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A list of ant species (Hymenoptera: Formicidae) recorded in Khuzestan Province, south-western Iran

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Abstract

Khuzestan Province in south-western Iran occupies a biogeographically important position at the interface between the western Palaearctic region and the lowlands bordering the Persian Gulf, yet its ant fauna has remained poorly documented in national compilations. In the present study, all available published records of ants from Khuzestan were compiled and critically appraised, with these data being supplemented by new field collections from western lowland localities. Ants were sampled using pitfall traps and hand collecting across a range of habitats, including two protected areas. Species identifications were based on standard regional taxonomic literature and updated catalogues, and were checked, where possible, against reference material. In total, 59 ant species, including four new provincial records, were documented from Khuzestan Province, belonging to five subfamilies (Dolichoderinae, Formicinae, Myrmicinae, Ponerinae and Dorylinae). This represents a substantial increase compared with earlier national checklists, which reported only a handful of species from the province, also revealing a strong bias of existing records toward agricultural and urban habitats. The mountainous eastern parts of Khuzestan, associated with the Zagros range, remain largely unexplored and are expected to yield additional taxa with further targeted sampling. The present compilation provides a baseline for future faunistic, ecological and biogeographical studies on ants in south-western Iran.

Keywords: faunistics; species diversity; species checklist; protected areas; arid lowlands

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فهرستی از گونه‌های مورچه (Hymenoptera: Formicidae) ثبت‌شده در استان خوزستان، جنوب غربی ایران

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چکیده

استان خوزستان در جنوب غربی ایران، موقعیت زیست‌جغرافیایی مهمی در مرز بین منطقه غربی پالئارکتیک و نواحی کم ارتفاع هم‌مرز با خلیج فارس دارد؛ با این حال، فون مورچه‌های آن در جمع‌بندی‌های ملی تاکنون به‌طور کافی مستند نشده است. در مطالعه حاضر، تمام گزارش‌های منتشرشده در رابطه با مورچه‌های استان خوزستان گردآوری و به‌طور انتقادی ارزیابی شد و این داده‌ها با نمونه‌برداری‌های میدانی جدید از مناطق کم ارتفاع غرب استان تکمیل گردید. مورچه‌ها با استفاده از تله‌های گودالی و جمع‌آوری دستی در طیفی از زیستگاه‌ها، از جمله دو منطقه حفاظت‌شده، نمونه‌برداری شدند. شناسایی گونه‌ها توسط منابع تاکسونومیک استاندارد منطقه‌ای و آخرین فهرست‌ها انجام گرفت و در صورت امکان با نمونه‌های مرجع مقایسه شد. در مجموع، ۵۹ گونه مورچه، شامل چهار گزارش جدید استانی، از خوزستان مستند شد که متعلق به پنج زیرخانواده Ponerinae، Myrmicinae، Formicinae، Dolichoderinae و Dorylinae است. این تعداد در مقایسه با فهرست‌های مورچه‌های ایران در گذشته که تنها تعداد اندکی گونه از این استان گزارش کرده بودند، افزایش قابل‌توجهی را نشان می‌دهد و سوگیری شدید داده‌های موجود به‌سوی زیستگاه‌های کشاورزی و شهری را آشکار می‌سازد. بخش‌های کوهستانی شرقی خوزستان، مرتبط با رشته‌کوه زاگرس، نیز عمدتاً ناشناخته باقی مانده و انتظار می‌رود با انجام نمونه‌برداری هدفمند، گونه‌های بیشتری در آن یافت شود. نتایج مطالعه حاضر، مبنایی برای مطالعات آینده فونستیکی، اکولوژیکی و زیست‌جغرافیایی روی مورچه‌ها در جنوب غربی ایران فراهم می‌کند.

کلید واژه‌ها: فونستیک؛ تنوع گونه‌ای؛ فهرست گونه‌ها؛ مناطق حفاظت شده؛ نواحی کم ارتفاع خشک

دبیر تخصصی: دکتر محمد مهدی ربیعه

Introduction

Ants (Hymenoptera: Formicidae) are among the most ecologically influential insects in terrestrial ecosystems, given their high abundance, broad geographic distribution, and diverse life histories. Through nest construction, foraging, as well as interactions with plants, soil organisms, and other arthropods, ants act as key ecosystem engineers that modify the physical, chemical, and biological properties of their environments. Their activities contribute to essential ecological processes including soil aeration, nutrient cycling, seed dispersal, and the regulation of arthropod populations. Since ant communities respond sensitively to environmental conditions and habitat structure, they are also widely employed as bioindicators in biodiversity assessments and ecological monitoring. Thus, documenting regional ant faunas is fundamental for understanding ecosystem functioning, biogeographic patterns, and the conservation value of understudied areas (Del Toro et al., 2012; Rocha et al., 2024).

From a taxonomic and biogeographical perspective, Formicidae are among the best-studied insect families, with over 14,000 described species and subspecies, though global models demonstrate substantially higher true diversity. High-resolution diversity maps illustrate that many climatically suitable regions remain under-sampled, highlighting the need for regional faunistic surveys to address spatial gaps and inform conservation planning (Kass et al., 2022; Ward & Boudinot, 2025).

Iran lies at the intersection of the western Palaearctic, Afrotropical and Oriental regions and encompasses a wide range of biomes and ecoregions, including Hyrcanian forests, Zagros Mountain systems, along with arid plateaus and lowland deserts; together they are expected to support a rich and heterogeneous ant fauna. Early myrmecological work in Iran, largely along the first third of the twentieth century, yielded scattered species records from different parts of the country; nevertheless, systematic faunistic research was limited and geographically biased. The publication of the first comprehensive national checklist, documenting 110 species and subspecies in 26 genera and six subfamilies, marked a turning point by synthesizing historical literature and museum material as well as through highlighting extensive gaps in sampling coverage (Olson et al., 2001; Paknia et al., 2008; Khalili-Moghadam et al., 2025).

Subsequent surveys, regional checklists and taxonomic contributions, including new records and status changes reported from various provinces and habitats, have augmented the number of ant taxa known from Iran to approximately 320 species and subspecies in more than 35 genera along with seven subfamilies, though some literature records remain doubtful or require revision. Recent faunistic papers from central, western and northern Iran consistently emphasize that many areas, especially mountainous regions and arid lowlands, are still poorly explored and that further collecting will substantially enhance the documented richness. This pattern agrees with global modelling, which identifies parts of the Middle East, including Iran, as “hotspots of discovery” where ant diversity is likely under-recorded relative to climatic expectations (Paknia et al., 2008; Guénard et al., 2012; Pashaei Rad et al., 2018; Khalili-Moghadam et al., 2025).

Within Iran, Khuzestan Province in the south-west is of particular biogeographical interest. It comprises predominantly low-elevation, hot, arid to semi-arid landscapes bordering Iraq and the Persian Gulf, with riverine systems, irrigated agriculture, and urban habitats which together may host both Palaearctic elements and species of Afrotropical or Oriental affinity. Previous studies from Khuzestan

have principally addressed ants in the context of mutualistic associations with aphids and mealybugs in agricultural systems as well as urban green spaces. They have revealed diverse assemblages of Formicinae, Myrmicinae and Dolichoderinae, but have not provided a province-level synthesis of the overall ant fauna. In addition, national-scale checklists and later additions have demonstrated that south-western Iran, including Khuzestan, remains less intensively sampled than many northern and central provinces (Paknia et al., 2008; Shiran et al., 2013; Mossadegh et al., 2016; Khalili-Moghadam et al., 2021).

In this context, regional species lists are crucial for documenting local richness, refining the distribution ranges of widespread taxa as well as detecting introduced or biogeographically significant species at the interface of major zoogeographical regions. The present study compiles ant species recorded from Khuzestan Province, south-western Iran, based on published literature, available voucher material, and new samplings focused on protected areas. This work contributes to a more comprehensive understanding of the Iranian myrmecofauna and together with its regional variation (Guénard et al., 2012; Shiran et al., 2013; Mossadegh et al., 2016).

Materials and Methods

Sampling was undertaken from April to December 2025 in West Khuzestan Province, south-western Iran, a region composed mainly of lowland plains below approximately 150 m a.s.l., characterized by a predominantly hot, arid to semi-arid climate. The area includes a heterogeneous mosaic of habitats, such as urban and suburban green spaces, irrigated agricultural fields and orchards, riparian corridors along major rivers, as well as patches of natural or semi-natural steppe and desert vegetation. This study also focused on the Karkheh and Mishdagh Protected Areas, for which we present the preliminary findings of the survey. Ants were collected from 12 sampling sites using pitfall traps (10 traps deployed for 48 hours) as well as through hand sampling (Figure 1). Hand collection involved systematic searches of soil, stones, leaf litter, dead wood, vegetation, and nest entrances. All specimens were preserved in 75% ethanol and labeled with collection locality and date. The specimens were identified using relevant taxonomic literature (e.g. AntWeb, 2026; Bolton, 2025). Also, the identifications were verified, where possible, through comparison with reference material. Voucher specimens are deposited in the Insect and Mite Collection of Ahvaz (IMCA), Plant Protection Department, Shahid Chamran University of Ahvaz, Iran. Duplicate specimens have been retained in the third author's reference collection.

The entire available literature was examined, with ant species previously recorded from Khuzestan Province compiled. For each nominal species, locality data (where available) were transcribed from the original sources. Systematics and nomenclature followed Bolton (2025). Species names applied in earlier Iranian literature were checked against current synonymies and status changes, and, where necessary, updated to reflect modern usage; names now regarded as junior synonyms or misidentifications were not treated as separate species in the provincial list. Subfamilies are arranged according to contemporary higher-level classifications, while genera and species are listed alphabetically.

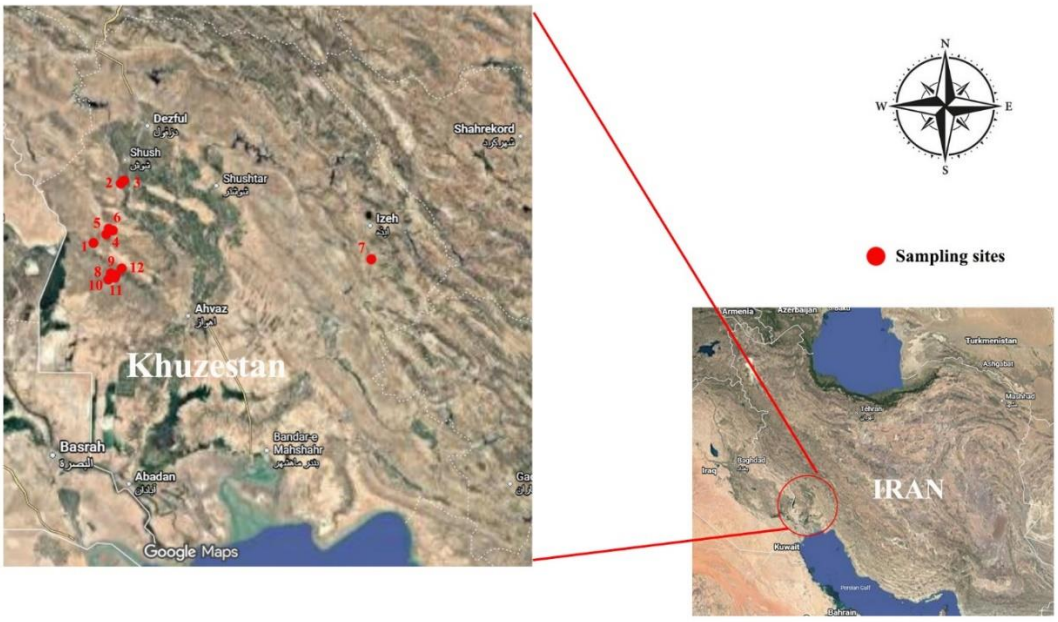


Figure 1. Map of the study area indicating the locations of 12 sampling sites within the Khuzestan Province, Bostan (1), Karkheh (2, 3), Mishdagh (4, 5, 6), Qaleh Tol (7) and Susangerd (8, 9, 10, 11, 12).

Results

We documented a total of 59 ant species from Khuzestan Province in south-western Iran, including four new provincial records, representing five subfamilies: Dolichoderinae (2 taxa), Dorylinae (1), Formicinae (22), Myrmicinae (21) and Ponerinae (1). Four species are newly recorded from the fauna of Khuzestan Province. This list, based on our sampling (marked with asterisk) and a review of available literature, is as follows:

Subfamily Dolichoderinae Forel, 1878

***Tapinoma insularis* Seifert, Kaufmann & Fraysse, 2024**

Distribution in Khuzestan Province. Abadan (Seifert et al., 2024).

***Tapinoma karavaievi* Emery, 1925**

Distribution in Khuzestan Province. Ahvaz (Paknia et al., 2008; Mossadegh et al., 2018); Izeh (Barangerd), Qaleh Tol (Khalili-Moghadam, 2021) and Masjedsoleyman (Seifert et al., 2024).

***Tapinoma simrothi* Krausse, 1911**

Distribution in Khuzestan Province. Ahvaz, Abadan, Mollasani, Ramhormoz, Dezful and Shush (Dezhakam and Soleyman-Nejadian, 2000, 2002; Nemati et al., 2000; Shiran et al., 2013; Mossadegh, 2012; Alizadeh et al., 2012; Torabi & Pashaei Rad, 2015; Mossadegh et al., 2008; 2016; 2017; Zarghami et al., 2024).

Note. It is widespread in most localities (Shiran et al., 2013).

Subfamily Dorylinae Leach, 1815

***Dorylus* sp.**

Distribution in Khuzestan Province. Ahvaz (Paknia et al., 2008).

Subfamily Formicinae Latreille, 1802

***Camponotus compressus* (Fabricius, 1787)**

Distribution in Khuzestan Province. Without exact location (Mossadegh, 1995).

Note: This species has been reported as *Camponotus thoracicus compressus* by Mossadegh (1995).

***Camponotus libanicus* André, 1881**

Distribution in Khuzestan Province. Dezful (Shiran et al., 2013)

***Camponotus oasium* Forel, 1890**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful, Shush and Izeh (Dezhakam & Soleyman-Nejadian, 2000; 2002; Alizadeh et

al., 2012; Mossadegh, 2012; Shiran et al., 2013; Mossadegh et al., 2016, 2017, 2018).

***Camponotus sanctus* Forel, 1904**

Distribution in Khuzestan Province. Ahvaz (Torabi & Pashaei Rad, 2015).

***Camponotus sericeus* (Fabricius, 1798)**

Distribution in Khuzestan Province. Dezful (Ghahari & Collingwood, 2011).

***Camponotus vogti* Forel, 1906**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Mossadegh et al., 2016, 2017).

***Camponotus xerxes* Forel, 1904**

Distribution in Khuzestan Province. Ahvaz and Dezful (Dezhakam & Soleyman-Nejadian, 2000; 2002; Mossadegh, 2012; Alizadeh et al., 2012; Mossadegh et al., 2018).

***Cataglyphis cinnamomea* (Karavaiev, 1910)**

Distribution in Khuzestan Province. Ahvaz (Albaji) (Shiran et al., 2013).

***Cataglyphis livida* (André, 1881)**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Mahshahr, Dezful and Shush (Dezhakam & Soleyman-Nejadian, 2000; 2002; Mossadegh, 2012; Shiran et al., 2013; Mossadegh et al., 2008, 2016, 2017, 2018; Zarghami et al., 2024).

***Cataglyphis nigra* (André, 1881)**

Distribution in Khuzestan Province. Ramhormoz (Ghahari & Collingwood, 2011).

Cataglyphis nodus* (Brullé, 1833)

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Dezhakam & Soleyman Nejadiyan, 2000, 2002; Mossadegh et al., 2016, 2017; Shiran et al., 2013; Torabi & Pashaei Rad, 2015).

Material examined. Khuzestan Province, Susangerd, Jangal-e Aflouk, 23.iv.2025, 14 m, 31°34′22″N, 48°12′40″E, 10 workers; Karkheh county, 1.vii.2025, 59 m, 32°04′02″N, 48°13′32″E, 32 workers; Mishdagh, 23.x.2025, 75 m, 31°48′08″N, 48°09′20″E, 26 workers; Qaleh Tol, 26.xi.2025, 873 m, 31°37′55″N, 49°52′57″E, 10 workers.

Cataglyphis pallida* Mayr, 1877

Material examined. Khuzestan Province, Susangerd, 23.iv.2025, 18 m, 31°33′41″N, 48°10′51″E, 11 workers; Bostan, Jangal-e Omm-o Debs, 29.vii.2025, 12 m, 31°43′57″N, 48°02′01″E, 7 workers; Karkheh County, 31.viii.2025, 59 m, 32°04′09″N, 48°14′13″E, 15 workers.

Note: This species is newly recorded for the fauna of Khuzestan Province (Khalili-Moghadam et al., 2021).

Cataglyphis shahrekordensis* Khalili-Moghadam, Salata & Borowiec, 2023

Distribution in Khuzestan Province. Ahvaz (Khalili-Moghadam et al., 2023b).

Material examined. Khuzestan Province, Bostan, Jangal-e Omm-o Debs, 21.vii.2025, 12 m, 31°43′57″N, 48°02′01″E, 8 workers; Mishdagh, 29.vii.2025, 69 m, 31°47′56″N, 48°09′21″E, 70 workers.

***Cataglyphis* sp.**

Distribution in Khuzestan Province. Izeh (Barangerd) (Khalili-Moghadam, 2021).

***Cataglyphis viatica* (Fabricius, 1787)**

Distribution in Khuzestan Province. Without exact location (Mossadegh 1995).

***Formica* sp.**

Distribution in Khuzestan Province. Izeh (Khalili-Moghadam, 2021).

***Lasius paralienus* (Seifert, 1992)**

Distribution in Khuzestan Province. Ahvaz (Shiran et al., 2013).

***Lasius platythorax* Seifert, 1991**

Distribution in Khuzestan Province. Dezful (Dezhakam & Soleyman-Nejadian, 2002; Alipanah, 2004).

***Lepisiota bipartita* (Smith, F., 1861)**

Distribution in Khuzestan Province. Ahvaz, Susangerd, Mollasani, Albaji, Mahshahr and Khorramshahr (Alizadeh et al., 2012; Shiran et al., 2013).

***Lepisiota melas* Emery, 1915**

Distribution in Khuzestan Province. Ahvaz (Torabi & Pashaei Rad, 2015).

Lepisiota semenovi* (Ruzsky, 1905)

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Mossadegh et al., 2016, 2017, 2018).

Material examined. Khuzestan Province, Susangerd, 14.iv.2025, 13 m, 31°33′57″N, 48°09′55″E, 15 workers; Susangerd, 15.v.2025, 16 m, 31°33′51″N, 48°10′54″E, 25 workers.

***Nylanderia jaegerskioeldi* (Mayr, 1904)**

Distribution in Khuzestan Province. Ahvaz and Abadan (Zarghami et al., 2024).

***Nylanderia flavipes* (Smith, 1874)**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Alipanah & Dezhakam, 2000; Dezhakam & Soleyman-Nejadian, 2000, 2002; Mossadegh, 2012; Mossadegh et al., 2008, 2016, 2017).

Note: This species has been reported as *Paratrechina flavipes* by all authors.

***Paratrechina longicornis* (Latreille, 1802)**

Distribution in Khuzestan Province. Ahvaz and Abadan (Alizadeh et al., 2012; Shiran et al., 2013, Mossadegh et al., 2017, 2018; Zarghami et al., 2024).

Note: This species has been reported as *Nylanderia longicornis* by Mossadegh et al. (2018).

***Plagiolepis pallescens* Forel, 1889**

Distribution in Khuzestan Province. Ahvaz and Dezful (Dezhakam & Soleyman-Nejadian, 2000, 2002; Alizadeh et al., 2012; Mossadegh, 2012; Shiran et al., 2013; Mossadegh et al., 2008, 2017, 2018).

***Plagiolepis pygmaea* (Latreille, 1798)**

Distribution in Khuzestan Province. Ahvaz (Ghahari & Collingwood, 2011).

***Plagiolepis taurica* Santschi, 1920**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Mossadegh et al., 2016, 2017).

***Plagiolepis vladileni* Radchenko, 1996**

Distribution in Khuzestan Province. Without exact location (Salata et al., 2018).

***Polyrhachis lacteipennis* Smith, F., 1858**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Dezhakam & Soleyman-Nejadian, 2000, 2002, Shiran et al., 2013; Mossadegh et al., 2008, 2016, 2017).

Note: This species has been reported as *Polyrhachis simplex* by Mossadegh et al. (2008).

Subfamily Myrmicinae Forel, 1878

***Aphaenogaster syriaca* Emery, 1908**

Distribution in Khuzestan Province. Ahvaz and Dezful (Alipanah & Dezhakam, 2000; Dezhakam & Soleyman-Nejadian, 2000, 2002).

***Cardiocondyla fajumensis* Forel, 1913**

Distribution in Khuzestan Province. Without exact location (Mossadegh et al., 2018).

***Crematogaster antaris* Forel, 1849**

Distribution in Khuzestan Province. Ahvaz, Dezful and Safiabad (Alipanah & Dezhakam, 2000; Soleyman Nejadiyan & Dejakam, 2001; Dezhakam & Soleyman Nejadian, 2000, 2002).

***Crematogaster sorokini* Ruzsky, 1905**

Distribution in Khuzestan Province. Khuzestan, without exact location (Mossadegh et al., 2017).

***Messor barbarus* (Linnaeus, 1767)**

Distribution in Khuzestan Province. Without exact location (Mossadegh & Kocheili, 2003).

***Messor dentatus* Santschi, 1927**

Distribution in Khuzestan Province. Ahvaz (Torabi & Pashaei Rad, 2015).

***Messor ebeninus* Santschi, 1927**

Distribution in Khuzestan Province. Ahvaz (Zarei et al., 2021).

***Messor galla* (Mayr, 1904)**

Distribution in Khuzestan Province. Khorramshahr (Ghahari & Collingwood, 2011);

***Messor rufotestaceus* (Foerster, 1850)**

Distribution in Khuzestan Province. Ahvaz and Dezful (Alipanah & Dezhakam, 2000).

***Messor* sp.**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Mossadegh et al., 2016).

Messor syriacus* Tohmé, 1969

Material examined. Khuzestan Province, Mishdagh, 24.xii.2025, 69 m, 31°47′56″N, 48°09′21″E, 85 workers.

Note: This species is newly recorded for the fauna of Khuzestan Province. It was previously recorded from Chaharmahal va Bakhtiari and Kordestan (Khalili-Moghadam et al., 2019; Safariyan et al, 2022).

Monomorium abeillei* André, 1881

Distribution in Khuzestan Province. Ahvaz, Abadan, Mollasani, Ramhormoz, Dezful and Shush (Alipanah & Dezhakam, 2000; Dezhakam & Soleyman-Nejadian, 2000, 2002; Mossadegh, 2012; Alizadeh et al., 2012; Mossadegh et al., 2008, 2016, 2017, 2018; Zarghami et al., 2024).

Material examined. Khuzestan Province, Susangerd, 23.iv.2025, 18 m, 31°33′41″N, 48°10′51″E, 13 workers; Karkheh County, 21.vi.2025, 59 m, 32°04′02″N, 48°13′32″E, 150 workers; Mishdagh, 21.vi.2025, 73 m, 31°48′00″N, 48°09′19″E, 67 workers.

Monomorium bicolor* Emery, 1877

Material examined. Khuzestan Province, Susangerd, 23.iv.2025, 18 m, 31°33′41″N, 48°10′51″E, 29 workers; Mishdagh, 21.vi.2025, 69 m, 31°47′56″N, 48°09′21″E, 67 workers; Bostan, Jangal-e Omm-o Debs, 29.vii.2025, 12 m, 31°43′57″N, 48°02′01″E, 21 workers; Karkheh county, 31.viii.2025, 59 m, 32°04′09″N, 48°14′13″E, 150 workers.

Note: This species is newly recorded for the fauna of Khuzestan Province. It was previously recorded from Shahroud, Semnan Province (Pashaei Rad & Shah Hoesseini, 2022).

***Monomorium clavicorne* André, 1881**

Distribution in Khuzestan Province. Abadan (Ghahari & Collingwood, 2011).

***Monomorium libanicum* (Tohmé, H. & Tohmé, G., 1980)**

Distribution in Khuzestan Province. Mahshahr and Khorramshahr (Shiran et al., 2013).

***Monomorium exiguum* Forel, 1894**

Distribution in Khuzestan Province. Ahvaz and Mahshahr (Shiran et al., 2013).

Note: This species has been reported as *Monomorium qarahe* Collingwood & Agosti, 1996 by Shiran et al. (2013).

***Monomorium salomonis* (Linnaeus, 1758)**

Distribution in Khuzestan Province. Without exact location (Modarres Awal 1997).

***Monomorium* sp.**

Distribution in Khuzestan Province. Qaleh Tol (Khalili-Moghadam, 2021).

***Pheidole indica* Mayr, 1879**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Dezful, Abadan, Khorramshahr, Ramhormoz and Shush (Dezhakam & Soleyman Nejadiyan, 2000, 2002; Mossadegh et al., 2008, 2016, 2017, 2018; Ghahari & Collingwood, 2011; Mossadegh, 2012; Alizadeh et al., 2012; Shiran et al., 2013; Zarghami et al., 2024).

Note: This species has been reported as *Pheidole teneriffana* Forel, 1893 by all authors.

***Pheidole pallidula* (Nylander, 1889)**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful, Shush (Nemati et al., 2000, Dezhakam & Soleyman-Nejadian, 2000, 2002; Mossadegh, 2012; Alizadeh et al., 2012; Shiran et al., 2013; Mossadegh et al., 2008, 2016, 2017, 2018); Izeh, Baghmalek and Qaleh Tol (Khalili-Moghadam, 2021).

Tetramorium caespitum* (Linnaeus, 1758)

Material examined. Khuzestan Province, Susangerd, 21.iv.2025, 11 m, 31°32′59″N, 48°09′43″E, 10 workers.

Note: This species is newly recorded for the fauna of Khuzestan Province. It was previously recorded from Isfahan (Pashaei Rad & Iravani, 2021).

***Tetramorium* sp.**

Distribution in Khuzestan Province. Dezful (Dezhakam & Soleyman-Nejadian, 2000, 2002; Zarghami et al., 2024).

***Trichomyrmex destructor* (Jerdon, 1851)**

Distribution in Khuzestan Province. Ahvaz, Hamidieh, Mahshahr, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Alipanah & Dezhakam, 2000; Nemati et al., 2000; Dezhakam & Soleyman-Nejadian, 2000, 2002; Alizadeh et al., 2012; Shiran et al., 2013; Mossadegh et al., 2008, 2016, 2017, 2018).

Note: This species has been reported as *Monomorium destructor* by most authors.

***Trichomyrmex evansi* (Donisthorpe, 1918)**

Distribution in Khuzestan Province. Ahvaz, Mollasani, Abadan, Ramhormoz, Dezful and Shush (Mossadegh et al., 2016, 2017).

***Trichomyrmex mayri* (Forel, 1902)**

Distribution in Khuzestan Province. Ahvaz, Shushtar, Susangerd, Albaji, Mahshahr and Khorramshahr (Shiran et al., 2013; Mossadegh et al., 2017, 2018).

Subfamily Ponerinae Lepeletier de Saint-Fargeau, 1835

***Mesoponera ambigua* (André, 1890)**

Distribution in Khuzestan Province. Dezful (Ghahari & Collingwood, 2011).

Discussion

Ants represent a powerful tool for monitoring ecosystem condition, as they are ubiquitous, abundant, ecologically pivotal across multiple trophic levels, as well as respond sensitively and rapidly to environmental change. Thus, they provide highly informative data for ascertaining both short-term management impacts and long-term ecosystem dynamics, including land conversion, grazing, fire, and climate change (Underwood & Fisher, 2006). Accordingly, faunistic surveys of ants in protected areas are essential, as only well-designed inventories and monitoring schemes can detect invasive, threatened, or functionally important species and thereby inform evidence-based conservation planning and management. The discovery of four new provisional records among a relatively small number of collected species further emphasizes the conservation value of the study sites. This finding demonstrates that the surveyed areas harbor previously undocumented elements of the regional ant fauna, highlighting their importance as reservoirs of biodiversity and reinforcing the need to prioritize them in future monitoring and management efforts.

The ant fauna of Khuzestan Province has long been under-represented in national and regional syntheses of Iranian Formicidae. In the first comprehensive checklist of Iranian ants (Paknia et al., 2008), only a small number of species were attributed to Khuzestan, in striking contrast to better-sampled provinces in northern and central Iran. This discrepancy clearly reflects low and geographically restricted sampling effort rather than genuine species impoverishment, a conclusion supported by global models that identify the Middle East as a region where ant diversity is likely under-recorded relative to climatic potential (Guénard et al., 2012). The present compilation, documenting 59 species for Khuzestan, indicates that the province supports a considerably richer ant fauna than previously recognized and highlights the importance of continued regional surveys.

Much of the recent increase in recorded species can be traced to intensified collecting associated with applied entomological research, particularly studies on ants attending honeydew-producing aphids and mealybugs in citrus orchards and other crops, along with surveys of ants and their associated mesostigmatic mites. These investigations, largely undertaken by research groups based at Shahid Chamran University of Ahvaz and collaborating institutions, have generated numerous records from orchards, field crops, and urban green spaces in localities such as Ahvaz, Dezful, Mollasani, Mahshahr and Abadan (e.g. Dezhakam & Soleyman-Nejadian, 2002; Shiran et al., 2013; Mossadegh et al., 2016, 2017; Khalili-Moghadam, 2021). As such, the current species list is strongly biased toward common, disturbance-tolerant taxa in the Formicinae and Myrmicinae, as well as toward genera known to be abundant in arid and anthropogenic habitats, such as *Camponotus*, *Cataglyphis*, *Lepisiota*, *Pheidole*, *Trichomyrmex* and *Tapinoma*. Small-bodied, cryptic or habitat-specialist species, as well as taxa associated with leaf litter, dead wood or intact steppe vegetation, are likely under-represented.

Khuzestan is environmentally heterogeneous, combining extensive lowland plains with hot, arid to semi-arid climates and more elevated terrain in the east that forms the south-western margin of the Zagros Mountains. Whereas the lowland agricultural landscapes and urban areas of western and central Khuzestan have received relatively intensive attention, the montane and foothill zones in the eastern part of the province, including localities around Izeh and Baghmalek, remain only sporadically sampled (Khalili-Moghadam, 2021). This imbalance is notable since studies in other Iranian mountain systems consistently indicate that upland habitats harbor distinct assemblages with both Palaearctic montane elements and regionally endemic taxa, especially within ecologically diverse genera such as *Cataglyphis*, *Camponotus* and *Messor* (Khalili-Moghadam et al., 2019, 2021, 2023a, b; 2025). Targeted surveys along elevational gradients in the eastern highlands and in semi-natural steppe, rocky slopes and oak woodlands are hence expected to enhance the known species richness of Khuzestan and may unveil taxa with restricted distributions or particular conservation significance.

From a biogeographical perspective, the ant fauna documented here reflects Khuzestan's position at the crossroads of major zoogeographical regions. The presence of widespread Palaearctic species, together with thermophilous forms typical of arid and semi-arid environments, reveals faunal links with both the Iranian Plateau and the Mesopotamian–Persian Gulf lowlands. Several recorded species, including well-known tramp and synanthropic ants such as *Paratrechina longicornis*, *Pheidole indica* and *Trichomyrmex destructor*, are almost certainly favored by human activities and irrigation-based agriculture, as documented in other parts of Iran as well as the wider Middle East (Paknia et al., 2008; Mossadegh et al., 2016, 2017; Shahnoori et al., 2026). Their repeated occurrence in orchards, gardens and indoor or peri-domestic habitats in Khuzestan highlights the role of anthropogenic environments as corridors and reservoirs for non-native or opportunistic taxa. Concurrently, the occurrence of taxa with broader Irano-Anatolian or Middle Eastern distributions, such as *Camponotus oasium*, *Cataglyphis nodus*, *Lepisiota semenovi* and

Polyrhachis lacteipennis, supports earlier suggestions that south-western Iran forms part of a faunal continuum linking Iran with the Arabian Peninsula and neighboring regions (Olson et al., 2001; Paknia et al., 2008; Mossadegh et al., 2016, 2017; AntWiki, 2025).

The composition of the Khuzestan fauna, as currently known, is broadly in accordance with patterns observed in other arid and semi-arid regions of Iran as well as adjacent countries, where *Camponotus*, *Cataglyphis*, *Messor* and *Pheidole* typically account for a large proportion of the recorded species and individuals (Paknia et al., 2008; AntWiki, 2025). Nevertheless, the relatively low number of taxa in some groups known to include litter-dwelling or cryptobiotic ants (e.g. certain Myrmicinae and Ponerine lineages) suggests that standard hand collecting and pitfall trapping in open habitats are not sufficient to capture the full spectrum of ant diversity in the province. Incorporation of complementary methods such as Winkler and Berlese extraction of leaf litter, systematic nest excavations in undisturbed sites and nocturnal sampling may reveal additional taxa and provide a more balanced view of community structure (Paknia et al., 2008).

This synthesis should therefore be considered as a provisional but necessary step toward a comprehensive understanding of the ant fauna of Khuzestan, as several records are based on limited material, some taxa remain unidentified to species level, and nomenclatural issues arising from recent revisions—particularly at the generic level in groups such as *Paratrechina–Nylanderia* and *Monomorium–Trichomyrmex*—need to be addressed consistently using up-to-date taxonomic frameworks. Future work in the province should prioritize systematic sampling across major habitat types as well as elevational zones, reexamination of critical material in light of modern revisions and online type imagery, along with integration of ecological data on habitat preferences and species associations with cultivated plants and other arthropods. Such efforts will be essential not only for refining species distributions and detecting non-native species at an early stage, but also for ascertaining the conservation value of ant assemblages in this biogeographically significant region of south-western Iran.

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