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Sclerogibbidae (Hymenoptera: Chrysidoidea), a new family record from Iran

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ABSTRACT. In the present study, the family Sclerogibbidae (Hymenoptera, Chrysidoidea) is newly recorded for the Iranian insect fauna by several records of a single species, *Sclerogibba talpiformis* Benoit, 1950. The material was captured by a series of Malaise traps in the provinces of Fars and Hormozgan (south of Iran) during 2013–2015.

Key words: New records, Fars, Hormozgan, Palaearctic region, *Sclerogibba talpiformis*

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Introduction

The superfamily Chrysidoidea is mainly a pantropical group of Hymenoptera including exclusively parasitoid species. It embraces seven recent families, three common: Chrysididae, Bethylidae and Dryinidae, as well as four rare: Embolemidae, Plumariidae, Sclerogibbidae and Scolebythidae (Aguiar et al., 2013). Recently, Iranian wasp species of three families Bethylidae, Chrysididae and Dryinidae have been studied (Samadi Afshar et al., 2012, 2013; Rosa et al., 2013; Rosa & Lotfalizadeh, 2013; Farhad et al., 2015, 2016, 2017; Strumia & Fallahzadeh, 2015, 2016; Strumia et al., 2016 a, b; Olmi & Xu, 2015; Derafshan at al., 2016, 2017), but the fauna of the superfamily Chrysidoidea in Iran is still poorly known.

The Sclerogibbidae are a small, specialized group composed exclusively ectoparasitoids of nymphs or adults of Embiidina (Olmi, 2005). This family comprising 3 genera and 20 described species worldwide (Olmi, 2005; Aguiar et al., 2013). Wasps of the family Sclerogibbidae are sexually dimorphic; males have wings while females are wingless. Olmi (2005) revised, keyed and catalogued all species known worldwide. In this monograph no species were listed from Iran. The present work is intended to increase our knowledge regarding Iranian Sclerogibbidae wasps from southern Iran.

Material and methods

The specimens studied in this paper were collected using standard Malaise traps in

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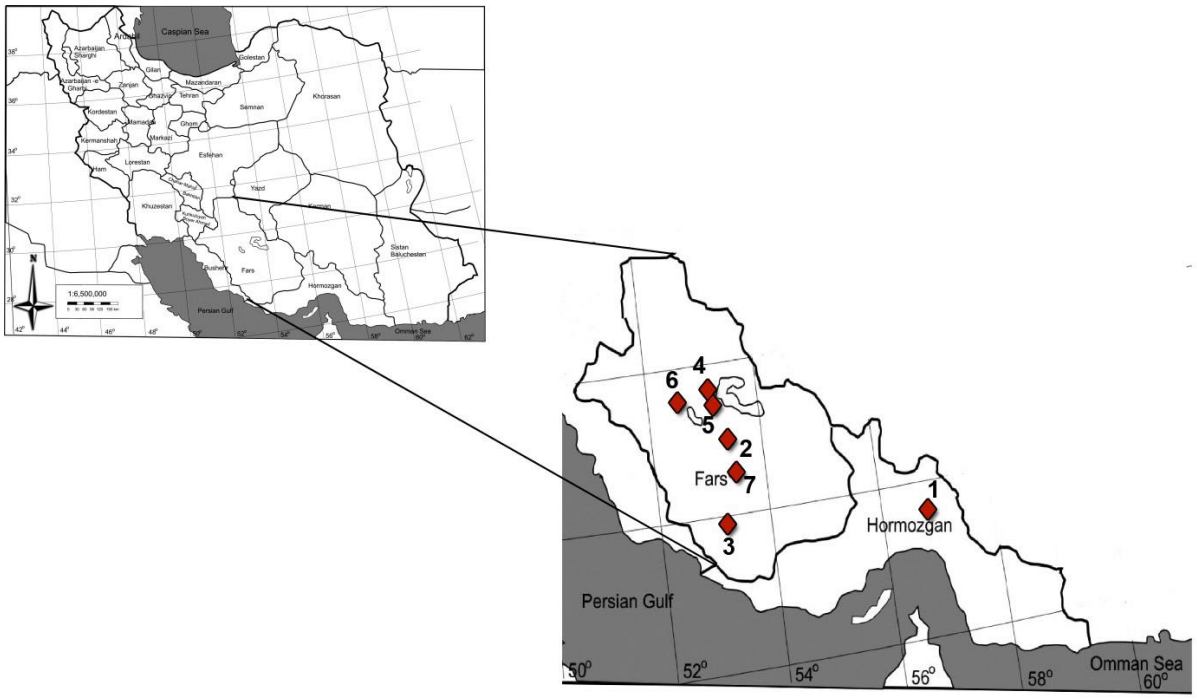

Figure 1. Map of studied area. Location of the sampling localities in Fars and Hormozgan provinces: **1.** SarKahnan, **2.** Fasa, **3.** Khonj, **4.** Kherameh, **5.** North-west of Kherameh, **6.** Kaftarak, **7.** Jahrom.

different locations in Fars and Hormozgan provinces (Fig. 1) during 2013–2015. For identification, the revised key to the world genera and species was used (Olmi, 2005). The photograph was taken using a Nikon 990 camera mounted on a Nikon SMZ-2T stereoscopic microscope, and was processed using Adobe Photoshop. The voucher specimens are deposited in Department of Entomology, Jahrom Branch, Islamic Azad University, Jahrom, Iran (JIAU) and the Institute of Biodiversity and Ecosystem Research, Sofia, Bulgaria (IBER). The classification and nomenclature were adapted from Olmi (2005).

Results

Among the material recently collected by Malaise traps in the several localities from south of Iran, the family Sclerogibbidae was represented by the single genus *Sclerogibba* Riggio & De Stefani-Perez, 1888 with a single species.

***Sclerogibba talpiformis* Benoit, 1950** (Fig. 2).

The males of *S. talpiformis* can be distinguished from other world species of genus *Sclerogibba* by the following combination of characters: fore wing without discoidal cell and with marginal cell large (Fig. 1 and Fig. 32 in Olmi, 2005); propodeum strongly reticulate rugose; the shortest distance between a lateral ocellus and the eye orbit at least twice as long as the shortest distance between a lateral ocellus and occipital carina; pronotum without a distinct track of a median longitudinal furrow; notauli complete, posteriorly separated; areolae of propodeum small (Olmi, 2005).

Material examined: 7♂♂, IRAN, Hormozgan: SarKahnan (27º24'55"N; 57º07'37"E, 215m a. s. l.), 9.vii.2013, in a

mixed lime and mango garden, leg. T.Tavakoli; 2♂♂, same data, 18.viii.2013; 1♂, Fars: Fasa (28º53'06''N; 53º40'36''E, 1320 m a. s. l.), in a *Medicago sativa* field, 17.i.2013, leg. S. Azadi; 1♂, Fars: Khonj (27º53'31''N; 53º26'42''E, 527 m a. s. l.), 20.v.2013,in a *Citrus* garden, leg. M.Atbaei; 1♂, same data, 11.v.2013; 1♂, same data,20.vi.2013; 1♂, Fars: Kherameh (29º30'51''N; 53º18'40''E, 1595m a. s. l.) in a *Punica granatum* garden, 15.i.2013, leg. E.Izadi; 1♂, same data, 24.i.2013; 2♂♂, North-west of Kherameh (29º30'42''N; 53º18'55''E, 1588, m a. s. l.) in a *Punica granatum* garden, 19.i.2013, leg. E. Izadi; 2♂♂, same data, 25.vi.2013; 1♂, Fars: Kaftarak (29°34′N; 52°41′E, 1470m a. s. l.) in a *Citrus* garden, 11-13.viii.2014, leg. S. Rezaei; 1♂, Fars: Jahrom (28°30'04"N; 53°35'16"E, 1044 m a. s. l.) in a mixed *Citrus* and palm date garden, 20–30.v.2015, leg. B. Majnon Jahromi.

Discussion

Sclerogibba talpiformis is one of the well-known parasitoids of Embiidina (Olmi, 2005; Olmi et al., 2015; Olmi et al. 2016). Our studied specimens were collected from different habitats such as mixed lime and mango garden, *Citrus* garden, *Punica granatum* garden; mixed *Citrus* and palm date garden and *Medicago sativa* field in southern Iran (see material examined).The collected material comes from places with high altitudes from inland Iran (range 215–1595 m a. s. l.) at the same time quite far from Persian Gulf. It is worth to note that the findings of Sclerogibbidae worldwide are numerous close to the water bodies or at lower altitudes (Olmi, 2005). For instance, in Europe (Italy, Greece) they have been recorded from islands rather than from the mainland (Olmi, 2005). The exceptional findings are those of *Sclerogibba rapax* Olmi, 2005 at high altitude and quite apart from marine areas – e g. Ruwenzori and Lubero (east Congo), at about 2000 and 2150 m a. s. l., respectively and at a distance from the Indian ocean on straight line of about 1 170 and 1 200 km, respectively.

Figure 2. *Sclerogibba talpiformis* Benoit, 1950, male in lateral view.

Indeed, there places are near to another big water area, the Victoria lake. *S. talpiformis* also has been recorded in some places quite apart from the marine areas (at Sankuru in central Congo which is at a distance from the Atlantic ocean on straight line of about 1 240 km but it is quite close to the Tanganayka lake or at Attock in Pakistan which is at a distance from the Indian ocean on straight line of about 1 130 km but it is on altitude of 360 m) but never so high and at the same time so far from the big, constant water bodies. The only finding similar to that from Iran is the record of Argaman (1988) for a species of *Sclerogibba* (specific status unclear) collected in Afghanistan. The climate of the collection areas in Iran are semi hot to hot and dry. As the specimens were collected using Malaise traps, the wingless female and their hosts remain unknown. Therefore, other collection methods for collecting the females, as well as further study of their occurrence, distribution and biology are recommended. *Sclerogibba talpiformis* occurs in all zoogeographical regions, except the Australian region (Olmi, 2005; Olmi et al., 2015, 2016).

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Conflict of Interests

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

References

Aguiar, A., Deans A., Engel, M., Forshage, M., Huber, J., Jennings, J., Johnson, N., Lelej, A.S., Longino, J., Lohrman, V., Mikó, I., Ohl, M., Ramusen, C., Taeger, A. & Ki Yu, D. (2013) Order Hymenoptera, pp. 51-62. *In*: Zhang, Z.-Q. (Ed.). *Animal Biodiversity: An Outline of Higher-level Classification and Survey of Taxonomic Richness (Addenda 2013). Zootaxa*, 3703, 1–82. https://doi.org/10.11646/zootaxa.3703.1.12

Argaman, Q. (1988) Generic synopsis of Sclerogibbidae (Hymenoptera). *Annales Historico-Naturales Musei Nationalis Hungarici*, 80, 177–187.

Derafshan, H.A., Rakhshani, E. & Olmi, M. (2016) A review of the genus *Dryinus* Latreille, 1804 (Hymenoptera, Chrysidoidea, Dryinidae) from Iran, with description of a new species. *Zootaxa*, 4117, 411–420. https://doi.org/10.11646/zootaxa.4117.3.8.

Derafshan, H.A., Rakhshani, E., Olmi, M. &Vafaei M. (2017) Discovery of the genus *Mirodryinus* Ponomarenko, 1972 (Hymenoptera, Chrysidoidea, Dryinidae) associated with salt cedar trees in the eastern part of Iran. *Turkish Journal of Zoology*, 41, 345–353. https://doi.org/ 10.3906/zoo-1605-35

Farhad, A., Rosa, P., Talebi, A.A. & Ameri, A. (2015) The Genus *Chrysis* (Hymenoptera: Chrysididae) in Hormozgan Province of Iran, with four new records for Iranian Fauna. *Entomofauna*, 36, 33–48.

Farhad, A., Talebi, A.A., Rosa, P., Fathipour, Y. & Hajiqanbar, H. R. (2016) Contribution to the Knowledge of the Chrysididae (Hymenoptera, Aculeata) in the South of Iran, with nine new records. *Turkish Journal of Zoology*, 40, 202–214. https://doi.org/10.3906/zoo-1502-6

Farhad, A., Talebi, A.A., Rosa, P., Fathipour, Y., Hajiqanbar, H. R. & Strumia, F. (2017) The genus *Holopyga* (Hymenoptera: Chrysididae) in Iran, with five new records. *Journal of Agricultural Science and Technology*, 19, 877–888.

Olmi, M. (2005) A revision of the world Sclerogibbidae (Hymenoptera Chrysidoidea). *Frustula Entomologica*, Nuova Serie, 26–27, 46–193.

Olmi, M. & Xu, Z. (2015) Dryinidae of the Eastern Palaearctic region. *Zootaxa*, 3996, 1–253. https://doi.org/10.11646/zootaxa.3996.1.1.

Olmi, M., Copeland, R. & Guglielmino, A. (2015) An updated checklist of Dryinidae, Embolemidae and Sclerogibbidae (Hymenoptera) of Kenya and Burundi, with descriptions of thirteen new species. *Acta Entomologica Musei Nationalis Pragae*, 55(1), 333–380.

Olmi. M., van Noort, S. & Guglielmino, A. (2016) Contribution to the knowledge of Afrotropical Dryinidae, Embolemidae and Sclerogibbidae (Hymenoptera), with description of new species from Central African Republic and Uganda. *ZooKeys*, 578, 45–95. https://doi.org/10.3897/zookeys.578.7820

Rosa, P. & Lotfalizadeh, H. (2013) A new species-group of *Chrysura* Dahlbom, 1845 (Hymenoptera: Chrysididae) with description of *Ch. baiocchii* sp. nov. from Iran. *Zootaxa*, 3737 (1), 24–32. https://doi.org/10.11646/zootaxa.3737.1.2

Rosa, P., Lotfalizadeh, H. & Pourrafei, L. (2013) First checklist of the chrysidid wasps (Hymenoptera: Chrysididae) of Iran. *Zootaxa*, 3700 (1), 1–47. https://doi.org/10.11646/zootaxa.3700.1.1

Samadi Afshar, N., Lotfalizadeh, H. & Ebrahimi, E. (2012) Preliminary study on Bethylidae (Hym.: Chrysidoidea) in Tabriz, Azarbaijan-e-Sharghi province, Iran, *Journal of Field Crop Entomology*, 2 (4), 15–26.

Samadi Afshar, N., Lotfalizadeh, H. & Ebrahimi, E. (2013) Species of the genus *Epyris* (Hym.: Bethylidae) in Azarbaijan-Sharghi Province. *Applied Entomology and Phytopathology*, 81 (1), 61–71.

Strumia, F. & Fallahzadeh, M. (2015) New records and three new species of Chrysididae (Hymenoptera, Chrysidoidea) from Iran. *Journal of Insect Biodiversity*, 3 (15), 1–32. https://doi.org/10.12976/jib/2015.3.15

Strumia, F. & Fallahzadeh, M. (2016) A new species of the genus *Haba* Semenov, 1954 (Hymenoptera: Chrysididae) from Iran, with a key to species, *Zoology in the Middle East*, 62 (4), 358–362. https://doi.org/10.1080/09397140.2016.1250858

Strumia, F., Fallahzadeh, M. & Izadi E. (2016a) *Chrysura izadiae* sp. nov., a new cuckoo wasp (Hymenoptera, Chrysididae) from Southern Iran. *Zootaxa*, 4061, 281–285. http://doi.org/10.11646/zootaxa.4061.3.7

Strumia, F., Fallahzadeh, M., Izadi E. & Tavassoli, H. (2016b) Additions to the Elampini (Hymenoptera, Chrysididae) of southern Iran, with description of a new subspecies. *Trends in Entomology*, 12, 51–61.

خانواده Sclerogibbidae (Hymenoptera, Chrysidoidea) گزارش جدیدی برای فون حشرات ایران

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چکیده: در مقاله حاضر، خانواده Sclerogibbidae (Hymenoptera: Chrysidoidea) برای اولین بار از ایران گزارش می‌شود. چندین نمونه از گونه *Sclerogibba talpiformis* Benoit, 1950 متعلق به این خانواده به وسیله تله مالیز از استان‌های فارس و هرمزگان در جنوب ایران در سال‌های ۱۳۹۲ تا ۱۳۹۴جمع‌آوری شد و در این جا معرفی می‌شود.

واژگان کلیدی: گزارش جدید، ایران، پالئارکتیک.