Persian J. Acarol., 14(4): 140404.

Correspondence https://biotaxa.org/pja https://doi.org/ 10.22073/pja.v14i4.87209

Rediscovery of *Paraseiulus incognitus* Wainstein & Arutunjan (Parasitiformes: Phytoseiidae) in Iran

Ismail Döker[1*] | Aylar Rostami[2] Mojtaba Mohammad-Doustarsharaf[3] | Mohammad Bagheri[2] | Marjorie G. Weber[4]

1. Cukurova University, Agricultural Faculty, Department of Plant Protection, Acarology Lab, Adana, Türkiye; E-mail: idoker@cu.edu.tr
2. Department of Plant Protection, Faculty of Agriculture, University of Maragheh, Maragheh, Iran; E-mail: aylar.rostami20@gmail.com, bagheri@maragheh.ac.ir
3. Doustar Agricultural Pharmacy, Urmia, West Azerbaijan, Iran; E-mail: mojtaba.doostar@gmail.com
4. Department of Ecology and Evolutionary Biology, University of Michigan, Ann Arbor, MI, United States; E-mail: webermg@umich.edu

**** Correspondence***
✉ *idoker@cu.edu.tr*

Received:	Accepted:	Published:	Subject Editor:
02 May, 2025	28 August, 2025	15 October, 2025	*P. Lotfollahi*

CITE: Döker, I., Rostami, A., Mohammad-Doustarsharaf, M., Bagheri, M. & Weber, M.G. (2025) Rediscovery of *Paraseiulus incognitus* Wainstein & Arutunjan (Parasitiformes: Phytoseiidae) in Iran. *Persian Journal of Acarology*, 14(4): 140404.
https://doi.org/ 10.22073/pja.v14i4.87209

The phytoseiids (Acari: Phytoseiidae) are a group of predatory mites within the superorder Parasitiformes, extensively studied due to their potential as biological control agents. Members of the genus *Paraseiulus* Muma are considered specialized predators primarily associated with tydeoid mites (Tydeoidea), and are classified under the "*Subtype Ic*" feeding lifestyle (McMurtry *et al.* 2013). Currently, 23 nominal species of *Paraseiulus* are recognized worldwide (Khaustov *et al.* 2023; Demite *et al.* 2025). A relatively high number of these mites have been reported from Iran, especially when compared to neighboring countries. The Iranian species of the genus include *P. amacroporus* Faraji, Jalaeian & McMurtry, 2008, *P. erevanicus* Wainstein & Arutunjan, 1967, *P. porosus* Kolodochka, 1980, *P. soleiger* (Ribaga, 1904), *P. talbii* (Athias-Henriot, 1960), and *P. triporus* (Chant & Yoshida-Shaul, 1982). Although *P. incognitus* Wainstein & Arutunjan, 1967 was first reported from Iran by Daneshvar (1987), he did not provide any morphological information, making it unclear whether the specimens he examined actually belonged to *P. incognitus*. Additionally, the species was considered as a synonym of *P. soleiger* by Chant and Yoshida-Shaul (1982). As a result, *P. incognitus* was not recognized as a valid species in subsequent systematic studies regarding Iranian phytoseiids (Faraji *et al.* 2008; Kazemi *et al.* 2022). In this study, we validate the presence of *P. incognitus* in the Iranian fauna. The predatory mite specimens examined in this study were collected in 2017 and 2024 from various host plants in East Azerbaijan Province, Iran. The specimens were extracted using Berlese funnels, cleared in lactic acid, mounted in Hoyer's medium, and examined under a differential interference contrast microscope (Leica DM4000B). Images were taken with a Leica DMC4500 camera attached to the microscope. No new morphological descriptions were made, as the examined specimens displayed characteristics consistent with those described by Döker *et al.* (2023) and Khaustov *et al.* (2023). The voucher slides are deposited in the mite collection of the Acarology Laboratory, Çukurova University, Adana, Türkiye.

***Paraseiulus incognitus* Wainstein & Arutunjan, 1967 (Figs 1–5)**

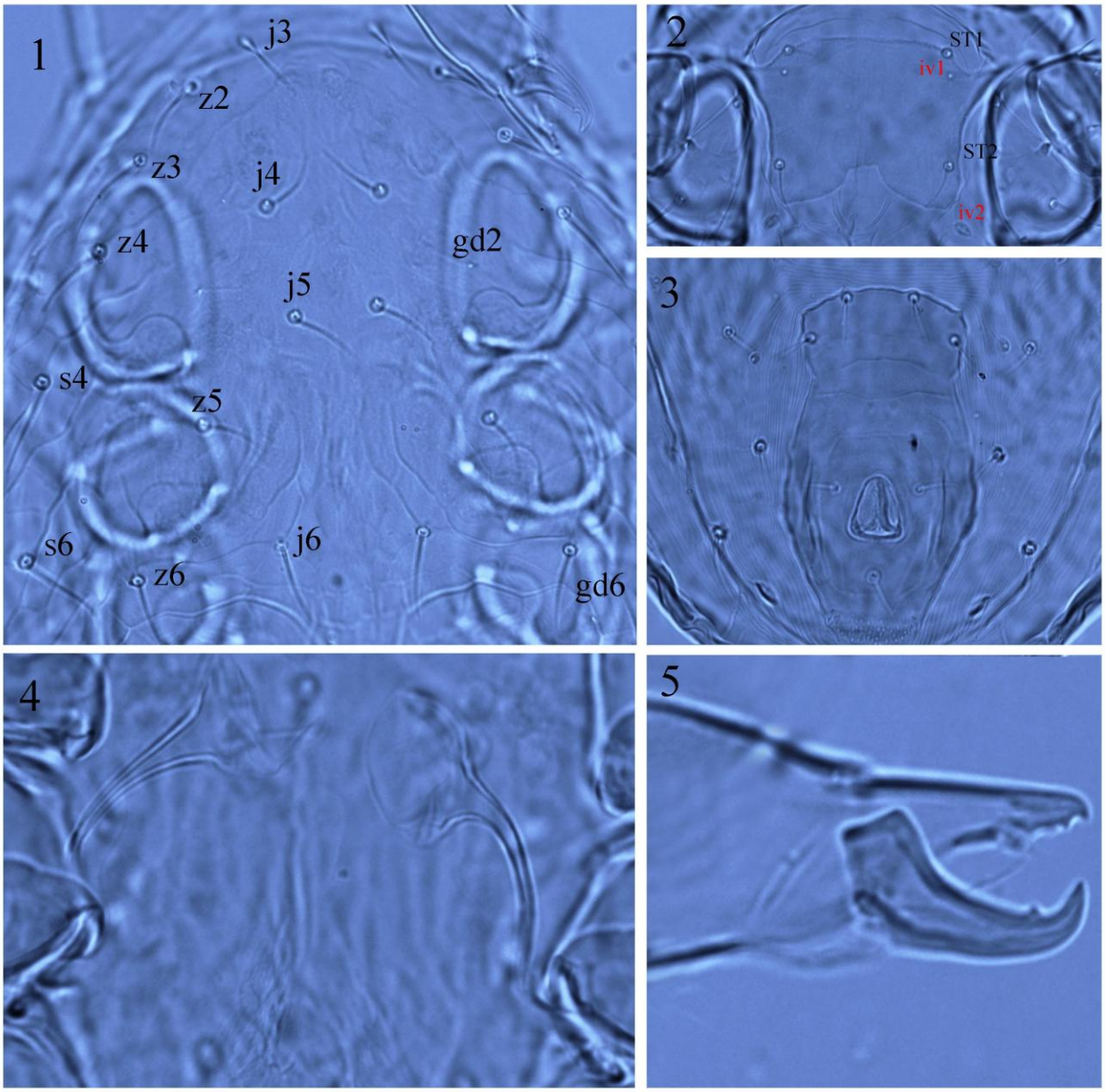
Paraseiulus incognitus Wainstein & Arutunjan, 1967: 1768.

Material examined

One female, *Carpinus* sp. (Betulaceae), Khoda Afarin, Kalaleh, East Azerbaijan Province, 38° 56'

COPYRIGHT. Döker *et al*. Persian Journal of Acarology is under a free license. This open-access article is distributed under the terms of the Creative Commons-BY-NC-ND which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

29" N, 46° 45' 40" E, 1156 m above sea level, 2 September 2017; five females, 15 July 2017; one female, *Quercus* sp. (Fagaceae), Khoda Afarin, Vaygan, East Azerbaijan Province, 38° 55' 07" N, 46° 46' 58" E, 1287 m above sea level, 16 July 2017; four females, *Acer campestre* L. (Sapindaceae), Khoda Afarin, Garmanab, East Azerbaijan Province, 38° 54' 26" N, 46° 47' 19" E, 1398 m above sea level, 3 September 2017, coll. M. Mohammad-Doustaresharaf. Three females, *A. campestre*, Arasbaran forest, Kaleybar, East Azerbaijan, 38° 50' 26.09" N, 46° 59' 46.5" E, 1730 m above sea level, 4 October 2024; one female, *Quercus petraea* (Matt.) Liebl. (Fagaceae), Arasbaran forest, Kaleybar, East Azerbaijan, 38° 50' 27.28" N, 46° 59' 50.64" E, 1730 m above sea level, 4 October 2024, coll. Aylar Rostami.



Figures 1–5. *Paraseiulus incognitus* Wainstein & Arutunjan, 1967 (female) – **1.** Propodosoma including solenostomes *gd2* and *gd6*; **2.** ventral idiosoma, including *iv2* on soft cuticle; **3.** Ventrianal shield; **4.** Spermathecae; **5.** Chelicera.

Remarks

Although *P. incognitus* was previously mentioned from Iran without supporting morphological data, this study presents the first confirmed record based on diagnostic characters. The morphological characters and measurements of the specimens examined in this study are identical to those reported in the original description and subsequent redescriptions (Kolodochka 1983; Döker *et al.* 2023; Khaustov *et al.* 2023) (Figs 1–5). Based on morphology of its spermatheca, *P. incognitus* is close to *P. soleiger*, one of the most widely distributed species, reported from about 40 countries worldwide, including Iran (Demite *et*

al. 2025). However, *P. incognitus* has two pairs of solenostomes on the dorsal shield (*gd2* present), whereas *P. soleiger* has only one pair (*gd2* absent). In addition, the ventral poroid *iv2* located on soft cuticle in the former but it is on the sternal shield in the latter. Furthermore, the anterolateral setae on the dorsal shield are longer in the former and shorter in the latter.

ACKNOWLEDGMENTS

We greatly appreciate the Research Divisions of University of Maragheh for supporting this project. Ismail Döker was supported by the Cukurova University Scientific Projects Foundation Units, under grant number FAY-2022-14495. We would like to thank the anonymous reviewers for their valuable comments and suggestions, which helped improve the quality of the manuscript.

Author contributions: Methodology: Morphological identification, Illustration, Writing – Original Draft, Supervision: I.D.; Sampling, collection, and preparation of specimens, Writing – Review & Editing: A.R., M.-M.D.; Supervision, Funding acquisition, Writing – Review & Editing: M.B.; Supervision, Writing – Review & Editing: M.G.W. All authors have read and agreed to the published version of the manuscript.

Funding: The research was funded by the Research Divisions of University of Maragheh, and Cukurova University Scientific Projects Foundation Units/FAY-2022-14495.

Data availability: Data are available upon request from the authors.

Ethics approval: This study only included arthropod material, and all required ethical guidelines for the treatment and use of animals were strictly adhered to in accordance with international, national, and institutional regulations. No human participants were involved in any studies conducted by the authors for this article.

Conflict of interest: The authors declare no conflict of interest.

REFERENCES

Athias-Henriot, C. (1960) Phytoseiidae et Aceosejidae (Acarina: Gamasina) d' Algerie. IV. Genre *Typhlodromus* Scheuten, 1857. *Bulletin de la Societe d'Histoire Naturelle de l'Afrique Du Nord*, 51: 62–107.

Chant, D.A. & Yoshida-Shaul, E. (1982) A world review of the soleiger species group in the genus *Typhlodromus* Scheuten (Acarina: Phytoseiidae). *Canadian Journal of Zoology*, 60: 3021–3032.

Daneshvar, H. (1987) Some predatory mites from Iran, with descriptions of one new genus and six new species (Acari: Phytoseiidae, Ascidae). *Entomologie et Phytopathologie Appliquees*, 54: 13–37 [in English]; 55–73 [in Persian].

Demite, P.R., de Moraes, G.J., McMurtry, J.A., Denmark, H.A. & Castilho R.C. (2025) Phytoseiidae database. Available from: https://www.lea.esalq.usp.br/phytoseiidae/(Accessed on 30 April 2025).

Döker, I., Joharchi, O., Karut, K. & Kazak, C. (2023) Description of *Typhloseiulus anatolicus* sp. nov. and redescription of two new records of Phytoseiidae (Acari: Mesostigmata) from Turkey. *Acarologia*, 63: 553–568. https://doi.org/10.24349/r4a9-vy9o

Faraji, F., Jalaeian, M. & McMurtry, J.A. (2008) A new species of *Paraseiulus* Muma from Iran with a key to the known species (Acari: Mesostigmata: Phytoseiidae). *Zootaxa*, 1770: 65–68. https://doi.org/10.11646/zootaxa.1770.1.3

Kazemi, S., Mohammad-Doustaresharaf, M. & Döker, I. (2022) An annotated checklist of the Iranian Phytoseiidae (Acari: Mesostigmata), with an updated key to the species. *Systematic & Applied Acarology*, 27: 697–748. https://doi.org/10.11158/saa.27.4.6

Khaustov, V.A., Döker I., Joharchi, O. & Khaustov, A.A. (2023) Review of the genus *Paraseiulus* Muma (Acari: Phytoseiidae) of Russia. *Systematic & Applied Acarology*, 28: 1235–1260. https://doi.org/10.11158/saa.28.7.4

Kolodochka, L.A. (1980) New species of phytoseiid mites from the fauna of the USSR (Parasitiformes: Phytoseiidae). *Vestnik Zoologii*, 2: 64–70 [in Russian].

Kolodochka, L.A. (1983) Three new species of the genus *Paraseiulus* (Parasitiformes: Phytoseiidae) from the SSSR fauna and redescription of *P. incognitus* Wainstein and Arutunjan, 1967. *Vestnik Zoologii*, 6: 21–30 [in Russian].

McMurtry J.A., Moraes G.J. de, Sourassou N.F. (2013) Revision of the lifestyles of phytoseiid mites (Acari: Phytoseiidae) and implications for biological control strategies. *Systematic & Applied Acarology*, 18: 297–320. https://doi.org/10.11158/saa.18.4.1

Ribaga, C. (1904) Gamasidi planticoli. *Rivista di Patologia Vegetale*, 10: 175–178.

Wainstein, B.A. & Arutunjan, E.S. (1967) New species of predaceous mites of the genera *Typhlodromus* Scheuten and *Paraseiulus* Muma (Parasitiformes, Phytoseiidae). *Zoologicheskii Zhurnal*, 46: 1764–1770 [in Russian].