

NOTE

**A NEW SPECIES OF *EURYTOMA* ILLIGER
(HYMENOPTERA: EURYTOMIDAE) PARASITIC
ON *EULECANIUM RUGULOSUM* ARCH.
(HOMOPTERA: COCCIDAE) FROM IRAN**

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ABSTRACT

A new *Eurytoma* species, of *E. iranica* Narendron and Lotfalizadeh, parasitic on *Eulecanium rugulosum* Arch. is described. This parasitoid was collected in April 1998 in Shiraz (Fars province), Iran. The parasitoid was mostly solitary. The rate of parasitism was 20%. Figures and a discussion on affinities of the new species with its close relatives, are presented.

تحقیقات کشاورزی ایران

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**گونه جدیدی از جنس: *Eurytoma* Illiger (Hymenoptera: Eurytomidae)
پارازیت شپشک. *Eulecanium rugulosum* Arch.
(Homoptera: Coccidae) از ایران**

1. Professor and former Graduate Student, respectively.

تی. سی. نارندران و حسینعلی لطفعلی زاده

به ترتیب استاد بخش جانور شناسی، دانشگاه کلکته، کیرالا-۶۷۳۶۳۵، هند، و دانشجوی سابق کارشناسی ارشد بخش گیاهپزشکی، دانشکده کشاورزی، دانشگاه شیراز، شیراز، جمهوری اسلامی ایران.

چکیده

گونه جدیدی با نام *Eurytoma iranica* که پارازیت شپشک *Eulecanium rugulosum* Arch. است توصیف گردید. این پارازیتوئید، در فروردین ۱۳۷۷ از شیراز (استان فارس) در ایران جمع آوری شد. پارازیتوئید یاد شده بیشتر حالت انفرادی داشت و مقدار پارازیته کردن آن ۲۰٪ بود. تصاویر لازم و همانندی های این گونه جدید با گونه های نزدیک به آن شرح داده شده است.

INTRODUCTION

The genus *Eurytoma* is the largest and, for identification purposes, most difficult genus in the family Eurytomidae. It includes hundreds of species throughout the world. Some species of this genus are phytophagous, others pass part of their larval development as parasitoids and then complete their growth by feeding on plant tissues, but the bulk of the species are primary or secondary parasitoids (3). They are associated with hosts such as Cynipidae, Chalcidoidea, Coleoptera, Diptera and Lepidoptera (12).

In the present study an *Eurytoma* species was found parasitizing a member of the genus *Eulecanium* (Homoptera: Coccidae). The characteristics of the parasitoid did not fit any keys or descriptions of species of *Eurytoma* published by Boheman (1), Burks (3), Peck *et al.* (10), Nikolskaya (8), Zerova (13, 14, 15), Boucek (2), Claridge (4), Narendran (6), Narendran *et al.* (7) and Szelenyi (12).

MATERIALS AND METHODS

The eurytomids were collected from the host *Eulecanium rugulosum* Arch., and reared under laboratory conditions at $25\pm 2^{\circ}\text{C}$ and $60\pm 10\%$ RH and 12:12 (L:D). The specimens were mounted on rectangular cards as described by Noyes (9). The systematic studies were made using available keys and description: Boheman (1), Burks (3), Peck *et al.* (10), Nikolskaya (8), Zerova (13, 14, 15), Boucek (2), Claridge (4), Narendran (6), Silvestri (11), Szelenyi (12) and Narendran *et al.* (7). The figures were drawn using a camera lucida.

Abbreviations used: F1 to F5=Funicular segments 1 to 5; MV=Marginal vein; PMV= Post-marginal vein; SMV=Sub-marginal vein; STV= Stigmal vein; POL=Post-ocellar line; OL=Ocellar line; ED=Eye diameter; MS=Malar space; T1-T6=Tergites 1 to 6.

RESULTS

The characteristics of the parasitoid did not fit to any species description, and it was therefore, considered a new species. The species is named and described as follows.

FAMILY EURYTOMIDAE

Eurytoma iranica Narendran and Lotfalizadeh sp. nov. (Fig. 1).

Holotype: Female: Length 3.46 mm. Black; eye dirty yellow with reflecting yellowish spots; ocelli black with apex and base of scape, apex of pedicel and anellus yellowish brown; mandibles blackish brown; labial palp pale yellow; trochanters, bases and apices of tibiae brown; tarsi pale yellow; pretarsus dark brown; body pubescence silvery; wings hyaline; veins pale brownish yellow; wing pubescence yellowish (Fig. 1-1.)

Head: (Fig. 1-2) Width in anterior view $1.75\times$ distance between front ocellus and lower clypeal margin; in dorsal view head width a trifle less than $3\times$ its maximum length; frons, vertex and occiput with deep close

setigerous spots, interstices microsculptured; face with a few strong raised radiating striae; scrobe deep, smooth, reaching front ocellus, margins carinate; interantennal projection somewhat blunt apically; genotemporal margin carinate; gena with deep pits; malar ridge merged with carinate margins of pits; maximum ED in profile $2\times$ length of MS; POL $2\times$ OOL.

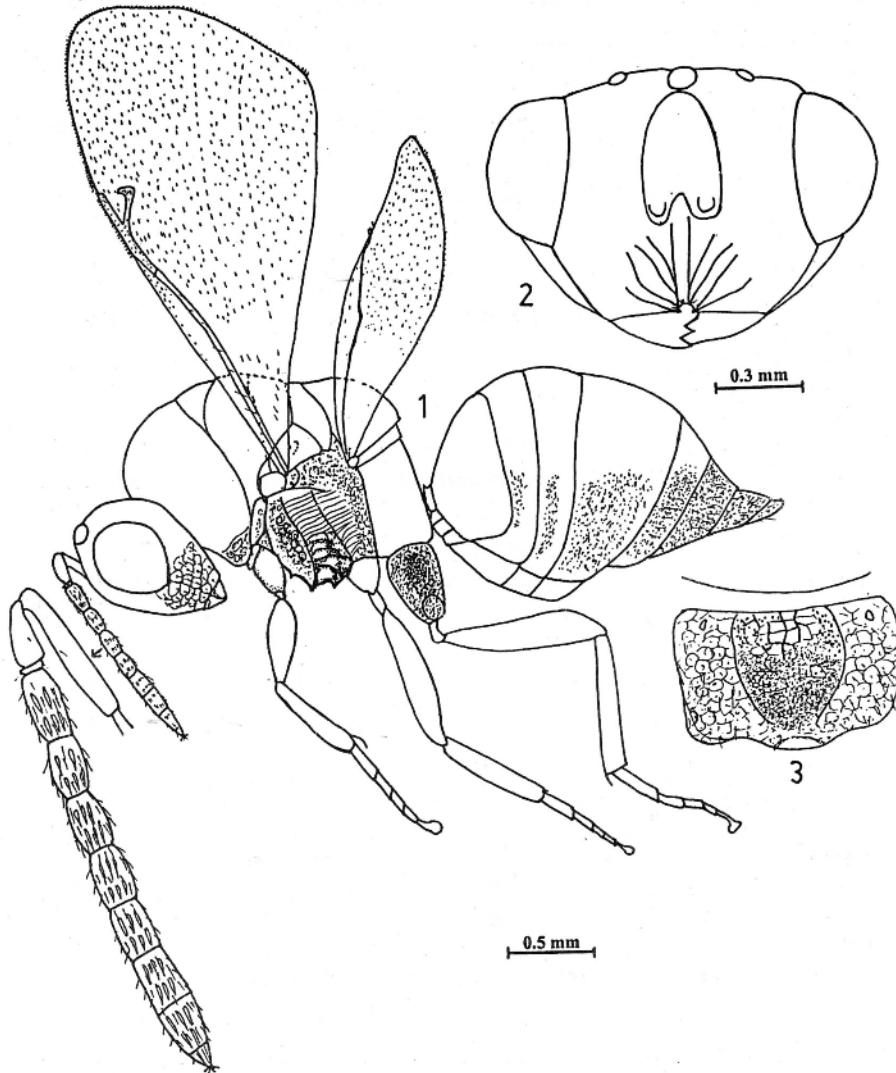


Fig. 1. *Eurytoma iranica* sp. nov. Female: Body profile (1). Head in front view (2). Propodeum (3).

Antennal formula 11153; torulus a little above of ventral margin of eye; scape almost reaching front ocellus, a little over $2.16\times$ length of F1; pedicel a little shorter than F1, a little more than $2.4\times$ its own width. Relative measurements of antennal segments (length: width)= scape 39:6, pedicel 17:7, F1 18:9, F2 16:9, F3 15:9, F4 15:9, clava 33:10, apex of clava with circlet of minute setae.

Mesosoma: $0.78\times$ maximum width of head in dorsal view; pronotum, mesoscutum and scutellum with close pits; interstices narrower than half diameter of pits, microsculptured; pronotum without anterior carina; median length of pronotum a little shorter than distance between scutoscutellar groove to apex of scutellum; maximum width of scutellum subequal to maximum length; apex of scutellum rounded; propodeum lying subvertical to longitudinal axis of thorax; surface with one or two median or submedian carinae; median region of propodeum slightly concave with irregular weak carinulae, small pits and microsculptures, sides with deep irregular pits; callus moderately pilose; mesopleural and mesosternal shelf moderately developed; eqicnemial carina distinct throughout, ending in a tooth ventrally; fore coxa without anterior tooth but with a thick basal rim, moderately hairy on anterior side; hind coxa reticulate on laterodorsal side; hind tibia with strong spines on dorsal side. Forewing length a little over $2\times$ its maximum width; relative lengths SMV 63, MV 10, PMV 8.5, STV 8.5 Basal line of setae present; speculum asetose; partially closed below by weak line of cubital setae; basal cell with two or three dorsal setae; costal cell with a single row of ventral setae which becomes doubled distally.

Gaster: subsessile, petiole hardly visible; gaster a little over $1.16\times$ longer than thorax (90:77), a little longer than combined length of head and mesosoma (90:80); tergites mostly smooth with faint aciculation and microsculptures on sides; T4 largest; T6 and epipygium microsculptured; ovipositor sheath directed straight posteriorly.

Male: Unknown

Specimen examined: Holotype 1♀ Iran, Shiraz, 10. IX. 1998, (Leg:H. Lotfalizadeh). Deposited in Department of Zoology, University of Calicut, Kerala-673635, India.; paratypes: ♀, same data as holotype (2♀ in DZUCK,

India, 2♀ in Plant Pests and Diseases Research Institute, Tehran, Iran, 2♀ in Natural History Museum, London, 1♀ in U.S. National Museum of Natural History, Washington, D.C.).

Biology: Parasitic on *Eulecanium rugulosum* Arch. on Hawthorn (*Crataegus persica* pojark 1960) in Iran. The parasitism of this parasitoid on *E. rugulosum* Arch. was approximately 20% in April 1998. Depending on the size of the host, one to three parasitoid larvae (mostly one larva) were observed in each host.

DISCUSSION

This species comes very close to *Eurytoma amarantusa* Narendran in the key to species provided by Narendran (6) but differs from that species in having:

- 1) Propodeum without median groove (in *amarantusa* propodeum has a distinct median groove).
- 2) PMV distinctly shorter than MV and equal to STV (in *amarantusa* the relative lengths of PMV 30, MV 29.5, STV 18).

This new species differs from *Eurytoma pollux* Claridge in having:

- 1) MV a little more than 1.1x STV (in *pollux* MV 1.5 to 2x as long as STV).
- 2) Epipygium not distinctly swollen to form a hump (in *pollux* epipygium distinctly swollen to form a hump).
- 3) The habit of parasitizing *Eulecanium* (*pollux* is parasitic on *Tetramesa*).

E. iranica differs from another relative *E. aethiops* Boheman in having:

- 1) MV a little more than 1.1x length of STV (in *aethiops* MV more than 1.5x longer than STV).
- 2) Gasteral petiole hardly visible (gasteral petiole as long as hind coxa in *aethiops*).
- 3) The habit of parasitizing *Eulecanium* (*aethiops* parasitises the Sawfly *Janus compressus* F.).

The Ugandan *E. gaeati* Girault differs from *E. iranica* in having:

- 1) F5 longer than pedicel (shorter than pedicel in *iranica*).
- 2) F1 a little longer than half of scape (not so in *iranica*).

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- 3) Prepectus mostly glabrous (prepectus not so in *iranica*).
- 4) STV shorter than PMV (STV as long as PMV in *iranica*).
- 5) T5 longest (*in iranica* T4 longest).

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