pISSN: 0259-9996 – eISSN: 2783-3968

Journal of Entomological Society of Iran

2026, 46 (3), 243–254

Research Article

A landlord or hitchhiking guest: Rediscovery of the genus *Duta* Nixon (Hymenoptera: Platygastridae, Scelionidae) in the Palaearctic region

Farzad Minab[1], Ehsan Rakhshani[1], Elijah J. Talamas[2] & Mostafa Ghafouri-Moghaddam[3]

1. *Department of Plant Protection, College of Agriculture, University of Zabol, Zabol, Iran*

2. *Florida State Collection of Arthropods, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA*

3. *Integrative Insect Ecology Research Unit, Department of Biology, Faculty of Science, Chulalongkorn University, Phaya Thai Road, Pathum Wan, Bangkok 10330, Thailand*

Abstract. The genus *Duta* Nixon, 1922 (Hymenoptera: Platygastroidea, Scelionidae), represented by a single species, *D. bicolor* Rajmohana, 2014, is first recorded in Western Asia, Iran. The specimens were collected from a desert area in the middle of the easternmost border of Iran, surrounded by native vegetation, including palm groves and tamarisk trees, as well as sub-mountainous terrain. *Duta bicolor* was originally described from the Oriental region, South India; its known distribution expanded into the Palaearctic as a trans-biogeographical element. This is also the fourth species of *Duta* from the Palaearctic region. The diagnostic characters are briefly described and illustrated. A preliminary world checklist is also generated to facilitate future revisionary studies on the genus.

Keywords: Desert area, egg parasitoid, Oriental, Western Asia, checklist

Article info
Received: 06 January 2026
Accepted: 12 May 2026
Published: 20 July 2026

Subject Editor: Hossein Lotfalizadeh

Corresponding authors: Ehsan Rakhshani

E-mail: rakhshani@uoz.ac.ir

DOI: https://doi.org/10.22034/jesi.46.3.1

Introduction

Scelionidae (Hymenoptera: Playgastroidea) is a diverse group of egg-parasitoid wasps, comprising about 4,000 described species belonging to 167 genera (Belokobylskij *et al.*, 2019; Johnson *et al.*, 2019). Members of this family are associated with the eggs of insects from nine orders (Coleoptera, Diptera, Embiidina, Hemiptera, Lepidoptera, Mantodea, Neuroptera, Odonata, Orthoptera), as well as with spiders (Muesebeck, 1979; Austin, 1984; Austin *et al.*, 2005). Higher-level evolutionary relationships within Scelionidae remain unclear (e.g., Austin *et al.*, 2005; Murphy *et al.*, 2007; Taekul *et al.*, 2014; Chen *et al.*, 2021), and the current classification does not accurately reflect the true evolutionary history of the group. In addition, host shift patterns are critical to understanding the evolution of host-finding strategies and the underlying mechanisms driving host selection among these parasitoids (Austin *et al.*, 2005; Murphy *et al.*, 2007; Taekul *et al.*, 2014). The genus *Duta* Nixon was originally proposed for *Holoteleia tenuicornis* Dodd, 1920, an Oriental/Afrotropical species (Nixon, 1933). *Duta* is a relatively small, cosmopolitan genus represented by 29 described species distributed globally (Masner, 1991; Galloway & Austin, 1984; Kozlov & Lê, 2000; Rajmohana, 2007a, 2007b, 2014; Debnath *et al.*, 2026). It is considered a well-defined genus; the concept provided by Masner (1991) in his revision of Nearctic species requires only minor adjustment to accommodate species from other biogeographic regions.

In the Palaearctic region, the genus *Duta* Nixon currently includes three described species: *D. serraticeps* (Priesner, 1951), originally described in the genus *Chaetanteris* Priesner, 1951 from Egypt; *D. tenuicornis* (Dodd, 1920); and *D. dissimilis* Rajmohana, 2014, whose type locality is in the Oriental region (Indonesia) and India, respectively. Although *D. tenuicornis* is originally an Oriental species, multiple records document its occurrence in various parts of the Palaearctic region, including Hungary, Moldova, Greece, and the Russian Far East (Szabó, 1957; Kozlov, 1971; Kononova & Kozlov, 2008). More recently, barcode-supported evidence has indicated the

occurrence of *D. dissimilis* in Russia (Debnath *et al.*, 2026). Around the turn of the millennium, a handful of additional species were described from the Oriental region, including *D. indica* Mukerjee, 1994, *D. tuberculata* Rajmohana, 2007, *D. typhona* Kozlov & Lê, 2000, and *D. xyphona* Kozlov & Lê, 2000. Despite the addition of several Oriental species in recent decades, a thorough re-examination of these taxa, along with earlier described species, is required to achieve a clearer understanding of species boundaries and classification within this genus. In Iran, 14 scelionid genera and 48 species have been documented (Minab *et al.*, 2023; Ameri *et al.*, 2024; Popovici *et al.*, 2024), representing only a small portion of the country's true diversity. This work provides the first record of the genus *Duta* from the easternmost border of Iran. The specimens were collected from a xeric habitat dominated by native vegetation such as tamarisk trees and palm groves. In addition, we provide a preliminary world checklist of all described *Duta* species. This checklist consolidates scattered taxonomic information and offers a comprehensive reference point for future revisionary and phylogenetic studies.

Materials and methods

A series of scelionid specimens was collected from palm groves (Fig. 1A) located in the sub-mountainous terrains of Bandan, South Khorasan Province, Eastern Iran, using Malaise traps (Fig. 1B). Among the collected material, two specimens were identified as belonging to the genus *Duta* using the identification keys provided by Masner (1976, 1980). The specimens were treated by the AXA protocol (van Achterberg, 2009) and mounted on point-card tips. A Nikon® SMZ-645 stereomicroscope was used for the specimen examination and preparation. Specimens were compared with the original descriptions of previously described species (Priesner, 1951; Masner, 1976; Masner, 1991; Mukerjee, 1994; Kozlov & Lê, 2000; Rajmohana, 2007a, 2007b; 2014), and images made available by Talamas *et al.* (2017) and Talamas and Pham (2017). Morphological terminology and abbreviations follow Masner (1980) and Mikó *et al.* (2007). A motorized Auto-focus macrophotography stage (Fast Macro - Omega Optics Co. Ltd., Iran) was used to capture multiple in-depth images. Photographs were taken using a Sony® a7R III camera (Sony Group Corporation, Tokyo, Japan) connected to Mitutoyo® Plan Apo Infinity Corrected Objectives (magnifications 10× and 50×, Mitutoyo Co., Ltd., Japan), using a 160 mm tubular adaptor (Omega Optics Co., Ltd., Iran). The light source was constructed using Triple LED panels (3 × 20 W, 20 × 20 cm), providing a smooth and diffused light covering all aspects of the specimens. The series of 100–120 partially focused images (depending on the target segment) was selected to be stacked into a single in-focus image. The pyramid approach in Helicon Focus® v. 7 (Helicon Soft Ltd., Kharkiv, Ukraine) was used for image processing of deep stacks, increasing contrast and reducing glare. Abbreviations used in the text are as follows: A1–A12 = antennomeres 1–12; T1–T7 = gasteral tergites 1–7; H = height; W = width. Examined specimens are deposited in the collection of the Department of Plant Protection, University of Zabol, Zabol, Iran (DPPZ).

Results

Taxonomy

Class Insecta Linnaeus, 1758

Order Hymenoptera Linnaeus, 1758

Superfamily Platygastroidea Haliday, 1833

Family Scelionidae Haliday, 1839

Subfamily Scelioninae Haliday, 1839

Genus *Duta* Nixon, 1933

Type species. *Holoteleia tenuicornis* Dodd, 1920, by monotypy and original designation.

Type information. Holotype female, NHMUK. Country of type locality: Indonesia.

Diagnosis. Antenna with 12 antennomeres in both sexes; clava clearly distinguished in females, usually with 6 clavomeres, A3–A5 often distinctly elongate and subequal in length in females; male antenna filiform; eyes large, setose, rounded and hairy; head globular; Gena and frons without any trace of radiating striae, frontal depression never developed; occipital carina distinct; skaphion well developed; notauli variable; netrion distinct; metascutellum

present as a smooth strip, not produced posteriorly marginalis either elongate or shorter to almost point-like, postmarginalis well developed, basalis sometimes spurious.

Fig. 1. The sampling locality of *Duta bicolor* Rajmohana, 2014. **A.** The Palm Grove in Bandan county, Southern Khorasan province; **B.** The installed Malaise trap in eastern Iran.

Subcosta with erect bristles all along its length, wings sometimes shortened; metasoma elongate, spindle-shaped, T1 at most with indistinct bulge or perfectly flat, T7 in females retracted, attached to ovipositor when extruded.

Host. Presumed to parasitise the eggs of various ground crickets (Orthoptera: Grylloidea, Gryllidae, Nemobiinae) (Masner, 1991).

Molecular data. To date, a total of 153 nucleotide sequences representing four genes (*18S*, *28S*, *COI*, and *wg*) have been reported for *Duta* specimens in public databases, including NCBI (https://www.ncbi.nlm.nih.gov) and BOLD (https://boldsystems.org).

Duta bicolor Rajmohana, 2014 (Figs 2A–C, 3A–F)

Duta bicolor Rajmohana, 2014:79, Holotype ♀ (ZSI).–INDIA.

Material examined. 2 ♀♀ (Fig. 3A), IRAN, South Khorasan province, Bandan (*31°23'42"N, 60°43'01"E, 737.46 m*), 12- VI-2021; F. Minab, leg.

Comparative material examined. Holotype [*images*], *Chaetanteris serraticeps,* Female, Meadi, Egypt, 06-XI-33 D, Dr. H. Priesner; H. Priesner's Collection, 1968; Type No. 70869, USNM. Refer to: https://mbd-db.osu.edu/hol/ collecting_units/0eae5d0b-a5f1-3aaa-e053-0100007f2cc9; Holotype [*images*], *Duta bicolor*, Female, India, Kerala, Madakkimala, 09-I-2009, Dr. K. Rajmohana; ZSI/ WGRS/PF23.

Note: The morphological traits of the recently collected specimens align closely with the original description (Rajmohana, 2014), except for a slightly darker body coloration and lighter pigmentation of the eyes; less pilosity of the face below the anterior oceli; shorter T1 (0.5–0.5 vis 0.8 in the Indian specimens), and more erect black bristles on submarginal vein (12–14 vis 11 in the Indian specimens). Episternal foveae are observed as very small, shallow depressions on the anterior part of the mesopleuron; however, their presence or absence was not mentioned in the original description of *D. bicolor*. Debnath *et al.* (2026) interpreted the episternal foveae as absent in the holotype of *D. bicolor*, whereas the Iranian specimens possess minute shallow depressions; nevertheless, their identification is supported by the overall morphology, particularly the distinctly elongate marginal vein.

Diagnosis. *Duta bicolor* is closely related to *D. serraticeps* (Priensner, 1951) in the Palaearctic region, from which it can be separated by the serrations on the gena, which are only found in D. serraticeps [but also in *Neoduta serrata* Rajmohana & Patra, 2012], by the following characters: The robust micro-sculpture on the vertex extended beyond the anterior ocelli in *D. serraticeps*, while the fine microsculptures truncated before the posterior ocelli in *D. bicolor*. The occipital area, vertex, and lateral part of frons with relatively dense setae in *D. serraticeps*, while these areas are sparsely setose in *D. bicolor*. The lateral lobes of the propodeum are positioned apart at the site of the median lobe of the metanotum in *D. serraticeps*, whereas these lobes are closer together in *D. bicolor*. Additionally, these two species have different colour patterns. *Duta serraticeps* has a body with dark brown colouration, except the reddish brown T1 and yellowish legs, while *D. bicolor* is distinctly bicolorous; its head and tip of abdomen are shiny black, and the rest of the body, except T1 and legs (yellow), are brown. Furthermore, the antennae are generally brown in *D. serraticeps*, with it being bicolorous in *D. bicolor*. The radicle and basal half of the scape are yellowish brown, and the rest run to blackish brown.

Redescription. Body length 1.2 mm (without ovipositor), wing length 1.0 mm.

Colouration (Fig. 2A–B). Head Black; eyes silvery and ocelli black; mandibles brownish yellow; funiculars and clava contrasting in colour with scape, pedicellus and radicle; radicle, and base of A1 yellow; upper half of A1 brownish yellow; A2–A12 dark brown to black; legs including coxae bright yellow; T1–T3 yellowish brown; T4–T6 dark brown; wings slightly infuscated.

Head. Transverse in dorsal view (Fig. 3C), sub-circular in frontal view, its width nearly twice its length, with very few scattered setae (Fig. 3A, 3C); frons smooth and shiny; gena sparsely setose; temple with few sparse setae (Fig. 2A); occiput emarginate (Fig. 3C), occipital carina finely but distinctly crenulate; occiput and vertex roughly coriaceous, coriaceous sculpture continuing along inner orbits, attenuating below anterior ocellus; compound eye large (Fig. 3A), distinctly setose; inner orbital margins diverging ventrally; malar sulcus deep, slightly widened in anterior (or ventral) half; mandible tridentate, teeth roughly equal in size; antennae (Fig. 3B) covered with fine

pilosity; clava abrupt, 6-merous and transverse; scape and pedicel cylindrical and elongated; pedicel longer than A3; maximum width of the clavomeres is twice the width of the funiculars.

Mesosoma. Longer than wide (L/W:1.81; Indian specimen: 1.51), in dorsal view (Figs 2B, 3D); its width including tegulae subequal to width of head; mesoscutum and mesoscutellum with sparse, long setae; notaulus deep and broad, internotaular distance at anterior margin nearly 1.6 times distance at posterior margin; scutoscutellar sulcus deep medially, laterally with three large foveae; mesoscutellar disc with long, scattered, semidecumbent setae, smooth and polished except for few setigerous punctures in anterior half; posterior mesoscutellar sulcus foveate; metascutellum narrow; lateral propodeal area mostly smooth, with foveae along anterior and posteromedian margins; lateral propodeal carinae not continuous medially (Fig. 3E); metasomal depression smooth; mesosoma in lateral view (Fig. 2A) slightly longer than high, dorsally convex; lateral pronotum predominantly smooth and glabrous, with pronotal shoulder not distinctly foveolate; netrion foveolate along anterior margin, foveolae smaller than half of netrion width, gradually diminishing dorsally; femoral depression smooth and glabrous; mesopleural carina complete, sharp, without foveolae ventrally; episternal foveae and mesepisternal sulcus present, as shallow depressions; metapleuron smooth and glabrous; paracoxal sulcus indicated by minute foveolae along anterior margin; metapleural sulcus indicated by a smooth furrow; fore wings (Fig. 3F) long and relatively narrow, exceeding the tip of metasoma; with 12–14 erect black bristles on submarginal vein; marginal vein 4 times longer than stigmal vein; postmarginal vein markedly elongate, approximately four times longer than the stigmal vein, stigmal vein oblique and knobbedbasal vein indicated as nebulous trace.

Metasoma. Excluding partially extended ovipositor system, metasoma, 1.85 times combined length of head and mesosoma (Fig. 2A–B); metasoma in dorsal view (Fig. 2A) 3.1 times longer than wide; T1 (Fig. 3E) 1.86 times wider than long, with strong longitudinal costae, with lateral setae; T2 to T6 transverse; T2 1.83 times wider than long, with strong longitudinal costae in anterior three-quarters, remainder of tergite smooth with scattered setae laterally; T3 2.0 times longer than T2, smooth and glossy, and with scattered, semidecumbent setae posterolaterally; T3 1.35 times longer than T4–T6 combined, with white short and sparse setae; T4–T6 smooth with decumbent setation laterally; T7 exserted along with ovipositor; three bristles on cercus (Fig. 2A).

Table 1. Preliminary world checklist of known species of the genus *Duta* Nixon (Hymenoptera: Scelionidae).

Species name	Type locality	Types*	Depositories**	Zoogeographical Distribution	References
D. aczeli Szabó, 1966	Argentina	HT	IFML	Neotropical	Szabó (1966)
D. argentinica Szabó, 1966	Argentina	HT	IFML	Neotropical	Szabó (1966)
D. aurea (Dodd, 1914)	Australia	HT	SAMA	Australasian	Dodd (1914)
D. australica (Dodd, 1913)	Australia	HT	SAMA	Australasian	Dodd (1913)
D. bicolor Rajmohana, 2014	India	HT & PT	NZSI	Oriental; Palaearctic	Rajmohana (2014)
D. concinna Galloway, 1984	Australia	HT PT	QM QDPC	Australasian	Galloway & Austin (1984)
D. dissimilis Rajmohana, 2014	India	HT & PT	NZSI	Oriental	Rajmohana (2014)
D. elongata Rajmohana, 2014	India	HT & PT	NZSI	Oriental	Rajmohana (2014)
D. foveolata Masner, 1991	Canada	HT	CNC	Nearctic	Masner (1991)
D. indica Mukerjee, 1994	India	HT	NZSI	Oriental	Mukerjee (1994)
D. policeps Masner, 1991	Canada	HT PT	CNC USNM	Nearctic	Masner (1991)
D. polita Rajmohana, 2007	India	HT	NZSI	Oriental	Rajmohana (2007a)
D. reticulata Galloway, 1984	Australia	HT	NHMUK	Australasian	Galloway & Austin (1984)
D. serraticeps (Priesner, 1951)	Egypt	HT	USNM	Palaearctic	Priesner (1951)
D. tenuicornis (Dodd, 1920)	Indonesia	HT	NHMUK	Oriental, Afrotropical	Dodd (1920)
D. tuberculata Rajmohana, 2007	India	HT & PT	NZSI	Oriental	Rajmohana (2007b)
D. typhona Kozlov & Lê, 2000	Vietnam	HT	IEBR	Oriental	Kozlov & Lê (2000)
D. virginiensis (Ashmead, 1893)	United States	HT	USNM	Nearctic	Ashmead (1893)
D. xyfona Kozlov & Lê, 2000	Vietnam	HT & PT	IEBR	Oriental	Kozlov & Lê (2000)

* **HT** – Holotype; **PT** – Paratype;

** **CNC** – Canadian National Collection of Insects, Arachnids, and Nematodes, Ottawa, Canada; **DPPZ** – Department of Plant Protection, University of Zabol, Iran; **IEBR** – Institute of Ecology and Biological Resources, Hanoi, Vietnam; **NHMUK** – Natural History Museum, London, United Kingdom; **NZSI** – National Zoological Collection, Zoological Survey of India, Kolkata, West Bengal, India; **IFML** – Instituto Fundación Miguel Lillo, Tucumán, Argentina; **QDPC** – Queensland Primary Industries Insect Collection, Queensland, Australia; **QM** – Queensland Museum, South Brisbane, Queensland, Australia; **SAMA** – South Australian Museum, Adelaide, South Australia, Australia; **USNM** – National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA.

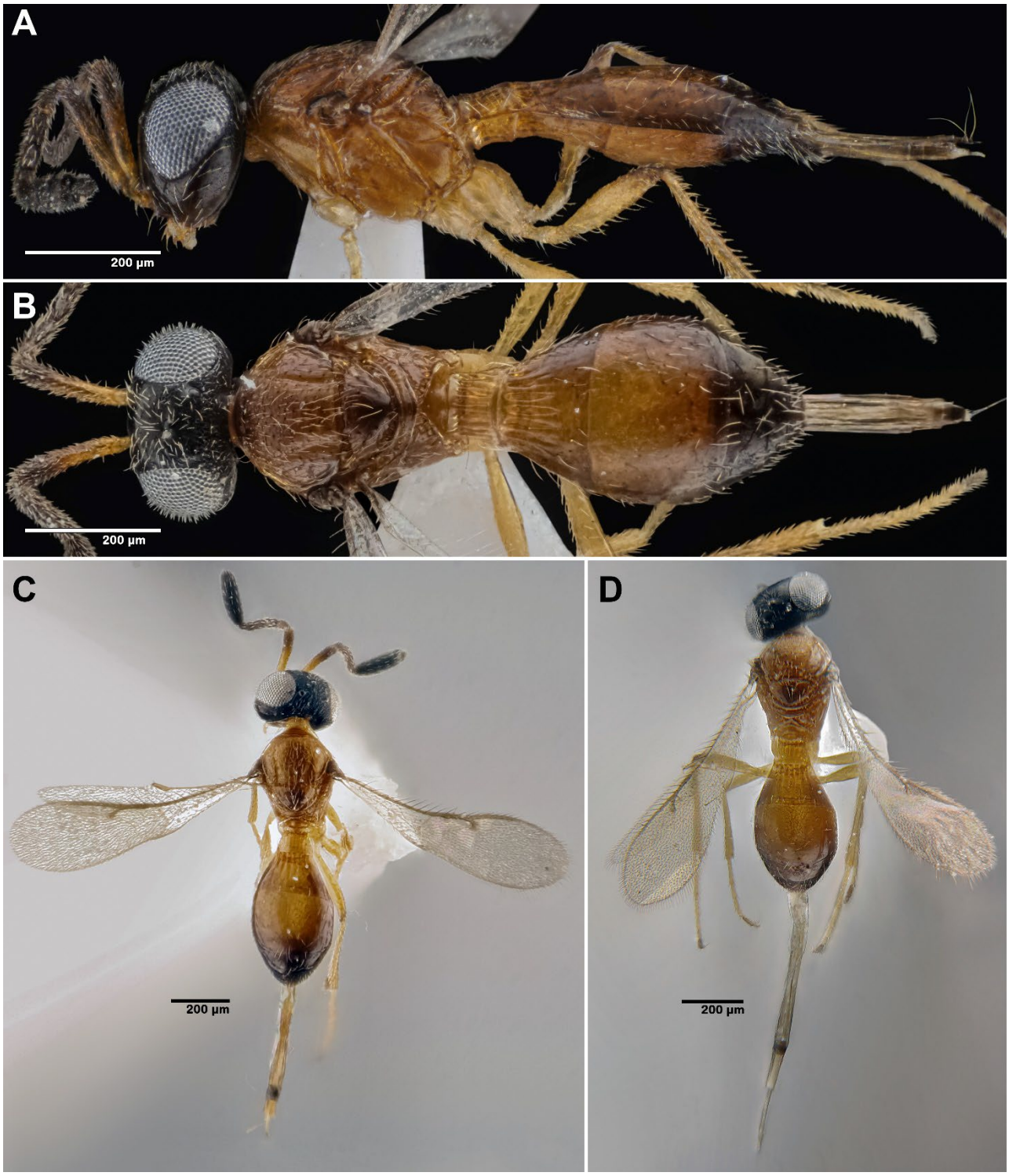

Fig. 2. *Duta bicolor* Rajmohana, 2014, female. **A.** Habitus, lateral view, **B.** Habitus, dorsal view (Head, mesoscutum, mesoscutellum, propodeum, TI, metasoma, ovipositor); **C.** The whole body, dorsal view; **D.** Second specimen with an extended ovipositor.

Male. Not yet collected in the Palaearctic region. The original description (Rajmohana, 2014 – fig. 69) illustrates the male antenna. However, all paratypes are female, and there is no accompanying description for the male specimens.

Biology. Unknown.

Distribution. Oriental (India), Palaearctic (Iran).

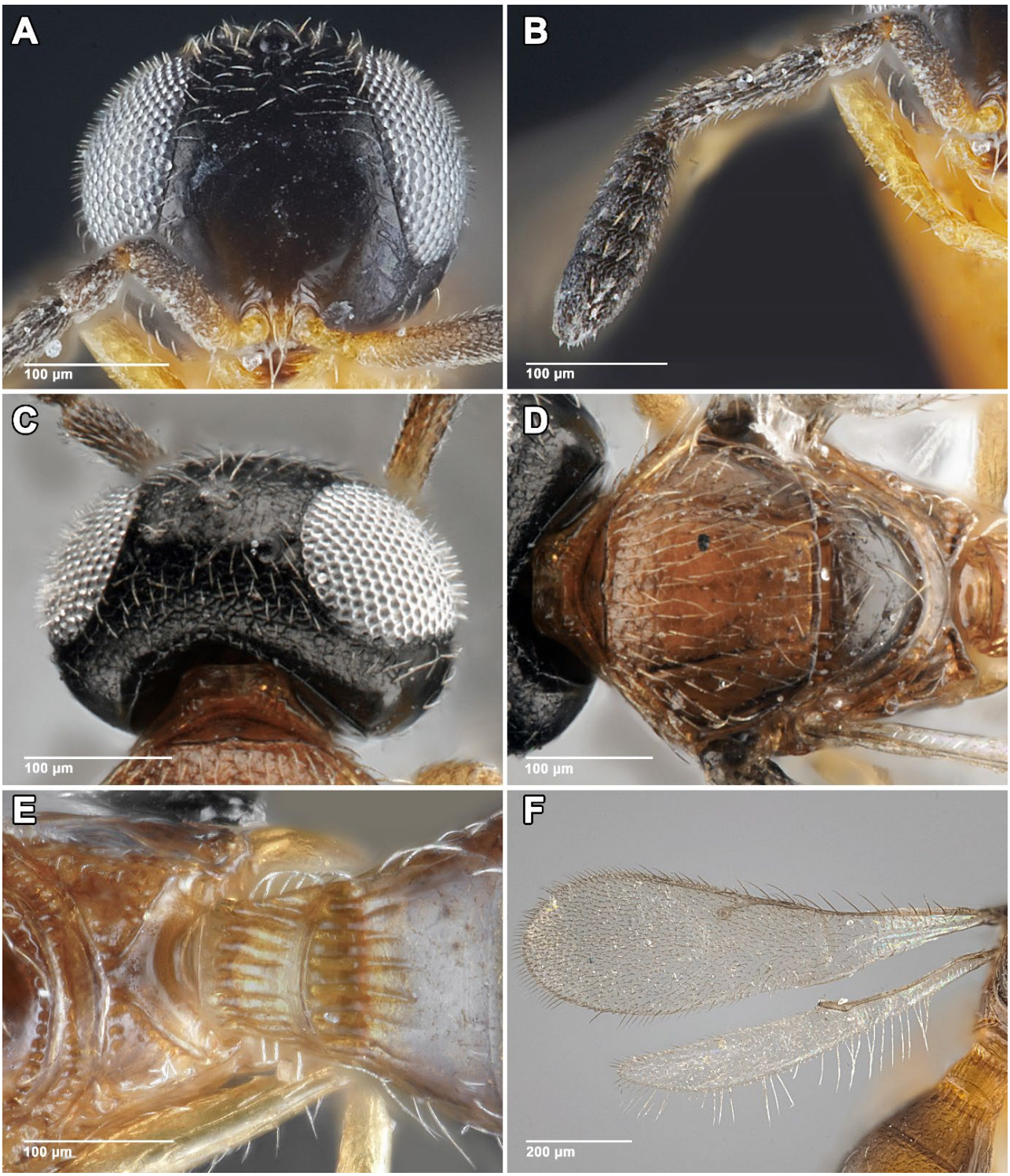

Fig. 3. *Duta bicolor* Rajmohana, 2014**,** female. **A.** Head, frontal view; **B.** Antenna; **C.** Head, dorsal view; **D.** Mesosoma, dorsal view; **E.** Propodeum, T1 and T2, dorsal view; **F.** Fore and hind wings.

Discussion

So far, no species of the genus *Duta* has been recorded from Central and Western Asia. It is mainly distributed in different biogeographic regions of the world, including the Afrotropical (Nixon, 1933), Australasian (Galloway & Austin, 1984), Nearctic (Masner, 1964, 1991), Oriental (Rajmohana, 2007a, 2014), and western Palaearctic (Priesner, 1951; Szabó, 1957; Kozlov, 1971; Kononova & Kozlov, 2008). The checklist presented in Table 1

herein compiles available information on all described species of *Duta* before Debnath *et al.* (2026), without re-examination of type or additional specimens (Ashmead, 1893; Dodd, 1913, 1914, 1920; Galloway & Szabó, 1966; Austin, 1983; Masner, 1991; Mukerjee, 1994; Kozlov & Lê, 2000; Rajmohana, 2007a, 2007b, 2014). During the production of the present paper, Debnath *et al.* (2026) published descriptions of ten additional Indian species of *Duta*, with the type material deposited in ZSIK: *D. coriata*, *D. foveola*, *D. microphleba*, *D. obscura*, *D. pallida*, *D. procera*, *D. protuberata*, *D. semiannulata*, *D. succina*, and *D. xantha*. A thorough revision of the genus is needed, not only for *Duta* itself, but also for closely related genera, to resolve longstanding ambiguities. *Duta bicolor* is a newly recorded addition to the scelionid fauna of Iran; its discovery represents the third *Duta* species in the Palaearctic region (Priesner, 1951). This species was collected from a desert habitat in the Bandan region, southeast of South Khorasan province. Given the diversity of this genus in the Oriental region (Mukerjee, 1994; Rajmohana, 2007a, 2007b, 2014), it is reasonable to expect the presence of additional species in the southeastern areas of the country. The occurrence of the species with an Oriental origin in various regions of Iran, particularly in the south and southeastern borders, indicates a biogeographical connection, which has been previously documented for many other groups of Hymenoptera (Rahmani *et al.*, 2019; Rosa *et al.*, 2024).

Furthermore, records for the existence of the elements from the Afrotropical (Derafshan *et al.*, 2021; Rosa *et al.*, 2024) in the same area of Iran also suggest a convergence of three biogeographical realms. This connection is largely a result of a shared geological history or the expansion in the distribution of the opportunistic or Hitchhiking species over a long-time scale (Noori *et al.*, 2024). No clear host evidence has been recorded for *Duta* species, other than a report by Masner (1991) that gryllids (Grylloidea) are the hosts. Gryllids are active across a wide range of habitats, and most species deposit their eggs either in or on plant tissues, where clutches may be sought by parasitoids (Masner, 1976, 1991). In general, the egg parasitoids employ different dispersal strategies compared to other parasitoids that target mobile stages of their hosts (larvae, nymphs, and adults). A key behavior is the attachment to the body of the female host insect (phoresy) prior to oviposition (Rajmohana & Patra, 2023). In the case of gryllids, as potential hosts of *Duta* species (Masner, 1991), this makes it difficult to consider this as a factor for dispersal across two biogeographical realms. However, it can be hypothesized that the oviposition habit of female gryllids - where they lay eggs in plant tissues (Naskrecki, 2001) - combined with human-mediated transfer of plant materials, may contribute to the transmission and expansion of the distribution range of this group of egg parasitoids. Considering the rich diversity of the parasitic hymenoptera in the south and southeastern parts of Iran (e.g., Ghafouri Moghaddam *et al.*, 2018; Rahmani *et al.*, 2019; Minab *et al.*, 2023; Ameri *et al.*, 2024), it is likely that there are undiscovered species of the genus *Duta* throughout various regions of the country. It is more likely to be found in scattered populations across the northeastern regions of the country, as well as in areas bordering Pakistan, Afghanistan, and Turkmenistan. Further research on host relationships and their role in natural biological control is also essential.

Author's Contributions

Farzad Minab: Field survey, collection, preparation and photography of the specimens, taxonomic identification, and drafting the manuscript; **Ehsan Rakhshani:** Supervising, methodology, review and editing; **Elijah J. Talamas**: Taxonomic identification, photography of the comparative material, review and editing; **Mostafa Ghafouri-Moghaddam:** drafting, review and editing.

Author's Information

Farzad Minab	✉ farzadminab@uoz.ac.ir	https://orcid.org/0000-0002-6850-0461
Ehsan Rakhshani	✉ rakhshani@uoz.ac.ir	https://orcid.org/0000-0001-5199-762X
Elijah J. Talamas	✉ Elijah.Talamas@fdacs.gov	https://orcid.org/0000-0002-1048-6345
Mostafa Ghafouri-Moghaddam	✉ mostafa.g@chula.ac.th	https://orcid.org/0000-0002-1942-9689

Funding

This research received no specific grant from any funding agencies.

Data Availability Statement

All data generated or analyzed during this study, including detailed methodology, are available from the corresponding author upon reasonable request.

Acknowledgments

This article forms a part of the PhD thesis of the first author and has been prepared and submitted in partial fulfillment of the requirements for the doctoral degree. Elijah Talamas was supported by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry.

Ethics Approval and Consent to Participate

Insects were used in this study. All applicable international, national, and institutional guidelines for the care and use of animals were followed. This article does not contain any studies with human participants performed by the authors.

Conflict of Interest

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

Generative AI statement

The authors declare that no Gen AI was used in the creation of this manuscript.

REFERENCES

Ameri, A., Lotfalizadeh, H., Talebi, A. A., Bagheri, A., & Ebrahimi, E. (2024) A preliminary survey of hymenopteran fauna of Iranian mangrove ecosystem, northern part of the Persian Gulf and Oman Sea. *Journal of Insect Biodiversity and Systematics*, 10(2), 401–413. https://doi.org/10.61186/jibs.10.2.401

Ashmead, W. H. (1893) A monograph of the North American Proctotrypidae. *Bulletin of the United States National Museum*, 45, 1–472. https://doi.org/10.5479/si.03629236.45.1

Austin, A. D. (1984) The fecundity, development and host relationship of *Ceratobaeus* spp. (Hymenoptera: Scelionidae), parasites of spider eggs. *Ecological Entomology*, 9, 125–132. https://doi.org/10.1111/j.1365-2311.1984.tb00707.x

Austin, A. D., Johnson, N. F., & Dowton, M. (2005) Systematics, evolution, and biology of scelionid and platygastrid wasps. *Annual Review of Entomology*, 50, 553–582. https://doi.org/10.1146/annurev.ento.50.071803.130500

Belokobylskij, S. A., Samartsev, K. G., & Il'inskaya, A. S. (2019) Annotated catalogue of the Hymenoptera of Russia. Volume II. Apocrita: Parasitica. *Proceedings of the Zoological Institute Russian Academy of Sciences*, 8(Suppl.), 1–594. https://doi.org/10.31610/trudyzin/2019.supl.8.5

Chen, H., Lahey, Z., Talamas, E. J., Valerio, A. A., Popovici, O. A., Musetti, L., Klopfstein, S., Polaszek, A., Masner, L., van Noort, S., Austin, A. D., & Deans, A. R. (2021) An integrated phylogenetic reassessment of the parasitoid superfamily Platygastroidea results in a revised familial classification. *Systematic Entomology*, 46(4), 1091–1124. https://doi.org/10.1111/syen.12511

Debnath, R., Abitha, J., Rajmohana, K., & Dinesh, K. P. (2026) Description of ten new species of *Duta* Nixon (Hymenoptera: Scelionidae) from India. *Zootaxa*, 5807(2), 201–244. https://doi.org/10.11646/zootaxa.5807.2.1

Derafshan, H. A., Olmi, M., Ghafouri Moghaddam, M., Nader, E., & Rakhshani, E. (2021) New records of Dryinidae from Iran. *Zoosystema*, 43(23), 563–583. https://doi.org/10.5252/zoosystema2021v43a23

Dodd, A. P. (1920) Notes on the exotic Proctotrupoidea in the British and Oxford University Museums, with descriptions of new genera and species. *Transactions of the Entomological Society of London*, 1919, 321–382. https://doi.org/10.1111/j.1365-2311.1920.tb00008.x

Dodd, A. P. (1913) Australian Hymenoptera Proctotrypoidea. No. 1. *Transactions of the Royal Society of South Australia*, 37, 130–181.

Dodd, A. P. (1914) Australian Hymenoptera Proctotrypoidea. No. 2. *Transactions of the Royal Society of South Australia*, 38, 58–131.

Galloway, I. D., & Austin, A. D. (1984) Revision of the Scelioninae in Australia. *Australian Journal of Zoology Supplementary Series*, 32(99), 1–138. https://doi.org/10.1071/AJZS099

Ghafouri Moghaddam, M., Rakhshani, E., van Achterberg, C., & Mokhtari, A. (2018) A study of the Iranian species of *Choeras* Mason. *Zootaxa*, 4446(4), 455–476. https://doi.org/10.11646/zootaxa.4446.4.3

Johnson, N. F., Musetti, L., & Masner, L. (2019) Systematics of Scelioninae. *ZooKeys*, 879, 23–50. https://doi.org/10.3897/zookeys.879.38788

Kononova, S. V., & Kozlov, M. A. (2008) *Scelionids of the Palaearctic. Subfamily Scelioninae.* KMK Scientific Press Ltd, Saint Petersburg, 489 P.

Kozlov, M. A. (1971) Proctotrupoids of the USSR. *Trudy Vsesoyuznogo Entomologicheskogo Obshchestva*, 54, 3–67.

Kozlov, M. A., & Lê, X. H. (2000) Egg-parasites of family Scelionidae (Hymenoptera). Fauna of Vietnam, vol. 3. Science and Technics Publishing House, Hanoi, 386 P.

Masner, L. (1964) A comparison of some Nearctic and Palearctic genera of Proctotrupoidea. *Časopis Československé Společnosti Entomologické*, 61, 123–155. https://doi.org/10.5281/zenodo.23730

Masner, L. (1976) Revisionary notes and keys to world genera of Scelionidae. *The Memoirs of the Entomological Society of Canada*, 108(S97), 1–87. https://doi.org/10.4039/entm10897fv

Masner, L. (1980) Key to genera of Scelionidae of the Holarctic region. *The Memoirs of the Entomological Society of Canada*, 112(S113), 1–54. https://doi.org/10.4039/entm112113fv

Masner, L. (1991) The Nearctic species of *Duta* Nixon. *The Canadian Entomologist*, 123(4), 777–793. https://doi.org/10.4039/Ent123777-4

Mikó, I., Vilhelmsen, L., Johnson, N. F., Masner, L., & Penzes, Z. (2007) Skeletomusculature of Scelionidae. *Zootaxa*, 1571(1), 1–78. https://doi.org/10.11646/zootaxa.1571.1.1

Minab, F., Rakhshani, E., Talamas, E. J., & Ghafouri Moghaddam, M. (2023) A checklist of Platygastridae and Scelionidae of Iran. *Journal of Insect Biodiversity and Systematics*, 9(2), 343–383. https://doi.org/10.52547/jibs.9.2.343

Muesebeck, C. F. W. (1979) Superfamily Proctotrupoidea. In: K. V., Krombein, P. D. Jr., Hurd, D. R. Smith, & B. D. Burks (Eds.), Catalog of Hymenoptera in America north of Mexico (pp. 1121–1186). Smithsonian Institution Press, Washington DC., xvi + 1011 P.

Mukerjee, M. K. (1994) Descriptions of Proctotrupoidea from Garhwal Himalayas. *Zoological Survey of India*, 163, 1–73.

Murphy, N. P., Carey, D., Castro, L. R., Dowton, M., & Austin, A. D. (2007) Phylogeny of platygastroid wasps. *Biological Journal of the Linnean Society*, 91, 653–669. https://doi.org/10.1111/j.1095-8312.2007.00825.x

Naskrecki, P. (2001) Grasshoppers and their relatives. In: S. A. Levin (Ed.), Encyclopedia of biodiversity. Vol. 3. (pp. 247–264). Academic Press, Elsevier, San Diego, CA, 5504 P.

Nixon, G. E. J. (1933) A further contribution to the study of South African Scelionidae. *Annals and Magazine of Natural History*, 12(70), 305–324. https://doi.org/10.1080/00222933308673697

Noori, S., Zahiri, R., Yusefi, G. H., Rajabizadeh, M., Hawlitschek, O., Rakhshani, E., Husemann, M., & Rajaei, H. (2024) Patterns of zoological diversity in Iran. *Diversity*, 16(10), 621. https://doi.org/10.3390/d16100621

Popovici, O. A., Fallahzadeh, M., Saghaei, N., Copeland, R., & Talamas, E. (2024) A new species-group in *Calliscelio*. *Zootaxa*, 5463(2), 201–214. https://doi.org/10.11646/zootaxa.5463.2.2

Priesner, H. (1951). New genera and species of Scelionidae from Egypt. *Bulletin de l'Institut Fouad I du Desert*, 1, 119–149.

Rahmani, Z., Samartsev, K., Ghafouri Moghaddam, M., & Rakhshani, E. (2019) Occurrence of *Amyosoma* in Iran. *Oriental Insects*, 54(3), 327–334. https://doi.org/10.1080/00305316.2019.1626779

Rajmohana, K. (2007a) Insecta: Scelionidae (Platygastroidea): Hymenoptera. *Fauna of Kudremukh National Park, Conservation Area Series*, 32, 49–69.

Rajmohana, K. (2007b) A new species of *Duta* Nixon. *Records of the Zoological Survey of India*, 107(4), 7–12. https://doi.org/10.26515/rzsi/v107/i4/2007/159106

Rajmohana, K. (2014) A systematic inventory of Scelioninae and Teleasinae. *Memoirs of Zoological Survey of India*, 22(1), 1–72.

Rajmohana, K., & Patra, S. (2023) Scelionid parasitoids. In Omkar (Ed.), Parasitoids in pest management (pp. 265–281). CRC Press, Boca Raton, 370 P. https://doi.org/10.1201/9781003354239

Rosa, P., Farhad, A., Talebi, A. A., Ameri, A., Baiocchi, D., Halada, M., & Rakhshani, E. (2024) The Iranian Chrysididae. *Journal of Insect Biodiversity and Systematics*, 10(4), 827–951. https://doi.org/10.61186/jibs.10.4.827

Szabó, J. B. (1957) Description of a new genus and species of Scelionidae from Hungary. *Folia Entomologica Hungarica*, 10, 267–272.

Szabó, J. B. (1966) New proctotrupoid genera and species from the Neogaea (Hymenoptera: Proctotrupoidea). First report on South American Scelionidae and Platygasteridae. *Acta Zoologica Academiae Scientiarum Hungaricae*, 12, 161–179.

Taekul, C., Valerio, A. A., Austin, A. D., Klompen, H., & Johnson, N. F. (2014) Molecular phylogeny of telenomine egg parasitoids. *Systematic Entomology*, 39(1), 24–35. https://doi.org/10.1111/syen.12032

Talamas, E. J., & Pham, H. T. (2017) An online photographic catalog of Platygastroidea in Vietnam. *Journal of Hymenoptera Research*, 56, 225–239. https://doi.org/10.3897/jhr.56.10214

Talamas, E. J., Thompson, J., Cutler, A., Schoenberger, S. F., Cuminale, A., Jung, T., Johnson, N. F., Valerio, A. A., Smith, A. B., Haltermann, V., & Alvarez, E. (2017) An online photographic catalog of primary types of Platygastroidea. *Journal of Hymenoptera Research*, 56, 187–224. https://doi.org/10.3897/jhr.56.10774

van Achterberg, K. (2009) Can Townes type Malaise traps be improved, *Entomologische Berichten*, 69(4), 129–135.

Citation: Minab, F., Rakhshani, E., Talamas, E. J. & Ghafouri-Moghaddam, M. (2026) A landlord or hitchhiking guest: Rediscovery of the genus *Duta* Nixon (Hymenoptera: Platygastridae, Scelionidae) in the Palaearctic region. *Entomol. Soc. Iran*, 46(3), 243–254.

DOI : https://doi.org/10.22034/jesi.46.3.1

URL : https://jesi.areeo.ac.ir/article_135777.html

pISSN: 0259-9996 – eISSN: 2783-3968

Journal of Entomological Society of Iran

2026, 46 (3), 243–254

Research Article

مالک یا مسافر فرصت‌طلب: بازشناسی جنس *Duta* Nixon (Hymenoptera: Platygastridae, Scelionidae) در منطقه پالئارکتیک

فرزاد میناب [۱]، احسان رخشانی [۱]، الیاس ج. تالاماس [۲] و مصطفی غفوری‌مقدم [۳]

۱. گروه گیاهپزشکی، دانشکده کشاورزی، دانشگاه زابل، ایران.

۲. کلکسیون بندپایان ایالت فلوریدا، بخش صنایع گیاهی، اداره کشاورزی و خدمات مصرف‌کنندگان فلوریدا، گینزویل، فلوریدا، آمریکا.

۳. واحد تحقیقات اکولوژی تلفیقی حشرات، گروه زیست‌شناسی، دانشکده علوم، دانشگاه چولالونگکورن، بانکوک، تایلند.

چکیده: جنس *Duta* Nixon, 1922 (Hymenoptera: Platygastroidea, Scelionidae)، بر اساس یک گونه با نام *D. bicolor* Rajmohana, 2014، برای اولین بار در غرب آسیا، ایران ثبت شد. نمونه‌ها از یک اقلیم بیابانی در منطقه کوهپایه‌ای واقع شده در شرقی‌ترن بخش در میانه نوار مرزی ایران، که توسط پوشش گیاهی بومی شامل نخلستان‌ها و درختان تاغ احاطه شده بود جمع‌آوری شدند. گونهٔ *Duta bicolor* در اصل از منطقه خاورزمین، در جنوب هند توصیف شده و اکنون به عنوان یک آرایهٔ میان زیست‌جغرافیایی، و چهارمین گونه از جنس *Duta* در منطقه پالئارکتیک گزارش می‌شود. ویژگی‌های افتراقی گونه به طور مختصر توصیف و تصویرسازی شدند. یک فهرست اولیه جهانی نیز برای تسهیل مطالعات بازنگری آینده درباره این جنس تهیه شد.

کلمات کلیدی: منطقه بیابانی، پارازیتوید تخم، خاورزمین، غرب آسیا، فهرست

اطلاعات مقاله

دریافت: ۱۴۰۴/۱۰/۱۶

پذیرش: ۱۴۰۵/۰۲/۲۲

انتشار: ۱۴۰۵/۰۴/۳۰

دبیر تخصصی: حسین لطفعلی زاده

نویسنده مسئول: احسان رخشانی

ایمیل: rakhshani@uoz.ac.ir

DOI :https://doi.org/10.22034/jesi.46.3.1