

Short communication

Notes on some Encyrtidae (Hymenoptera: Chalcidoidea) from Iran

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چکیده

زنبورهای خانواده‌ی Encyrtidae از عوامل موفق در کنترل آفات گیاهی و به ویژه شپشک‌های آردآلود می‌باشند. در مطالعات انجام شده در سال‌های ۸۵-۱۳۸۱ که به منظور شناسایی پارازیتوئیدهای شپشک‌های آردآلود در استان فارس انجام گرفت، از این خانواده و زیرخانواده‌ی Tetracneminae، گونه‌های *Gyranusoidea indica* Shafee, Alam & Agarwal، *Anagyrus fusciventris* (Girault) از روی شپشک آردآلود *Maconellicoccus hirsutus* (Green) روی توت سفید در جهرم، *M. hirsutus* (Girault) از روی شپشک آردآلود *M. hirsutus* روی ختمی در جهرم و *Leptomastidea abnormis* (Girault) از روی شپشک آردآلود *Planococcus ficus* (Signoret) روی انگور در میمند شناسایی شد. جنس *Gyranusoidea* Compere و گونه‌های پارازیتوئید مذکور برای اولین بار از ایران گزارش می‌شوند. همچنین از زیرخانواده‌ی Encyrtinae گونه‌ی *Chrysopidae* در کلنی شپشک آردآلود جنوب، *Nipaecoccus viridis* (Newstead) روی درختان مرکبات جهرم و کازرون شناسایی شد.

The Encyrtidae is one of the largest and most widespread families of Hymenoptera with approximately 3300 species described. Its greatest diversity is in tropical and subtropical areas (Grissell & Schauff, 1990; Noyes *et al.*, 1997). Members of the family are questionably one of the most useful groups in biological control, whereas 241 species of them are used in biological control programs of 134 pest species (Noyes, 1985; Grissell & Schauff, 1990; Noyes *et al.*, 1997), particularly on the mealybugs (Noyes & Hayat, 1994). The present study was conducted to identify the Encyrtidae of Fars Province as a framework for future use in any biological control program.

During 2002-2006, shoots and leaves of plants infested with mealybugs were collected from different places of Fars Province. Samples were taken to the laboratory and all individuals of parasitized mealybugs on the surface of the twigs were counted under a stereomicroscope. The samples were placed individually in gelatine capsules in room temperature for parasitoid emergence. The entire of the emerged parasitoids were killed and preserved in 70% alcohol and were counted. Some specimens were slide-mounted for further study using the method outlined by Noyes (1982). The wasps were then identified based on the morphological characters such as wing venation, shape and colour of antennal segments

using available identification keys (Prinsloo, 1984; Noyes & Hayat, 1994). Some doubtful identification was confirmed by Dr John S. Noyes (The Natural History Museum, London, UK) and Dr Zhihong Xu (The Institute of Applied Entomology, Zhejiang University, China). All the specimens were deposited at the Insects collection of Jahrom Islamic Azad University. Consequently, 1 genus and 3 species belonging to the Tetracneminae are new records for Iran as follows:

***Anagyrus fusciventris* (Girault)**

Material examined – 6♀♀, Fars province: Jahrom, ex. *Maconellicoccus hirsutus* (Green), (Hem.: Pseudococcidae) on Althaea, 31.V.2005.

This wasp is a solitary endoparasitoid and has been reported from Antilles, Australia, Bermuda, Brazil, Costa Rica, Cuba, Ghana, Hawaii, Indonesia, Italy, New Zealand, Peoples' Republic of China, Puerto Rico, Trinidad & Tobago and United States of America as primary parasitoid of 20 species of Pseudococcidae (Noyes, 2007).

***Leptomastidea abnormis* (Girault)**

Material examined – 4♀♀, Fars Province: Meymand, ex. *Planococcus ficus* (Signoret) (Hem.: Pseudococcidae) on grape, 12.VII.2004; 2♂♂, 2♀♀, Meymand, ex. *P. ficus* on grape, 26.VI.2005.

The parasitoid is solitary and has been reported from Algeria, Argentina, Australia, Azerbaijan, Belgium, Bermuda, Brazil, Canada, Canary Islands, Chile, Costa Rica, Cuba, Cyprus, Dominica, Dominican Republic, Egypt, France, Georgia, Ghana, Greece, Hawaii, India, Italy, Japan, Kenya, Mexico, Morocco, Netherlands, New Zealand, Peoples' Republic of China, Peru, Senegal, Sierra Leone, Spain, Sweden, Tadjhikistan, Turkey, Turkmenistan, United Kingdom (excl. Northern Ireland), United States of America, former USSR and Uzbekistan as primary parasitoid of 2 Coccidae species and 25 Pseudococcidae species (Noyes, 2007).

***Gyranusoidea indica* Shafee, Alam & Agarwal**

This parasitoid is new as genus and species for Iranian fauna. The *Gyranusoidea* Compere is a cosmopolitan genus including over 42 described species (Noyes & Hayat, 1994; Noyes, 2007). The *G. indica* belongs to Anagyrini within Tetracneminae. This species is considered a solitary endoparasitoid and has been reported from Australia, Bahamas, Belize,

Caribbean, Egypt, Grenada, Guyana, India, Puerto Rico, St Christopher (Kitts) & Nevis, Trinidad & Tobago and US Virgin Islands as primary parasitoid of *M. hirsutus* and *Nipaecoccus viridis* (Newstead) (Hem.: Pseudococcidae) (Noyes, 2007).

The female of this encyrtid can be distinguished from other Palearctic species of the genus by following characters: female (length 1.42-1.45 mm), body robust, head yellowish; dorsum of thorax yellowish, sides and venter whitish; gaster whitish with syntergum brown; antennae with scape brown amid a subapical white band; flagellum proximally dark brown, distally testaceous; each antennal torulus connected to eye margin by a dark brown line; forewings slightly less than $2.5 \times$ as long as broad; costal cell with only a single complete line of setae ventrally; marginal vein clearly longer than stigmal vein; postmarginal vein about twice as long as stigmal one; hindwings about $5 \times$ as long as broad (Noyes & Hayat, 1994).

The parasitoid is active from the spring to the autumn in Jahrom. The parasitization of this species varies from 4 to 23%. The highest parasitization points were recorded in September. The sex ratio of the parasitoid wasp was 1:1.76 on mulberry trees in natural conditions.

Also some encyrtid parasitoids were reared on the larvae of Chrysopidae that identified as *Isodromus cf. axillaris* Timberlake belonging to Encyrtinae.

Material examined – 1♂, Fars Province: Kazeron, ex. parasitized larva of Chrysopidae in colony of *Nipaecoccus viridis* (Newstead) (Hem.: Pseudococcidae) on citrus, 26.IV.2004; 1♂, Jahrom, ex. parasitized larva of Chrysopidae in colony of *N. viridis* on citrus, 10.V.2005; 1♂, Kazeron, ex. parasitized larva of *Exochomus nigripennis* Erichson (Col.: Coccinellidae) (unusual host) in colony of *N. viridis* on citrus, 8.VII.2005.

This is a solitary endoparasitoid wasp and has been reported from Hawaii, India, Japan and Peoples' Republic of China as primary parasitoid of 5 Chrysopidae species (Noyes, 2007).

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