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Trichrysis baratzsensis sp. nov. (Hymenoptera: Chrysididae) from Sardinia*

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Abstract

Trichrysis baratzsensis **sp. nov.**, from Lago Baratz (Sassari province, Sardinia), is described and compared with all other Palaearctic congeners. A key for the identification of Mediterranean *Trichrysis* species is also provided.

Key words: Hymenoptera, Chrysididae, new species, Sardinia, identification key, type material

Introduction

The family Chrysididae contains some 5,000 named species worldwide (Kimsey & Bohart 1990) but the taxonomy of the family in some biogeographical regions, especially the Afrotropical and the Oriental ones, is presently unsatisfactory and confused. Several new species are to be discovered and several synonymies to be established when review studies of the material presently dispersed in many collections will become possible. The Mediterranean Chrysididae fauna is reasonably well known and particularly rich (Linsenmaier 1999; Strumia & Yildirim 2007), despite it being a largely anthropized and overpopulated region.

The genus *Trichrysis* Lichtenstein, 1876 was recently critically reviewed and revaluated by Kimsey and Bohart (1990: 568) in their world review of the family: "*Trichrysis* has frequently confused with other genera, some of whose species may have a tridentate TIII". Bohart (1987) published a key for the identification of the known *Trichrysis* species. *Trichrysis* includes about 26 species, mostly Afrotropical and Oriental (10 in the Oriental region and 7 in the Afrotropical region). Only three species were previously recorded from the Mediterranean region: *T. cyanea* (Linnaeus, 1758), *T. lacerta* (Semenov-Tyan-Shanskii & Nikolskaya, 1954) and *T. scioensis* Gribodo, 1879.

Trichrysis cyanea is widespread in the Palaearctic region, *T. lacerta* is known from Greece, Cyprus, Turkey, the Caucasus and Egypt, whereas *T. scioensis* Gribodo, 1879 is an Afrotropical species reaching also Egypt and Palestine (Lisenmaier 1999). *Trichrysis cypria* (Mocsáry, 1902) from Cyprus is a synonym of *T. lacerta*. Linsenmaier (1959: 170) found that the name *Chrysis cypria* Mocsáry, 1902 was preoccupied by *Chrysis pyrrhina cypria* Buysson, 1897 from Cyprus (Buysson 1897: 555, pl. 19, fig. 11), and renamed the species as *C. devia*. More recently, Linsenmaier (1968) discovered that the same species had been previously described by Semenov-Tyan-Shanskii and Nikolskaya (1954: 122) as *C. lacerta* (thus *lacerta* is the valid name, *devia* and *cypria* are synonyms: Linsenmaier 1999: 227).

In the material recently collected during the projects UE Interreg IIa and IIIa (Strumia *et al*. 2006, 2007a, 2007b) in northern Sardinia (Italy), I found a new species of *Trichrysis*, the description of which is the goal of this paper.

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Material and methods

The description follows the format used by Bohart (1987). The terminology and nomenclature are those of Kimsey and Bohart (1990).

Label data of type specimens are cited as printed; a single forward slash denotes the end of a line, and a double forward slash denotes the end of a label.

Digital images were taken using a Nikon 990 camera mounted on a Nikon SMZ-2T stereoscopic microscope and processed by Photoshop software. SEM images were taken with a JEOL environmental SEM. Measurements and ratios were taken using a 10X eyepiece micrometer.

Together with the *Trichrysis* material described in this paper, the many congeneric species were examined and compared (see Appendix 1).

Acronyms of specimen depositories

FSC	Franco Strumia collection, Pisa, Italy.
CSU	Department of Zoology, Salamanca University, Salamanca, Spain.
MSNPU	Museo di Storia Naturale dell'Università di Pisa, Pisa, Italy.
HNHM	Hungarian Natural History Museum, Budapest, Hungary.

Taxonomy

***Trichrysis baratzsensis* sp. nov.**
(Figs 1, 5, 7)

Type material. Holotype ♀. Sardinia (Sassari province)/ Lake Baratz, Malaise trap /40˚ 40', 61 N – 8˚16', 64 E, 30 m,/ 15–30.VIII.2002/ F. Strumia legit// (FSC).

Paratypes: same data as holotype but 18.VIII–3.IX.2003, 1 ♀ (FSC), same data as holotype but 16–28.VII.2004, 1 ♀ (MSNPU, collection registration number: IME-12008).

Etymology. The name refers to the type locality of the new species and must be treated as a Latin adjective.

Diagnosis. Distinctive features of the new species (Fig. 1) are the shape of the distal margin of TIII, the absence of the pronotal lateral carina, the carina around the compound eye, and the two isolated and not touching black spots on STII, that are, on the contrary, touching or fused together in all other studied species of the genus (see also the key at end of this paper).

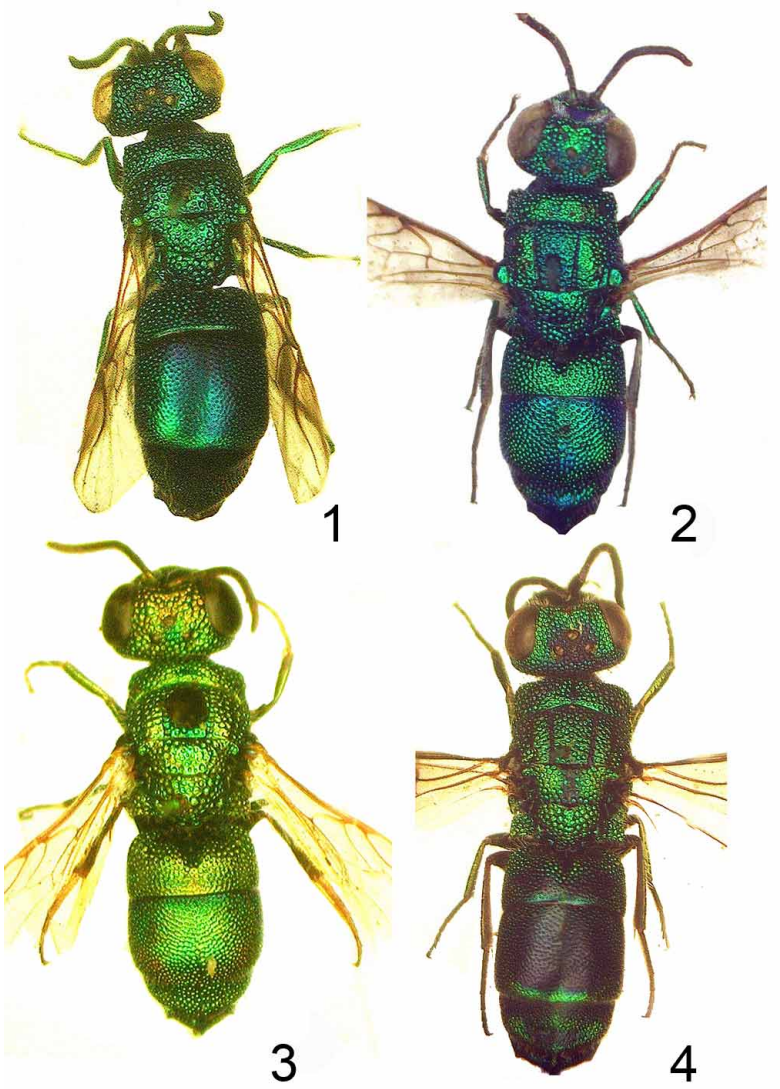
Description. Body length 4.3 (paratype) to 5.9 mm (holotype and paratype).

Colour. Body blue-green as in other species of the genus. Dark blue at base of central part of mesonotum, between ocelli and at base of TII; body pubescence short and white. Fore wings slightly brown-stainted. Antenna black in colour with pedicel and FI metallic green. Legs metallic green; first tarsomere of anterior leg metallic green as tegulae.

Head. Elevated carina all around compound eye (Fig. 7). Facial cavity deep, finely, irregularly and transversally striate; malar space as long as FII. Mandible simple, without additional teeth.

Thorax. Pronotum lacking lateral carina and with a weak groove in the middle of anterior edge. Punctures on mesonotum and scutellum large with smooth shining areas and smaller punctures in between. Radial cell of fore wings narrow, long and closed. Propodeal angle obtuse, pointing backward.

Abdomen. Anterior declivity of TI with two grooves delimiting two anterior humps. Punctures on TII smaller than on thorax, becoming smaller distally. TIII saddled in shape, with smaller punctures than TII. Distal margin of TIII tridentate; spaces between teeth strongly convex, almost forming additional obtuse teeth (Figs 1, 5). Sternal black spots on SII small and isolated from one another: not touching as in other Mediterranean species.



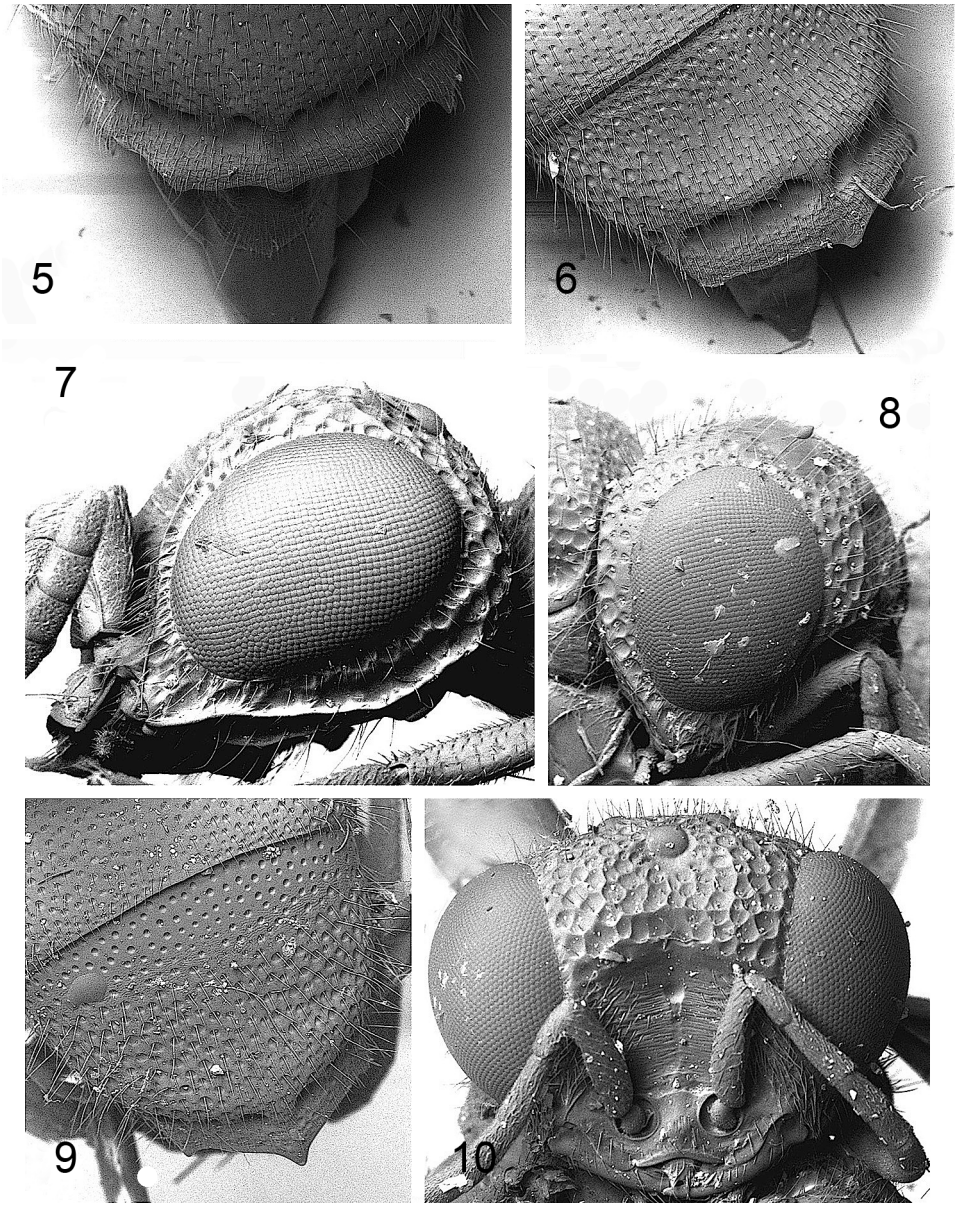
FIGURES 1–4. *Trichrysis* spp. **1.** *Trichrysis baratzsensis* (holotype). **2.** Female of *Trichrysis scioensis* Gribodo (Egypt, Cairo) (length 5.9 mm). **3.** Female of *Trichrysis lacerta* (Semenov-Tyan-Shanskii & Nikolskaya) (Egypt, Cairo) (length 4.8 mm). **4.** *Trichrysis cyanea* (Linnaeus) (Italy, Tuscany, Pomarance) (length 6.7 mm).

Ecology. This species was collected exclusively with a Malaise trap placed in the "Riserva Naturale del lago [= Nature Reserve of the lake] Baratz" (40˚ 40'. 6 N – 8˚ 13'.64 E, 30 m), near the sandy shore of the lake (Fig. 11). This Reserve is situated in northwest Sardinia and Lago Baratz is the only natural lake in Sardinia (Martinelli 1998; Borgarello *et al.* 2000), having formed behind a coastal barrier of wind-formed dunes. The basin is permanent and the area is covered by thick vegetation, whereas the surrounding sandy terrain is favourable to nesting of Hymenoptera. The biotope was surveyed in the years 2001–2005, both through direct collecting and with Malaise traps. *Trichrysis baratzsensis* was much less common than *T. cyanea*: respectively 3 and 47 specimens. In 2001–2005 36 species of Chrysididae were found in the Reserve, including all Sardinian endemics and the new species (Strumia, unpublished data). This shows that the Lago Baratz Nature Reserve is a very interesting biotope worthy of the environmental safeguard promoted by the city of Sassari.

Key to Mediterranean species of *Trichrysis*

1 Discoidal cell on forewing present, distal margin of TIII with a median tooth..... 2
- Discoidal cell on forewing absent, distal margin of TIII rounded..... *Chrysidea* Bischoff

2 Facial brow ending above middle of compound eye height ..... *T. cyanea*
- Facial brow ending at middle of compound eye height (Fig. 10) 3
3 Space between teeth of T III straight or slightly concave (Fig. 9). ..... *T. lacerta*
- Space between teeth of T III straight or convex (Figs 5, 6) 4
4 Punctures on tergites strong and of the same size as on notum, space between teeth of T III moderately convex (Fig. 6), compound eye without a carina all around, black spots on SII very close together, nearly fused and touching .... *T. scioensis*
- Space between teeth of T III strongly convex (Fig. 5), carina present all around the compound eye (Fig. 7), the two black spots on TII small, transverse and well separated ..... *T. baratzsensis*



FIGURES 5–10. *Trichrysis* spp. **5.** Distal margin of TIII of *T. baratzsensis* (holotype). **6.** Female of *Trichrysis scioensis* Gribodo, distal margin of TIII. **7.** Head of *Trichrysis baratzsensis* (holotype) in lateral view. **8.** Head of *Trichrysis lacerta* (Semenov-Tyan-Shanskii & Nikolskaya) in lateral view. **9.** Dorsal view of TIII of *Trichrysis lacerta*. **10.** Frontal view of head of *T. lacerta* (holotype of *T. cypria* (Mocsáry), length 5.2 mm).

FIGURE 11. The Malaise trap on the shore of Lake Baratz in 2002.

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Appendix 1. Examined specimens of *Trichrysis*

Trichrysis bohemanni Dahlbom, 1845
Mali: Yalimane, VIII–X 1986, 1 ♂ (FSC).
South Africa: Clarens, 15-18.I.1986, 1 ♂ (FSC).
Tanzania: Zanzibar, Airport, 8.VI.1988, 1 ♂ (FSC).

Trichrysis cyanea (Linnaeus, 1758) (Fig. 4)
Italy: Tuscany, Pisa province, Pomarance, 16.IX.1999, F. Strumia legit, 1 ♀ (FSC); Sardinia, Sassari province, Lake Baratz, 30 m, 2001-2005, F. Strumia legit, Malaise trap, 47 specimens (FSC); various localities (see Strumia 2006).
Spain: Viana de Cega (Valladolid), 14.VI.1993, 2 ♂♂, 1 ♀ (CSU, FSC).

Trichrysis heliophila Mocsáry, 1899
Somalia: Baidoa, 17–31.V.1935, 1 ♂, 1 ♀ (FSC).

Trichrysis impressifrons Mocsáry, 1902
South Africa: Kamieskroon, 1.X.1990, 1 ♂ (FSC); Karoo National Park, 13.XI.1991, 1 ♀ (FSC).

Trichrysis mendicalis Cameron, 1897
Malaysia: Sarawak, Mulu, 17.IX–23.X.1997, 1 ♀ (FSC).

Trichrysis lacerta (Semenov-Tyan-Shanskii & Nikolskaya 1954) (Figs 3, 10).
Cyprus:/ Larnaka/ Holotypus// ♀ of *T. cypria* (Mocsáry, 1902) (HNHM).
Egypt: Cairo, Boubashi legit, 1 ♀ (FSC).
"Transcaspica": 25.V.1903, 1 ♀ [length 4.4 mm], identified as *T. cypria* by Mocsáry (HNHM).

Trichrysis lomholdti Bohart, 1987
South Africa: Karoo National Park, 13.XII.1988, 1 ♂ (FSC).

Trichrysis longispina Mocsáry, 1912
Oman: Dhofar, Al Mughsayl, 14.III.2004, 1 ♂ (FSC); Dhofar, Wadi Darbat, 4.IX.2000, 1 ♀ (FSC).
Yemen: Al Kadan, 17.II–30.III.1998, 2 ♀♀, 2 ♂♂ (FSC).

Trichrysis scioensis Gribodo, 1879 (Fig. 2)
Egypt: Cairo, Boubashi legit, 2 ♀♀ [lenght 6.0 and 5.5 mm, respectively] (FSC); Cairo; 4.VI.1936, 1 ♂ (FSC).
Oman: Wadi Darbat, Dophar, 4.IX.2000, F. Strumia legit, 1 ♂, 1 ♀ (FSC).
South Africa: Northern territories, 16–17.III.1998, Nylstrom legit, 2 ♀ ♀ (FSC).

Trichrysis triacantha Mocsáry, 1899
Malaysia: Sarawak: Mulu, 17.IX–23.X.1987, 1 ♂, 1 ♀ (FSC).