

TWO NEW SPECIES RECORDS OF FAMILY SIGNIPHORIDAE (CHALCIDOIDEA) IN EGYPT

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Abstract

The present work dealt with the survey of Family Signiphoridae in Egypt. The results indicated that the parasitoid species collected were *Signiphora flavella* Girault and *Chartocerus nigra* (Ashmead) (Hymenoptera: Signiphoridae) associated with *Hemiberlesia rapax* (Comstock) and *Chrysomphalus aonidum* (L.) (Homoptera: Diaspididae), respectively. These parasitoids recorded here for the first time in Egypt.

INTRODUCTION

Family Signiphoridae is one of the least studied families of the Chalcidoidea, although they are economically quite harmful. This is a small comprising only five genera. Little is known about the biology of this family. Most species are said to be external hyperparasitoids of scale insects, aleurodids, psyllids, aphids and certain Diptera. Some species are also known to be primary ectoparasitoids on the puparia of the dipterous families Chamaemiidae and Chloropidae (Rozanov, 1956) whereas others have been recorded as primary parasitoids of mealybugs and armored scale insects.

Species of the genera *Chartocerus* and *Signiphora*, which are the genera most commonly found in different parts of the world are frequently reared from scale insects of the families Diaspididae and Coccidae (Prinsloo, 1980). Not much has been done on the Egyptian Signiphoridae.

In the present work a survey on the family Signiphoridae which attacking the scale insects was conducted

MATERIALS AND METHODS

During October and November 2004, collected guava leaves heavily infested by Apple Scale, *Hemiberlesia rapax* (Comstock) from Qalyubiya and citrus leaves, Black scale, *Chrysomphalus aonidum* (L.) (Homoptera: Diaspididae) in Minufiya, respectively, were transferred to the laboratory for parasitoids emergence and identification.

Identification of the parasitoid followed mounting the specimens through the method of Noyes (1982). Identification of the parasitoid followed by the keys of

Rozanov, 1956; Hayat, 1970; Quezada *et al.*, 1973; Woolley, 1988 and Abd-Rabou, 1998. Also the specimens sent to USA, to Dr. Gergory Evans to identify and confirm the species of signiphorid.

RESULTS AND DISCUSSION

Results indicated that the parasitoid species collected were *Signiphora flavella* Girault and *Chartocerus niger* (Ashmead) (Hymenoptera: Signiphoridae) associated with *Hemiberlesia rapax* (Comstock) and *Chrysomphalus aonidum* (L.) (Homoptera: Diaspididae), respectively. These parasitoids recorded here for the first time in Egypt.

1. *Chartocerus niger* (Ashmead) Figs 1-4

Diagnosis : Fore wing with infusate area from base to almost reaching the stigmal vein, submarginal vein with 2 setae, marginal vein setae M1-6 present, discal seta absent, marginal fringe 0.5x maximum width of forewing; hind wing clear, oar-shaped with 1 seta under distal end of marginal vein; body entirely shiny black, legs black except yellowish brown tarsi; female antennae black with 4 anelli.

Material examined: 5♀ and 3 ♂ Minufiya, November 2004 ex. *Chrysomphalus aonidum* (L.) on citrus leaves.

2. *Signiphora flavella* Girault Figs 5-8

Diagnosis: Fore wing marginal vein with 6 dorsal setae; seta M2 present, seta M1 rarely absent; female primarily pale with some dusky areas; [Gastral tergite = Gt] GtII; anterodorsal margin of female GtIX transverse, without a medial incision; antennal club tan, entirely dusky brown or dusky brown in distal quarter or half.

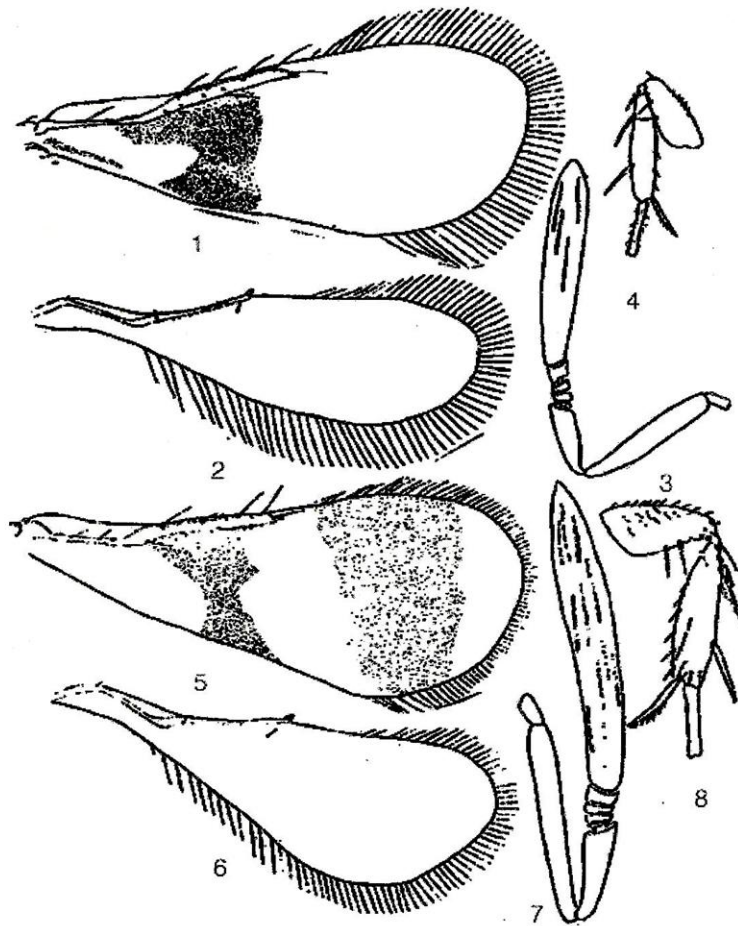
Material examined: 8♀ and 6 ♂ Qalyubiya, October 2004 ex. *Hemiberlesia rapax* (Comstock) on guava leaves.

Key to species

1. Calcar on fore tibia without a comb of fine setae; posterior lamelliform process lacking on medial sclerite of propodeum; female antenna with four anelli, body entirely shiny black, discal seta absent*Chartocerus niger* (Ashmead)
- .Calcar on fore tibia with a comb of fine setae; posterior lamelliform process present on medial sclerite of propodeum; female antenna variable but usually with three anelli, body primarily pale with some dusky areas, discal seta absent.....*Signiphora flavella* Girault

During the present work the forementioned two species recorded here for the first time. Not much has been done on family Signiphoridae in Egypt. Only two species are so far known from Egypt, namely *Chartocerus subaeneus* (Foerster) (Abd-Rabou, 1999) and *Signiphora* sp. (Abou-Elkhair, 1999).

In the near future a revision of the family Signiphoridae will be published by the first author of this work to acknowledge the present status of Signiphorids in Egypt.



Figs1-8: Figs 1-4: *Chartocerus nigra* 1. Female fore wing, 2. Male fore wing, 3. Female antenna, 4. Part of middle leg 5. Figs 5-8: *Signiphora flavella* 5. Female fore wing,6. Male fore wing,7. Female antenna, 8. Part of middle leg

REFERENCES

1. Abd-Rabou, S. 1998. Key to the families of Egyptian Chalcidoidea (Hymenoptera). *Annals of Agric. Sc., Moshtohor*, 36 (1): 569 - 576.
2. Abd-Rabou, S. 1999. Seven species of superfamily Chalcidoidea (Hymenoptera) new to Egypt. *J. Agric. Res.*, 77 (3): 1205 - 1215.
3. Abou-Elkhair, S. 1999. Scale insects (Homoptera: Coccoidea) and their parasitoids on ornamental plants in Alexandria, Egypt. *Entomologica, Bari*, 33: 185 - 195.
4. Hayat, M. 1970. Studies on the genera of the family Signiphoridae (Hymenoptera: Chalcidoidea) recorded from India. *Entomophaga*, 15 (4): 387 - 399.
5. Noyes, J. S. 1982. Collecting and preserving chalcidid wasps (Hymenoptera: Chalcidoidea). *Journal of Natural History*, 16: 315 - 334.
6. Prinsloo, G. L. 1980. An illustrated guide to the families of African Chalcidoidea (Insecta: Hymenoptera). *Sci. Bull. Dep. Agric. Fish. Repub. S. Afr. No. 395*: 1 - 48.
7. Quezada, J. R., P. De Bach and D. Rosen. 1973. Biological and taxonomic studies of *Signiphora borinquensis*, New Species, (Hymenoptera: Signiphoridae), a primary parasite of diaspine scales. *Hilgardia*, Vol. 41 (18): 543 - 576.
8. Rozanov, I. V. 1956. Review of the genera of parasitic Hymenoptera of the Family Signiphoridae (Hymenoptera: Chalcidoidea). *Ent. Obozr. Moscow*, 44: 866 - 884. (English Transl. - *Ent. Rev.* 44: 508 - 516).
9. Woolley, J. B. 1988. Phylogeny and classification of the Signiphoridae (Hymenoptera: Chalcidoidea). *Systematic Entomology*, 13: 465 - 501.

تسجيل نوعين جديدين من فصيلة سجنيفوريدي في مصر
(Hymenoptera : Signiphoridae)

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تضمن هذا العمل تجميع عينات مصابة بحشرة التفاح القشرية و الحشرة القشرية السوداء من محافظتى القليوبية و المنوفية على التفاح والموالح خلال شهرى أكتوبر و نوفمبر وتم عزل و تحضير عينات الطفيليات لتعريفها بأستخدام المفاتيح التصنيفية المتخصصة لتعريف الطفيليات. أتضح من نتائج التعريف أن هناك نوعين وهما *Chartocerus nigra* Girault و *Signiphora flavella* Ashmead و يعتبران تسجيلا جديدا في مصر.