



New Record and Observations of *Parapolybia escalerae* (Meade-Waldo, 1911) (Hymenoptera: Vespidae: Polistinae) in Kurdistan, Iraq

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Among the Polistinae, the tribe Ropalidiini has four genera, of which *Parapolybia* is one of them. This genus is distributed in the Middle East and East Asia, from Turkey to the Korean peninsula to Japan. Two species of this genus are known to occur only in the Middle East: *Parapolybia escalerae* (Meade-Waldo, 1911) and *Parapolybia persica* Meade-Waldo, 1911 (Saito *et al.*, 2015). *Parapolybia escalerae* is recorded in Iran, Pakistan, and Turkey (Gusenleitner, 1988; Yildirim & Kojima, 1999; Ýýldýrým & Gusenleitner, 2007; Kemal & Koçak, 2015; Rahmani *et al.*, 2020), while *P. persica* is only recorded in Iran (Kojima & Carpenter, 1997; Rahmani *et al.*, 2020). *Parapolybia escalerae* is easily distinguishable at a glance, and it has a pale appearance. The shorter petiole and variably formed second metasomal segment distinguish this species from *P. persica*. In *P. persica*, the second metasomal segment is as broad at the apex as it is long, whereas in *P. escalerae*, it is one and quarter times as long as it is broad at the apex and appears to be much slenderer (Meade-Waldo, 1911). A number of faunistic studies about the subfamily Polistinae have been conducted in Iraq. Only three species that belong to the genus *Polistes* have been recorded (Carpenter, 1996; Augul, 2017). The three species were *Polistes gallicus* (Linnaeus, 1767), recorded by Derwesh (1965), *Polistes wattii* Cameron, 1900, recorded by Khalaf & Al-Omar (1974) and *Polistes nimpha* (Christ, 1791) mentioned in the Carpenter (1996) checklist. We had observed *Parapolybia escalerae* in the Kurdistan region, Iraq, for the first time and we aimed that our finding will add some valuable information about the distribution and social behavior of this rare species, but still more study on nesting behavior, combs, and food products is necessary and recommended.

Materials and methods

In this study, *Parapolybia* were collected and observed during field trips conducted from 2021 to 2022, from various locations in the Kurdistan region, Iraq. The collected specimens were mounted and preserved according to standard entomological procedures and deposited in the Animal Biodiversity Laboratory, Department of Biology, College of Science, University of Sulaimani, Kurdistan Region, Iraq. The species were identified depending on their taxonomic characters found in the following references (Meade-Waldo, 1911; Kemal & Koçak, 2015).

Results and Discussion

Genus: *Parapolybia* de Saussure, 1854

Species: *Parapolybia escalerae* (Meade-Waldo, 1911)

(Fig. 1)

Polybia escalerae Meade-Waldo, 1911: 109, Female.—Iran

Specimen examined and its distribution in Kurdistan-Iraq: Kanizhalla village (34.949526 N, 45.766046 E) 5 F, Penjwen (35.634938 N, 45.948148 E) 3 F, Darbandikhan (35.086871 N, 45.695632 E) 1 F, Qara Dagh (35.276764 N, 45.377715 E) 1 F, Dokan (35.795588 N, 44.974828 E) 4 F, Choman (36.616656 N, 44.876900 E) 9 F, Halsho (36.211574 N, 45.254974 E) 1 F, and Ranya (36.321017 N, 44.796033 E) 3 F.



FIGURE 1. *Parapolybia escalerae* adult females on the water source.

General distribution: Eastern (Iran, Pakistan) and Western Palaearctic (Turkey) (Yildirim & Kojima, 1999; Rahmani *et al.*, 2020).

The wasps were observed in colonies and building nests, while some adults were recorded singly in previous studies (Fig. 2a). Although Kemal & Koçak (2015) observed eight individuals on wet ground, this did not indicate nesting or colony behavior. Nests were observed in rock cliffs, in old ruined houses, and under rocks and soil. Saito *et al.* (2015) observed nests from five of the nine species within the *Parapolybia indica* species group. Although *P. escalerae* nests are basically similar to these other species, we observed that *P. escalerae* collect sugary substances in their nests, which local people harvest as food mainly in September and October (Fig. 2b). It is treated like honey and is more expensive than honeybee honey. All the captured specimens in this study were female. We think that their social life imposes much more responsibility on the females than the males, so they were much more abundant in the field. The adults are common and can be easily collected, particularly near water sources in summer (Fig. 1), but their biology, behavior, and food products are still poorly understood and need further study.

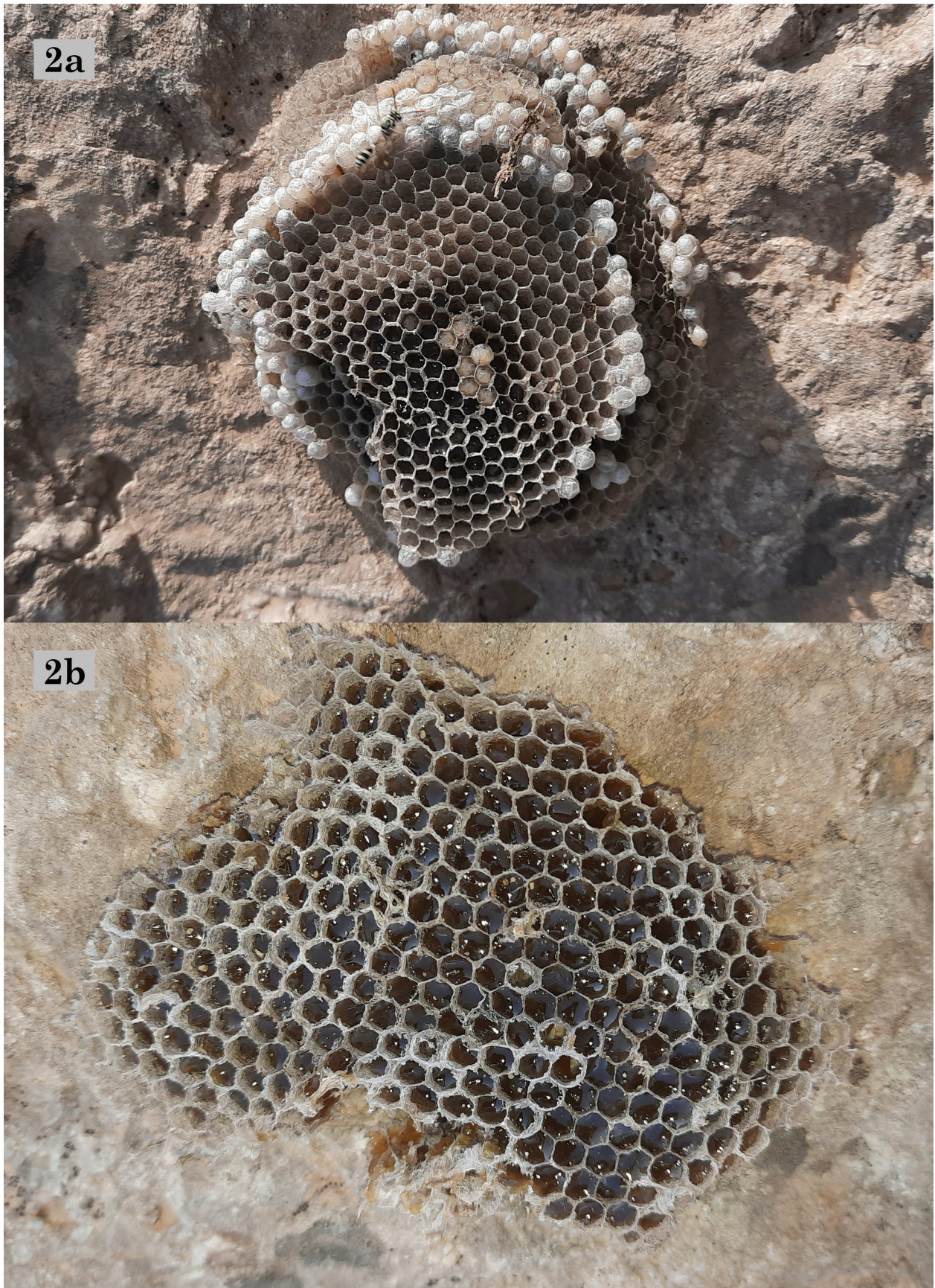


FIGURE 2. *Parapolybia escalerae*: (a) nest, (b) stored sugary food product within combs.

References

- Augul, R.S. (2017) Revision of vespid wasps (Hymenoptera; Vespidae) in Iraq. *Journal of Biodiversity and Environmental Sciences*, 10 (3), 99–111.
- Carpenter, J.M. (1996) Distributional checklist of species of the genus *Polistes* (Hymenoptera, Vespidae, Polistinae, Polistini). *American Museum novitates*, 3188, 1–39.
- Derwesh, A.I. (1965) *A preliminary list of identified insects and some arachnids of Iraq*. The Government Press, Baghdad, 123 pp.
- Gusenleitner, J. (1988) Neue und bemerkenswerte Faltenwespen aus der Türkei (Hymenoptera, Vespoidea). *Linzer Biologische Beiträge*, 20 (2), 713–737.
- Kemal, M. & Koçak, A.Ö. (2015) *Parapolybia escalerae* (Meado-Waldo) from SE Turkey with further faunistical records (Hymenoptera, Vespidae, Polistinae). *Cesa News*, 110, 6–9.
- Khalaf, A.N. & Al-Omar, MA. (1974) *A second list of insects from Iraq*. Biological Research Centre Publication 2. Biological Research Centre, Baghdad, 41 pp.
- Kojima, J.I. & Carpenter, J.M. (1997) Catalog of species in the Polistine tribe Ropalidiini (Insecta: Hymenoptera: Vespidae). *American Museum Novitates*, 3199, 1–96.
- Meade-Waldo, G. (1911) X.—New species of Diploptera in the collection of the British Museum. *Annals and Magazine of Natural History*, Series 8, 7 (37), 98–113.
<https://doi.org/10.1080/00222931108692910>
- Rahmani, Z., Rakhshani, E. & Carpenter, J.M. (2020) Updated checklist of vespidae (Hymenoptera: Vespoidea) in Iran. *Journal of Insect Biodiversity and Systematics*, 6 (1), 27–86.
<https://doi.org/10.52547/jibs.6.1.27>
- Saito-Morooka, F., Nguyen, L.T. & Kojima, J.I. (2015) Review of the paper wasps of the *Parapolybia indica* species-group (Hymenoptera: Vespidae, Polistinae) in eastern parts of Asia. *Zootaxa*, 3947 (2), 215–235.
<https://doi.org/10.11646/zootaxa.3947.2.5>
- Yıldırım, E. & Gusenleitner, J. (2007) The present situation of the Vespidae-fauna of Turkey (Hymenoptera: Vespidae). *Linzer biologische Beiträge*, 39 (1), 105–109.
- Yıldırım, E. & Kojima, J. (1999) Distributional checklist of the species of the family Vespidae (Insecta: Hymenoptera; Aculeata) of Turkey. *Natural history bulletin of Ibaraki University*, 3, 19–50.