

New Records of Two Rare Species of the Family Chalcididae (Hymenoptera: Chalcidoidea) in Iran, with Data on Their Associations

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Abstract: Two species of the family Chalcididae (Hymenoptera: Chalcidoidea), i.e. *Cratocentrus tomentosus* (Nikol'skaya, 1952) and *Trigonura ninae* (Nikol'skaya, 1952), were reared for the first time from *Chrysobothris parvipunctata* Obenberger, 1914 (Coleoptera: Buprestidae) from pomegranate trees in central Iran. The bioagent potential of these two parasitoid species for controlling jewel beetles is discussed.

Keywords: Chalcidoidea, Buprestidae, Xylophagous, Pomegranate, Host

Introduction

LOTFALIZADEH *et al.* (2012) tabulated the hosts of Iranian species of the family Chalcididae and reported three species as parasitoids on coleopterans of the family Buprestidae; these were *Tanycoryphus tibialis* (Nikol'skaya, 1960), *Trigonura ruficaudis* (Cameron, 1913) and *Trigonura ninae* (Nikol'skaya, 1952). The present article reports on new associations of two species of Chalcididae in Iran, both associated with *Chrysobothris parvipunctata* Obenberger, 1914 (Coleoptera: Buprestidae) occurring on pomegranate trees in Iran.

Materials and Methods

During a study of parasitoids of *Chrysobothris parvipunctata* on pomegranate trees *Punica granatum* (L.), in Yazd Province, we found two chalcidid species. These specimens were examined morphologically and compared with available identification keys and descriptions (STEFFAN 1959, NIKOL'SKAYA 1952, 1960, BOUČEK 1952, 1956, 1988, NARENDHAN 1989).

Results

Cratocentrus tomentosus (Nikol'skaya, 1952)

Material examined: Iran, Yazd Province, Yazd, ex *C. parvipunctata* on *P. granatum*, 19 July 2012, (A. Jafari-Nadushan), 1♀ and 1♂.

Distribution. This species has been reported from India (NARENDHAN 1989) and the north and the south-east of Iran (NIKOL'SKAYA 1952; LOTFALIZADEH *et al.* 2012). The present study extends its geographical range to the central part of Iran.

Biology. The species of the genus *Cratocentrus* Cameron, 1907 are generally parasitic on beetles of the families Buprestidae, Curculionidae and Cerambycidae (LOTFALIZADEH, KHALGHANI 2008). However, there are no previous reports on the biological associations of *C. tomentosus*. We reared *C. tomentosus* for the first time from *C. parvipunctata* galleries on *P. granatum* in July 2012. *C. tomentosus*, with the females c. 9.5 mm long and males c. 7 mm long, is the largest chalcidid species recorded from Iran.

Trigonura ninae (Nikol'skaya, 1952)

Material examined: Iran, Yazd Province, Yazd, ex *Chrysobothris parvipunctata* on *Punica*

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granatum, 19 July 2012 (A. Jafari-Nadushan), 3 ♀♀ and 2 ♂♂.

Distribution. *T. ninae* is known from Kazakhstan (NIKOL'SKAYA 1952, 1960) and Iran (HAESSELBARTH 1983). HAESSELBARTH (1983) reported this species from Iran without giving a precise locality. Recently, it was reared by Dr M. Abai in Tehran (LOTFALIZADEH *et al.* 2012). We report it here for the central part of Iran.

Biology. The biology of *T. ninae* is little known. It has been reported as a parasitoid of the Buprestidae only (LOTFALIZADEH *et al.* 2012). The specimens examined by us have been reared for the first time from *C. parvipunctata* galleries on *P. granatum* in July 2012.

Discussion

Chrysobothris parvipunctata is one of the important pests of trees in Iran, including of some economically important trees such as pomegranate in central parts of Iran. Prior to our study, biocontrol agents of *C. parvipunctata* have not been reported. The present study is the first record of parasitoids from this coleopteran pest species.

References

- BOUČEK Z. 1952. The first revision of the European species of the family Chalcididae (Hymenoptera). – *Acta Entomologica Musei Nationalis Pragae*, **27** (Supplement 1): 1-108.
- BOUČEK Z. 1956. A contribution to the knowledge of the Chalcididae, Leucospidae and Eucharitidae (Hymenoptera, Chalcidoidea) of the Near East. – *Bulletin of the Research Council of Israel*, **5B**: 227-259.
- BOUČEK Z. 1988. Australasian Chalcidoidea (Hymenoptera): A biosystematic revision of genera of fourteen families, with a reclassification of species, 832 pp. Wallingford, U. K.: CAB International.
- HAESSELBARTH E. 1983. Determination list of entomophagous insects. Nr. 9. – *Bulletin. Section Regionale Ouest Palaearctique, Organisation Internationale de Lutte Biologique*, **6** (1): 1-49.
- LOTFALIZADEH H. 2012. Review of chalcidoid parasitoids (Hymenoptera: Chalcidoidea) of xylophagous beetles. – *Munis of Entomology and Zoology*, **7** (1): 309-333.
- LOTFALIZADEH H., E. EBRAHIM, G. DELVARE 2012. A contribution to the knowledge of the family Chalcididae (Hym.: Chalcidoidea) in Iran. – *Journal of Entomological Society of Iran*, **30** (2): 67-100.
- LOTFALIZADEH H., J. KHALGHANI 2008. Hymenopterous parasitoids (Hym.: Chalcidoidea) of xylophagous beetles in Iran. – *Entomofauna*, **29** (19): 249-264.
- NARENDHAN T. C. 1989. Oriental Chalcididae (Hymenoptera: Chalcidoidea). University of Calicut, Department of Zoology, Kerala, India. Zoological Monograph, 441 pp.
- NIKOL'SKAYA M. 1952. Chalcids of the fauna of the USSR (Chalcidoidea). 575 pp. *Opredeliteli po Faune SSSR 44*; Moscow and Leningrad, Zoologicheskim Institutom Akademii Nauk SSSR. (In Russian).
- NIKOL'SKAYA M. N. 1960. Chalcididae and Leucospidae in Central Asia (Hymenoptera, Chalcidoidea). – *Trudy Zoologicheskogo Instituta, Akademiya Nauk SSSR, Leningrad*, **27**: 220-246. (In Russian).
- NOYES J. S. 2012. Universal Chalcidoidea Database. The Natural History Museum. Retrieved October 30, 2012. from <http://www.nhm.ac.uk/research-curation/projects/chalcidoids/>.
- STEFFAN J.-R. 1959. Révision de la tribu des Cratocentrini (Hymen.: Chalcididae). – *Acta Entomologica Musei Nationalis Pragae*, **33**: 287-325.

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