

Basden, E.B. Institute of Animal Genetics, Edinburgh, Scotland. The Hymenopterous parasites of the Drosophilidae.

As more parasites of *Drosophila* are being used experimentally, the following list may be of service. It is compiled from records I can immediately recall to mind so is of a preliminary nature. Only skeleton references are given, and some older parasite names may have been

changed. Many more records would doubtless be forthcoming if larvae and puparia from natural habitats were isolated. Spontaneous infestations of laboratory cultures are treated as natural parasitism, but purely experimental hosts are indicated by an asterisk*.

ICHNEUMONOIDEA (Braconidae, Ichneumonidae)

1. *Aspilota* sp.
Bickley, 1956, J. ec. Ent. 49:419. U.S.A. *Drosophila melanogaster*
2. *Aspilota concolor* Nees.
Thompson, 1943, Cat. Pars. Preds. Ins. Pests 1(2):32 *D. funebris*
3. *Dacnusa* (=Rhizarcha) *faeroensis* Rom. (=lestes Nix.)
Griffiths, 1956, 1962, 1964 Ent. mon. Mag. 92:27; in litt; Beit. Ent. 14:870, 16:893. England. *Scaptomyza graminum* ("incana")
Basden, 1959 unpub. Scotland. Ex *Stellaria* leaves from which *Sc. graminum*, *Sc. gris-eola*, *Parascaptomyza pallida* emerged
4. *Dacnusa* (=Rhizarcha) *maculipes* Thom. (det Nixon)
Basden, 1959 unpub. Scotland. Ex *Stellaria* leaves from which *Sc. graminum*, *Sc. gris-eola*, *Parascapt. pallida* emerged
5. *Dacnusa scaptomyzae* Gah.
Gahan, 1913 Can. Ent. 45:152-153. U.S.A. *Scapt. "flaveola"*
Frost, 1924 Cornell Me. 78:91, 132. U.S.A. *Sc. flaveola*, *Sc. adusta*.
Pimentel, 1961 An. Ent. Soc. Am. 54:328, 332. U.S.A. *Sc. flaveola*, *Sc. adusta*, *Parascapt. pallida* (=disticha)
6. *Dacnusa* (=Pachysema) *temula* Hal.
Frey, 1951 Z. Pfl.-Krankh. 58:10-20. Germany. *Scaptomyza flava*
Nixon, 1954 Ent. mon. Mag. 90:269. G.B. *Sc. flava* ("flaveola")
Basden, 1957 unpub. (det. Nixon). Scotland. *Sc. flava* (=apicalis)
Stein, 1963 Z. angew. Ent. 52:51. Germany. *Sc. flava*
Griffiths, 1964 Beit. Ent. 14:870. G.B. *Sc. flava* ("apicalis")
7. *Opius* sp.
Basden, 1957 unpub. Scotland. *Sc. flava* (=apicalis)
Griffiths, 1962 in litt. England. *Scaptomyza* sp.
8. *Opius* sp. n.
Guido & Ruffinelli, 1958 Proc. 10th Int. Cong. Ent. 4:915 Uruguay. *Drosophila* sp.
9. *Opius quebecensis* Prov.
Frost, 1924 Cornell Mem. 78:91, 132 U.S.A. *Scaptomyza adusta*
10. *Opius trimaculatus* Spin.
Brncic, 1966 Evol. 20:22-23 Chile. *Dros. flavopilosa*
11. *Phaenocarpa tabida* Nees.
Jenni, 1951 Act. Zool. (Stockh.) 32:240, 242 Switzerland. *Dros. melanogaster*, *Drosophilids*
12. *Phygadeuon ? curvispina* Th.
Stein, 1963 Z. angew. Ent. 52:51 Germany. *Scapt. flava*

CYNIPOIDEA (Cynipidae, Eucilidae, Figitidae)

13. *Ganaspis* sp.
Brncic, 1966 Evol. 20:22-23 Chile. *Dros. flavopilosa*
14. *Ganaspis* (=Xystus) *musti* Rond.
Rondani, 1875 Boll. Com. Ag. Parm. 8:148; 1876 Bull. Soc. Ent. Ital. 8:84, 258 Italy.
D. melanogaster ("uvarum"), ?*funebris* ("aenopotae")
Martelli, 1910 Boll. Lab. Zool. Port. 4:172 *D. melanogaster* ("ampelophila")
15. *Pseudeucoila* (=Eucila) sp.
Jenni, 1947 Rev. Suis. Zool. 54:252, 258 Switzerland *(*D. melanogaster*, *D. busckii*)
Blight, 1953 Amer. Nat. 87:112 U.S.A. *Dros. americana*-group
16. *Pseudeucoila bochei* Weld.
Weld, 1944 Proc. Ent. Soc. Wash. 46:65-66 U.S.A. *D. melanogaster* *(*D. simulans*)

- Jenni, 1951 Act. Zool. (Stockh.) 32:177, 249 Switzerland. *D. melanogaster* *(*D. funebris*, *littoralis*, *hydei*, *phalerata*, *busckii*, *subobscura*, *Zaprionus "tuberosus"*)
- Oprecht & Hadorn, 1952 DIS 26:116 *(*D. melanogaster*)
- Schlegel-Oprecht, 1953 ZIAV 85:245 *(*D. melanogaster*)
- Nöstvik, 1954 Sympos. Genet. (Pavia) 2:140 Italy. *Drosophila* sp. *(*D. melanogaster*)
- Walker, 1959-1962 Rev. Suis. Zool. 66:579-; 68:252-; 69:209- *(*D. melanogaster*, *simulans*, *hydei*)
- Hadorn & Walker, 1960 Rev. Suis. Zool. 67:216 *(*D. melanogaster*)
- Meyer-Grassmann, 1967 Rev. Suis. Zool. 74:409- *(*D. melanogaster*)
- Streams, 1968-1969 An. Ent. Soc. Am. 61:159-; J. Inv. Path. 12:379-, 13:371 U.S.A. *D. ?melanogaster* *(*D. melanogaster*, *immigrans*, *affinis*, *algonquin*, *athabasca*, *robusta*, *putrida*)
- Nappi, 1969-1971 An. Ent. Soc. Am. 63:321-, 1217; J. Ins. Phys. 15:1551; J. Inv. Path. 16:408 *(*D. melanogaster*. Abortive development in *D. paramelanica*, *melanica*, *melanura*, *euronotus*, *micromelanica*, *nigromelanica*)
17. *Pseudeucoila* (= *Eucoila*) *drosophilae* Kieff.
Kieffer, 1913 Boll. Lab. Zool. Port. 7:112 French Guinea. *Drosophila* sp.
Imms, 1930 Parasitol. 22:19 (Kieffer's record)
Boche, 1938, 1939 Coll. Net. 13:149; Genetics 24:95 *Drosophila* spp. *(*D. melanogaster*)
18. [*Pseudeucoila hookeri* Crawford.
Muma, 1968 Co-op. Econ. Ins. Rep. (USDA) 18:54 ?*Drosophila* sp.]
19. *Pseudeucoila mellipes* Say.
Streams, 1969 J. Inv. Path. 13:372 U.S.A. *(*D. melanogaster*, *robusta*, *immigrans*, *paramelanica*)
Nappi, 1969 J. Ins. Physiol. 15:1553 *(*D. immigrans*)
- CHALCIDOIDEA (Encyrtidae, Eulophidae, Eupelmidae, Miscogastridae, Pteromalidae, Signiphoridae/Thysanidae)
20. *Callitula bicolor* Spin.
Simmonds, 1952, 1953 Bull. Ent. Res. 43:529; 44:388-. Canada *(*D. melanogaster*)
21. *Chrysocharis* sp.
Frost, 1924 Cornell Mem. 78:91, 132 U.S.A. *Scap. adusta*
Basden, 1961 unpub. (det. Huddleston) Scotland. *Scap. flava* (= *apicalis*)
22. *Chrysocharis petiolata* Thoms.
Stein, 1963 Z. Angew. Ent. 52:51 Germany. *Scap. flava*
23. *Cryptogaster vulgaris* Walk
Stein, 1963 Z. Angew. Ent. 52:51 Germany. *Scap. flava*
24. *Eupelmus* sp.
Williams, 1931 Hndbk. Ins. Haw. Sug. Fields : 19 Hawaii. *Drosophilid* (perhaps *Titanochaeta*)
25. *Eupteromalus* sp.
McCoy, 1960 Dissert. Abstr. 21 (6) U.S.A. *Drosophila* spp.
26. *Halticoptera* sp.
Stein, 1963 Z. Angew. Ent. 52:51 Germany. *Scap. flava*
27. *Miscogaster cinctipes* Walk.
Curtis, 1860 (1883) Farm Insects: 85 England. *Scaptomyza* ("*Drosophila*") *flava*
28. *Myiocnema* sp.
Clausen & Berry, 1932 USDA Tech. Bull. 320:43-44 Java. *Acletoxenus indica*
29. *Pachyneuron* (= *Pteromalus*) *vindemmiae* Rond.
Rondani, 1875 Boll. Com. Ag. Parm. 8:148; 1876 Bull. Soc. Ent. Ital. 8:85, 249 Italy. *D. melanogaster* ("*uvarum*")
Martelli, 1910; Silvestri, 1917 Boll. Lab. Zool. Port. 4:169; 12:143 *D. melanogaster* ("*ampelophila*")
Milani, 1947 DIS 21:87 Italy. *Drosophila* sp.
Ghesquière, 1949 Acad. Ag. France (Séance 23.XI.49) *D. melanogaster*
Vayssière, 1953 C.R. Assem. Un. Int. Sci. Biol., Rapp. 7. France. *Drosophila* sp.
30. *Pachycrepoideus dubius* Ashm.
Timberlake, 1924 Proc. Haw. Ent. Soc. 5:424 Hawaii. *Drosophila* sp.
Swezey, 1934 Proc. Haw. Ent. Soc. 8:389 Hawaii. *D. melanogaster*
Dresner, 1954 Proc. Haw. Ent. Soc. 15:308 Hawaii. *(*Drosophila* sp.)
Whiting, 1954 Evol. 8:138-140 U.S.A. *Drosophila* sp. *(*D. virilis*, *funnebris*)
Young & Meyer, 1954 DIS 28:167 U.S.A. *D. melanogaster*

31. *Pleurotropis flaviscapus* Thoms.
Frey, 1951 Z. Pfl-Krankh. 58:10-20 Germany. *Scaptomyza flava*
 32. *Pterosemoidea drosophilae* Dodd.
Dodd, 1917 Tr. Proc. Roy. Soc. S. Austral. 41:351 Australia. *Drosophilid* (perhaps *Gitonides*)
Fulmek, 1943 Ent. Beiheft. 10:62 Australia. *Drosophilid*.
 33. *Signiphora reticulata* Gir.
Dodd, 1917 Tr. Proc. Roy. Soc. S. Austral. 41:353 Australia. *Drosophilid* (perhaps *Gitonides*)
 34. *Spalangia* spp.
Dresner, 1954 Proc. Haw. Ent. Soc. 15:264 Hawaii. *Drosophila* sp.
 35. *Spalangia lanaiensis* Ashm.
Perkins, 1913 Faun. Haw. 1(6):189 Hawaii. *Drosophilid*
Fullaway, 1954 Proc. Haw. Ent. Soc. 15:264 Hawaii. *Drosophilid*
 36. *Spalangia drosophilae* Ashm.
Ashmead, 1887 Tr. Am. Ent. Soc. 14:199; 1894 Proc. Ent. Soc. Wash. 3:37 U.S.A. *Drosophila* sp.
Simmonds, 1944-1956 Bull. Ent. Res. 35:222; 43:524-; 44:388-, 773-; 45:527-; 47:361-. Canada *(*D. melanogaster*; *Drosophilid* sp.)
Simmonds, 1948 Phil. Tr. Roy. Soc. Lond. B. 233:387 *(*D. melanogaster*)
Bouček, 1963 Act. Ent. Mus. Nat. Prag. 35:480, 506 U.S.A. *D. melanogaster*
 37. *Syntomosphyrum albiclavus* Kerrich.
Saunders, 1961 Bull. Ent. Res. 52:414 *(*D. melanogaster*)
- PROCTOTRUPOIDEA (Ceraphrontidae, Diapriidae, Proctotrupidae)
38. *Ashmeadopria drosophilae* Kieff.
Kieffer, 1913 Boll. Lab. Zool. Port. 7:111 Nigeria. *Drosophila* sp.
 39. *Ceraphron niger* Curt.
Curtis, 1860 (1883) Farm Insects:85 England. *Scaptomyza* (*Drosophila*) *flava*
 40. *Loxotropa* sp. (?*tritoma* Thoms.)
Simmonds, 1944, 1952, 1953 Bull. Ent. Res. 35:222; 43:522; 44:391 Canada. *(*D. mel.*)
 41. *Loxotropa tritoma* Thoms.
Maybee, 1956 Ann. Rep. Ent. Soc. Ont. 86:53-. Canada. *(*D. melanogaster*)
 42. *Phaenopria* sp.
Perkins, 1913 Faun. Haw. 1(6):189 Hawaii. *Drosophilid*
 43. *Proctotrupes* ("Proctotrypes") *hawaiiensis* Ashm.
Perkins, 1913 Faun. Haw. 1(6):189 Hawaii. *Drosophilid*
 44. *Spilomicrus* sp.
Barker, 1965 DIS 40:66 Australia. *D. melanogaster*, *D. nebulosa*, *D. pseudoobscura*, *D. simulans* (Lab. stocks)
 45. *Trichopria* sp.
Dresner, 1954 Proc. Haw. Ent. Soc. 15:308 Hawaii. *(*Drosophila* sp.)
 46. *Trichopria* (*Planopria*) *rhopalica* Kieff.
Kieffer, 1913 Boll. Lab. Zool. Port. 7:111 Lagos. *Drosophila* sp.
 47. *Pseudeucoila bochei*
Bakker et al. 1967:295- *(*D. melanogaster*)

Grossfield, J. New England Institute,
Ridgefield, Connecticut. A new class of
light dependent behavior in *Drosophila*.

Many species of *Drosophila* are known to be partially or completely light dependent in their sexual behavior. A few species mate equally well in light or darkness (Grossfield, PNAS 68: 2669). Table 1 demonstrates that two white eye

mutants (see DIS 45:55) of *D. auraria* do not mate in the light. Both mutants were derived from race A of *D. auraria* and were tested after 7 generations of isogenization with race A as the recurrent parent. In addition to demonstrating the importance of vision in the initiation of courtship, the fact that these mutants will mate in darkness but not in light suggests that a switch in the relative importance of different sensory stimuli occurs under different environmental conditions. Since race A will mate in both darkness and light but these mutants will not mate in light, it appears that perturbations of image formation in the visual system under illuminated conditions blocks courtship. However, the complete absence of light merely