



## New records of two cuckoo wasp species (Hymenoptera: Chrysididae) from Iran

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**ABSTRACT.** Two cuckoo wasp species (Hymenoptera: Chrysididae), *Trichrysis lacerta* (Semenov, 1954) from the subfamily Chrysidinae, and *Cleptes striatipleuris* Rosa, Forshage, Paukkunen & Soon, 2015 from the subfamily Cleptinae, are newly documented for the Iranian fauna. The specimens were collected using Malaise traps in the Fars Province, south of Iran during 2015–2016. Notes about taxonomy, relevant references as well as geographical distribution of both species are given. The total number of Iranian *Trichrysis* and *Cleptes* currently increased to four and three species, respectively.

**Key words:** Cuckoo wasps, Chrysidinae, Cleptinae, Hymenoptera, new records

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### Introduction

The Chrysididae, cuckoo wasps, are a family of the Aculeata or stinging wasps with about 3,000 species found worldwide (Kimsey & Bohart, 1991; Aguiar et al., 2013). Studies of the Iranian cuckoo wasp fauna were limited until the two last decades. Rosa et al. (2013) catalogued 184 species in 20 genera of Chrysididae in the first checklist for Iran. Later, other authors (e.g. Rosa & Lotfalizadeh, 2013; Torabipour et al., 2013a, 2013b; Strumia & Fallahzadeh, 2015; 2016; Strumia et al., 2016a; 2016b; Farhad et al., 2015, 2016, 2017, 2018, 2019; Farzaneh et al., 2017; Iranmanesh et al., 2017; Rosa et al., 2017; Falahatpisheh et al., 2019, 2020; Rosa, 2020), added many more species and genera, and as a result the number of known taxa from the country has considerably increased to about 320 species and subspecies.

The current paper aims to provide information on the newly discovered cuckoo wasps in the Fars Province, and thus to make an additional contribution to the knowledge of the Iranian wasp fauna.

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## Material and methods

Surveys in 2015–2017 using Malaise traps in different localities of the Fars Province in southern Iran resulted in finding two species of cuckoo wasp new for the country. The examined specimens in this study are deposited in the Department of Entomology, Jahrom Branch, Islamic Azad University, Jahrom, Iran (JIAU) and the Franco Strumia Collection, Pisa, Italy (FSC). Photos were taken using a Nikon 990 camera mounted on a Nikon SMZ-2T stereoscopic microscope, and were processed with Adobe Photoshop or Apple Preview software.

## Results

### Subfamily Chrysidinae Latreille, 1802

#### Tribe Chrysidini Latreille, 1802

#### Genus *Trichrysis* Lichtenstein, 1876

#### *Trichrysis lacerta* (Semenov, 1954)

**Material Examined:** 1♀: IRAN, Fars, Larestan, 27°39'8.39" N; 54°16'54" E, 827 m a.s.l., 20.v.2015, Malaise trap in a mixed orange tree (*Citrus* spp) and palm date (*Phoenix dactylifera* L.) orchard, leg. A. Falahatpisheh; 1♂: Fars, Shiraz, 29°59'6.65 " N; 52°39'38.5 " E, 1628 m. a. s. l, 12.vi.2016, Malaise trap in a garden with a large number of fruit trees and ornamental plants including walnut, pomegranate (*Punica granatum* L.), pine (*Pinus* ssp.) and cypress trees (*Cupressus sempervirens* L.), leg. B. Jahromi.

**Diagnosis:** Body length 4.2 –4.8 mm; anal margin with straight or slightly concave intervals, the keel of the median tooth not very prominent; colour green to golden-green, base of T2 and T3 narrow dark blue; punctures on metasoma smaller than on mesosoma and fairly dense, punctation of T2 finer than on T1 and T3 (Fig. 1).

**General distribution:** Greece, Cyprus, Turkey, the Caucasus and Egypt (Kimsey & Bohart 1991; Strumia, 2009) and Iran (new record).

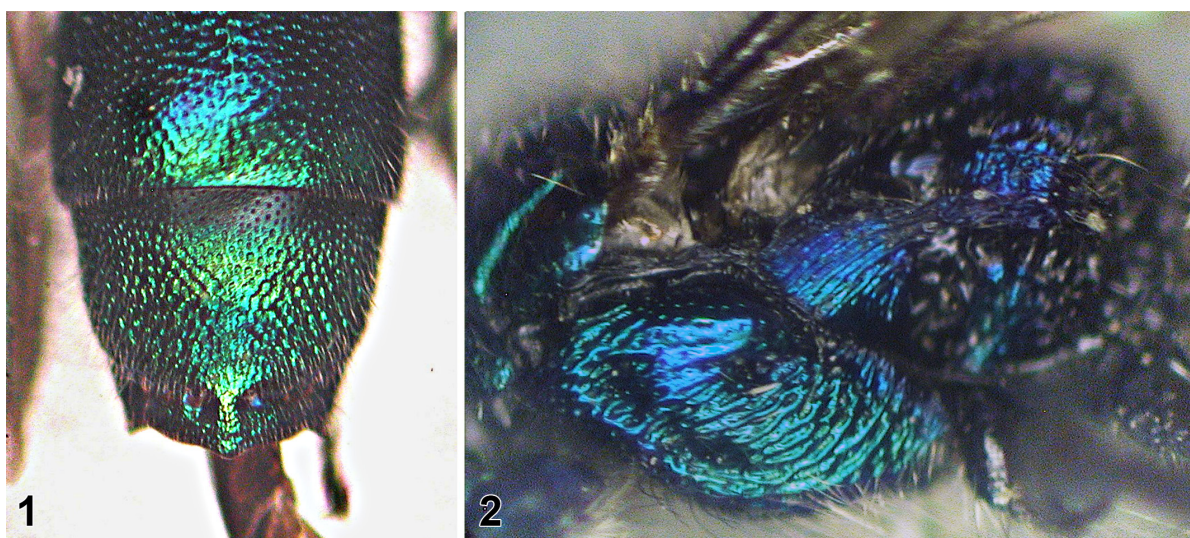
**Remarks:** The genus *Trichrysis*, distributed worldwide, contains 36 described species, 11 of which are found in the Palaearctic region (Kimsey & Bohart 1991; Linsenmaier 1994, 1997; Strumia, 2009; Madl & Rosa, 2012; Rosa et al., 2016). The Mediterranean species of the genus were revised and keyed by Strumia (2009), while Rosa et al. (2016) revised the Chinese species. Only three species of the genus had been recorded from Iran before the present study: *T. cyanea* (Linnaeus, 1758), *T. longispina* (Mocsáry, 1912), and *T. scioensis* (Gribodo, 1879) (Pourrafei et al. 2011; Rosa et al., 2013; Strumia & Fallahzadeh, 2015; Farhad et al., 2016; Farzaneh et al., 2017; Rosa, 2020). Our record of *T. lacerta* is the south-easternmost in its overall range. In this species space between teeth of T3 straight or slightly concave (see Strumia, 2009) (Fig. 1). According to Rosa et al. (2016) and Strumia & Dawah (2019) specimens collected with Malaise traps or conserved in alcohol till they are completely dehydrated may change colours when they were prepared: blue metallic colour turns into dark blue, green turns into blue, yellow turns into greenish and red becomes more yellowish.

### Subfamily Cleptinae Latreille, 1802

#### Genus *Cleptes* Latreille, 1802

#### *Cleptes striatipleuris* Rosa, Forshage, Paukkunen & Soon, 2015

**Material Examined:** 1♂,1♀: IRAN, Fars, Larestan, 27°39'8.39" N; 54°16'54" E, 827 m a.s.l., 10.v.2015, Malaise trap in a mixed orange tree and palm date orchard, leg. A. Falahatpisheh.



**Figures 1-2.** Cuckoo wasps; **1.** *Trichrysis lacerta* (Semenov, 1954) ♀, tergite III in dorsal view; **2.** *Cleptes striatipleuris* Rosa, Forshage, Paukkunen & Soon, 2015 ♂, mesopleuron in lateral view.

**General distribution:** Caucasus, South-eastern Europe, Russia and USA (Rosa et al., 2015, 2019) and Iran (new record).

**Remarks:** *Cleptes* is a Holarctic genus of about 100 species, of which more than 71 are Palearctic (Kimsey & Bohart, 1991; Móczár 1997a, 1997b, 1998a, 1998b, 1998c, 2000a, 2000b, 2001, 2009; Rosa et al., 2015). So far, two species, *C. splendidus* (Fabricius, 1794) and *C. semiauratus* (Linnaeus, 1761) have been reported from Iran (Rosa et al., 2013; Strumia & Fallahzadeh, 2015; Farzaneh et al., 2017). Our record of *C. striatipleuris* is the south-easternmost in its overall range.

This species differs from all known species of the Palearctic region by the peculiar horizontally striated mesopleuron (Fig. 2).

## Discussion

As a result of this paper, two cuckoo wasp species, *Trichrysis lacerta* and *Cleptes striatipleuris* have been recorded for the first time from Iran. Iran represents the south-easternmost record of both species. The total number of Iranian *Trichrysis* and *Cleptes* now increased to four and three species, respectively. Rosa et al. (2013) listed 184 species of Chrysididae from Iran. With addition results of the present paper and previous works (e.g. Torabipour et al., 2013a, 2013b; Strumia & Fallahzadeh, 2015; 2016; Strumia et al., 2016a, 2016b; Farzaneh et al., 2017; Iranmanesh et al., 2017; Farhad et al., 2015, 2016, 2017, 2018, 2019; Falahatpisheh et al., 2019; Rosa, 2020), the number of cuckoo wasps known from Iran is raised to about 322 species and subspecies. A comparison of this species number with those recorded for adjacent areas such as Turkey with 410 species (Özbek & Strumia, 2018), Russia with 340 species (Rosa et al., 2019), and the Arabian Peninsula with 124 species (Strumia, 2008, 2014; Strumia & Dawah, 2010, 2012, 2019; Rosa et al., 2020) reveals that the fauna of these wasps in Iran is moderately known. Given the extension of Iran in the Palearctic region, and its closeness to the Afrotropical, Oriental and Caucasus regions, one can certainly expect additional species not yet found in Iran.



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## Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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## گزارش جدید دو گونه زنبور فاخته (Hymenoptera: Chrysididae) از ایران

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**چکیده:** در مطالعه حاضر، دو گونه زنبور فاخته (Hymenoptera: Chrysididae) به نام‌های *Trichrysis lacerta* (Semenov, 1954) از زیرخانواده Chrysidinae و *Cleptes striatipleuris* Rosa, Forshage, Paukkunen & Soon, 2015 از زیر خانواده Cleptinae برای اولین بار از ایران گزارش می‌شوند. نمونه‌ها با استفاده از تله مالیز و از استان فارس در جنوب ایران طی سال‌های ۱۳۹۴ تا ۱۳۹۵ جمع‌آوری شد. یادداشت‌هایی در مورد رده‌بندی، منابع مربوطه و همچنین پراکنش جغرافیایی هر دو گونه ارائه شده است. با در نظر گرفتن نتایج این تحقیق، مجموع گونه‌های گزارش شده در جنس‌های *Trichrysis* و *Cleptes* از ایران به ترتیب به چهار و سه گونه افزایش یافت.

**واژگان کلیدی:** زنبورهای فاخته، Chrysidinae، Cleptinae، بال‌غشاییان، گزارش جدید