

## NEW SPECIES OF *ARGE* SCHRANK, 1802 (HYMENOPTERA, ARGIDAE) FROM TURKEY

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*Arge yildirimi* Haris et Kaplan sp. n. is described from Turkey, Diyarbakir Province and compared to *Arge pectoralis* (Leach, 1817) and *Arge frivaldszkyi* (Tischbein, 1852).

Key words: Hymenoptera, Argidae, *Arge yildirimi* sp. n., Diyarbakır, Turkey.

### INTRODUCTION

This paper is part of a project Insects of Anatolia with a special focus on the fauna of Bingöl and Diyarbakir provinces, conducted by the Plant Protection Department of Bingöl University, Turkey.

In 2018 and 2019, the senior author captured 6 females in the genus *Arge* Schrank, 1802 in different locations of Diyarbakir Province. Although the new species runs to *Arge frivaldszkyi* (Tischbein, 1852) in the Palaearctic key (GUSAKOVSKIJ 1935), it also shows a close relationship with one Nearctic species.

The first argid sawflies from Turkey, including *Arge* Schrank, 1802, were recorded by BENSON (1968) and WOLF (1968). So far, only one taxon of *Arge*, namely *Arge fuscipes seljuki* Benson, 1968 has been described from Turkey. Currently, 25 *Arge* species are recorded from the country (ÇALMAŞUR & ÖZBEK 2006).

### MATERIAL AND METHODS

The material was collected by sweeping grass and a variety of flowering plants in meadows and pastures. Sampling was performed throughout the vegetation season, namely 2 days in March, 13 days in April, 21 days in May, 7 days in June, 2 days in July, 3 days in August and 3 days in September in 2018 and 11 days in March, 16 days in April, 13 days in May, 6 days in June, 5 days in July, 4 days in August and 3 days in September in 2019.

For the identification and differential diagnosis of *Arge yildirimi* Haris et Kaplan sp. n. the following papers and monographs were studied: SMITH (1989), BENSON (1968), GUSAKOVSKIJ (1935), VASILENKO (2010), ÖRGEN and BASIBÜYÜK (2006), SAINI (2009), CHOI *et al.* (2016), HARA *et al.* (2012, 2007), HARA and SHINOHARA (2008, 2011), MALAGON-ALDANA *et al.* (2021), MUCHE (1977), OKUTANI, (1956), SHINOHARA and HARA (2008, 2009), SHINOHARA *et al.* (2009, 2011, 2015), TAKEUCHI (1932), WEI (2004, 2005), WEI and NIE (1998, 1999), WEI and NIU (2010), WEI and WEN (1997, 1999 and 2002), WEN and WEI (1998), ZHELOCHOVTSEV (1988) and ZOMBORI (1978).

**Arge yildirimi** Haris et Kaplan sp. n.  
(Figs 1–5)

*Arge frivaldszkyi*: KAPLAN *et al.* 2018 (misidentification).

Type material. Holotype: Lice: Yalaza, N 38° 20' 16.33", E 40° 40' 35.45", 921 m, 25. 04. 2018, 1 female, leg. Emin Kaplan. Deposited in the Rippl-Rónai Museum, Kaposvár, Hungary.

Paratypes: Eğil: Yatır, N 38° 08' 09.41", E 40° 08' 56.18", 836 m, 28. 03. 2019, 1 female; Kocaköy, Ambar, N 38° 16' 07.99", E 40° 28' 29.61", 733 m, 24. 04. 2018, 1 female; Lice, Beni, N 38° 20' 07.29", E 40° 38' 57.00", 1124 m, 25. 04.2018, 1 female; Kutlu, N 38° 21' 37.62", E 40° 46' 28.39", 825 m, 28. 04. 2018, 1 female; Oyuklu, N 38° 19' 44.71", E 40° 45' 31.90", 939 m, 28. 04. 2018, 1 female; all leg. Emin Kaplan (3 in Rippl-Rónai Museum; 2 in Bingöl University).

Female: Head, including antennae and mouthparts, bluish black. Thorax predominantly orange, bluish black are: legs, tegulae, prosternum, mesosternum, metasternum, katepimeron, metapleuron, mesoscutellum, metascutellum, and metanotum. Abdomen predominantly orange, bluish black are: first tergite, narrow anterior margin of second tergite, last abdominal segment and ovipositor. Wings weakly infumate, subcostal area strongly infumate; veins, including costa, subcosta and stigma black. Head behind the eyes moderately expanded. Gena about as long as diameter of anterior ocellus, clypeus triangularly excised, clypeal excision about 0.4× as deep as clypeal median length. Frontal basin triangularly elongated down to level of antennal sockets and clearly carinated. Labrum with straight anterior margin. Labrum, clypeus, inner orbits and frontal area shallowly and densely punctured, shiny. Temples and vertex smooth and shiny. OOL : POL : OCL: 9:11:11. Temples, vertex not carinated posteriorly. Gena with short sharp carina. Mesonotum, mestascutellum and mesopleuron smooth and shiny. Mesoscutellum with minute, moderately dense punctures, shiny. Basalis and cubitalis of anterior wing meet in one point on subcosta. Abdominal tergites with fine coriaceous surface sculpture, shiny. Hind tibial calcars subequal and about as long as width of hind tibia. Hind tibial spur : apical width of hind tibia: 10 : 9. Hind tibia with an additional submedian spine. Claws simple. Head and thorax covered with short, sparse, white pubescence. Lancet slender with 18 serrulae (Fig. 5). Length: 7.6 mm.

Variation: one paratype has 2 small and rounded orange spots on sides of mesoscutellum. Length: 7.6- 8.6 mm.

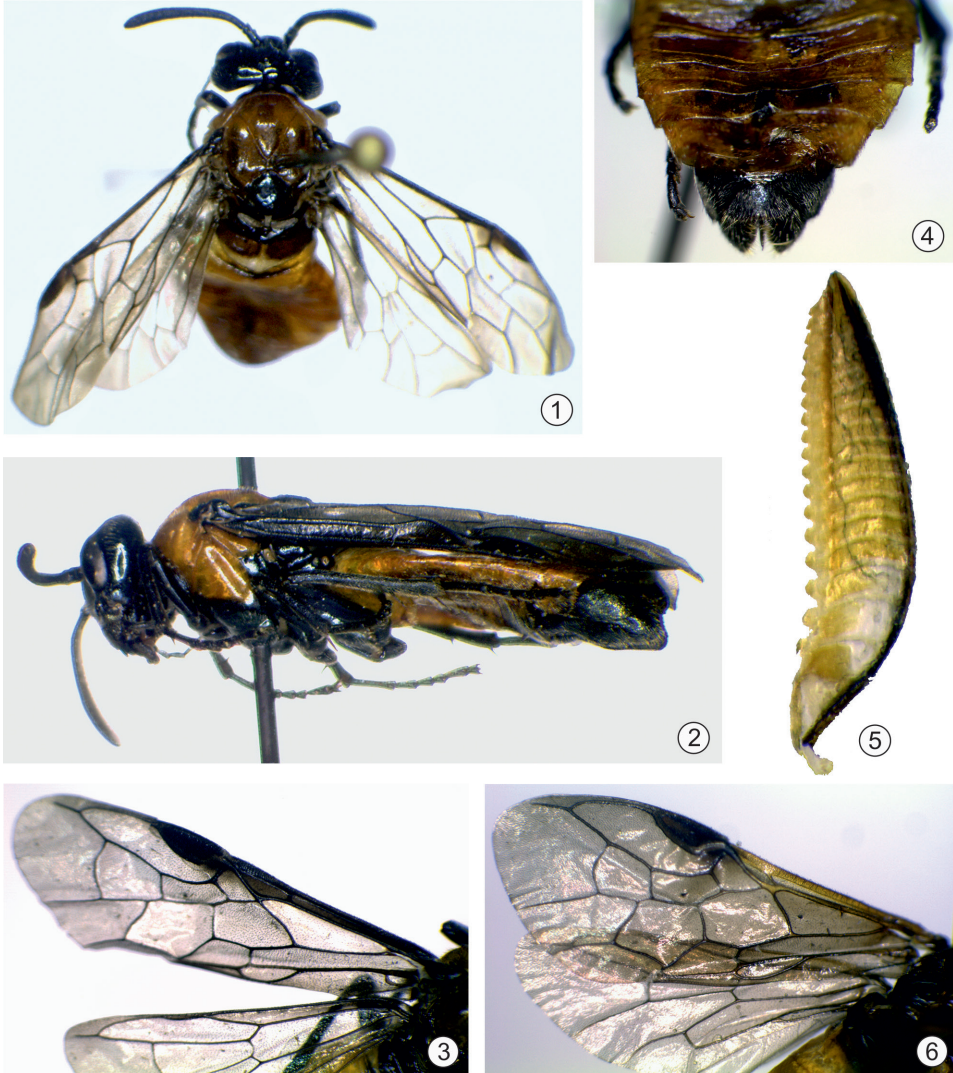
Male: Unknown.

Etymology: The new species is dedicated to Professor Dr. Erol Yildirim (Ataturk University, Faculty of Agriculture, Department of Plant Protection, Erzurum, Turkey).

## DISCUSSION

Differences: In the classification of SMITH (1989), the new species is a member of the *clavicornis* group having sharply prominent supraclypeal crest broken rectangularly on the lower third; lancet is slender, without a larger gap between 2nd and 3rd serrulae. It is not similar to any member of the *clavicornis* group, but superficially looks like *Arge pectoralis* (Leach, 1817).

These two species differ in body size (7.6–8.6 mm in *A. yildirimi* versus 9.0–11.5 mm in *A. pectoralis*). In the form of the frontal crest, it is strongly elevated in the new species, versus the hardly elevated frontal crest in *A. pectoralis*. The colour of mesoscutellum is also different: the mesoscutellum is orange in *Arge pectoralis*, but it is always black in *A. yildirimi*.



**Figs 1–6.** 1–5 = *Arge yildirimi* Haris et Kaplan sp. n.: 1–2 = holotype: 1 = dorsal view, 2 = lateral view; 3 = anterior wing, 4 = apex of abdomen, 5 = lancet. 6 = Anterior wing of *Arge frivaldszkyi* (Tischbein, 1852). (Photos: A. Haris)

Finally, the lancet is completely different in these 2 species: please, compare Fig. 5 with Fig. 50 in SMITH (1989). In the Palaearctic (GUSSAKOVSKIJ, 1935; MUCHE, 1977), *A. yildirimi* is most similar to *Arge frivaldszkyi* (Tischbein, 1852). These two species differ as follows: the frontal basin of the *A. yildirimi* is triangularly elongated down to the level of the antennal sockets and clearly carinate; in *A. frivaldszkyi* this elongate and carinate frontal basin is missing. In the fore wing of *A. yildirimi*, veins basalis and cubitalis meet at one point on the subcosta, and the wings are weakly infumated, with subcostal area strongly and strikingly infumate, veins, including costa, subcosta and stigma black (Fig. 3). In contrast, the wings of *A. frivaldszkyi* are uniformly infumated, and the subcostal area is not darker than the other parts of the wing, costa and subcosta yellow and basalis and cubitalis of anterior wing reach the subcosta having distance equal with subcostal cross-vein (Fig. 6). The last abdominal segment in *A. yildirimi* is bluish black (Fig. 4), while in *A. frivaldszkyi* it is orange, only the ovipositor is black. Finally, all dark colour in *A. yildirimi* is black with strong blue lustre, while in *A. frivaldszkyi* it is black without any metallic lustre. We also examined the description of *Arge schmiedeknechti* (Costa, 1890), which is considered the only one junior synonym of *A. frivaldszkyi*. Based on the original description (COSTA, 1890): „Rufo-testacea, antennis, capite, scutello, metanoto, pectoris disco pedibusque nigris alis aequae saturate fuliginosis, stigmatibus venisque fusco-nigris vena costali tantum flava - Long mill 7", we conclude that the synonym status is correct and it is not conspecific with the new species.

The biotope of the new species: all specimens were captured by sweep netting alongside the edges of oak forests dominated by *Quercus brantii* and *Q. infectoria*. Oak forests were mixed with the following trees and shrubs: *Celtis tournefortii*, *Cerasus mahaleb*, *Fraxinus angustifolia*, *Juniperus oxycedrus*, *Paliurus spia-christi* and *Pistacia terebintus*. The typical herbaceous plants of this biotope are: *Acantholimon acerosum*, *Achillea vermicularis*, *Astragalus gummifer*, *Alcea apterocarpa*, *A. calverti*, *Anthemis cotula*, *Anthemis wiedemanniana*, *Bromus tomentellus*, *Cardus nutans*, *Cotoneaster nummularia*, *Crataegus orientalis*, *Eryngium billardieri*, *Euphorbia cheiradenia*, *Ficus cariaca* ssp. *rupestris*, *Genista albida*, *Gundelia tournefortii*, *Gypsophila ruscifolia*, *Hypericum scabrum*, *H. perforatum*, *Onosma trachytrichum*, *Nigella arvensis*, *Phlomis armeniaca*, *Pisum sativum*, *Poa bulbosa*, *Prunus divaricata*, *Scutellaria orientalis*, *Sinapis arvensis*, *Thymus kotschyanus*, *Trifolium resupinatum*, *Verbascum* sp., *Vicia sativa* and *V. noeana*.

Distribution of the new species: specimens were captured in the montane region of Anatolia between 733 and 1124 meters above sea level.

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