Perkins, 1905: 150 (*Pipunculus*). Australia (Qld); PNG (Bismarck Arch), Solomon Is; Philippines.