

KEY TO THE GENERA OF APHELINIDS FROM EGYPT  
(HYMENOPTERA : APHELINIDAE)

SHAABAN ABD-RABOU

Plant Protection Research Institute, Agricultural Research Centre, Dokki, Giza.

(Manuscript received 26 May 1998)

---

Abstract

A Key is given to the females of 11 genera of family Aphelinidae (Hymenoptera) that are known from Egypt. The key was provided by the illustration of the general characters of the aphelinids, together with figures of taxonomic characters of the known genera in Egypt. Synonyms, number of species, distribution and references of each genus are given.

INTRODUCTION

Aphelinids (Hymenoptera: Aphelinidae) are considered important biological control of against many pests. The Aphelinidae is a moderate-sized family of chalcidoid: Hymenoptera, including 33 valid genera and approximately 978 species. Most aphelinids are primary parasitoids of *Sternorhynchus*, Homoptera (Aphidoidea, Aleyrodoidea and Coccoidea), however of these parasitoids attack other hosts (eggs of Orthoptera and Lepidoptera, puparia of Diptera) and are reported as hyperparasitoids.

The systematics of the family Aphelinidae attracted the attention of many workers all over the world.

Many species of Aphelinidae were recorded in Egypt by Priesner and Hosny (1940), Hassan (1963) and Abd-Rabou (1997 a,b & 1998).

The present key includes eleven genera of the family Aphelinidae as known in Egypt.

MATERIALS AND METHODS

Preparation of aphelinid genera for identification

1. Dried specimens are soaked in glacial acetic acid (7 drops) mixed with choralphenol (5 drops) in small watch glasses.

2. After 48 hours specimens should be satisfactorily cleared.
3. The cleared specimens are then mounted in Hoyer's medium.
4. After drying for about two weeks under 40°C, the slide cover is ringed with a suitable sealer.

The terminology of the general characters of adult aphelinids used is based mainly according to Rosen and De Bach (1979), Fig. 1.

### Key to genera, females

1. Tarsi 4-segmented ..... 2
- Tarsi 5-segmented .....4
- 2 (1) Antennae 5-segmented, linea calva sometimes not well defined .....  
..... *Eretmocerus* Haldeman ..... (Figs. 25-27)
- Antennae 6-8 segmented, fore wing without linea calva .....3
- 3 (2). Antennae 6-segmented, tibial spur of fore leg straight .....  
..... *cales* Howard ..... (Figs. 11-13)
- Antennae 7-segmented, tibial spur of fore leg curved .....  
..... *Pteroptrix* Westwood..... (Figs. 31-33)
- 4 (1). Antennae at most with 6-segmented, fore wing generally with linea calva .. 5
- Antennae at most with 7-segmented, fore wing generally without linea calva .....7
- 5 (4). Mesopleurum divided by an oblique suture into epimeron and episternum, axillae slightly to strongly projecting forwards, hypopygium prominent, extending to apex of gaster or beyond.  
..... *Aphelinus* Dalman ..... (Figs. 5-7)
- Mesopleurum large, undivided, axillae barely projecting forwards so that their anterior margins are almost in line with anterior margin of scutellum .....6
- 6 (5). Propodeum long, considerably longer than metanotum, bearing marginal crenulae ..... *Aphytis* Howard ..... (Figs. 8-10)
- Propodeum short, subequal to metanotum, without crenulae .....  
..... *Marietta* Motschulsky ..... (Figs. 28-30).

- 7 (4). Antennae 7-segmented, if antennal formula 1,1,3,2; then either fore wing with linea calva or axillae very small, not projecting forwards ..... 8
- Antennae 8 or 9-segmented, if 7-segmented then not with the formula 1,1,4,1; linea calva absent and axillae large, strongly projecting forwards ..... 9
- 8 (7). Antennal formula 1,2,3,2; propodeum not distinctly longer than metanotum; mesoscutum with numerous setae; submarginal vein with 4 or more setae .....  
*Coccobius* Ratzeburg ..... (Figs.14-16)
- Antennal formula 1,1,4,1; propodeum distinctly longer than metanotum; mesoscutum with 1 or 2 pairs of setae; submarginal vein with one seta ..... *Ablerus* Howard ..... (Figs. 2-4).
- 9 (7). Antenna 7-segmented; axillae large, separated usually about the maximum length of axilla; mesoscutum with numerous setae; scutellum usually less than 1.5 times as wide as long ..... *Coccophagus* Westwood... (Figs. 19-21).
- Antenna 8-segmented; axillae small, apparently strongly projecting forward and separated mesally by more than the maximum length of an axilla; scutellum distinctly 1.5 times or more than as wide as long ..... 10
- 10 (9). Submarginal vein with 3 or more setae, scutellum with 4-6 setae .....  
*Coccophagoids* Girault..... (Figs. 17-18).
- Submarginal vein with 2 or rarely 1 seta, scutellum with 4 setae .....  
*Encarsia* Foerster ..... (Figs. 22-24).

### The genera of family Aphelinidae in Egypt

#### - *Ablerus* Howard

Species: Egypt : 1

World : 57

Distribution : Egypt : Qalyubiya

World : Australian, oriental, Ethiopian, Nearctic, Neotropical

References: Egypt : Abd-Rabou, 1998

World : Annecke & Insley, 1970

#### - *Aphelinus* Dalman

Species: Egypt : 4

World : 57

**Distribution:** Egypt : Demyaat, Minyufiya and Giza  
World : Cosmopolitan

**References:** Egypt : Hassan, 1963  
World : Graham, 1976.

- **Aphytis Howard**

**Species:** Egypt : 6  
World : 112

**Distribution:** Egypt : Alexandria, Giza, Cairo  
World : Cosmopolitan

**References:** Egypt : Priesner & Hosny, 1940  
World : Rosen & De Bach, 1979

- **Cales Howard**

**Species:** Egypt : 1  
World : 2

**Distribution:** Egypt : Beni-Suef  
World : Australian, Neotropical, Palearctic

**References:** Egypt : Abd-Rabou, 1996  
World : Viggiani, 1981

- **Coccobius Ratzeburg**

**Species:** Egypt : 1  
World : 56

**Distribution:** Egypt : Fayoum  
World : Cosmopolitan

**References:** Egypt : Present work  
World : Compere & Annecke, 1961.

- **Coccophagoides Girault**

**Species:** Egypt :

World : 13

**Distribution:** Egypt : Sinai

World : Australian, Oriental, Nearctic, Palearctic

**References:** Egypt : Present work

World : Doutt, 1966.

- *Coccophagus* Westwood

**Species:** Egypt : 3

World : 188

**Distribution:** Egypt : Giza, Qalyubiya, Cairo, Alexandria

World : Cosmopolitan

**References:** Egypt : Priesner & Hosny, 1940

World : Annecke & Insley, 1974

- *Encarsia* Foerster

**Species:** Egypt : 6

World : 161

**Distribution:** Egypt : Giza, Qalyubiya, Minyufiya, Alexandria, Behira

World : Cosmopolitan

**References:** Egypt : Abd-Rabou, 1998

World : Hayat, 1981

- *Eretmocerus* Haldeman

**Species:** Egypt : 3

World : 31

**Distribution:** Egypt : Qalyubiya, Giza, Behira, Dakahlia

World : Cosmopolitan

**References:** Egypt : Abd-Rabou, 1998

World : De Santis, 1948

- *Marietta* Motschulsky

**Species :** Egypt: 2

World : 20

**Distribution:** Egypt : Cairo, Giza, Qalyubiya, Matruh,

Northern coast.

World: Cosmopolitan

References : Egypt : Abd-Rabou, 1997

World : De Santis, 1948

- *Pteroptrix* Westwood

Species: Egypt : 1

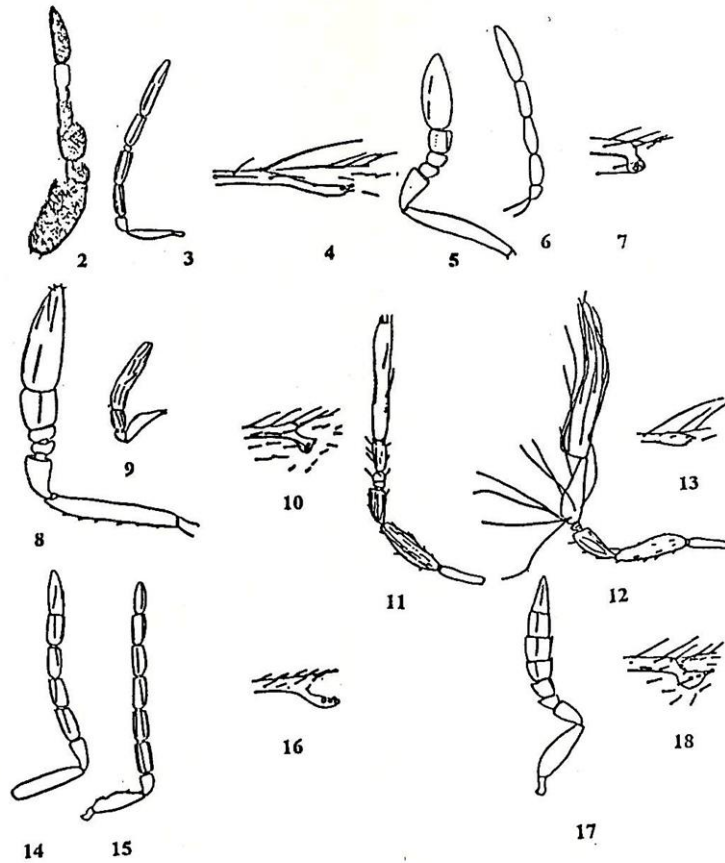
World : 12

Distribution: Egypt : Qalyubiya

World : Australian, oriental, Ethiopian, Neotropical, Palearctic

References: Egypt : Present work

World : Nikol'skaja & Jasnosh, 1966



Figs. 2-18. (2-4) *Ablerus* sp. (2) Female antenna, (3) Male antenna, (4) Part of venation of fore wing; (5-7) *Aphelinus* sp. (5) female antenna, (6) Male antenna, (7) Part of venation of fore wing; (8-10) *Aphytis* sp. (8) Female antenna, (9) Male antenna, (10) Part of venation of fore wing; (11-13) *Cales* sp. (11) Female antenna, (12) Male antenna, (13) Part of venation of fore wing; (14-16) *Coccobius* sp. (14) Female antenna, (15) Male antenna, (16) Part of venation of fore wing; (17-18) *Coccophagoides* sp. (17) Female antenna, (18) Part of venation of fore wing.

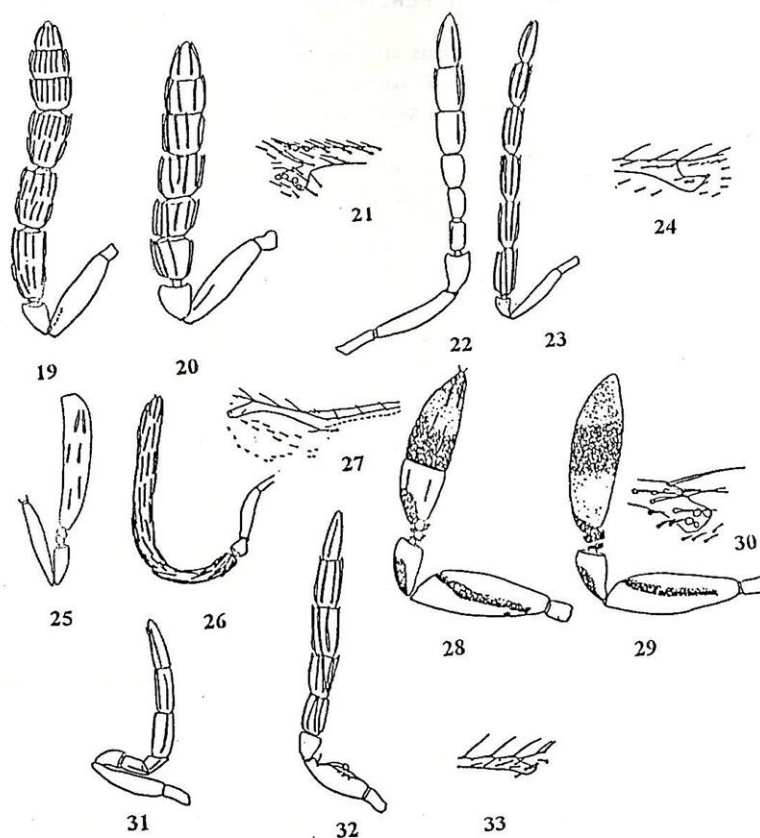


Fig. 19-33: (19-21) *Coccophagus* sp. (19) Female antenna, (20) Male antenna, (21) Part of venation of fore wing; (22-24) *Encarsia* sp. (22) Female antenna, (23) Male antenna, (24) Part of venation of fore wing; (25-27) *Eretmocerus* sp. (25) Female antenna, (26) Male antenna, (27) Part of venation of fore wing; (28-30) *Marietta* sp. (28) Female antenna, (29) Male antenna, (30) Part of venation of fore wing; (31-33) *Pteroptrix* sp. (31) Female antenna, (32) Male antenna, (33) Part of venation of fore wing.



## REFERENCES

1. Abd-Rabou, S. 1997a. Parasitoids attacking the olive scale insect, *Parlatoria oleae* (Colvee) (Homoptera: Coccoidea: Diaspididae) in Egypt. The First Scientific Conference of Agricultural Sciences, Assiut, Vol. II: 719-726.
2. Abd-Rabou, S. 1997b. Parasitoids attacking the Egyptian species of whiteflies (Homoptera: Aleyrodidae). Bull. Soc. ent. Egypt (In press).
3. Abd-Rabou, S. 1998. Seven species of superfamily Chalcidoidea (Hymenoptera) new to Egypt. Egypt. J. Agric.Res. (In press).
4. Annecke, D.P. and H.P. Insley. 1970. New and little known species of *Azotus* Howard, *Ablerus* Howard and *Physcus* Howard (Hym., Aphelinidae) from Africa and Mauritius. Bull. Ent. Res., 60 : 237-251.
5. Annecke, D.P. and H.P. Insley. 1974. The species of *Coccophagus* Westwood, 1833 from the Ethiopian region (Hymenoptera: Aphelinidae). Ent. Mem., Dept. of Agric. Tech. Serv., Republic of South Africa, 37 : 1-62.
6. Compere, H. and D.P. Annecke. 1961. Descriptions of parasitic Hymenoptera and comments (Hymenoptera: Aphelinidae, Encyrtidae, Eulophidae). J. Ent. Soc. S. Afr., 24 : 17-71.
7. De Santis, L. 1948. Estudio monografico de las Afelinidos de la Republica Argentina (Hymenoptera, Chalcidoidea). Revista del Musco de la Plata (Nueva Serie), 5 (Seccion Zoologia), 23-280.
8. Doult, R.L. 1966. Studies of two parasites of olive scale, *Parlatoria oleae* (Colvee). 1-Taxonomic analysis of parasitic Hymenoptera reared from *Parlatoria oleae* (Colvee). Hilgardia, 37: 219-231.
9. Graham, M.W.R. de V. 1976. The British species of *Aphelinus* with notes and descriptions of other European Aphelinidae (Hymenoptera). Systematic Entomology, 1: 123-146.
10. Hassan, M.S. 1963. Natural enemies of some root aphids, in Egypt (Hemiptera: Homoptera: Aphelinidae). Min. of Agric., Egypt. Agr. Extension Dept., Ediating and Publ. Administration, 22 p.

11. Hayat, M. 1981. Taxonomic notes on some Oriental Aphelinidae with new records (Hym: Chalcididae). *Oriental Insects*, 14 : 461-472.
12. Nikolskaja, M.A. and V.A. Jasnosh. 1966. Aphelinids of the European part of the USSR and Caucasus (Hymenoptera: Aphelinidae) (In Russian). *Opredelitel' Faune SSR*, No. 91, 296 p.
13. Priesner, A. and M. Hosny. 1940. Notes on parasites and predators of Coccidae and Aleyrodidae in Egypt. *Bull. Soc. Ent. Egypte*, 24 : 58-70.
14. Rosen, D. and P. De Bach. 1979. Species of *Aphytis* of the world (Hymenoptera : Aphelinidae). In *Series Entomologica*, 17. Dr. W. Junk KV Publisher, The Hague.
15. Viggiani, G. 1981. Note sui generi *Paranthemus Giraulte Debachiella* Gordh et Rosen (Hymenoptera: Aphelinidae). *Bollettino della Societa Entomologica Italiana*, 113: 47-49.

مفتاح تصنيفي للأجناس المتواجدة في فصيلة  
الأفيلينيد في مصر

شعبان عبد ربه

معهد بحوث وقاية النباتات - مركز البحوث الزراعية - الدقي - الجيزة.

تناول البحث إجراء دراسة تصنيفية لأحد عشر جنسا من فصيلة الأفيلينيد :  
(Aphelinidae : Hymenoptera) معروفة في مصر. المفتاح مصاحب للصفات العامة لهذه  
الفصيلة مع رسم توضيحي للصفات التصنيفية لهذه الأجناس. وقد تم أيضا تسجيل عدد  
الأنواع والتوزيع الجغرافي والمراجع الخاصة بكل جنس.