



Contributions to the *Andrena* (Hymenoptera, Andrenidae) Fauna of the Mediterranean Region of Türkiye

Kerem Kaleli[‡], Fatih Dikmen[§], Thomas James Wood[|], Çiğdem Özenirler[¶], Ahmet Murat Aytekin[¶]

[‡] Istanbul University, Institute of Graduate Studies in Sciences, Istanbul, Türkiye

[§] Istanbul University, Faculty of Science, Department of Biology, Istanbul, Türkiye

[|] Naturalis Biodiversity Center, Darwinweg 2, 2333 CR, Leiden, Netherlands

[¶] Applied Biological Sciences Research Laboratory (ABS-Lab), Department of Biology, Faculty of Science, Hacettepe University, Ankara, Türkiye

Corresponding author: Thomas James Wood (thomas.wood@naturalis.nl)

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Abstract

Background

Andrena is one of the most diverse bee genera in the Holarctic Region, yet its species diversity and distribution in Türkiye remain poorly documented. This study provides an updated faunistic assessment of the genus in the Mediterranean Region of southern Türkiye, based on extensive field sampling in 12 provinces between 2008 and 2009 and a comprehensive synthesis of existing records. Specimens were identified using the latest taxonomic revisions and provincial distributions were compiled to produce a contemporary regional baseline.

New information

A total of 81 species were documented, belonging to 26 subgenera, including three endemic Turkish taxa (*A. hungarica* ssp. *macroua*, *A. purpureomicans* and *A. cinnamonea*), as well as *A. wolffi*, which was recorded in the country for the first time. Floral visitation data were also incorporated into the study. Furthermore, the species distribution was summarised with regional maps. The photos of morphological characters of regional and Turkish new records were also taken and included to the study. Together, these results provide the most current and comprehensive overview of *Andrena* diversity in southern Türkiye, offering a critical foundation for future research into the taxonomy, biogeography, pollination ecology and conservation of Mediterranean bee communities.

Keywords

Andrena, bee diversity, Mediterranean Region, pollinator-plant interactions, new records, taxonomy

Introduction

The order Hymenoptera, which contains over 150,000 identified species, is considered the fourth largest order within the class Insecta (Michener 2007, Mayhew 2007, Huber 2009). However, some studies suggest that this order may harbour a much greater number of species than previously thought, potentially making it the most species-diverse order (Forbes et al. 2018). Within this order, the group Anthophila, which belongs to the Apoidea superfamily, constitute the 'true bees', with approximately 21,000 known species (Gullan and Cranston 2010, Potts et al. 2016, Ascher and Pickering 2025). As bees are considered as being the primary pollinators for nearly 300,000 species of flowering plants (Angiospermae), this ecological service is indispensable for both the continuity of natural ecosystems and for global agricultural production (Ollerton et al. 2011, Güler 2011). Due to this multifaceted ecological and economic importance, bees continue to be one of the focal points for biodiversity and conservation studies (Michez et al. 2019).

It is estimated that bees (Anthophila) in Türkiye are represented by approximately 1,750 and possibly as many as 2,000 species with more than 75 genera (Özbek 2003, Hazır 2010, Dikmen 2018, Lhomme et al. 2020, Ascher and Pickering 2025). Although this figure shows how important a biodiversity centre Türkiye is for bees, our knowledge regarding the current status, precise distribution areas and population dynamics of these species is still incomplete nationwide (Güler 2011, Hazır et al. 2014, Dikmen 2018). One of the most common genus of bees in Türkiye is *Andrena* Fabricius, 1775 (Apoidea, Andrenidae) with 392 species reported (Wood 2023a, Wood 2024, Wood 2025, TJW unpublished data). This genus is the second richest globally, after *Lasioglossum* Curtis, 1833 (Apoidea, Halictidae), with around 1,738 species following recent revisions (Pisanty et al. 2022, Wood and Monfared 2022, Wood 2023a, Wood et al. 2024, Wood 2025,

Ascher and Pickering 2025). However, this total is constantly growing due to ongoing active taxonomic revisions. This remarkable diversity is concentrated in the temperate and arid zones of the Holarctic Region, particularly within the Mediterranean Basin. Türkiye's unique position as a bridge between continents, coupled with its varied topography and climate, makes it a significant hotspot for *Andrena* diversity (Hazır 2010, Wood 2023a). While pioneering researchers, such as Warncke (1965), Warncke (1967), Warncke (1975) and Özbek (1976), conducted foundational research that revealed the diversity of the genus in the country and established a strong baseline, comprehensive faunistic studies on the *Andrena* of Türkiye have remained limited since then (Scheuchl and Hazır 2012, Hazır et al. 2012, Hazır et al. 2014, Wood 2023a). Recent taxonomic interest in the region has revitalised research and the known diversity is once again expanding. A steady stream of studies is adding new species and country records to Turkish fauna, indicating that the actual number of species is likely to be much higher than previously reported (Wood 2021a, Pisanty et al. 2022, Wood 2023a, Wood 2024, Wood 2025).

Given the importance of these taxa and the existing knowledge gaps, this study aims to: (1) provide an up-to-date checklist for the region; (2) present preliminary distributional data for the species and (3) report new records and endemic species for the region, focusing on *Andrena* species in the Mediterranean Region of Türkiye, an area renowned for its rich biodiversity. Ultimately, we hope that this work will contribute to future research on the taxonomy, ecology and conservation on the genus *Andrena* of Türkiye.

Materials and methods

Field studies

This study was conducted within the Mediterranean Region of southern Türkiye. The study area encompassed twelve provinces representing the core distribution of the Mediterranean Basin in the country. Amongst these, eight provinces are entirely located within the Mediterranean Region (Adana, Antalya, Burdur, Hatay, Isparta, Mersin, Muğla and Osmaniye), whereas four provinces are only partly situated within the region (Denizli, Karaman, Kahramanmaraş and Niğde).

Field studies were conducted during the spring and summer seasons of 2008 and 2009. As the survey area covered more than 100,000 km², an opportunistic sampling protocol was employed to maximise the number of specimens collected. All bees were captured using hand nets and aspirators and floral resources visited by them were either recorded in the field or collected for subsequent identification. Bees were examined and photographed by Zeiss Discovery V8 stereoscopic microscope. Identification of the bee specimens was made by T. Wood. The species and their authorities are listed below in alphabetical order within subgenera (Table 1). The distribution of the species was compiled, based on a literature review and listed in alphabetical order. Identification of plant specimens were made by D. Töre according to Flora of Turkey and East Aegean Islands (Davis 1965, Davis 1988, Güner et al. 2000).

Spatial data visualisation

The map of Türkiye (Fig. 1) displaying the Mediterranean Region and the sampled provinces was generated in R Studio (version 2025.05.1+513 or latest available; Posit team (2025)). The spatial extent was restricted to 27–37°E longitude and 35.5–38.5°N latitude to highlight the study area. Provincial boundaries were retrieved from publicly available shapefiles and the provinces were coloured according to the collected specimens. This visualisation was produced to facilitate geographic representation of the study area and to contextualise the distribution of the recorded *Andrena* species.

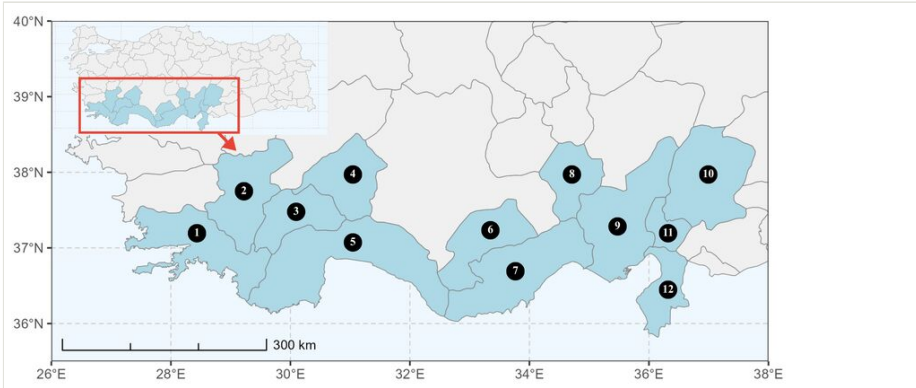


Figure 1. [doi](#)

Study area in the Mediterranean Region of Türkiye, showing sampled provinces in blue. **1** Muğla; **2** Denizli; **3** Burdur; **4** Isparta; **5** Antalya; **6** Karaman; **7** Mersin; **8** Niğde; **9** Adana; **10** Kahramanmaraş; **11** Osmaniye; **12** Hatay.

Specimen records were categorised into three data sources: literature records (L), collection-based records (C) and combined literature plus collection records (LC). For analytical purposes, both *L* and *LC* were treated as literature-based records, whereas species represented solely by *C* (i.e. present in the collection, but absent from the literature) were considered as new records (Table 2). Provinces were subsequently mapped according to these record categories, enabling comparison between previously known and newly-documented distributions. Taxonomic updates followed the most recent revisions of the *Andrena* fauna of the Palearctic Region (see previous citations).

Data resources

The data underpinning the analysis reported in this paper are deposited at GBIF, the Global Biodiversity Information Facility, https://ipt.pensoft.net/resource?r=andrena_med_tr

Taxon treatments

Andrena (Ulandrena) abbreviata Dours, 1873

Materials

- a. countryCode: TR; stateProvince: Antalya; county: Akseki; locality: Akseki road; verbatimElevation: 1262 m; verbatimLatitude: 37.118; verbatimLongitude: 31.778; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 74954092-D803-5024-8830-2C6F9B0DCC0D
- b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.108; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B1FB5C84-10C4-5489-9D70-5D525250B7E8
- c. countryCode: TR; stateProvince: Afyon; county: Dazkırı; locality: Örtülü; verbatimElevation: 1192 m; verbatimLatitude: 37.899; verbatimLongitude: 29.754; eventDate: 12-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F45DF9C8-8EA7-5C5F-ACD6-1A2FB8106403

Distribution

Albania, Bulgaria, Georgia, Greece, Iran, North Macedonia, Israel and the West Bank, Jordan, Lebanon, Syria and Türkiye (Wood 2024).

Distribution in Türkiye: Antalya, Mersin (Warncke 1974); Adana, Adıyaman, Ağrı, Denizli, Erzurum, Eskişehir, Gaziantep, Konya, Kütahya, Malatya, Van (Wood 2024); Afyon, Antalya, Mersin (this study) (Fig. 2).

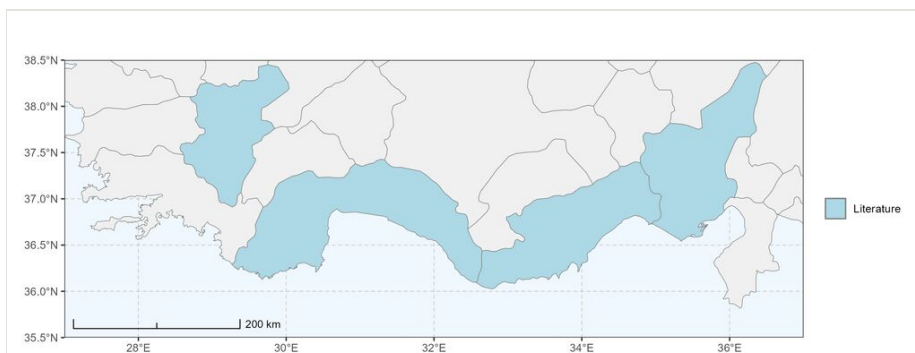


Figure 2. [doi](#)

Distribution of *A. abbreviata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica napus* L. (Khodarahmi Ghahnavieh and Monfared 2019);

Asteraceae: *Anthemis pseudocotula* Boiss., *Cota coelopoda* var. *coelopoda* (Boiss.) Boiss., *Anthemis coelopoda* var. *bourgaei* Boiss.

Andrena (Notandrena) aerinifrons Dours, 1873

Materials

- a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 12120632-01B3-59AA-9BDB-A6DA373843D5
- b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B0CDCEC4-9B84-5B1E-AF7C-969D05FB7B00
- c. countryCode: TR; stateProvince: Hatay; county: Antakya; locality: Reyhanlı; verbatimElevation: 85 m; verbatimLatitude: 36.253; verbatimLongitude: 36.52; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9CC1D763-380C-55CE-8A6A-E0846D7435F1
- d. countryCode: TR; stateProvince: Hatay; county: Kırıkhan; locality: Reyhanlı; verbatimElevation: 85 m; verbatimLatitude: 36.509; verbatimLongitude: 36.418; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1E24B2E3-2320-5C0A-9EAE-113F8BF02D53

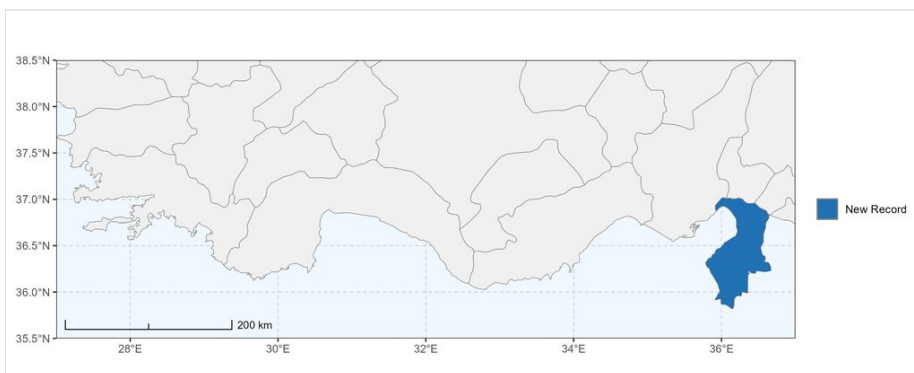
Distribution

Algeria, Egypt, Iran, Iraq, Israel and the West Bank, Italy, Jordan, Libya, Morocco, Portugal, Spain, Syria, Tunisia and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

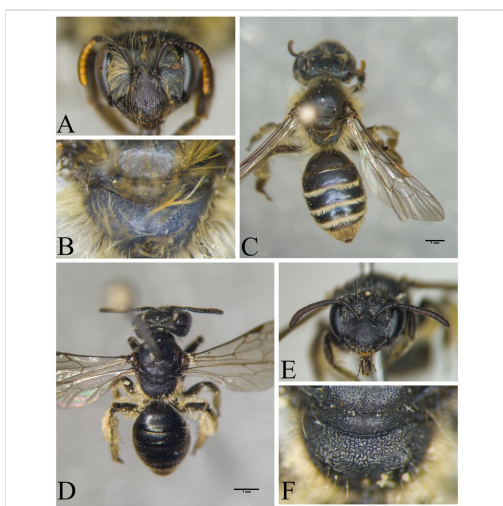
Distribution in Türkiye: Şanlıurfa (Warncke 1974); Kilis (Schönitzer 1997); Hatay (this study) (Fig. 3 and Fig. 4A-C).

Flower records

Brassicaceae: *Eruca vesicaria* (L.) Cav., *Ochthodium aegyptiacum* (L.) DC., *Sisymbrium* L.

Figure 3. [doi](#)

Distribution of *A. aerinifrons* in the Mediterranean Region of Türkiye.

Figure 4. [doi](#)

Andrena aerinifrons, female. Head, frontal view (A); propodeum, dorsal view (B); Habitus, dorsal view (C). *Andrena alfkenella*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Andrena (Micrandrena) alfkenella Perkins, 1914

Material

- a. countryCode: TR; stateProvince: Hatay; locality: Belen-Radar road; verbatimElevation: 1124 m; verbatimLatitude: 36.519; verbatimLongitude: 36.243; eventDate: 30-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 41B3D84E-42F3-5E05-A9D4-9E2320FE426C

Distribution

Albania, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Italy, Latvia, Lithuania, Luxembourg, Moldova, Morocco, Netherlands, North Macedonia, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Erzurum, Diyarbakır (Warncke 1974); Adana (Dardón et al. 2014); Hatay (this study) (Fig. 5 and Fig. 4D-F).

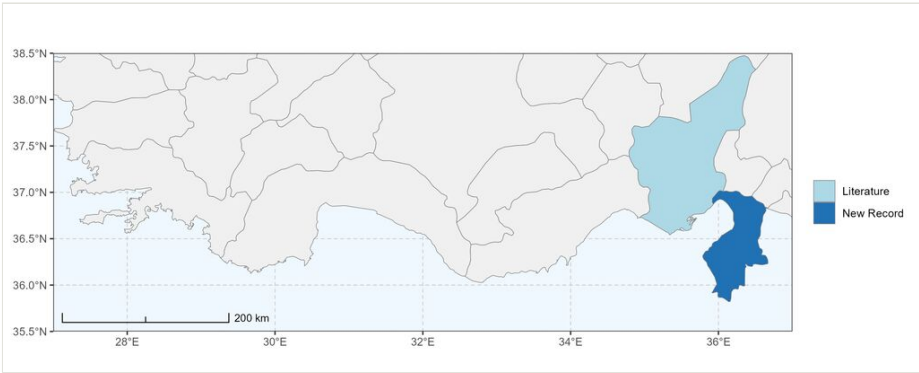


Figure 5. [doi](#)

Distribution of *A. affkenella* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Daucus carota* L., *Heracleum sphondylium* L. (Balfour et al. 2022);
Apiaceae: *Aegopodium podagraria* L., *Carum carvi* L., *Chaerophyllum bulbosum* L.,
Daucus carota L., *Ferula tingitana* L., *Heracleum sphondylium* L., *Pimpinella saxifraga* L.,
Torilis arvensis (Huds.) Link **Asteraceae:** *Achillea millefolium* L.,
Erigeron annuus (L.) Desf., *Matricaria chamomilla* L., *Tripleurospermum maritimum*
(L.) W.D.J.Koch **Brassicaceae:** *Hirschfeldia incana* (L.) Lagr.-Foss., *Rorippa*
amphibia (L.) Besser, *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L.
Caryophyllaceae: *Stellaria graminea* L. **Crassulaceae:** *Sedum acre* L. **Fabaceae:**
Lotus corniculatus L., *Medicago lupulina* L. **Geraniaceae:** *Geranium pyrenaicum*
Burm.f. **Lamiaceae:** *Thymus* L. **Ranunculaceae:** *Ranunculus paludosus* Poir.,
Ranunculus polyanthemos L. **Rosaceae:** *Potentilla reptans* L. **Rubiaceae:** *Galium*
lucidum All. (Lanuza et al. 2025); **Rosaceae:** *Rubus canescens* var. *glabratus* (Godr.)
Davis & Meikle.

Andrena (Micrandrena) alfkenelloides Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Osmaniye; locality: Karatepe National Park; verbatimElevation: 325 m; verbatimLatitude: 37.26; verbatimLongitude: 36.219; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DDB26D2C-B27E-5419-A2DC-D9CA48057737

Distribution

Bulgaria, Cyprus, Greece, Israel and the West Bank, Iran, Jordan, Lebanon, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood et al. 2020).

Distribution in Türkiye: Ankara, Manisa, Nevşehir (Ürgüp), Denizli, Antalya, Mersin, Niğde, Tunceli, Adana, Osmaniye, Hatay (Warncke 1974); Aydın, Burdur, Mersin (Hazır et al. 2014); Osmaniye (this study) (Fig. 6).

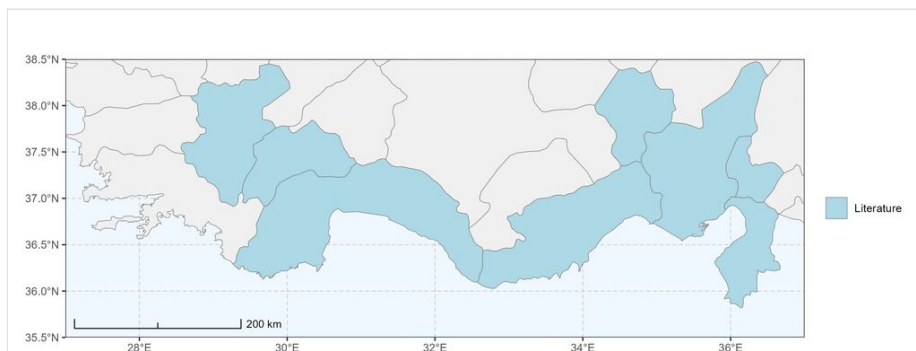


Figure 6. [doi](#)

Distribution of *A. alfkenelloides* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Anthemis chia* L., *Crepis commutata* (Spreng.) Greuter **Apiaceae:** *Pimpinella cretica* Poir., *Pimpinella peregrina* L. (Lanuza et al. 2025); **Asteraceae:** *Senecio vernalis* Waldst. & Kit.

Andrena (Micrandrena) alutacea Stöckhert, 1942

Material

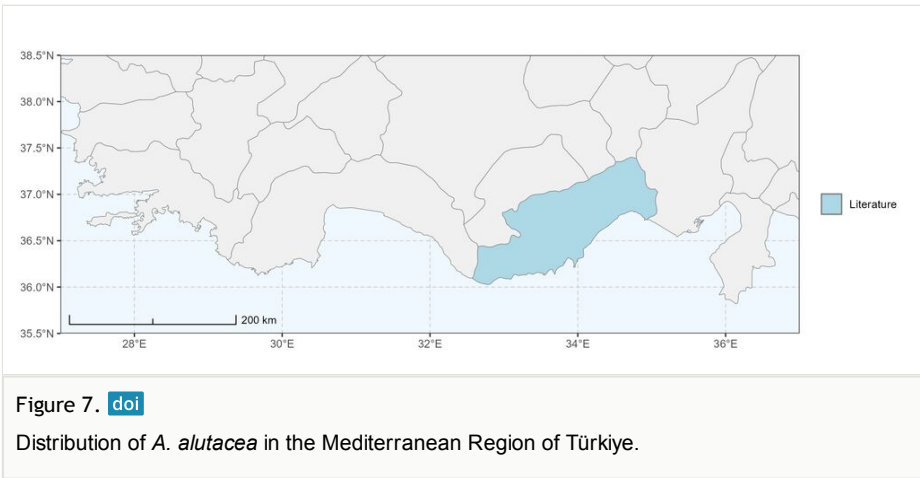
- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.354; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2750D662-8609-55D3-A4CD-FC19ECCEAE92

Distribution

Austria, Azerbaijan, Bulgaria, Crimea, Croatia, Georgia, Germany, Greece, Iran, Italy, Latvia, Montenegro, North Macedonia, Poland, Romania, Russia, Switzerland, Turkmenistan, Türkiye and Ukraine (Schmid-Egger 2005, Proshchalykin et al. 2017, Wood and Monfared 2022).

Distribution in Türkiye: Ağrı, Amasya, Erzurum, Hakkari, Kars, Konya, Mersin, Muş, Nevşehir, Sivas (Schmid-Egger 2005); Ankara, Aydın, Çankırı, Konya, Kütahya (Hazır et al. 2014); Mersin (this study) (Fig. 7).



Flower records

Apiaceae: *Prangos uechtrizii* Boiss. & Hausskn

Andrena (Chlorandrena) astica Warncke, 1967

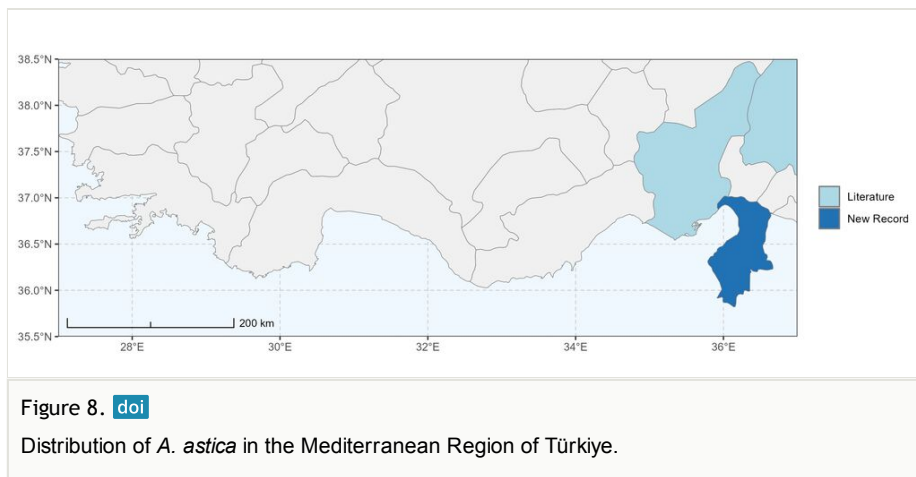
Materials

- countryCode: TR; stateProvince: Adana; locality: Çukurova University; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 4C57582C-1356-5330-9FBA-1621AEB CAB7B
- countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 30EC40D8-F5BC-5DBE-B1A2-C77C71CB53E4

Distribution

Cyprus, Georgia, Greece, Iran, Iraq, Israel and West Bank, Lebanon and Türkiye (Schwenninger 2015, Wood 2021b, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Balıkesir, Adana (Warncke 1974); Maraş (Hazır 2010, Hazır et al. 2014); Adana, Hatay (this study) (Fig. 8).



Flower records

Asteraceae: *Crepis sancta* (L.) Bornm. **Brassicaceae:** *Sisymbrium* L.

Andrena (*Euandrena*) *bicolor* Fabricius, 1775

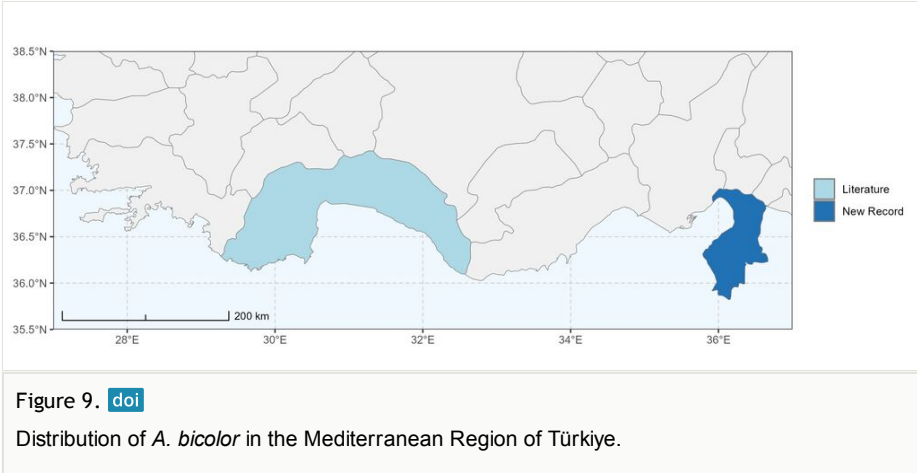
Material

- a. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 326EA524-F698-5679-A36F-377F663D0313

Distribution

Algeria, Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iran, Ireland, Italy, Latvia, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022).

Distribution in Türkiye: Amasya, Ankara, Antalya, Ardahan, Balıkesir, Bursa, Diyarbakır, Erzurum, Kayseri, Konya, Nevşehir (Ürgüp), Tekirdağ (Warncke 1974); Ankara, Aydın, Bursa, Kırklareli, Sivas (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 9).



Flower records

Amaryllidaceae: *Narcissus* L. **Apiaceae:** *Anthriscus sylvestris* (L.) Hoffm., *Daucus carota* L., *Daucus* L., *Erodium* L'Hér., *Heracleum sphondylium* L., *Oenanthe crocata* L. **Araliaceae:** *Hedera* L. **Asparagaceae:** *Hyacinthoides non-scripta* (L.) Chouard ex Rothm. **Asteraceae:** *Anthemis* L., *Bellis perennis* L., *Centaurea nigra* L., *Cirsium arvense* (L.) Scop., *Cirsium* Mill., *Crepis capillaris* (L.) Wallr., *Crepis* L., *Hieracium* L., *Hypochaeris radicata* L., *Lapsana communis* L., *Leontodon* L., *Leucanthemum vulgare* Lam., *Matricaria chamomilla* L., *Picris hieracioides* L., *Picris* L., *Scorzonoides autumnalis* (L.) Moench, *Senecio jacobaea* L., *Sonchus arvensis* L., *Sonchus* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Taraxacum* F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae:** *Arabis* L., *Brassica napus* L., *Brassica* L., *Cakile maritima* Scop., *Capsella bursa-pastoris* (L.) Medik., *Sinapis alba* L., *Sinapis arvensis* L., *Sisymbrium officinale* (L.) Scop. **Campanulaceae:** *Campanula portenschlagiana* Schult., *Campanula rotundifolia* L., *Campanula* L., *Campanula trachelium* L. **Caprifoliaceae:** *Symphoricarpos albus* (L.) S.F.Blake, *Valerianella* Mill. **Caryophyllaceae:** *Stellaria* L., **Convolvulaceae:** *Convolvulus arvensis* L. **Cornaceae:** *Cornus alba* L. **Cucurbitaceae:** *Bryonia dioica* Bojer **Fabaceae:** *Lotus corniculatus* L., *Medicago lupulina* L., *Trifolium campestre* Schreb., *Trifolium hybridum* L., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium* Tourn. ex L., *Ulex* L. **Geraniaceae:** *Geranium pyrenaicum* Burm.f., *Geranium robertianum* L., *Geranium* Tourn. ex L. **Lamiaceae:** *Lamium album* L., *Mentha aquatica* L. **Malvaceae:** *Tilia cordata* Mill., *Tilia* L. **Plantaginaceae:** *Veronica chamaedrys* L., *Veronica persica* Poir., *Veronica* L. **Polemoniaceae:** *Phlox* L. **Primulaceae:** *Primula elatior* (L.) Hill, *Primula* L., *Primula*

vulgaris Huds. **Ranunculaceae:** *Clematis vitalba* L., *Ranunculus ficaria* L., *Ranunculus repens* L., *Ranunculus* L. **Rosaceae:** *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Potentilla* L., *Potentilla sterilis* (L.) Garcke, *Rosa arvensis* Huds., *Rosa* L., *Rubus fruticosus* agg. L., *Rubus* L. **Rubiaceae:** *Sherardia arvensis* L. **Salicaceae:** *Salix* L. **Sapindaceae:** *Acer* L. **Viburnaceae:** *Viburnum* L. (Balfour et al. 2022); **Apiaceae:** *Falcaria vulgaris* Bernh., *Heracleum sphondylium* L., *Pimpinella saxifraga* L. **Asteraceae:** *Hieracium* L., *Leontodon hispidus* L., *Leontodon saxatilis* Lam., *Taraxacum* F.H.Wigg., *Taraxacum officinale* F.H.Wigg. **Boraginaceae:** *Pentaglottis sempervirens* (L.) Tausch ex L.H.Bailey **Brassicaceae:** *Brassica napus* L. **Campanulaceae:** *Campanula bononiensis* L., *Campanula patula* L., *Campanula portenschlagiana* Schult., *Campanula rapunculoides* L., *Campanula rotundifolia* L. **Convolvulaceae:** *Convolvulus arvensis* L. **Cucurbitaceae:** *Bryonia cretica* L. **Fabaceae:** *Medicago lupulina* L., *Melilotus officinalis* (L.) Lam., *Vicia sepium* L. **Geraniaceae:** *Geranium Tourn. ex L.*, *Geranium dissectum* L., *Geranium pyrenaicum* Burm.f., *Geranium sanguineum* L. **Lamiaceae:** *Thymus pulegioides* L. **Linaceae:** *Linum austriacum* L., *Linum tenuifolium* L. **Malvaceae:** *Malva sylvestris* L. **Orobanchaceae:** *Orobanche gracilis* Sm. **Primulaceae:** *Primula veris* L. **Rosaceae:** *Rubus* L. (Lanuza et al. 2025); **Asteraceae:** *Senecio vernalis* Waldst. & Kit.

Andrena (Plastandrena) bimaculata (Kirby, 1802)

Material

- a. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 520 m; verbatimLatitude: 35.949; verbatimLongitude: 36.052; eventDate: 22-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 85EE365A-208A-5645-88F0-CD67130CB702

Distribution

Algeria, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Ireland, Israel and the West Bank, Italy, Jordan, Latvia, Lebanon, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Malatya, Sakarya (Adapazarı) (Warncke 1974); Ankara, Aydın, Kastamonu, Kayseri (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 10).

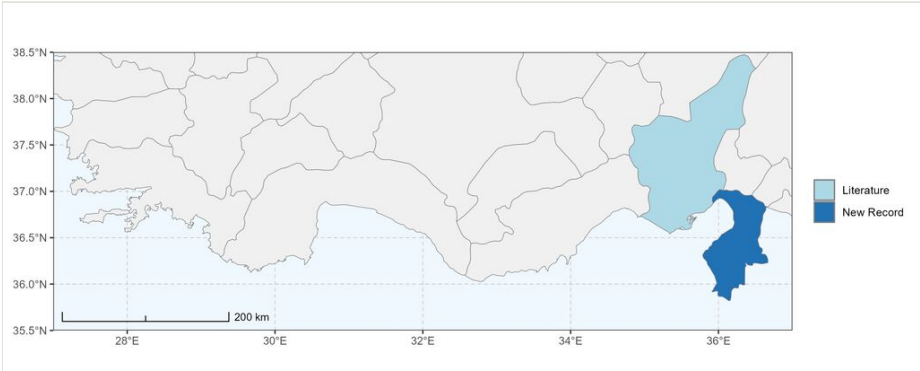


Figure 10. [doi](#)

Distribution of *A. bimaculata* in the Mediterranean Region of Türkiye.

Flower records

Amaryllidaceae: *Allium* L. **Apiaceae:** *Heracleum sphondylium* L. **Asteraceae:** *Cirsium* Mill., *Senecio jacobaea* L. **Brassicaceae:** *Cakile maritima* Scop., *Sisymbrium* L. **Ericaceae:** *Erica* Tourn. ex L. **Fagaceae:** *Castanea sativa* Mill. **Polygonaceae:** *Rumex* L. **Rosaceae:** *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Prunus* L., *Rubus fruticosus* agg. L., *Rubus* L. **Salicaceae:** *Salix* L., *Salix triandra* L. (Balfour et al. 2022); **Fabaceae:** *Lotus corniculatus* L., *Trifolium repens* L. **Rosaceae:** *Rosa* L. (Lanuza et al. 2025); **Asteraceae:** *Crepis sancta* (L.) Bormm.

Andrena (Aenandrena) bisulcata Morawitz, 1877

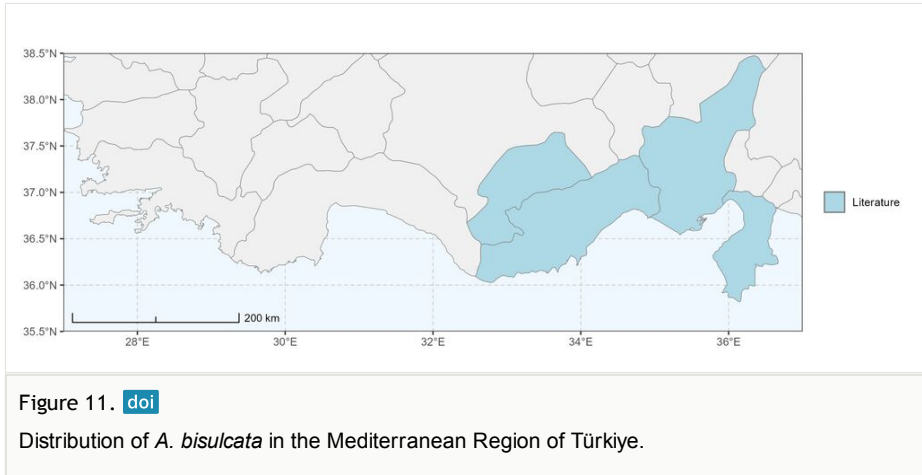
Materials

- countryCode: TR; stateProvince: Mersin; locality: Mersin-Adana highway; verbatimElevation: 189 m; verbatimLatitude: 36.937; verbatimLongitude: 34.799; eventDate: 22-05-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CD58061B-25A6-5F07-9788-DA2980F5E3B0
- countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B96ED88C-8101-53F6-8784-0FA5E104FDA8

Distribution

Austria, Azerbaijan, Bulgaria, Greece, Hungary, Israel and the West Bank, Italy, Iran, Moldova, Poland, Romania, Russia, Slovakia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022).

Distribution in Türkiye: Adana (Ceyhan), Balıkesir (Ayvalık), Çanakkale, Diyarbakır, Edirne, Hatay (Antakya, İskenderun), Mersin (Tarsus), Samsun (Vezirköprü), Sakarya (Adapazarı), Tekirdağ, Urfa (Warncke 1974); Antep, Burdur, Çanakkale, Karaman, Manisa (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 11).



Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (Cryptandrena) brumanensis Friese, 1899

Materials

- a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 4C269114-53C0-5E4C-A100-73EEC5D7F020
- b. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road; verbatimElevation: 1346 m; verbatimLatitude: 36.949; verbatimLongitude: 30.131; eventDate: 10-06-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 39748768-1E27-5945-BC6B-DD9E16C9F19B

Distribution

Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Greece, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Monaco, Montenegro, Palestine, Slovenia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Wood et al. 2024, Wood 2025).

Distribution in Türkiye: Adana, Ankara, Balıkesir (Ayvalık), Bursa, Çanakkale (Bigadiç), İstanbul (Kilyos), Konya, Mersin (Mut), Muş, Şanlıurfa (Birecik) (Warnecke 1974); Erzurum (Oltu), Muş (Özbek 1976); Diyarbakır (Hazır 2010); Ankara, Antalya, Diyarbakır, Konya, Mersin, Urfa (Hazır et al. 2014); Antalya, Muğla (this study) (Fig. 12).

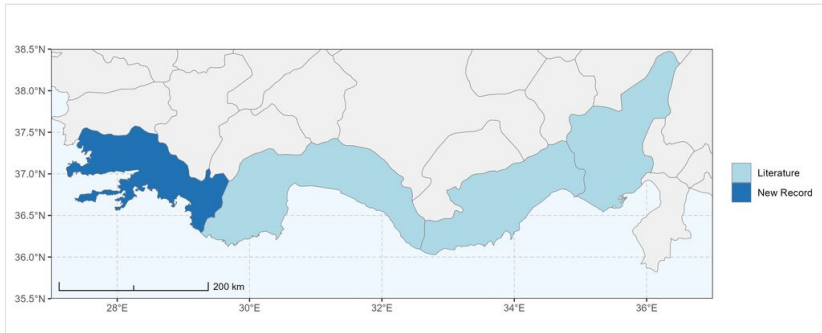


Figure 12. [doi](#)

Distribution of *A. brumanensis* in the Mediterranean Region of Türkiye.

Flower records

Caryophyllaceae: *Silene colorata* Poir. **Plantaginaceae:** *Plantago lagopus* L., *Veronica barrelieri* H.Schott ex Roem. & Schult. (Lanuza et al. 2025); **Asteraceae:** *Crepis* L.

Andrena (Micrandrena) cedricola Wood, 2020

Materials

- a. countryCode: TR; stateProvince: Niğde; locality: Alihoca village; verbatimElevation: 1173 m; verbatimLatitude: 37.483; verbatimLongitude: 34.705; eventDate: 22-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F65FE683-2AAC-5258-977A-D555127C05AB
- b. countryCode: TR; stateProvince: Niğde; locality: Alihoca village; verbatimElevation: 1173 m; verbatimLatitude: 37.483; verbatimLongitude: 34.705; eventDate: 22-05-2008; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D696C389-DFE5-579A-B4C5-2C9140B0BBF1

Distribution

Iraq, Israel and the West Bank, Lebanon, Syria and Türkiye (Pisanty et al. 2022, Wood et al. 2024).

Distribution in Türkiye: Hakkari (Pisanty et al. 2022); Niğde (this study) (Fig. 13 and Fig. 14A-C).

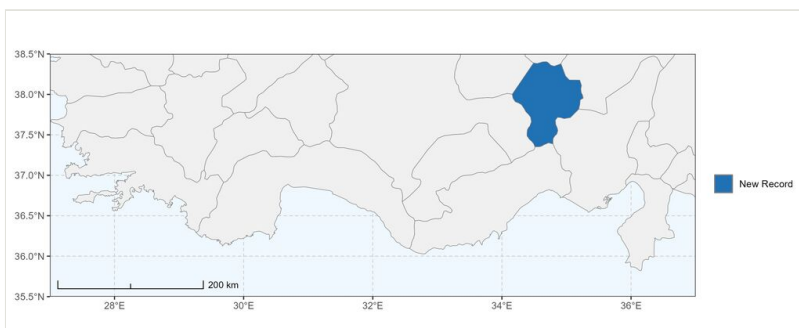


Figure 13. [doi](#)

Distribution of *A. cedricola* in the Mediterranean Region of Türkiye.

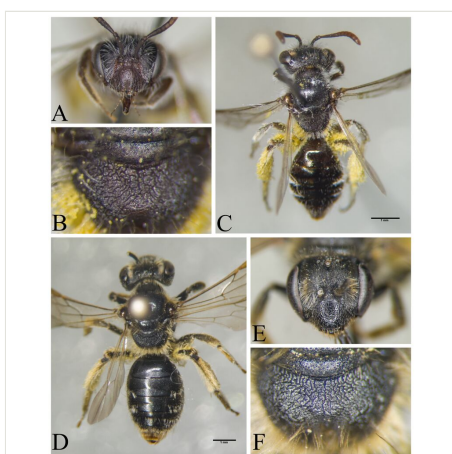


Figure 14. [doi](#)

Andrena cedricola, female. Head, frontal view (A); propodeum, dorsal view (B); Habitus, dorsal view (C). *Andrena enslinella*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Brassicaceae: *Brassica* L., *Peltaria angustifolia* DC. (Pisanty et al. 2022).

Andrena (Chlorandrena) cinereophila Warncke, 1965

Materials

- a. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8CEA5C11-BD49-5E57-9CF4-EE0513BB9D1A

- b. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 4; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A86228B4-3267-5B30-8D5C-37FBA84F2A94
- c. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 475CF6B2-FE80-52A5-A41E-121FE2149296
- d. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 5AA93C3E-36EC-5E69-A6D5-CD71158A2270
- e. countryCode: TR; stateProvince: Mersin; locality: Mut-Silifke road; verbatimElevation: 124 m; verbatimLatitude: 36.569; verbatimLongitude: 33.449; eventDate: 22-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: AAD51886-409E-5706-AEF4-39F512BBAF59
- f. countryCode: TR; stateProvince: Muğla; locality: Marmaris; verbatimElevation: 9 m; verbatimLatitude: 36.985; verbatimLongitude: 28.216; eventDate: 02-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F0C16409-0124-5201-B8B3-3AB78A5C7DF4

Distribution

Afghanistan, Bulgaria, Cyprus, Greece, Iran, Iraq, Israel and the West Bank, Jordan, Lebanon, North Macedonia, Romania, Russia and Türkiye (Gusenleitner and Schwarz 2002, Osytsnjuk et al. 2005, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Balıkesir (Ayvalık), Mardin, Sakarya (Adapazarı) (Warncke 1966); Antalya (Paulus et al. 2001); Antep, Aydın, Diyarbakır, Kırklareli, Maraş, Mersin, Urfa (Hazır 2010, Hazır et al. 2014); Adana, Hatay, Mersin, Muğla (this study) (Fig. 15).

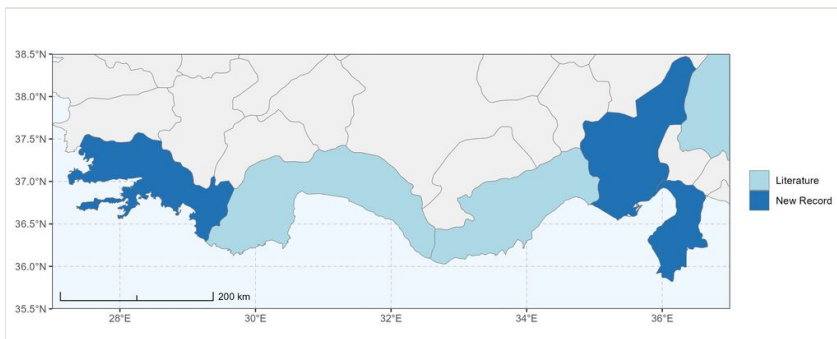


Figure 15. [doi](#)

Distribution of *A. cinereophila* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Anthemis chia* L., *Crepis commutata* (Spreng.) Greuter, *Helichrysum stoechas* (L.) Moench (Lanuza et al. 2025); **Asteraceae:** *Anthemis chia* L., *Calendula arvensis* L., *Crepis sancta* (L.) Bornm. *Crepis foetida* L., **Brassicaceae:** *Sisymbrium* L.

Andrena (*Simandrena*) *cinnamonea* Warncke, 1975

Material

- a. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 520 m; verbatimLatitude: 35.949; verbatimLongitude: 36.052; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CD6D518F-F204-59FC-A1F5-47297AD6AB7E

Distribution

Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Antalya (Akseki), Hatay (Antakya, Mersin (Mut) (Warncke 1974); Hatay (this study) (Fig. 16).

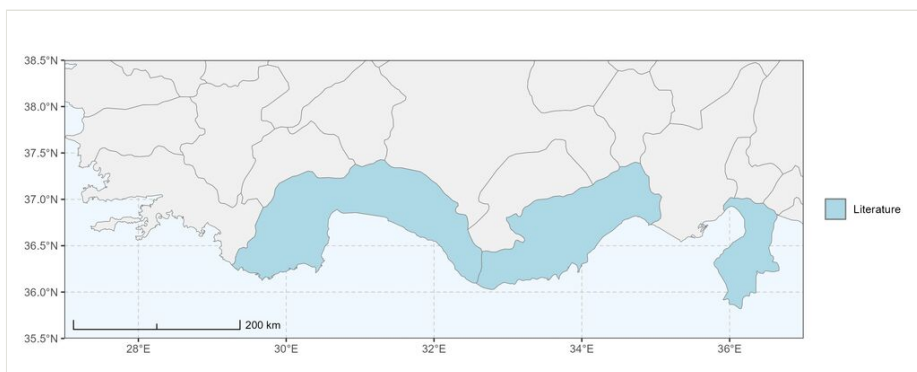


Figure 16. [doi](#)

Distribution of *A. cinnamonea* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm.

Andrena (Brachyandrena) colletiformis Morawitz, 1873

Materials

- countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: FCF57C78-D4DD-522D-930F-419919B54530
- countryCode: TR; stateProvince: Afyon; county: Dazkırı; municipality: Örtülü; verbatimElevation: 1192 m; verbatimLatitude: 37.899; verbatimLongitude: 29.753; eventDate: 12-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DD6C5F87-0C82-5548-B9CE-E179C5A5B4CA

Distribution

Albania, Bosnia and Herzegovina, Bulgaria, Corsica, Croatia, Cyprus, France, Greece, Iran, Israel and the West Bank, Italy, Kazakhstan, Kafkaslar, Morocco, North Macedonia, Portugal, Romania, Russia, Slovenia, Spain, Tunisia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytsnjuk et al. 2005, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Amanos Mountains, Ankara, Toroslar (Warncke 1966); Adapazarı, Bilecik (Osmaneli), Bursa (Gemlik, Kurlu), Çanakkale, Denizli (Pamukkale), Edirne (İpsala), İstanbul (Selimpaşa), İzmir (Torbalı), Tekirdağ (Warncke 1969); Erzurum (Oltu, Tortum, Horasan, İspir) (Özbek 1976); Aydın (Kuşadası) (Ariana et al. 2009); Antalya, Burdur, Karaman, Manisa (Hazır 2010, Hazır et al. 2014); Afyon, Mersin (this study) (Fig. 17).

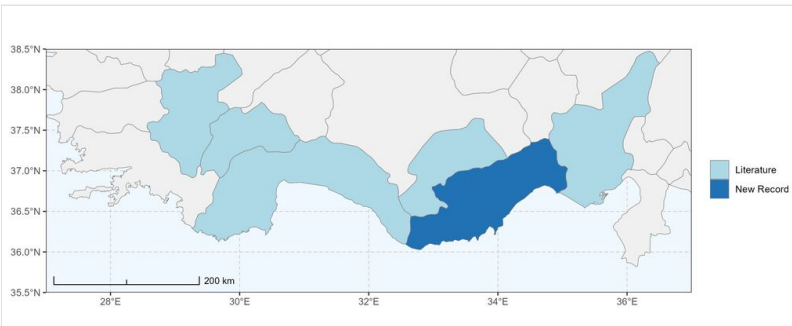


Figure 17. [doi](#)

Distribution of *A. colletiformis* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Daucus carota* L. **Asteraceae:** *Pimpinella cretica* Poir. **Asteraceae:** *Helichrysum stoechas* (L.) Moench, *Sonchus tenerrimus* L., **Rosaceae:** *Spiraea*

japonica L.f. (Lanuza et al. 2025); *Prangos uechtrizii* Boiss. & Hausskn., *Cota coelopoda* var. *coelopoda* (Boiss.) Boiss.

Andrena (Truncandrena) combusta Morawitz, 1876

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Sarıkavak road; verbatimElevation: 665 m; verbatimLatitude: 36.565; verbatimLongitude: 33.63; eventDate: 25-04-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: ADB344B9-1F2A-5596-BE1F-0A7BCB2EA22E

Distribution

Afghanistan, Armenia, Azerbaijan, Iran, Kazakhstan, Pakistan, Syria, Tajikistan, Turkmenistan, Türkiye and Uzbekistan (Schuberth et al. 2001, Wood 2021b, Astafurova et al. 2022, Wood and Monfared 2022, Wood 2025).

Distribution in Türkiye: Ağrı (Ararat), Ankara (Gölbaşı), Nevşehir (Warncke 1974), Erzurum (Horasan), Iğdır (Özbek 1976); Mersin (Hazır 2010); Mersin (this study) (Fig. 18).

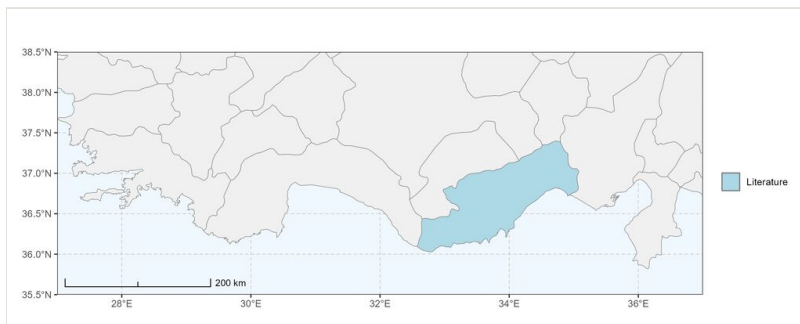


Figure 18. [doi](#)

Distribution of *A. combusta* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Diplotaxis tenuifolia* (L.) DC.

Andrena (Cordandrena) cordialis (Morawitz, 1877)

Material

- a. countryCode: TR; stateProvince: Burdur; county: Ağlasun; locality: 2-3 km after Koroğlu Pass; verbatimElevation: 1016 m; verbatimLatitude: 37,563 m; verbatimLongitude: 30,707 m; eventDate: 29-05-2009; individualCount: 2; sex: female; recordedBy: Fatih

Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A231E502-8914-5B1F-8964-00E36677D3E3

Distribution

Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Hungary, Iran, North Macedonia, Romania, Russia, Serbia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytsnjuk et al. 2005, Khodarahmi Ghahnavieh and Monfared 2019, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Ankara (Şereflikoçhisar), Bursa (Mustafakemalpaşa), Erzurum, Iğdır, Kayseri (Yeşilhisar), Kırıkkale, Konya (Kulu, Sarayönü), Kütahya, Muş, Samsun, Sakarya (Adapazarı), Tokat (Niksar) (Warncke 1974); Aksaray, Ankara, Aydın, Burdur, Çorum, Hatay, Kastamonu, Konya, Kütahya, Manisa, Sivas (Hazır 2010, Hazır et al. 2014); Burdur (this study) (Fig. 19).

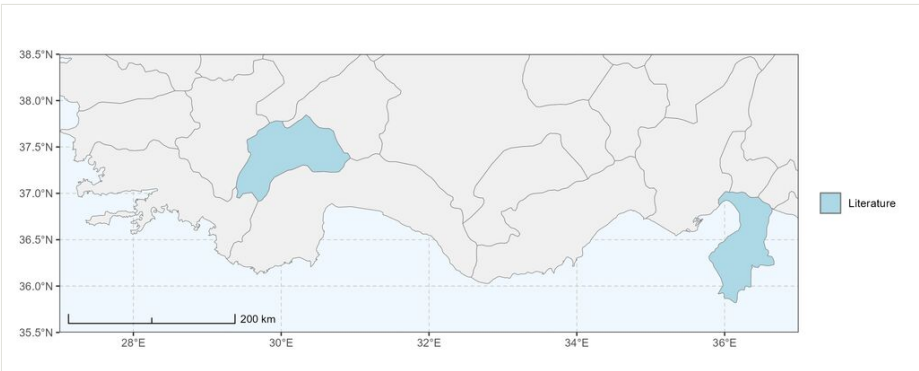


Figure 19. [doi](#)

Distribution of *A. cordialis* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica napus* L., *Lepidium draba* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae:** *Crepis foetida* L.

Andrena (Poecilandrena) crassana Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Burdur; county: Ağlasun; locality: <10 km after Koroğlu Pass; verbatimElevation: 948 m; verbatimLatitude: 37.636; verbatimLongitude: 30.684; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 93616C76-075B-5C9F-9407-ACE18EF50C5E

Distribution

Cyprus, Greece, Iran, Iraq, Israel and West Bank, Jordan, Lebanon, North Macedonia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Pisanty et al. 2018, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Antalya (Finike), Bursa (Karacabey), Mersin (Anamur), Muğla (Marmaris) (Warncke 1974); Antalya, Hatay, Kütahya, Muğla (Hazır 2010, Hazır et al. 2014); Burdur (this study) (Fig. 20).

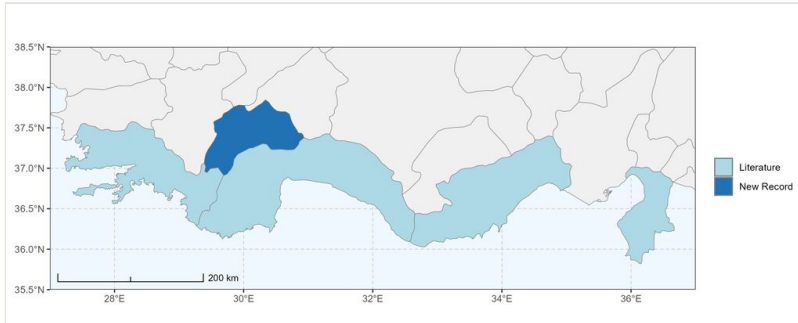


Figure 20. [doi](#)

Distribution of *A. crassana* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis foetida* L.

Andrena (Cordandrena) cypria Pittioni, 1950

Material

- a. countryCode: TR; stateProvince: Muğla; county: Marmaris; municipality: Turunç; locality: Datça road; verbatimElevation: 347 m; verbatimLatitude: 36.775; verbatimLongitude: 28.221; eventDate: 03-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 994D2A27-ED8F-5EB3-8740-DBC5F9E511D5

Distribution

Cyprus, Iran, Israel and the West Bank, Jordan, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Konya (Sarayönü) (Warncke 1966); Ankara (Gölbaşı, Şereflikoçhisar), Erzurum, Kayseri (Yeşilhisar), Kırşehir (Kaman), Mersin (Mut), Muş, Nevşehir (Ürgüp), Niğde (Ulukışla), Sivas (Gürün) (Warncke 1974, Özbek 1976); Aksaray, Ankara, Aydın, Burdur, Kırşehir, Konya, Manisa, Sivas, Yozgat (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 21).

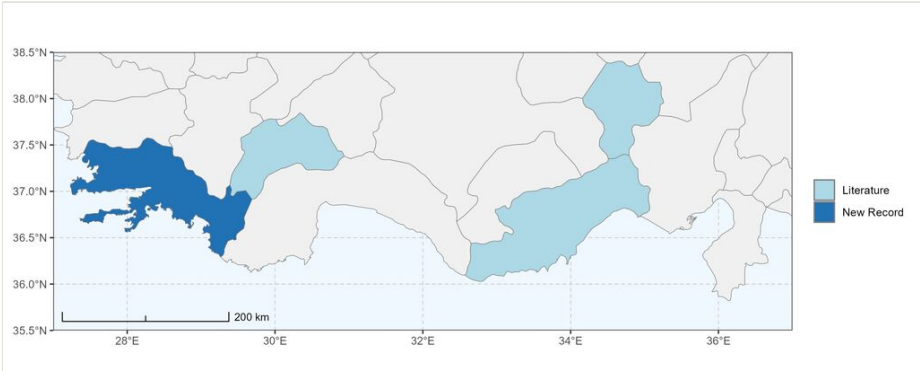


Figure 21. [doi](#)

Distribution of *A. cypria* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Alyssum* L., *Lepidium draba* L. **Berberidaceae:** *Bongardia chrysogonum* (L.) Spach **Papaveraceae:** *Papaver* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae:** *Anthemis chia* L.

Andrena incertae sedis discordia Wood, 2023

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 6AC52A2D-2D56-5C79-821B-32ECD984DACD

Distribution

Iran, Iraq and Türkiye (Wood 2023a, Wood et al. 2024).

Distribution in Türkiye: Hakkari, Mersin (Wood 2023a); Mersin (this study) (Fig. 22).

Flower records

Apiaceae: *Prangos uechtrizii* Boiss. & Hausskn.

Andrena (Simandrena) dorsata (Kirby, 1802)

Material

- a. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1570 m; verbatimLatitude: 37.887; verbatimLongitude: 35.112; eventDate: 23-05-2008;

individualCount: 6; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CA5182FB-17BA-51AB-AECE-C6123241F290

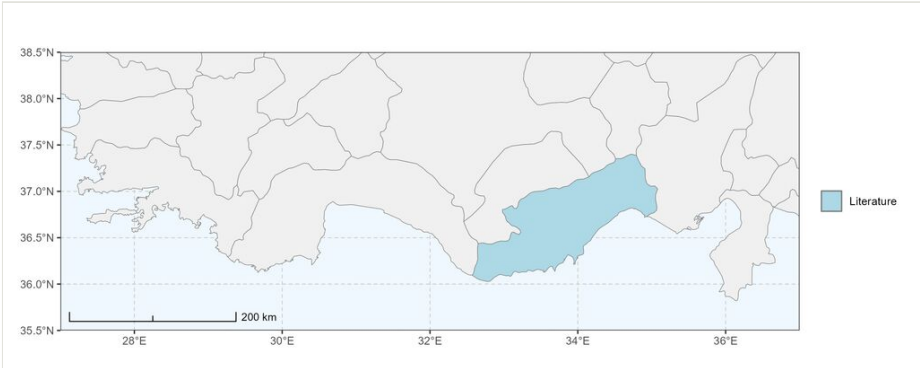


Figure 22. [doi](#)

Distribution of *A. discordia* in the Mediterranean Region of Türkiye.

Distribution

Albania, Austria, Belgium, Bulgaria, Corsica, Croatia, Estonia, France, Germany, Great Britain, Greece, Hungary, Iran, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Adapazarı, Eskişehir (Sivrihisar), İstanbul, Konya, Tekirdağ, Toroslar (Gülek) (Warncke 1966); Afyon (Çay), Ankara (Delice), Hatay (Samandağ) (Warncke 1969); Bingöl, Erzincan, Erzurum (Oltu), Kars (Kağızman), Muş (Özbek 1976); Adana, Afyon, Amasya, Ankara, Antalya, Aydın, Burdur, Çorum, Denizli, Hatay, Isparta, Maraş, Karabük, Kastamonu, Kırıkkale, Kırşehir, Konya, Mersin, Samsun (Hazır 2010); Niğde (this study) (Fig. 23).

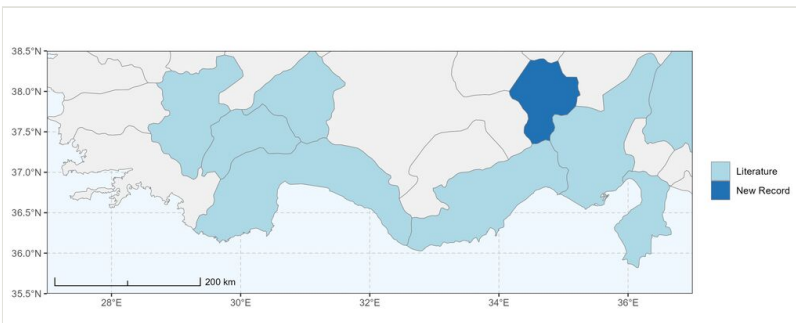


Figure 23. [doi](#)

Distribution of *A. dorsata* in the Mediterranean Region of Türkiye.

Flower records

Convolvulaceae: *Convolvulus* L. **Fabaceae:** *Glycyrrhiza glabra* L., *Medicago sativa* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Alismataceae:** *Alisma plantago-aquatica* L. **Apiaceae:** *Anthriscus sylvestris* (L.) Hoffm., *Chaerophyllum temulum* L., *Conopodium majus* (Gouan) Loret, *Daucus carota* L., *Daucus* L., *Heracleum sphondylium* L., *Oenanthe crocata* L., *Torilis japonica* (Houtt.) DC. **Asteraceae:** *Bellis perennis* L., *Centaurea nigra* L., *Cirsium arvense* (L.) Scop., *Cirsium palustre* (L.) Scop., *Cirsium* Mill., *Crepis capillaris* (L.) Wallr., *Crepis* L., *Hypochaeris radicata* L., *Leontodon hispidus* L., *Leucanthemum vulgare* Lam., *Picris echioides* L., *Picris hieracioides* L., *Pulicaria dysenterica* (L.) Bernh., *Senecio jacobaea* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae:** *Alliaria petiolata* (M.Bieb.) Cavara & Grande, *Barbarea vulgaris* W.T.Aiton, *Brassica napus* L., *Brassica* L., *Pimpinella saxifraga* L., *Raphanus raphanistrum* L., *Sinapis alba* L., *Sinapis arvensis* L., *Sisymbrium officinale* (L.) Scop. **Convolvulaceae:** *Convolvulus arvensis* L. **Cornaceae:** *Cornus alba* L. **Cucurbitaceae:** *Bryonia dioica* Bojer **Ericaceae:** *Calluna vulgaris* (L.) Hull, *Erica cinerea* L., *Erica Tourn. ex L.*, *Erica tetralix* L. **Fabaceae:** *Medicago lupulina* L., *Trifolium repens* L., *Ulex europaeus* L., *Ulex minor* Roth **Fagaceae:** *Castanea sativa* Mill. **Geraniaceae:** *Geranium Tourn. ex L.* **Hypericaceae:** *Hypericum perforatum* L. **Lamiaceae:** *Clinopodium vulgare* L., *Mentha aquatica* L. **Orobanchaceae:** *Odontites vernus* (Bellardi) Dumort., *Vicia sativa* L. **Papaveraceae:** *Papaver rhoeas* L. **Plantaginaceae:** *Veronica chamaedrys* L. **Ranunculaceae:** *Ranunculus repens* L. **Rosaceae:** *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Potentilla erecta* (L.) Raeusch., *Potentilla* L., *Prunus* L., *Prunus spinosa* L., *Rosa* L., *Rubus fruticosus* agg. L., *Rubus idaeus* L., *Rubus* L. **Salicaceae:** *Salix* L. **Sapindaceae:** *Acer campestre* L., *Acer* L. **Viburnaceae:** *Viburnum opulus* L., *Viburnum* L. (Balfour et al. 2022); **Apiaceae:** *Anthriscus sylvestris* (L.) Hoffm., *Daucus carota* L., *Heracleum sphondylium* L., *Torilis japonica* (Houtt.) DC. **Asteraceae:** *Bellis perennis* L., *Centaurea nigra* L., *Cirsium arvense* (L.) Scop., *Cirsium vulgare* (Savi) Ten., *Crepis capillaris* (L.) Wallr., *Matricaria chamomilla* L., *Taraxacum* F.H.Wigg., *Tanacetum vulgare* L. **Brassicaceae:** *Brassica juncea* (L.) Czern., *Brassica napus* L., *Lepidium draba* L., *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Caprifoliaceae:** *Valeriana officinalis* L. **Caryophyllaceae:** *Arenaria serpyllifolia* L. **Cornaceae:** *Cornus alba* L. **Euphorbiaceae:** *Euphorbia esula* L. **Fabaceae:** *Anthyllis montana* L., *Lotus corniculatus* L., *Melilotus albus* Medik., *Melilotus officinalis* (L.) Lam., *Trifolium repens* L. **Hypericaceae:** *Hypericum perforatum* L. **Lamiaceae:** *Lamium amplexicaule* L. **Onagraceae:** *Oenothera biennis* L. **Orchidaceae:** *Orchis mascula* (L.) L. **Ranunculaceae:** *Ranunculus acris* L. **Rosaceae:** *Filipendula ulmaria* (L.) Maxim., *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Pyrus communis* L., *Rubus* L., *Rubus fruticosus* L., *Sanguisorba minor* Scop. **Scrophulariaceae:** *Verbascum densiflorum* Bertol. **Solanaceae:** *Solanum tuberosum* L. (Lanuza et al. 2025); **Brassicaceae:** *Brassica* L.

Andrena (Micrandrena) enslinella* Stöckhert, 1924*Material**

- a. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 6FDC8C99-7382-573D-9939-32B3B0BA6919

Distribution

Austria, Bulgaria, Croatia, Czechia, Greece, Hungary, Iran, Italy, North Macedonia, Poland, Russia, Serbia, Slovakia, Slovenia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Ankara, Çorum, İstanbul, Konya (Akşehir), Sivas (Gürün) (Warncke 1974); Antalya (Güzelsu) (Ebmer 2005); Ankara, Isparta (Gelendost) (Hazır et al. 2014); Niğde (this study) (Fig. 24 and Fig. 14D-F).

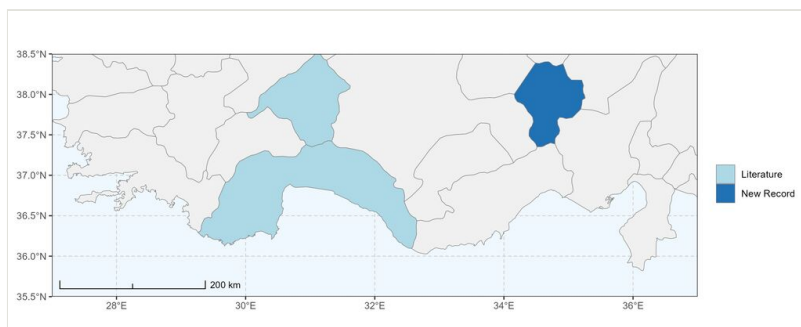


Figure 24. [doi](#)

Distribution of *A. enslinella* in the Mediterranean Region of Türkiye.

Flower records

Rosaceae: *Potentilla reptans* L. (Lanuza et al. 2025); **Brassicaceae:** *Brassica* L.

Andrena (Campylogaster) erberi* Morawitz, 1871*Material**

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Sarıkavak road; verbatimElevation: 665 m; verbatimLatitude: 36.565; verbatimLongitude: 33.63; eventDate: 25-04-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C6132760-7237-5316-8DEC-6403731EAE9B

Distribution

Bulgaria, Egypt, Greece, Iran, North Macedonia, Romania, Türkiye and the Caucasus (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Adana (Ceyhan), Ankara, Nevşehir (Ürgüp) (Warncke 1966); Konya (Hazır 2010); Mersin (this study) (Fig. 25).

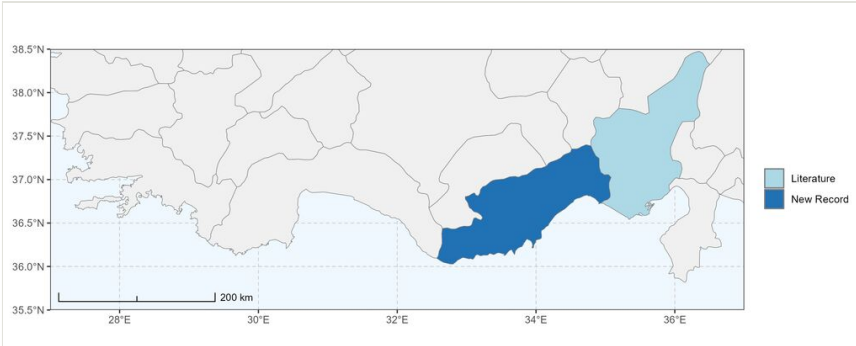


Figure 25. [doi](#)

Distribution of *A. erberi* in the Mediterranean Region of Türkiye.

Flower records

Resedaceae: *Reseda lutea* var. *lutea* L.

Andrena (Chlorandrena) exquisita Warncke, 1975

Materials

- a. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 440 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 853BF550-A6AF-5545-BF70-3ACE55B4C38A
- b. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 440 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054; eventDate: 22-03-2009; individualCount: 6; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 77F462A5-E1DD-5634-A5C1-CB80E16BC759

Distribution

Bulgaria, Cyprus, Georgia, Iran, Israel and the West Bank, Jordan, Lebanon, Russia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Pisanty et al. 2018, Wood et al. 2020).

Distribution in Türkiye: Çanakkale (Bigadiç), İstanbul (Büyükdere) (Warncke 1974, Blank and Kraus 1994); Aydın, Bursa, Çanakkale, Maraş, Kırklareli, Manisa (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 26).

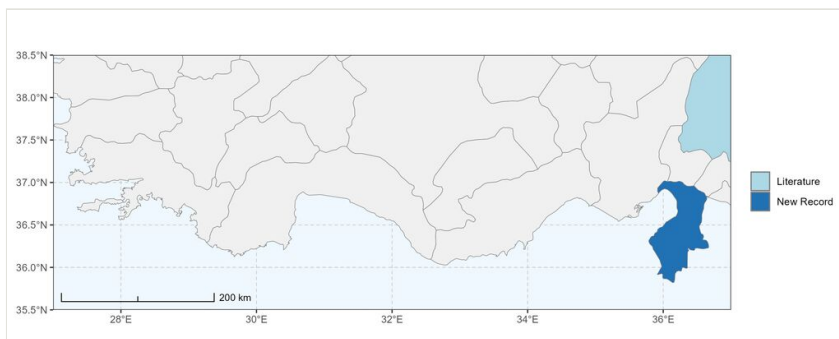


Figure 26. [doi](#)

Distribution of *A. exquissita* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm.

Andrena (Leimelissa) fallax Eversmann, 1852

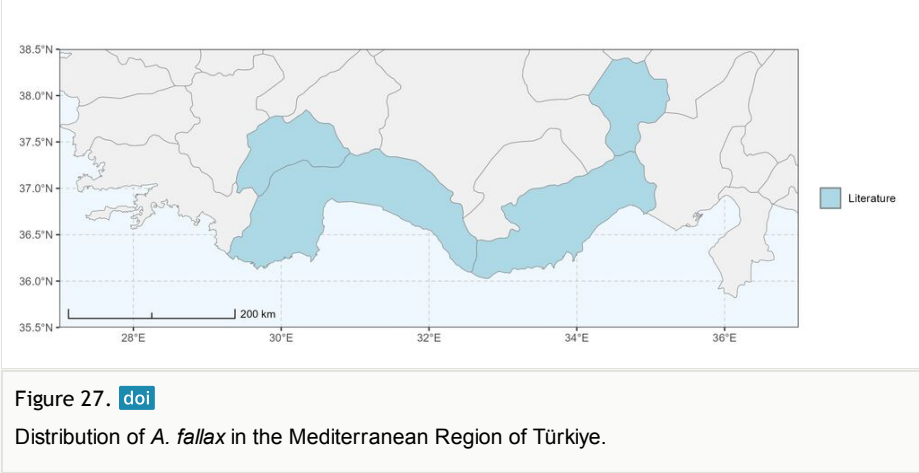
Materials

- a. countryCode: TR; stateProvince: Antalya; locality: Saklıkent road; verbatimElevation: 1759 m; verbatimLatitude: 36.87; verbatimLongitude: 30.343; eventDate: 11-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E4730366-05C0-5172-BD7A-E645E106A41E
- b. countryCode: TR; stateProvince: Antalya; locality: Saklıkent road; verbatimElevation: 1759 m; verbatimLatitude: 36.87; verbatimLongitude: 30.343; eventDate: 11-06-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E7C0FA88-55C9-51B1-90DB-A2DBCC36BA0A
- c. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.108; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2C455CF4-A8A2-57F1-A320-4BD1F56044DC

Distribution

Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Hungary, Iran, Romania, Syria and Türkiye (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Wood 2023a).

Distribution in Türkiye: Konya (Beyşehir) (Warncke 1966); Çanakkale (Eceabat), Kırşehir, Nevşehir (Ürgüp), Niğde (Çiftehane), Mersin (Mut), Samsun (Bafra), Muş (Warncke 1974); Erzurum (Oltu, İspir, Tortum) (Özbek 1976); Antalya, Burdur (Hazır 2010); Antalya, Mersin (this study) (Fig. 27).



Flower records

Brassicaceae: *Lepidium chalepense* L.

Andrena (Holandrena) flavilabris Schenck, 1874

Material

- a. countryCode: TR; stateProvince: Burdur; locality: Antalya road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8E062BBF-0562-542C-B8EB-DDB86EB41DAE

Distribution

Croatia, Cyprus, France, Germany, Greece, Italy, Spain, Switzerland, Türkiye and Ukraine (Ascher and Pickering 2025).

Distribution in Türkiye: Ankara (Şereflikoçhisar) (Warncke 1966); Konya (Kulu), Samsun (Bafra) (Warncke 1974); Erzurum, Muş (Özbek 1976); Burdur (this study) (Fig. 28 and Fig. 29A-C).

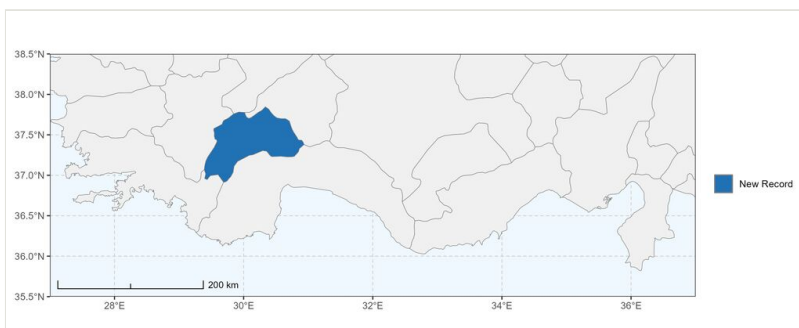


Figure 28. [doi](#)

Distribution of *A. flavilabris* in the Mediterranean Region of Türkiye.

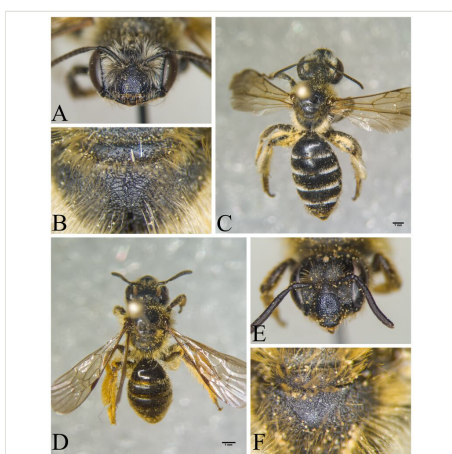


Figure 29. [doi](#)

Andrena flavilabris, female. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena fulvago*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (Melandrena) flavipes Panzer, 1799

Materials

- a. countryCode: TR; stateProvince: Antalya; county: Side; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 8; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 7433D05D-0E9E-5ACF-B018-07C3C239A266

- b. countryCode: TR; stateProvince: Antalya; locality: between Side-Belek; verbatimElevation: 16 m; verbatimLatitude: 36.843; verbatimLongitude: 31.292; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 85E3A9F3-B5C0-5CF2-AFDE-C3CB5B292355
- c. countryCode: TR; stateProvince: Kahramanmaraş; locality: Andırlı-Kadirli road, Torun village; verbatimElevation: 659 m; verbatimLatitude: 37.503; verbatimLongitude: 36.345; eventDate: 19-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: FC87C27B-517B-569C-B195-9CC31B0D0446
- d. countryCode: TR; stateProvince: Mersin; locality: Gülnar-Ermenek road; verbatimElevation: 1241 m; verbatimLatitude: 36.366; verbatimLongitude: 33.234; eventDate: 07-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: ADFEFDAC-819D-52DD-84C1-6CD48DD39519
- e. countryCode: TR; stateProvince: Antalya; county: Side; verbatimElevation: 1 m; verbatimLatitude: 36.776; verbatimLongitude: 31.414; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 58195365-8019-53EB-91A0-90A21215ACCD
- f. countryCode: TR; stateProvince: Afyonkarahisar; county: Dazkırı; locality: Örtülü village exit; verbatimElevation: 891 m; verbatimLatitude: 37.899; verbatimLongitude: 29.753; eventDate: 12-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 3AE8B396-A39A-58B3-B1A6-769E6713F07C
- g. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road, Yeşilbayır Plateau; verbatimElevation: 1438 m; verbatimLatitude: 36.956; verbatimLongitude: 30.058; eventDate: 10-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 88083B6E-D494-52D3-A53D-0D715E21D6DF
- h. countryCode: TR; stateProvince: Hatay; locality: Belen-Radar road; verbatimElevation: 1124 m; verbatimLatitude: 36.518; verbatimLongitude: 36.234; eventDate: 30-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 54A5EBAF-582C-5D44-B00E-7154CBAB9504
- i. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road, 2 km before Cevizli turn; verbatimElevation: 1262 m; verbatimLatitude: 37.117; verbatimLongitude: 31.777; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9242A9FC-58A4-5BE1-A04A-84E7183C1186
- j. countryCode: TR; stateProvince: Kahramanmaraş; locality: Göksun road; verbatimElevation: 901 m; verbatimLatitude: 37.727; verbatimLongitude: 36.693; eventDate: 02-07-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 03E8DFCF-4C66-5F93-900D-92029FC65105
- k. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 6; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D24761B2-1A84-5D40-8877-D7F3A37AE1AB

- I. countryCode: TR; stateProvince: Niğde; locality: Karagöl road, Madenköy exit; verbatimElevation: 1756 m; verbatimLatitude: 37.455; verbatimLongitude: 34.623; eventDate: 22-05-2008; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 87F5FB3D-39FD-5472-A48B-D376D11BF9A5

Distribution

Distribution. Albania, Algeria, Armenia, Austria, Afghanistan, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Denmark, Egypt, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Israel and the West Bank, Italy, India, Kazakhstan, Latvia, Lebanon, Lithuania, Luxembourg, Malta, Moldova, Morocco, Nepal, Netherlands, North Macedonia, Pakistan, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Sweden, Syria, Tunisia, Turkmenistan, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Wood 2024, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Balıkesir (Edremit), Bilecik, Bolu (Abant), Burdur, Çanakkale (Truva, Gelibolu), Denizli (Pamukkale), İstanbul (Selimpaşa), İzmir (Ensetepe), Karaman, Samsun (Dikbıyık) (Warncke 1969); Erzurum (Oltu, Tortum, İspir, Horasan, Hınıs, Aşkale), Iğdır, Tunceli, Elazığ (Özbek 1976); Adana, Afyon, Aksaray, Amasya, Ankara, Antalya, Aydın, Bayburt, Bolu, Burdur, Çanakkale, Çankırı, Çorum, Denizli, Düzce, Hatay, Kahramanmaraş, Karabük, Kastamonu, Kırıkkale, Kırşehir, Konya, Kütahya, Manisa, Mersin, Muğla, Nevşehir, Samsun, Sivas, Yozgat (Hazır 2010, Güler 2011, Hazır et al. 2014); Afyon, Antalya, Hatay, Kahramanmaraş, Mersin, Niğde (this study) (Fig. 30).

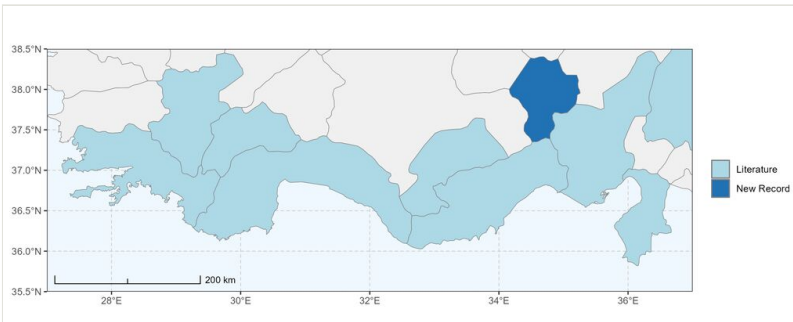


Figure 30. [doi](#)

Distribution of *A. flavipes* in the Mediterranean Region of Türkiye.

Flower records

Alliaceae: *Allium cepa* L., *Tragopogon* L. **Asteraceae:** *Centaurea* L., *Cirsium* Mill.
Berberidaceae: *Bongardia chrysogonum* (L.) Spach **Brassicaceae:** *Alyssum* L., *Brassica napus* L., *Lepidium draba* L., *Descurainia sophia* (L.) Webb ex Prantl, *Lepidium sativum* L. **Convolvulaceae:** *Convolvulus* L. **Fabaceae:** *Medicago sativa* L.,

Melilotus officinalis (L.) Lam. **Papaveraceae**: *Papaver* L. (Khodarahmi Ghahnavieh and Monfared 2019); **Amaryllidaceae**: *Allium* L., *Narcissus* L. **Apiaceae**: *Aegopodium podagraria* L., *Anthriscus* Pers., *Anthriscus sylvestris* (L.) Hoffm., *Daucus carota* L., *Daucus* L., *Dorycnium* Mill., *Heracleum sphondylium* L., *Oenanthe crocata* L., *Pimpinella saxifraga* L., *Smyrnium olusatrum* L., *Torilis japonica* (Houtt.) DC. **Asteraceae**: *Achillea millefolium* L., *Anthemis* L., *Arctium minus* (Hill) Bernh., *Bellis perennis* L., *Centaurea cyanus* L., *Centaurea nigra* L., *Centaurea scabiosa* L., *Cirsium arvense* (L.) Scop., *Cirsium* Mill., *Cirsium vulgare* (Savi) Ten., *Crepis capillaris* (L.) Wallr., *Crepis* L., *Eupatorium cannabinum* L., *Erigeron annuus* (L.) Desf., *Hypochaeris radicata* L., *Leontodon hispidus* L., *Leontodon* L., *Leucanthemum vulgare* Lam., *Picris echioides* L., *Picris hieracioides* L., *Pulicaria dysenterica* (L.) Bernh., *Senecio erucifolius* L., *Senecio jacobaea* L., *Sonchus* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Taraxacum* F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae**: *Alliaria petiolata* (M.Bieb.) Cavara & Grande, *Arabidopsis thaliana* (L.) Heynh., *Barbarea vulgaris* W.T.Aiton, *Brassica napus* L., *Brassica* L., *Cakile maritima* Scop., *Raphanus raphanistrum* L., *Sinapis alba* L., *Sinapis arvensis* L., *Sinapis* L., *Sisymbrium officinale* (L.) Scop. **Campanulaceae**: *Campanula* L. **Caprifoliaceae**: *Knautia arvensis* (L.) Coult. **Caryophyllaceae**: *Stellaria holostea* L., *Stellaria* L. **Convolvulaceae**: *Convolvulus arvensis* L. **Cornaceae**: *Cornus sanguinea* L. **Cucurbitaceae**: *Bryonia dioica* Bojer **Ericaceae**: *Erica* Tourn. ex L. **Fabaceae**: *Cytisus* Desf., *Laburnum* Fabr., *Lathyrus pratensis* L., *Medicago lupulina* L., *Medicago* L., *Trifolium hybridum* L., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium* Tourn. ex L., *Ulex* L. **Fagaceae**: *Fagus sylvatica* L., *Quercus* L. **Gentianaceae**: *Centaureum erythraea* Rafn **Geraniaceae**: *Geranium* Tourn. ex L. **Lamiaceae**: *Glechoma hederacea* L., *Lamium* L., *Lamium purpureum* L., *Origanum vulgare* L. **Oleaceae**: *Ligustrum vulgare* L. **Onagraceae**: *Chamaenerion angustifolium* (L.) Scop. **Orchidaceae**: *Herminium* L. **Papaveraceae**: *Papaver rhoeas* L. **Plantaginaceae**: *Veronica chamaedrys* L., *Veronica* L. **Polygonaceae**: *Persicaria lapathifolia* (L.) Delarbre **Ranunculaceae**: *Ranunculus bulbosus* L., *Ranunculus ficaria* L., *Ranunculus repens* L., *Ranunculus* L. **Rhamnaceae**: *Rhamnus cathartica* L. **Rosaceae**: *Crataegus monogyna* Jacq., *Filipendula ulmaria* (L.) Maxim., *Fragaria* L., *Potentilla erecta* (L.) Raeusch., *Potentilla* L., *Prunus* L., *Prunus spinosa* L., *Pyrus* L., *Rosa arvensis* Huds., *Rosa* L., *Rubus fruticosus* agg. L., *Rubus idaeus* L., *Rubus* L. **Salicaceae**: *Salix caprea* L., *Salix cinerea* L., *Salix* L. **Sapindaceae**: *Acer campestre* L., *Acer pseudoplatanus* L., *Acer* L., *Aesculus hippocastanum* L. **Viburnaceae**: *Viburnum opulus* L. (Balfour et al. 2022); **Apiaceae**: *Daucus carota* L., *Elaeoselinum* W.D.J.Koch ex DC., *Falcaria vulgaris* Bernh., *Pimpinella cretica* Poir., *Pimpinella major* (L.) Huds., *Pimpinella peregrina* L., *Torilis arvensis* (Huds.) Link **Asphodelaceae**: *Asphodelus aestivus* Brot. **Asteraceae**: *Achillea millefolium* L., *Andryala ragusina* L., *Anthemis arvensis* L., *Anthemis chia* L., *Bellis perennis* L., *Buphthalmum salicifolium* L., *Carduus acanthoides* L., *Calendula arvensis* L., *Centaurea cyanus* L., *Centaurea jacea* L., *Centaurea nigra* L., *Centaurea scabiosa* L., *Centaurea stoebe* L., *Centaurea spinosa* L., *Chamaemelum fuscatum* (Brot.) Vasc., *Chamaemelum nobile* (L.) All., *Cichorium intybus* L., *Cirsium arvense* (L.) Scop., *Cirsium vulgare* (Savi) Ten., *Crepis* L., *Crepis biennis* L., *Crepis capillaris*

(L.) Wallr., *Crepis commutata* (Spreng.) Greuter, *Crepis setosa* Haller f., *Echinops ritro* L., *Erigeron annuus* (L.) Desf., *Eupatorium cannabinum* L., *Glebionis coronaria* (L.) Cass. ex Spach, *Hedypnois cretica* (L.) Dum.Cours., *Helichrysum italicum* (Roth) G.Don, *Helichrysum stoechas* (L.) Moench, *Helminthotheca echioides* (L.) Holub, *Hypochaeris achyrophorus* L., *Hypochaeris radicata* L., *Jacobaea vulgaris* Gaertn., *Jurinea humilis* (Desf.) DC., *Leontodon* L., *Leontodon hispidus* L., *Leontodon saxatilis* Lam., *Leontodon tuberosus* L., *Leucanthemopsis alpina* (L.) Heywood, *Leucanthemum vulgare* Lam., *Pentanema ensifolium* (L.) D.Gut.Larr., Santos-Vicente, Anderb., E.Rico & M.M.Mart.Ort., *Pentanema salicinum* (L.) D.Gut.Larr., Santos-Vicente, Anderb., E.Rico & M.M.Mart.Ort., *Phagnalon saxatile* (L.) Cass., *Picris hieracioides* L., *Senecio* L., *Senecio inaequidens* DC., *Sonchus arvensis* L., *Taraxacum* F.H.Wigg., *Taraxacum campylodes* G.E.Haglund, *Taraxacum officinale* F.H.Wigg., *Xeranthemum cylindraceum* Sm. **Boraginaceae:** *Echium plantagineum* L., *Echium vulgare* L. **Brassicaceae:** *Brassica barrelieri* (L.) Janka, *Brassica juncea* (L.) Czern., *Brassica napus* L., *Bunias orientalis* L., *Erysimum pusillum* Bory & Chaub., *Hirschfeldia incana* (L.) Lagr.-Foss., *Raphanus raphanistrum* L., *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Campanulaceae:** *Jasione crispa* (Pourr.) Samp. **Caprifoliaceae:** *Valeriana officinalis* L. **Cistaceae:** *Cistus albidus* L., *Cistus crispus* L., *Cistus halimifolius* L., *Cistus ladanifer* L., *Cistus monspeliensis* L., *Cistus parviflorus* Lam., *Cistus salviifolius* L., *Helianthemum oelandicum* (L.) Dum.Cours. **Convolvulaceae:** *Convolvulus arvensis* L. **Cupressaceae:** *Juniperus communis* L. **Euphorbiaceae:** *Euphorbia esula* L. **Fabaceae:** *Adenocarpus hispanicus* (Lam.) DC., *Coronilla varia* L., *Cytisus oromediterraneus* Rivas Mart. & al., *Genista acanthoclada* DC., *Genista hirsuta* Vahl, *Lotus corniculatus* L., *Lotus dorycnium* L., *Medicago falcata* L., *Medicago lupulina* L., *Medicago sativa* L., *Melilotus albus* Medik., *Melilotus officinalis* (L.) Lam., *Onobrychis viciifolia* Scop., *Ononis spinosa* L., *Trifolium arvense* L., *Trifolium campestre* Schreb., *Trifolium fragiferum* L., *Trifolium montanum* L., *Trifolium pratense* L., *Trifolium repens* L. **Geraniaceae:** *Geranium Tourn.* ex L., *Geranium pratense* L., *Geranium pyrenaicum* Burm.f. **Hydrangeaceae:** *Philadelphus coronarius* L. **Hypericaceae:** *Hypericum perforatum* L. **Lamiaceae:** *Origanum vulgare* L., *Satureja thymbra* L., *Teucrium capitatum* L., *Thymbra capitata* (L.) Cav., *Thymus praecox* Opiz, *Thymus pulegioides* L., **Linaceae:** *Linum tenuifolium* L. **Malvaceae:** *Malva alcea* L. **Papaveraceae:** *Papaver rhoeas* L. **Plantaginaceae:** *Plantago* L., *Plantago lanceolata* L., *Plantago media* L., *Veronica persica* Poir. **Plumbaginaceae:** *Armeria caespitosa* (Ortega) Boiss. **Primulaceae:** *Primula veris* L. **Ranunculaceae:** *Ranunculus acris* L., *Ranunculus polyanthemus* L. **Resedaceae:** *Reseda lutea* L. **Rosaceae:** *Fragaria viridis* Weston, *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Rosa canina* L., *Rubus* L. (Lanuza et al. 2025); **Asteraceae:** *Centaurea iberica* Trev. ex Spreng., *Cichorium intybus* L., *Echinops orientalis* Trautv. **Brassicaceae:** *Brassica* L., *Sinapis arvensis* L., *Sisymbrium altissimum* L. **Fabaceae:** *Melilotus officinalis* (L.) Lam., *Trifolium repens* L., *Trigonella spicata* Sibth. & Sm. **Papaveraceae:** *Glaucium leiocarpum* Boiss. **Ranunculaceae:** *Ranunculus marginatus* d'Urv. **Rosaceae:** *Rubus canescens* var. *glabratus* (Godr.) Davis & Meikle.

Andrena (Micrandrena) floricola Eversmann, 1852

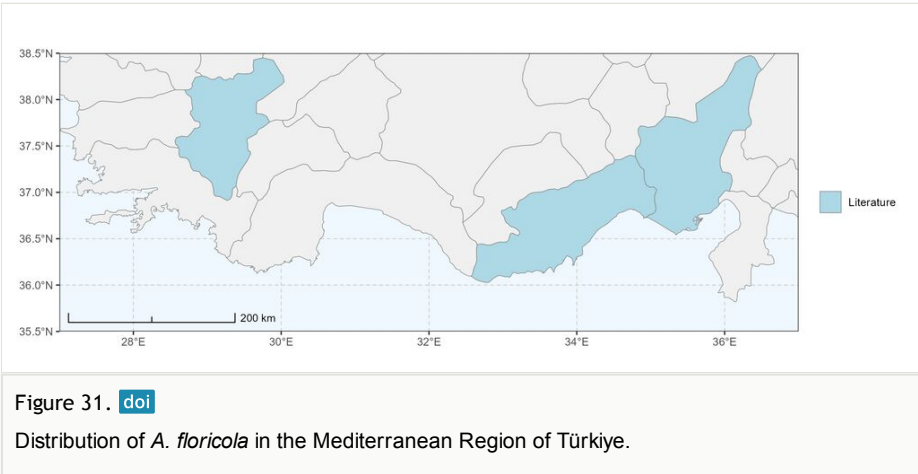
Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 05D9BE50-AB4A-5FDD-8542-F4DD9E0487D5

Distribution

Austria, Belarus, Belgium, Bosnia and Herzegovina, Czechia, France, Georgia, Germany, Great Britain, Iran, Lithuania, Netherlands, Poland, Russia, Spain, Switzerland and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Amasya, Ardahan, Balıkesir (Ayvalık), Diyarbakır, Erzurum (Tortum), Eskişehir, Konya (Sarayönü), Mersin (Gülek) (Warncke 1974); Hakkari, Denizli (Karakurt) (Dardón et al. 2014); Mersin (this study) (Fig. 31).



Flower records

Apiaceae: *Foeniculum vulgare* Mill., *Turgenia* Hoffm. **Fabaceae:** *Melilotus officinalis* (L.) Lam. **Ranunculaceae:** *Delphinium* Tourn. ex L. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae:** *Achillea millefolium* L., *Lactuca serriola* L., *Senecio vernalis* Waldst. & Kit., *Tripleurospermum maritimum* (L.) W.D.J.Koch **Brassicaceae:** *Sisymbrium loeselii* L. (Lanuza et al. 2025); **Brassicaceae:** *Lepidium draba* L.

Andrena* (*Holandrena*) *forsterella* Osytsnjuk, 1978*Materials**

- a. countryCode: TR; stateProvince: Adana; locality: Kadirli-Andırın road; verbatimElevation: 224 m; verbatimLatitude: 37.422; verbatimLongitude: 36.281; eventDate: 10-07-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 25855E71-9352-5E89-95B9-D1CA6CC84155
- b. countryCode: TR; stateProvince: Kahramanmaraş; locality: Göksun road; verbatimElevation: 901 m; verbatimLatitude: 37.727; verbatimLongitude: 36.693; eventDate: 02-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 33433EBD-3354-534B-9321-6D31ED969E08
- c. countryCode: TR; stateProvince: Muğla; county: Datça; locality: Ballık hill; verbatimElevation: 0 m; verbatimLatitude: 36.808; verbatimLongitude: 27.901; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 19A62CB3-680B-5816-BB39-41EAB9B21DCA
- d. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 450 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054; eventDate: 27-04-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 58477EDB-1C91-53D4-9596-30E846A40B22

Distribution

Azerbaijan, Bulgaria, Croatia, Cyprus, Greece, Iran, Israel and the West Bank, Italy, Lebanon, Liechtenstein, Macedonia and Türkiye (Schönitzer et al. 1995, Wood et al. 2020, Wood 2021b, Pisanty et al. 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Erzurum, Muş, Tunceli (Özbek 1976); Antalya (Akseki), Diyarbakır, Konya (Seydişehir), Samsun, Şanlıurfa, Tokat (Niksar) (Schönitzer et al. 1995); Adana (Ceyhan), Ankara (Şereflikoçhisar), Balıkesir (Ayvalık), Bursa (Karacabey), Hatay (Topboğazı), Iğdır, İstanbul (Florya), Konya (Beyşehir), Mersin (Mut, Namrun) (Schuberth 1995, Hazır 2010); Antalya, Antep, Diyarbakır, Konya, Mersin (Hazır et al. 2014); Adana, Hatay, Kahramanmaraş, Muğla (this study) (Fig. 32).

Taxon discussion

In this study, *Andrena wilhelmi* and *Andrena forsterella* are treated as conspecific. We follow the taxonomic classification proposed by Wood (2026), wherein *A. wilhelmi* is considered a synonym of *A. forsterella*.

Flower records

Asteraceae: *Centaurea solstitialis* subsp. *carneola* (Boiss.) Wagenitz, *Echinops orientalis* Trautv., *Glebionis segetum* (L.) Fourr.



Figure 32. [doi](#)

Distribution of *A. forsterella* in the Mediterranean Region of Türkiye.

Andrena (Chrysandrena) fulvago (Christ, 1791)

Material

- a. countryCode: TR; stateProvince: Kahramanmaraş; county: Andırın; locality: Çokak village exit; verbatimElevation: 1362 m; verbatimLatitude: 37.76; verbatimLongitude: 36.35; eventDate: 18-07-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 89EAE04E-5AB1-540C-99B2-D217C393D871

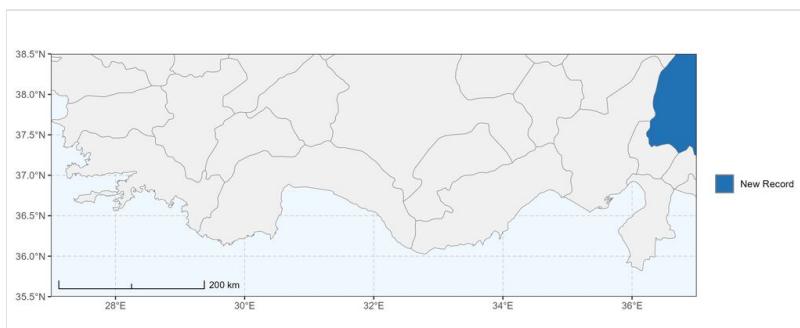
Distribution

Afghanistan, Albania, Armenia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Finland, France, Georgia, Germany, Great Britain, Greece, Iran, Italy, Kazakhstan, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Wood and Monfared 2022, Wood 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Bolu (Abant) (Warncke 1969); İstanbul (Belgrad) (Warncke 1974); Ankara, Kırklareli (Hazır et al. 2014); Kahramanmaraş (this study) (Fig. 29D-F and Fig. 33).

Flower records

Asteraceae: *Taraxacum* agg. F.H.Wigg. (Balfour et al. 2022); **Asteraceae:** *Crepis* L., *Crepis capillaris* (L.) Wallr., *Crepis biennis* L., *Hypochaeris radicata* L., *Lapsana communis* L., *Leontodon hispidus* L., *Picris hieracioides* L., *Pilosella* Hill, *Pilosella officinarum* F.W.Schultz & Sch.Bip., *Sonchus oleraceus* L. **Geraniaceae:** *Geranium* Tourn. ex L., *Geranium pyrenaicum* Burm.f., **Ranunculaceae:** *Ranunculus acris* L. (Lanuza et al. 2025); **Asteraceae:** *Cichorium intybus* L.

Figure 33. [doi](#)Distribution of *A. fulvago* in the Mediterranean Region of Türkiye.

Andrena (Ulandrena) fulvitaris Brullé, 1833

Material

- a. countryCode: TR; stateProvince: Burdur; locality: Ağlasun-Antakya road; verbatimElevation: 1048 m; verbatimLatitude: 37.617; verbatimLongitude: 30.522; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1FAA3984-EF9D-5A45-8F4D-E2578C3356CC

Distribution

Albania, Bulgaria, Croatia, Greece, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, North Macedonia, Slovenia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Adana, Ankara, Antalya (Side), Çanakkale (Truva), Diyarbakır, Edirne, İstanbul (Belgrad Ormanı, Büyükdere), Karaman (Madenşehir), Kayseri (Yeşilhisar), Mersin (Anamur, Gilindire, Gülek), Muğla (Marmaris), Niğde (Ulukışla), Urfa (Birecik) (Warncke 1974); Adana, Ankara, Antalya, Antep, Aydın, İzmir, Karabük, Karaman, Kırşehir, Konya, Kütahya, Manisa (Hazır et al. 2014); Burdur (this study) (Fig. 34).

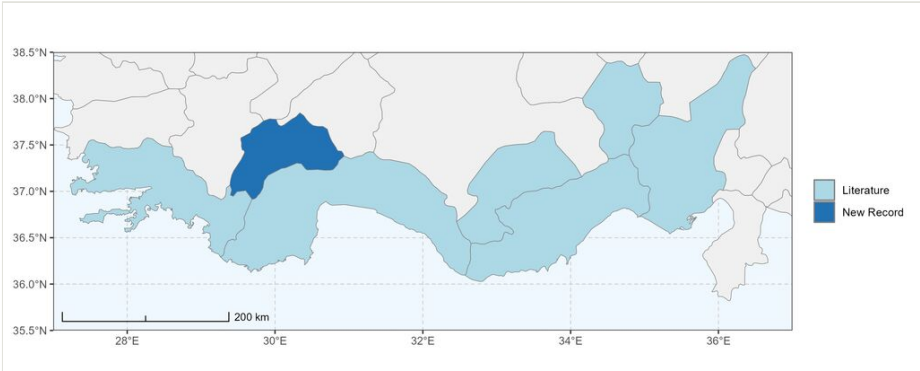


Figure 34. [doi](#)

Distribution of *A. fulvitorsis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm., *Tripleurospermum* Sch.Bip. (Lanuza et al. 2025); **Asteraceae:** *Anthemis pseudocotula* Boiss.

Andrena (Melanapis) fuscosa Erichson, 1835

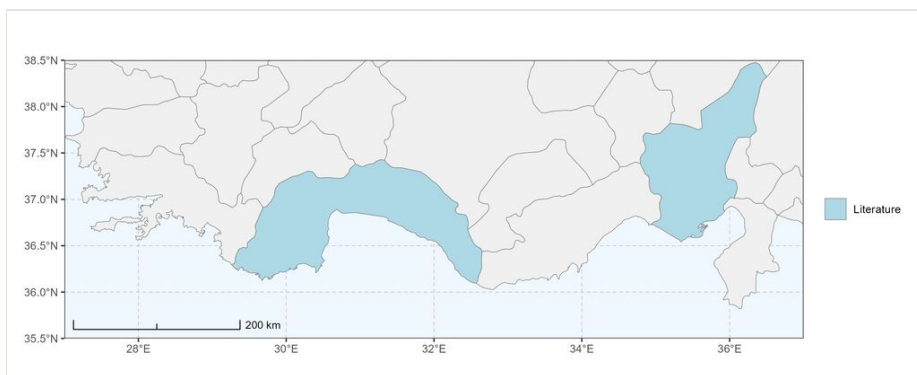
Material

- a. countryCode: TR; stateProvince: Antalya; county: Gazipaşa; verbatimElevation: 149 m; verbatimLatitude: 36.192; verbatimLongitude: 32.435; eventDate: 08-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8819D90A-38CC-5550-841D-DCDFD1D47BCD

Distribution

Afghanistan, Algeria, Austria, Croatia, Cyprus, Dağıstan, Egypt, France, Greece, Hungary, India, Iran, Israel and the West Bank, Italy, Kazakhstan, Libya, Morocco, Moritanya, Pakistan, Poland, Romania, Slovakia, Spain, Switzerland, Tajikistan, Tunisia, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Osytsnjuk et al. 2008, Wood and Monfared 2022, Wood 2023b, Wood 2024, Wood 2025, Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Ceyhan, Karataş), Amanos Mountains, Ankara, Balıkesir (Ayvalık), Sakarya (Adapazarı) (Warncke 1966); Aydın (Kuşadası), Bilecik (Warncke 1969); Erzurum (İspir, Horasan) (Özbek 1976); Antep, Konya (Hazır 2010); Antalya, Antep, Aydın, Erzurum, Konya (Hazır et al. 2014); Antalya (this study) (Fig. 35).

Figure 35. [doi](#)Distribution of *A. fuscosa* in the Mediterranean Region of Türkiye.

Flower records

Alliaceae: *Allium cepa* L. **Amaranthaceae:** *Amaranthus* L. **Asteraceae:** *Centaurea virgata* Lam. **Apiaceae:** *Petroselinum* Hill. **Brassicaceae:** *Brassica napus* L., *Descurainia sophia* (L.) Webb ex Prantl **Boraginaceae:** *Anchusa azurea* var. *azurea* Mill. **Chenopodiaceae:** *Chenopodium* L. **Papaveraceae:** *Papaver* L. **Primulaceae:** *Lysimachia arvensis* (L.) U.Manns & Anderb. (Khodarahmi Ghahnavieh and Monfared 2019); **Apiaceae:** *Pimpinella peregrina* L. **Brassicaceae:** *Hirschfeldia incana* (L.) Lagr.-Foss. **Lamiaceae:** *Thymbra capitata* (L.) Cav. (Lanuza et al. 2025); **Brassicaceae:** *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (*Simandrena*) *gasparella* Patiny, 1998

Material

- a. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1496 m; verbatimLatitude: 37.14; verbatimLongitude: 31.875; eventDate: 09-06-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1DF6EDF3-6960-53BB-BD92-CA54A4AA6149

Distribution

Iran and Türkiye (Gusenleitner and Schwarz 2002, Khodarahmi Ghahnavieh and Monfared 2019, Wood and Monfared 2022).

Distribution in Türkiye: Konya (Akşehir) (Patiny 1998); Antalya (this study) (Fig. 36 and Fig. 37A-C).

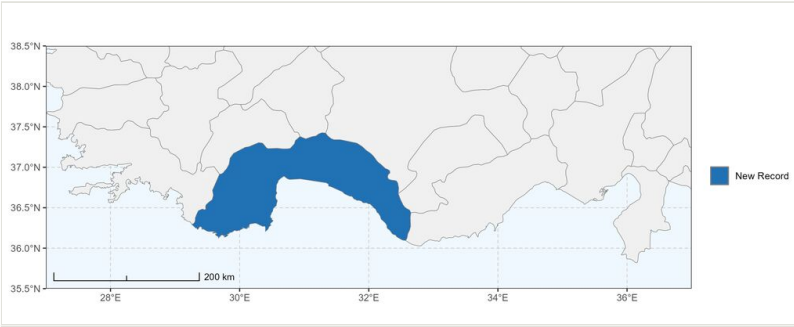


Figure 36. [doi](#)

Distribution of *A. gasparella* in the Mediterranean Region of Türkiye.

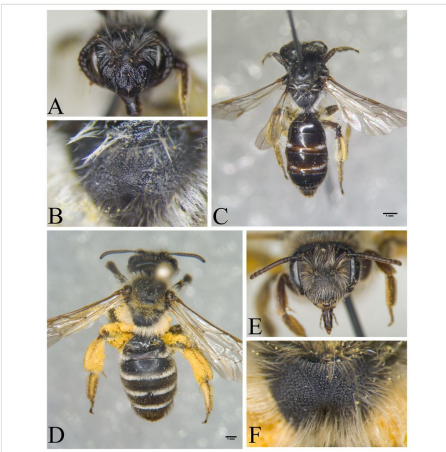


Figure 37. [doi](#)

Andrena gasparella, female. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena hungarica* ssp. *macroura*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Apiaceae: *Foeniculum vulgare* Mill., *Turgenia* Hoffm. **Brassicaceae:** *Brassica napus* L., *Lepidium draba* L., **Fabaceae:** *Papaver* L. **Ranunculaceae:** *Delphinium* Tourn. ex L. (Khodarahmi Ghahnavieh and Monfared 2019); **Brassicaceae:** *Isatis* L.

Andrena (Chrysandrena) glandaria Warncke, 1975

Materials

- a. countryCode: TR; stateProvince: Adana; county: Seyhan; locality: DSI facilities; verbatimElevation: 91 m; verbatimLatitude: 37; verbatimLongitude: 35.33; eventDate: 23-05-2009; individualCount: 9; sex: female; recordedBy: Fatih Dikmen; identifiedBy:

- Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 7750ECFB-E3AD-5A1B-81C5-1FC0DD122C2D
- b. countryCode: TR; stateProvince: Adana; county: Seyhan; locality: DSI facilities; verbatimElevation: 91 m; verbatimLatitude: 37; verbatimLongitude: 35.33; eventDate: 23-05-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B3067328-4352-58CE-970B-1607C62E3B68
- c. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 19; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0255721B-3973-557D-9E26-31EFE8949FDB
- d. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 935AD164-A264-538F-922F-2B4F0B3C04C4
- e. countryCode: TR; stateProvince: Mersin; locality: Mut-Silifke road, Sarıkavak turn; verbatimElevation: 223 m; verbatimLatitude: 36.503; verbatimLongitude: 33.585; eventDate: 22-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1B3C8523-A6E4-5B5E-ADB0-1EC5A977CA48
- f. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F19378B5-B089-5309-A53A-38379F90CBD3
- g. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: AD6EF303-72F8-575D-9C34-179E76ED6081
- h. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 145 m; verbatimLatitude: 37.065; verbatimLongitude: 35.366; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8D500D41-BC16-5E13-8327-D8B7126E7F5D
- i. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8E2C97E4-E4FA-523C-BF38-7AED29027374

Diagnosis

Greece, Iraq, Israel and the West Bank, Syria and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Antalya (Warncke 1974); Urfa (Blank and Kraus 1994); Aydın, Isparta (Gelendost), Muğla (Hazır 2010, Hazır et al. 2014); Adana, Hatay, Mersin, Muğla (this study) (Fig. 38).

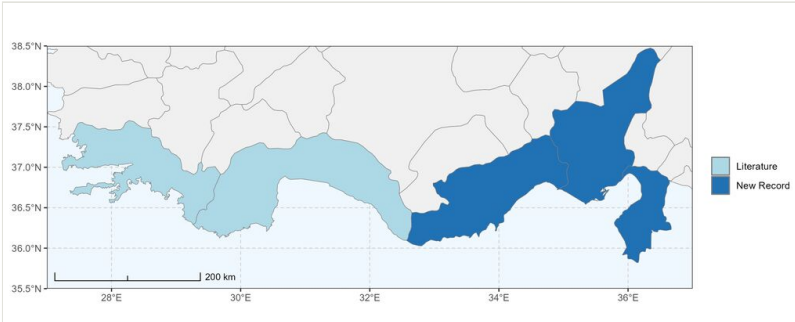


Figure 38. [doi](#)

Distribution of *A. glandaria* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Calendula arvensis* L., *Crepis* L., *Crepis foetida* L., *Crepis foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak., *Senecio vernalis* Waldst. & Kit. **Brassicaceae:** *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (Chrysandrena) hesperia Smith, 1853

Materials

- countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9E7F9490-5173-5AD1-BC1C-0745A58D96E5
- countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2E5A1FD8-B36E-5BAD-A008-F89054DCB34C

Distribution

Algeria, Austria, Cyprus, Croatia, Egypt, France, Greece, Israel and the West Bank, Italy, Morocco, Portugal, Slovenia, Spain, Switzerland, Tajikistan, Tunisia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2005, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Konya (Warncke 1966); Ankara, Antalya (Akseki, Side), Bursa, Denizli (Acıgöl, Pamukkale), Diyarbakır, İstanbul (Büyükçekmece, Büyükdere), Manisa, Mersin (Tarsus) (Warncke 1974); Erzurum

(İspir) (Özbek 1976); Adana, Ankara, Antalya, Aydın, Çanakkale, Karaman, Manisa, Maraş, Muğla (Hazır 2010, Hazır et al. 2014); Adana, Hatay (this study) (Fig. 39).

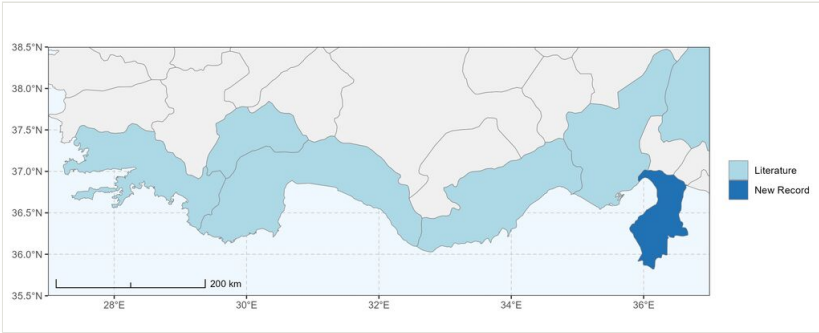


Figure 39. [doi](#)

Distribution of *A. hesperia* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Centaurea* L., *Tragopogon* L. **Fabaceae:** *Medicago sativa* L., *Melilotus officinalis* (L.) Lam. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae:** *Bellis annua* L., *Calendula arvensis* L., *Hypochaeris achyrophorus* L., *Leontodon tuberosus* L. (Lanuza et al. 2025); **Asteraceae:** *Calendula arvensis* L., *Crepis sancta* (L.) Bomm.

Andrena (*Chlorandrena*) *humabilis* Warncke, 1965

Materials

- a. countryCode: TR; stateProvince: Osmaniye; locality: Karatepe National Park; verbatimElevation: 325 m; verbatimLatitude: 37.26; verbatimLongitude: 36.219; eventDate: 20-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0093D167-4000-5872-83ED-5878661139DA
- b. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C6D1FC06-2B03-5846-89A9-CB958DA5B558
- c. countryCode: TR; stateProvince: Muğla; county: Marmaris; verbatimElevation: 156 m; verbatimLatitude: 36.87; verbatimLongitude: 28.19; eventDate: 02-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EB510070-246E-5C5F-BC48-406A56EBF6A2
- d. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 20-03-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: AF30DB1B-FE16-5531-BBBA-810B2D50DB37

Distribution

Bulgaria, Greece and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık, Bigadiç), Bursa (Mustafakemalpaşa, Karacabey), Çanakkale (Truba), Diyarbakır, İstanbul (Büyükdere), Mersin (Gülek) (Warncke 1974); Adana, Antalya, Aydın, Maraş (Hazır 2010, Hazır et al. 2014); Adana, Hatay, Muğla, Osmaniye (this study) (Fig. 40).

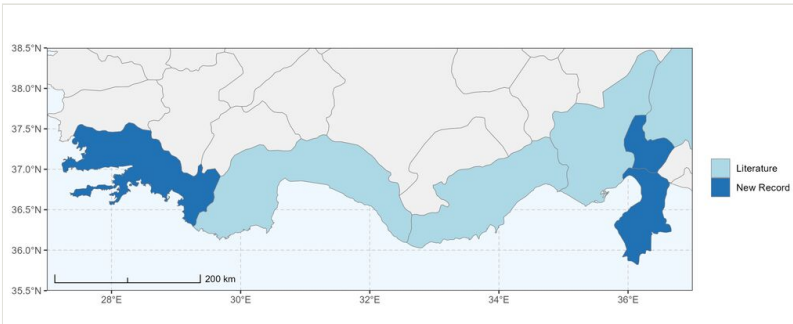


Figure 40. [doi](#)

Distribution of *A. humabilis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Bellis perennis* L., *Senecio vernalis* Waldst. & Kit., *Crepis sancta* (L.) Bornm., *Calendula arvensis* L.

Andrena (Melandrena) hungarica macroura Warncke, 1975

Material

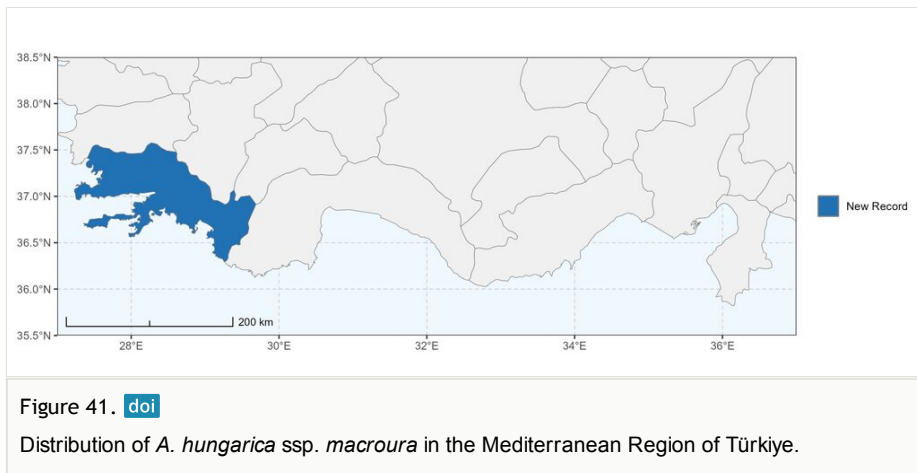
- a. countryCode: TR; stateProvince: Muğla; county: Datça; verbatimElevation: 0 m; verbatimLatitude: 36.802; verbatimLongitude: 27.866; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 41035E65-36C1-59EE-AFED-553DEEDAEB67

Distribution

The taxonomic situation is complex and confused. True *A. hungarica* Friese, 1887 is probably restricted to the Pannonian Basin (Austria, Slovakia, Hungary, Serbia), with *A. hungarica* ssp. *macroura* seemingly restricted to Türkiye and *A. hungarica* ssp. *khursiensis* Osytshnjuk, 1994 is a junior synonym of *Andrena quadimaculata* Friese, 1921 (TJW, in press). The presence of *A. hungarica* ssp. *macroura* in the coastal

region of Muğla is perplexing, as it has previously only been recorded in central Türkiye; further study of this taxon is required.

Distribution in Türkiye: Ankara, Erzurum, Sivas (Gürün) (Warncke 1974); Muğla (this study) (Fig. 37D-F and Fig. 41).



Flower records

Cistaceae: *Cistus* L.

Andrena (*Fuscandrena*) *iliaca* Warncke, 1969

Materials

- a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C1C9384E-D7F3-50CC-921A-CA5C0CDF2CFD
- b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9F1AD1D6-A7D3-5E39-98C9-D9AFF5311EDD

Distribution

Iran, Israel and the West Bank, Jordan and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Diyarbakır (Hazır et al. 2012, Hazır et al. 2014); Hatay (this study) (Fig. 42 and Fig. 43A-C).

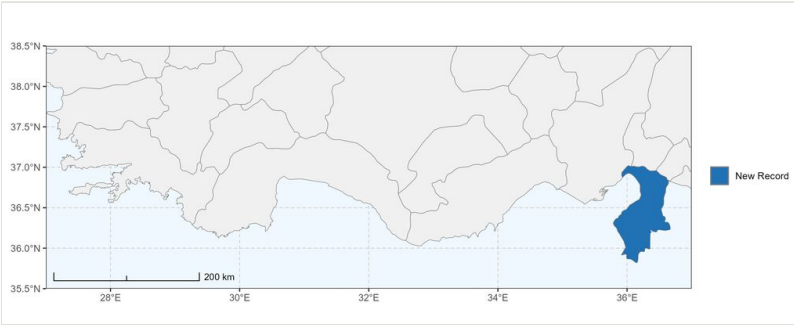


Figure 42. [doi](#)

Distribution of *A. iliaca* in the Mediterranean Region of Türkiye.

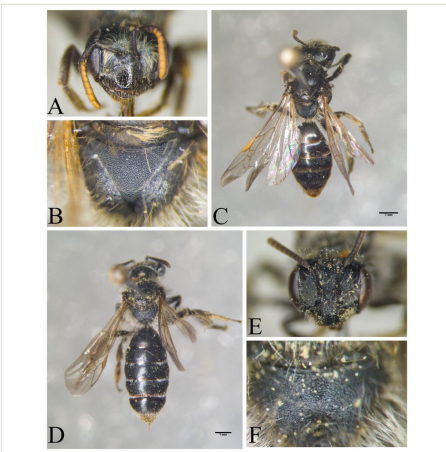


Figure 43. [doi](#)

Andrena iliaca, female. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena immaculata*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Flower records

Brassicaceae: *Sisymbrium* L.

Andrena (Micrandrena) immaculata Warncke, 1975

Material

- a. countryCode: TR; stateProvince: Antalya; locality: Burdur road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E7714C29-77BA-5A62-8A8E-FF0E16779B1C

Distribution

Cyprus, Israel and the West Bank, Syria and Türkiye (Gusenleitner and Schwarz 2002 Ascher and Pickering 2025, TJW unpublished data).

Distribution in Türkiye: Ankara (Şereflikoçhisar), Muş (Warncke 1974); Antalya (this study) (Fig. 44).

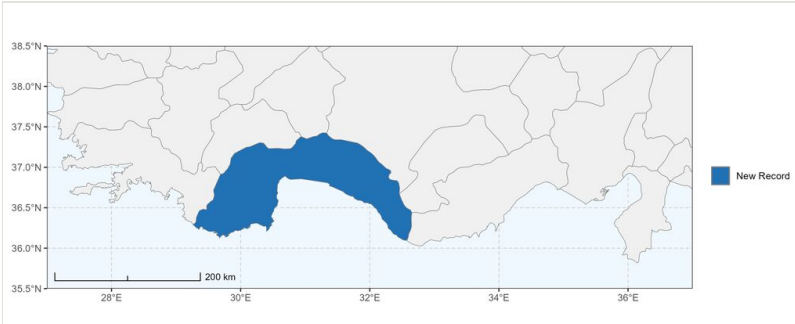


Figure 44. [doi](#)

Distribution of *A. immaculata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (Ulandrena) isabellina Warncke, 1969

Material

- a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 8; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 267D525D-18FB-5DCA-9D6C-C73BEB6ABBD4

Distribution

Iran, Israel and the West Bank, Jordan, Lebanon and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Hatay (Antakya) (Warncke 1974); Şırnak (Uludere), Hakkari, Gaziantep (Gusenleitner and Schwarz 2000); Hatay (this study) (Fig. 45).

Flower records

Asteraceae: *Crepis sancta* (L.) Bornm.

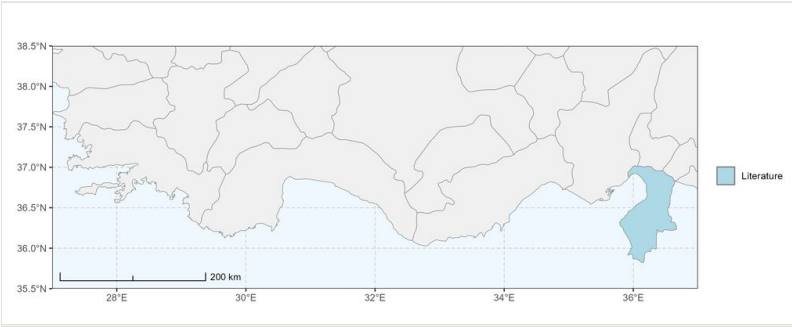


Figure 45. [doi](#)

Distribution of *A. isabellina* in the Mediterranean Region of Türkiye.

Andrena (Ulandrena) kriechbaumeri Schmiedeknecht, 1883

Materials

- countryCode: TR; stateProvince: Mersin; county: Mut; locality: Silifke road; verbatimElevation: 124 m; verbatimLatitude: 36.569; verbatimLongitude: 33.449; eventDate: 22-05-2009; individualCount: 5; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2215AACF-79EF-5228-889B-7B8EC0DECDEC
- countryCode: TR; stateProvince: Muğla; county: Marmaris; municipality: Karacasöğüt; verbatimElevation: 0 m; verbatimLatitude: 36.941; verbatimLongitude: 28.185; eventDate: 21-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0E892810-E3DF-506B-94BC-1FFFA2F8E489

Distribution

Bulgaria, Croatia, Greece, Iraq, Italy, North Macedonia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood et al. 2024).

Distribution in Türkiye: Ankara, Amasya (Warncke 1974); Ankara, Antalya, Balıkesir, Kırklareli, Mersin, Muğla (Hazır 2010); Mersin, Muğla (this study) (Fig. 46).

Flower records

Asteraceae: *Crepis foetida* L. (Lanuza et al. 2025); **Asteraceae:** *Crepis foetida* L., *Crepis foetida* subsp. *rheoadifolia* (M.Bieb.) Čelak.

Andrena (Holandrena) labialis (Kirby, 1802)

Materials

- countryCode: TR; stateProvince: Adana; county: Tufanbeyli; locality: Damlalık village; verbatimElevation: 1569 m; verbatimLatitude: 38.33; verbatimLongitude: 36.167;

eventDate: 17-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F5C1A4E1-F5D0-5425-96C6-6285262077C2

- b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 05FD7DD1-44BA-52C5-9B1D-881E315392F0

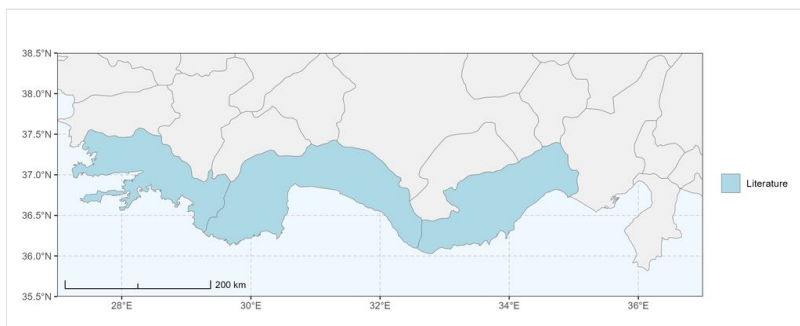


Figure 46. [doi](#)

Distribution of *A. kriebchaumeri* in the Mediterranean Region of Türkiye.

Distribution

Albania, Algeria, Austria, Belgium, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Luxembourg, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Türkiye and Ukraine (Gusenleithner and Schwarz 2002, Osytsnjuk et al. 2005, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Ankara (Şereflikoçhisar), Antalya (Finike), Aydın (Bozdoğan), Bursa (Uludağ), Erzurum (İspir, Oltu), Gümüşhane (Zigana), Karaman (Madenşehir), Kars, Konya, Niğde (Ulukışla), Tatos Mountains, Tunceli (Warncke 1974); Bayburt, Elazığ, Erzurum (Hınıs, Horasan, İspir, Narman, Oltu, Tortum), Iğdır, Muş (Özbek 1976); Burdur, Çanakkale, Denizli, Erzincan, Karabük, Kastamonu, Kayseri, Konya, Mersin, Sivas (Hazır 2010, Hazır et al. 2014); Aydın (Kuşadası), Kütahya, Mardin, Mersin, Van (Wood 2024); Adana, Mersin (this study) (Fig. 47).

Flower records

Euphorbiaceae: *Euphorbia* L. **Fabaceae:** *Astragalus* L. **Lamiaceae:** *Mentha longifolia* (L.) L., *Phlomis olivieri* Benth. (Khodarahmi Ghahnavieh and Monfared 2019); **Apiaceae:** *Heracleum sphondylium* L. **Asteraceae:** *Bellis perennis* L., *Hieracium* L., *Leucanthemum vulgare* Lam., *Senecio jacobaea* L., *Taraxacum* agg. F.H.Wigg. **Brassicaceae:** *Raphanus raphanistrum* L., *Sinapis alba* L., *Sinapis* L.

Caryophyllaceae: *Stellaria graminea* L. **Cistaceae:** *Helianthemum nummularium* (L.) Mill. **Ericaceae:** *Erica* Tourn. ex L., *Vaccinium myrtillus* L. **Fabaceae:** *Cytisus scoparius* (L.) Link, *Genista tinctoria* L., *Lathyrus* L., *Lotus corniculatus* L., *Lotus* L., *Medicago* L., *Onobrychis viciifolia* Scop., *Trifolium hybridum* L., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium* Tourn. ex L., *Ulex europaeus* L., *Ulex* L. **Ranunculaceae** : *Ranunculus acris* L., *Ranunculus* L. **Rosaceae:** *Filipendula ulmaria* (L.) Maxim., *Rosa* L., *Rubus fruticosus* agg. L. (Balfour et al. 2022); **Apiaceae:** *Daucus carota* L., *Thapsia villosa* L., *Torilis arvensis* (Huds.) Link **Asteraceae:** *Carduus crispus* L. **Caprifoliaceae:** *Knautia arvensis* (L.) Coult. **Cistaceae:** *Cistus crispus* L. **Fabaceae:** *Genista hirsuta* Vahl, *Hippocrepis comosa* L., *Lotus corniculatus* L., *Lotus dorycnium* L., *Lotus germanicus* (Gremli) Peruzzi, *Medicago sativa* L., *Melilotus albus* Medik., *Onobrychis viciifolia* Scop., *Ononis spinosa* L., *Trifolium campestre* Schreb., *Trifolium hybridum* L., *Trifolium montanum* L., *Trifolium pratense* L., *Trifolium repens* L. **Lamiaceae:** *Salvia verticillata* L., *Thymus vulgaris* L. **Malvaceae:** *Malva sylvestris* L. **Plumbaginaceae:** *Armeria caespitosa* (Ortega) Boiss. (Lanuza et al. 2025); **Asteraceae:** *Scorzonera cana* (C.A.Mey.) Griseb., *Onopordum boissierianum* Raab-Straube & Greuter **Fabaceae:** *Astragalus* L., *Vicia villosa* subsp. *eriocarpa* (Hauskn.) P.W.Ball.

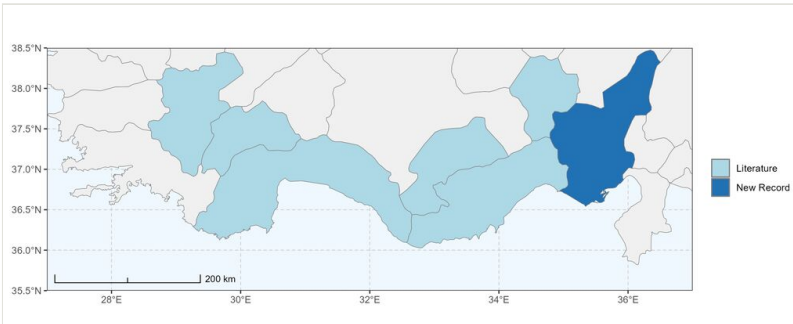


Figure 47. [doi](#)

Distribution of *A. labialis* in the Mediterranean Region of Türkiye.

Andrena (Aciandrena) lamiana Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 27726EE8-9AAA-5F58-815A-38398FA63E07

Distribution

Cyprus, Greece, Iran, North Macedonia, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Adana, Amasya, Balıkesir (Ayvalık), Eskişehir (Sivrihisar), Hatay, Konya (Sarayönü), Malatya, Sakarya (Adapazarı) (Warncke 1966); Ankara (Hazır et al. 2014); Antep, Kütahya, Mardin, Mersin, Van (Wood 2024); Muğla (this study) (Fig. 48).

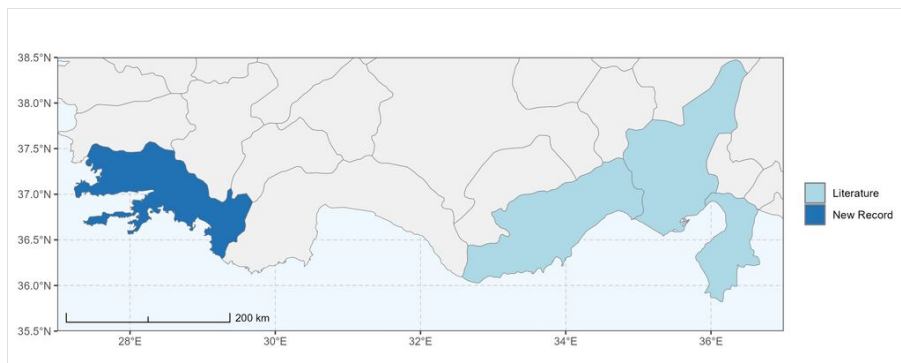


Figure 48. [doi](#)

Distribution of *A. lamiana* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis commutata* (Spreng.) Greuter, *Glebionis coronaria* (L.) Cass. ex Spach, *Senecio leucanthemifolius* Poir. **Brassicaceae:** *Hirschfeldia incana* (L.) Lagr.-Foss., *Sinapis alba* L. (Lanuza et al. 2025); **Brassicaceae:** *Isatis* L.

Andrena (*Poecilandrena*) *laticeps* Morawitz, 1877

Material

- a. countryCode: TR; stateProvince: Niğde; county: Çamardı; verbatimElevation: 1350 m; verbatimLatitude: 38.066; verbatimLongitude: 34.794; eventDate: 23-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2FA7DDC0-06E9-5C51-BAF3-EC2F6A47944D

Distribution

Distribution. Armenia, Georgia, Iran, Iraq and Türkiye (Wood and Monfared 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Kayseri, Konya (Warncke 1966; Niğde (Ulukışla), Mersin (Sertavul), Sakarya (Adapazarı) (Warncke 1974); Erzincan (Refahiye) (Özbek 1976); Ankara, Karaman, Kütahya, Mersin, Niğde (Hazır 2010, Hazır et al. 2014); Hakkari, Van (Wood and Monfared 2022); Niğde (this study) (Fig. 49).

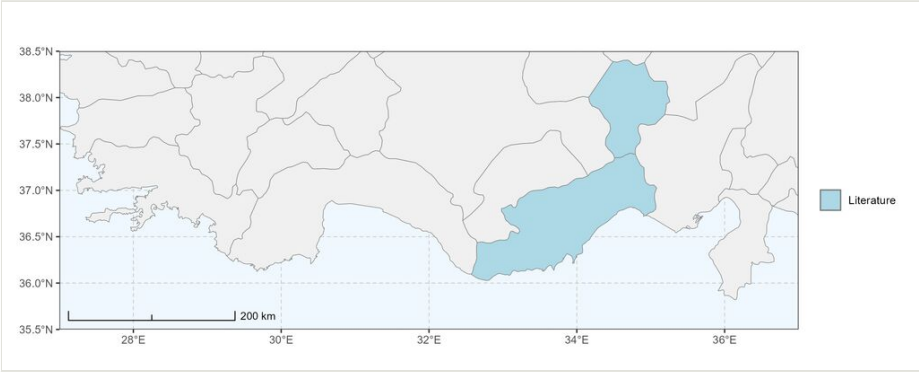


Figure 49. [doi](#)

Distribution of *A. laticeps* in the Mediterranean Region of Türkiye.

Flower records

Plantaginaceae: *Veronica* L. (Warncke 1974)

Andrena (Simandrena) lepida Schenck, 1861

Material

- a. countryCode: TR; stateProvince: Hatay; county: Kırıkhan; locality: Reyhanlı; verbatimElevation: 85 m; verbatimLatitude: 36.508; verbatimLongitude: 36.418; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E69AEE1E-06E6-59F7-916D-2AC5A3CCFA71

Distribution

Algeria, Austria, Bulgaria, Corsica, Cyprus, France, Germany, Great Britain, Greece, Hungary, Italy, Lithuania, Morocco, Morovya, Poland, Portugal, Romania, Russia, Slovakia, Spain, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Ankara, Balıkesir (Ayvalık), Eskişehir, Konya (Warncke 1966); Erzurum (Özbek 1976); Adana, Ankara, Antalya, Aydın, Burdur, Çorum, Denizli, Karaman, Kastamonu, Kırıkkale, Kırşehir, Konya, Maraş, Yozgat (Hazır 2010); Hatay (this study) (Fig. 50).

Flower records

Cistaceae: *Cistus albidus* L., *Cistus monspeliensis* L., *Cistus salviifolius* L. **Fabaceae** *Vicia lutea* L. (Lanuza et al. 2025); **Brassicaceae:** *Ochthodium aegyptiacum* (L.) DC.

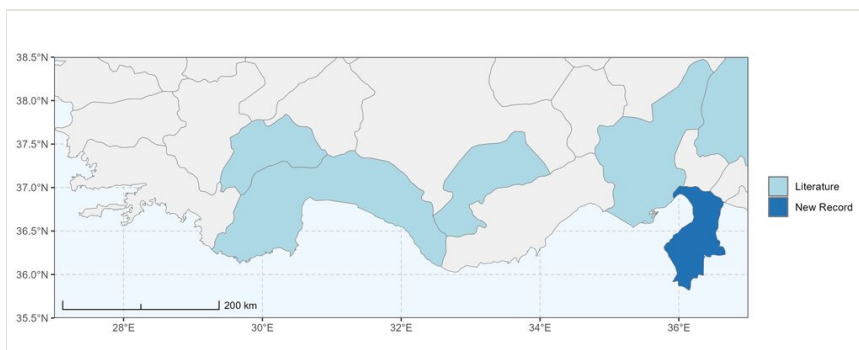


Figure 50. [doi](#)

Distribution of *A. lepida* in the Mediterranean Region of Türkiye.

Andrena (Melandrena) limata Smith, 1853

Material

- a. countryCode: TR; stateProvince: Antalya; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 20CFE819-39F6-5302-88CC-C98DE7508CF8

Distribution

Algeria, Austria, Belgium, Bulgaria, Cyprus, Finland, France, Germany, Greece, Italy, Iraq, Iran, Latvia, Lithuania, Luxembourg, Morocco, Poland, Portugal, Romania, Russia, Slovenia, Spain, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytsnjuk et al. 2008, Wood and Monfared 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Burdur, Nevşehir (Ürgüp), Sakarya (Adapazarı), Toros Mountains (Warncke 1966); Aydın (Germencik), İzmir (Ensetepe) (Warncke 1969); Erzurum (Tortum, Oltu) (Özbek 1976); Ankara, Antalya, Aydın, Bolu, Denizli, Erzurum, Manisa, Muğla, Uşak (Hazır 2010, Hazır et al. 2014); Antalya (this study) (Fig. 51).

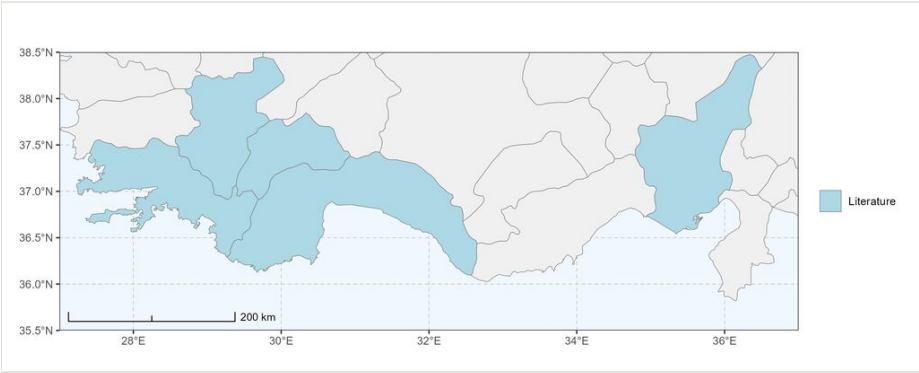


Figure 51. [doi](#)

Distribution of *A. limata* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Chamaemelum fuscatum* (Brot.) Vasc. **Cistaceae:** *Cistus parviflorus* Lam. **Hydrangeaceae:** *Deutzia scabra* Thunb., *Philadelphus coronarius* L., *Philadelphus incanus* Koehne **Lamiaceae:** *Origanum onites* L. **Plantaginaceae:** *Plantago lanceolata* L., *Thymbra capitata* (L.) Cav. **Rosaceae:** *Crataegus azarolus* L., *Crataegus monogyna* Jacq., *Photinia* Lindl., *Spiraea* L., *Spiraea blumei* G.Don, *Spiraea japonica* L.f. **Solanaceae:** *Eriolarynx australis* (Griseb.) J.M.H.Shaw (Lanuza et al. 2025); **Brassicaceae:** *Sinapis arvensis* L.

Andrena (Melandrena) magna Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Denizli; locality: Ankara road, 3 km Sanayi-Kocabaş; verbatimElevation: 439 m; verbatimLatitude: 37.823; verbatimLongitude: 29.293; eventDate: 12-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B6A4A593-6443-551D-8E96-07F51410A79A

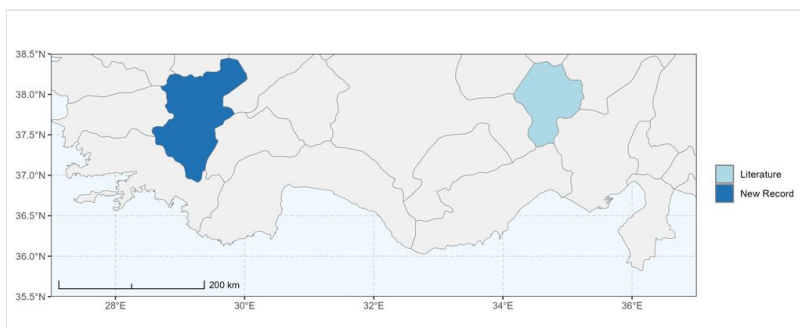
Distribution

Greece, Romania, Türkiye and Ukraine (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Amasya (Warncke 1966); Ankara (Gölbaşı), Kayseri (Yeşilhisar), Konya (Akşehir, Kulu), Niğde (Ulukışla) (Warncke 1974); Denizli (this study) (Fig. 52).

Flower records

Asteraceae: *Onopordum acanthium* L.

Figure 52. [doi](#)Distribution of *A. magna* in the Mediterranean Region of Türkiye.

Andrena (Micrandrena) minutula (Kirby, 1802)

Materials

- a. countryCode: TR; stateProvince: Osmaniye; locality: Karatepe National Park; verbatimElevation: 325 m; verbatimLatitude: 37.26; verbatimLongitude: 36.219; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 04A5AD37-1A5E-5437-9912-71AB8AB9EF5D
- b. countryCode: TR; stateProvince: Muğla; locality: Datça road, Turunç; verbatimElevation: 347 m; verbatimLatitude: 36.774; verbatimLongitude: 28.22; eventDate: 03-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D01C194A-D3B7-5275-8346-DFFB14D8E880
- c. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C41EFA18-7851-537B-AEDE-DC813CDDC923
- d. countryCode: TR; stateProvince: Antalya; county: Korkuteli; municipality: Çomaklı; verbatimElevation: 838 m; verbatimLatitude: 37.267; verbatimLongitude: 30.313; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CE75B73B-DED1-5B21-BE5E-5366BB226A20

Distribution

Algeria, Armenia, Australia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cyprus, Czechia, Denmark, France, Georgia, Germany, Great Britain, Iran, Japan, Lebanon, Libya, Morocco, Netherlands, New Caledonia, Norway, Poland, Portugal, Russia, Slovenia, Spain, Sweden, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Pisanty et al. 2022, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: In all parts of the country (Warncke 1974); Antalya, Muğla, Osmaniye (this study) (Fig. 53).

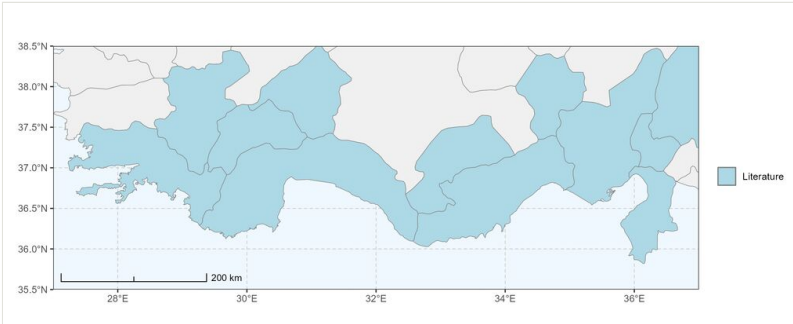


Figure 53. [doi](#)

Distribution of *A. minutula* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Anthriscus sylvestris* (L.) Hoffm., *Conopodium majus* (Gouan) Loret, *Daucus carota* L., *Heracleum sphondylium* L., *Pastinaca sativa* L., *Torilis japonica* (Houtt.) DC. **Asteraceae:** *Achillea millefolium* L., *Centaurea nigra* L., *Centaurea scabiosa* L., *Cirsium arvense* (L.) Scop., *Cirsium* Mill., *Crepis capillaris* (L.) Wallr., *Hieracium* agg. L., *Leucanthemum vulgare* Lam., *Matricaria chamomilla* L., *Pilosella officinarum* F.W.Schultz & Sch.Bip., *Sonchus arvensis* L., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae:** *Brassica napus* L., *Sinapis arvensis* L. **Convolvulaceae:** *Convolvulus arvensis* L. **Fabaceae:** *Trifolium* Tourm. ex L. **Geraniaceae:** *Geranium molle* L. **Hypericaceae:** *Hypericum perforatum* L. **Lamiaceae:** *Mentha aquatica* L. **Ranunculaceae:** *Ranunculus bulbosus* L., *Ranunculus repens* L., **Rosaceae:** *Rubus fruticosus* agg. L. (Balfour et al. 2022); **Apiaceae:** *Anthriscus sylvestris* (L.) Hoffm., *Apium graveolens* L., *Astrantia major* L., *Chaerophyllum bulbosum* L., *Chaerophyllum temulum* L., *Daucus carota* L., *Falcaria vulgaris* Bernh., *Heracleum sphondylium* L., *Oenanthe pimpinelloides* L., *Pimpinella major* (L.) Huds., *Pimpinella saxifraga* L., *Pimpinella peregrina* L., *Torilis arvensis* (Huds.) Link, *Torilis japonica* (Houtt.) DC. **Asteraceae:** *Achillea millefolium* L., *Bellis annua* L., *Bellis perennis* L., *Centaurea jacea* L., *Centaurea nigra* L., *Cichorium intybus* L., *Cirsium arvense* (L.) Scop., *Crepis* L., *Crepis capillaris* (L.) Wallr., *Leontodon hispidus* L., *Matricaria chamomilla* L., *Picris hieracioides* L., *Scorzonera humilis* L., *Senecio* L., *Senecio inaequidens* DC., *Senecio leucanthemifolius* Poir., *Senecio vernalis* Waldst. & Kit., *Tanacetum vulgare* L., *Taraxacum campylodes* G.E.Haglund, *Taraxacum officinale* F.H.Wigg., *Pilosella officinarum* F.W.Schultz & Sch.Bip. **Brassicaceae:** *Barbarea vulgaris* W.T.Aiton, *Biscutella laevigata* L., *Brassica arvensis* L., *Brassica napus* L., *Bunias orientalis* L., *Cakile maritima* Scop., *Erysimum crepidifolium* Rchb., *Hirschfeldia incana* (L.) Lagr.-Foss., *Lepidium draba* L., *Rorippa sylvestris* (L.) Besser, *Sisymbrium loeselii* L. **Caryophyllaceae:** *Dianthus hyssopifolius* L., *Stellaria media* (L.) Vill. **Cistaceae:**

Helianthemum nummularium (L.) Mill. **Convolvulaceae**: *Calystegia sepium* (L.) R.Br., *Convolvulus arvensis* L. **Crassulaceae**: *Sedum acre* L., *Sedum album* L., *Sedum sexangulare* L. **Ericaceae**: *Daboecia cantabrica* (Huds.) K.Koch **Fabaceae**: *Astragalus monspessulanus* L., *Hippocrepis comosa* L., *Lotus corniculatus* L., *Lotus dorycnium* L., *Medicago lupulina* L., *Medicago sativa* L., *Melilotus albus* Medik., *Melilotus officinalis* (L.) Lam., *Onobrychis viciifolia* Scop., *Ononis spinosa* L., *Trifolium campestre* Schreb., *Trifolium pratense* L., *Trifolium repens* L., *Trifolium montanum* L. **Geraniaceae**: *Geranium pratense* L., *Geranium pyrenaicum* Burm.f. **Hypericaceae**: *Hypericum perforatum* L. **Lamiaceae**: *Teucrium capitatum* L., *Thymus praecox* Opiz, *Thymus pulegioides* L. **Linaceae**: *Linum catharticum* L., *Linum suffruticosum* L. **Orchidaceae**: *Himantoglossum hircinum* (L.) Spreng. **Oxalidaceae**: *Oxalis corniculata* L. **Plantaginaceae**: *Plantago lanceolata* L., *Veronica chamaedrys* L., *Veronica persica* Poir. **Ranunculaceae**: *Ranunculus* L., *Ranunculus bulbosus* L. **Rosaceae**: *Fragaria viridis* Weston, *Geum urbanum* L., *Potentilla erecta* (L.) Raeusch., *Potentilla reptans* L., *Potentilla verna* L., *Prunus mahaleb* L., *Rubus* L., *Rubus caesius* L. (Lanuza et al. 2025); **Asteraceae**: *Anthemis chia* L., *Senecio vernalis* Waldst. & Kit. **Brassicaceae**: *Isatis* L. **Convolvulaceae**: *Convolvulus* L.

Andrena incertae sedis monacha Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 50A96BCC-BC5A-5DE0-A37A-05BE2ED3AA38

Distribution

Cyprus, Greece, Iran, Iraq, Lebanon, Syria and Türkiye (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Sakarya (Adapazarı), Balıkesir (Ayvalık), Toroslar (Warncke 1966, Blank and Kraus 1994); Adana (Karataş), Antalya (Aspendos, Finike, Side), Çanakkale (Bigadiç), Muğla, Osmaniye (Warncke 1974); Antalya, Aydın (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 54).

Flower records

Asteraceae: *Crepis alpina* L.

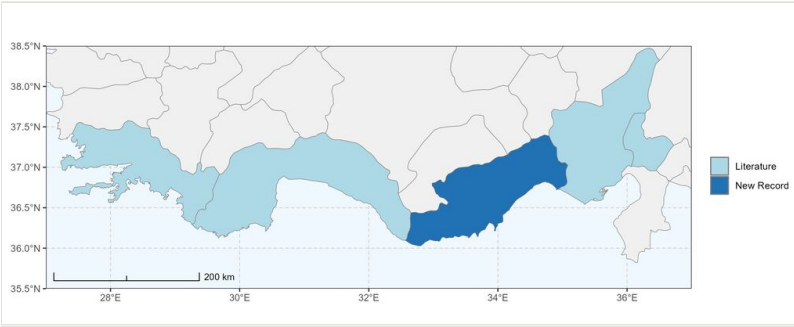


Figure 54. [doi](#)

Distribution of *A. monacha* in the Mediterranean Region of Türkiye.

Andrena (Hamandrena) nasuta Giraud, 1863

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 7FD0DCF4-D4F0-5D44-8FD1-1DF8203F4F1F

Distribution

Armenia, Austria, Bulgaria, Czech Republic, Germany, Greece, Hungary, Iran, Lithuania, Poland, Romania, Slovakia, Switzerland and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Ankara (Warncke 1966); Erzurum, Karaman, Konya, Niğde (Warncke 1974); Ankara, Aydın, Karaman, Kayseri, Kütahya (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 55).

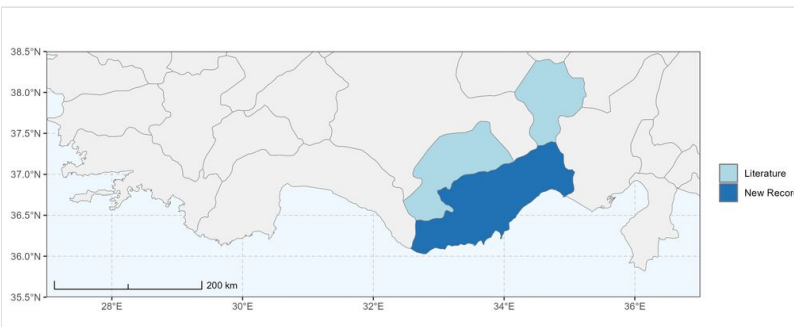


Figure 55. [doi](#)

Distribution of *A. nasuta* in the Mediterranean Region of Türkiye.

Flower records

Boraginaceae: *Anchusa leptophylla* subsp. *leptophylla* Roem. & Schult.

Andrena (Ulandrena) neocyprica Mavromoustakis, 1956

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Silifke road, Sarıkavak turn; verbatimElevation: 223 m; verbatimLatitude: 36.503; verbatimLongitude: 33.585; eventDate: 22-05-2009; individualCount: 6; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 11A2663E-532D-5E07-B9F3-286EA1C14EFF

Distribution

Cyprus, Greece and Türkiye (Gusenleitner and Schwarz 2002, Wood 2021b).

Distribution in Türkiye: Hatay, Sakarya (Adapazarı) (Warncke 1966); Antalya (Anamur, Side), İzmir, Muğla (Fethiye, Marmaris), Urfa (Birecik) (Warncke 1974); Aydın, Antep, Maraş, Mersin (Hazır 2010); Mersin (this study) (Fig. 56).

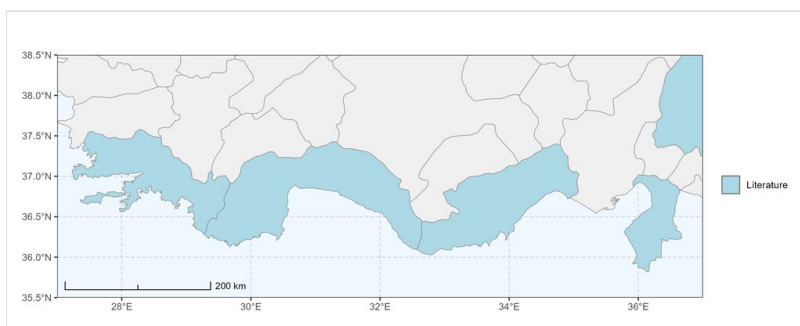


Figure 56. [doi](#)

Distribution of *A. neocyprica* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis foetida* L.

Andrena (Melandrena) nigroaenea (Kirby, 1802)

Materials

- a. countryCode: TR; stateProvince: Antalya; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J.

Wood; collectionCode: ZMUI; occurrenceID: A14B1A92-BF7E-5E9C-B7A8-A88282C925AD

- b. countryCode: TR; stateProvince: Antalya; locality: Alanya entrance; verbatimElevation: 11 m; verbatimLatitude: 36.656; verbatimLongitude: 31.701; eventDate: 14-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 11824214-303F-5888-A310-059419775634

Distribution

Afghanistan, Algeria, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Croatia, Czechia, Democratic Republic of the Congo, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Iran, Israel and the West Bank, Italy, Latvia, Lebanon, Libya, Morocco, Netherlands, New Caledonia, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Syria, Ukraine, Tunisia and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025)

Distribution in Türkiye: Adana, Balıkesir (Ayvalık), Eskişehir (Sivrihisar), Konya, Malatya, Manisa, Nevşehir (Ürgüp), Toroslar (Warncke 1966); Ankara, Antalya, Aydın, Kastamonu, Kütahya, Muğla (Hazır et al. 2014); Antalya (this study) (Fig. 57).

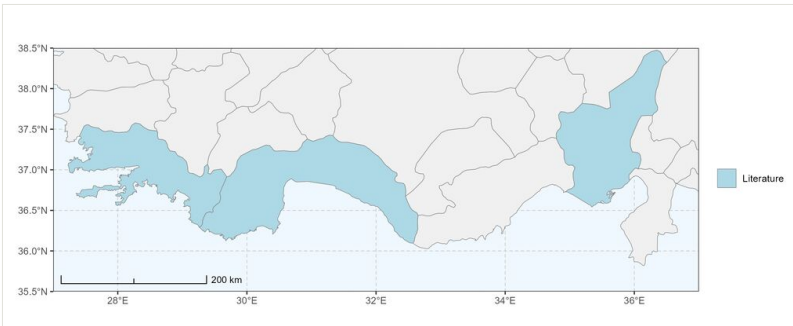


Figure 57. [doi](#)

Distribution of *A. nigroaenea* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Anthriscus* Pers., *Anthriscus sylvestris* (L.) Hoffm., *Chaerophyllum temulum* L., *Heracleum sphondylium* L., *Oenanthe crocata* L. **Aquifoliaceae:** *Ilex aquifolium* L. **Asteraceae:** *Achillea millefolium* L., *Anthemis* L., *Bellis perennis* L., *Crepis* L., *Leucanthemum vulgare* Lam., *Taraxacum* agg. F.H.Wigg., *Taraxacum officinale* agg. F.H.Wigg., *Taraxacum* F.H.Wigg., *Tripleurospermum inodorum* (L.) Sch.Bip. **Brassicaceae:** *Brassica napus* L., *Cakile maritima* Scop., *Coincya wrightii* (O.E.Schulz) Stace, *Sisymbrium officinale* (L.) Scop. **Caryophyllaceae:** *Silene dioica* (L.) Clairv. **Cistaceae:** *Helianthemum nummularium* (L.) Mill. **Cornaceae:** *Cornus sanguinea* L. **Fabaceae:** *Medicago lupulina* L., *Trifolium hybridum* L., *Trifolium repens* L., *Ulex europaeus* L., *Vicia sativa* L. **Geraniaceae:** *Geranium* Tourn. ex L.

Lamiaceae: *Stachys sylvatica* L. **Orchidaceae:** *Orchis mascula* (L.) L.
Plantaginaceae: *Plantago lanceolata* L. **Ranunculaceae:** *Helleborus* Tourn. ex L.,
Ranunculus acris L., *Ranunculus bulbosus* L., *Ranunculus repens* L., *Ranunculus* L.
Resedaceae: *Reseda lutea* L. **Rhamnaceae:** *Rhamnus cathartica* L. **Rosaceae:**
Crataegus monogyna Jacq., *Crataegus* L., *Fragaria* L., *Rubus fruticosus* agg. L.,
Rubus L. **Rubiaceae:** *Galium aparine* L. **Salicaceae:** *Salix* L. **Sapindaceae:** *Acer*
campestre L. **Solanaceae:** *Solanum dulcamara* L. **Viburnaceae:** *Sambucus nigra* L. (Balfour et al. 2022); **Aizoaceae:** *Carpobrotus acinaciformis* (L.) L. Bolus **Apiaceae:**
Aegopodium podagraria L., *Daucus carota* L., *Elaeoselinum* W.D.J.Koch ex DC.,
Thapsia foetida L., *Thapsia villosa* L. **Asparagaceae:** *Ornithogalum narbonense* L.
Asteraceae: *Achillea millefolium* L., *Chamaemelum fuscum* (Brot.) Vasc., *Crepis*
foetida L., *Glebionis coronaria* (L.) Cass. ex Spach, *Leucanthemum vulgare* Lam.,
Pilosella officinarum F.W.Schultz & Sch.Bip., *Taraxacum* F.H.Wigg., *Taraxacum*
officinale F.H.Wigg. **Boraginaceae:** *Echium angustifolium* Mill. **Brassicaceae:** *Arabis*
hirsuta (L.) Scop., *Aurinia saxatilis* (L.) Desv., *Biscutella laevigata* L., *Brassica juncea*
(L.) Czern., *Brassica napus* L., *Brassica repanda* (Willd.) DC., *Bunias orientalis* L.,
Erysimum odoratum Ehrh. **Buxaceae:** *Buxus sempervirens* L. **Caryophyllaceae:**
Viscaria vulgaris Bernh. **Cistaceae:** *Cistus albidus* L., *Cistus calycinus* L., *Cistus*
crispus L., *Cistus ladanifer* L., *Cistus monspeliensis* L., *Helianthemum apenninum* (L.)
Mill., *Helianthemum nummularium* (L.) Mill., *Helianthemum oelandicum* (L.)
Dum.Cours. **Cornaceae:** *Cornus sanguinea* L. **Cupressaceae:** *Juniperus communis*
L. **Fabaceae:** *Anthyllis vulneraria* L., *Hippocrepis comosa* L., *Lotus dorycnium* L.,
Lotus fulgurans (Porta) D.D.Sokoloff, *Onobrychis viciifolia* Scop., *Trifolium pratense*
L., *Trifolium repens* L., *Vicia sativa* L. **Hydrangeaceae:** *Philadelphus coronarius* L.,
Philadelphus incanus Koehne **Lamiaceae:** *Lavandula stoechas* L., *Salvia rosmarinus*
Spenn., *Teucrium capitatum* L., *Teucrium fruticans* L., *Thymus vulgaris* L.
Papaveraceae: *Eschscholzia californica* Cham., *Glaucium flavum* Crantz
Plantaginaceae: *Veronica arvensis* L. **Plumbaginaceae:** *Armeria maritima* (Mill.)
Willd., *Plumbago auriculata* Lam. **Primulaceae:** *Primula veris* L. **Ranunculaceae:**
Helleborus foetidus L., *Ranunculus* L., *Ranunculus acris* L., *Ranunculus auricomus*
L., *Ranunculus bulbosus* L. **Resedaceae:** *Reseda lutea* L., *Reseda luteola* L.,
Reseda phyteuma L. **Rosaceae:** *Crataegus monogyna* Jacq., *Potentilla verna* L.,
Prunus spinosa L., *Pyracantha* M.Roem., *Rubus idaeus* L., *Spiraea* L., *Spiraea*
blumei G.Don, *Spiraea japonica* L.f. **Rubiaceae:** *Galium pusillum* L. **Rutaceae:** *Ruta*
angustifolia Pers., *Ruta montana* (L.) L. **Salicaceae:** *Salix aurita* L., *Salix repens* L.
Saxifragaceae: *Saxifraga granulata* L. (Lanuza et al. 2025); **Brassicaceae:** *Sinapis*
arvensis L.

Andrena (*Melandrena*) *nitidemula* Scheuchl & Hazır, 2012

Materials

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau;
 verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107;
 eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 94E50711-6E95-50E3-AE89-660D211DF8D7

- b. countryCode: TR; stateProvince: Niğde; locality: Çamardı road; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A0D53D07-D7E2-5C79-96B3-A37133A9CDAE

Distribution

Armenia, Georgia, Greece, Iran, Iraq, Syria and Türkiye (Scheuchl and Hazır 2012, Rasmont et al. 2017, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Kars (Karakurt) (Scheuchl and Hazır 2012); Ankara, Burdur, Konya, Mersin, Sivas (Hazır et al. 2014); Ankara, Burdur, Hakkari, Konya, Mersin, Sivas (Ascher and Pickering 2025); Mersin, Niğde (this study) (Fig. 58).

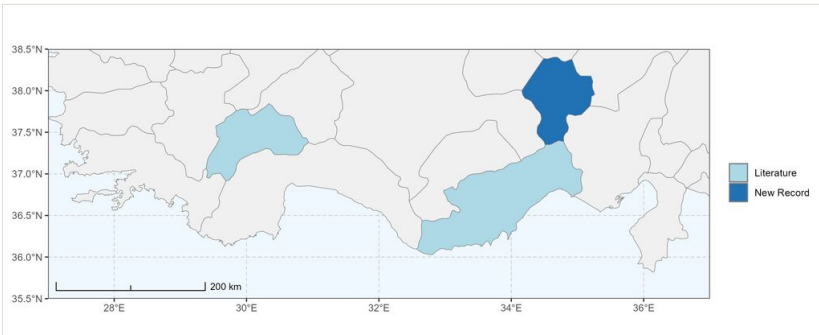


Figure 58. [doi](#)

Distribution of *A. nitidemula* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica* L.

Andrena (Nobandrena) nobilis Morawitz, 1873

Materials

- a. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road; verbatimElevation: 1346 m; verbatimLatitude: 36.949; verbatimLongitude: 30.131; eventDate: 10-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B3F88FC4-87D9-54D6-9340-6B1584E78C41
- b. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID:
EF6CC033-0D40-5D31-8FF7-19247C00EA53

Distribution

Armenia, Austria, Azerbaijan, Bulgaria, Croatia, Czechia, Georgia, Greece, Hungary, Iran, Italy, Poland, Romania, Russia, Slovakia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Proshchalykin et al. 2017, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Aksaray, Ankara, Kayseri, Kırıkkale, Konya (Beyşehir), Toros Mountains (Warncke 1966); Adana (Gülek, Pozantı), Amasya, İzmir (Selçuk), Mersin (Sertavul), Nevşehir (Ürgüp) (Warncke 1974); Erzurum (Oltu, Tortum, İspir, Horasan) (Özbek 1976); Aksaray, Ankara, Aydın, Burdur, Çorum, İzmir, Karaman, Konya, Kütahya, Nevşehir, Yozgat (Hazır 2010, Hazır et al. 2014); Antalya, Mersin (this study) (Fig. 59).

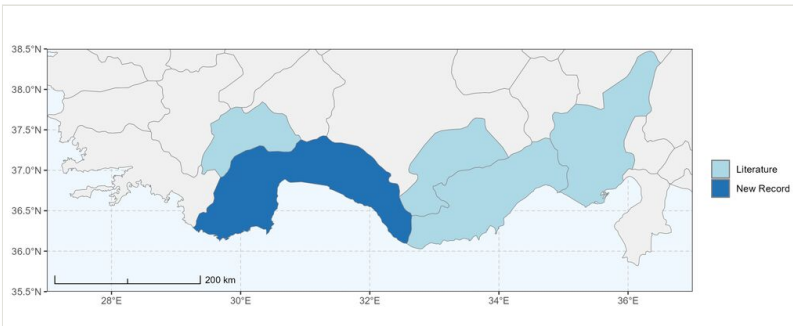


Figure 59. [doi](#)

Distribution of *A. nobilis* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Sisymbrium altissimum* L.

Andrena (*Micrandrena*) *oedincema* Warncke, 1975

Materials

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 5; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 30D97900-92F3-5D78-8E80-7DEB6CA2E467
- b. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1496 m; verbatimLatitude: 37.14; verbatimLongitude: 31.875; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J.

Wood; collectionCode: ZMUI; occurrenceID:
B1EBF2B9-484A-5C6F-8FBE-759B068FC3FD

Distribution

Greece, Iran, Iraq, Israel and West Bank, Jordan, Lebanon, Syria and Türkiye (Gusenleitner and Schwarz 2002, Pisanty et al. 2018, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Antalya (Akseki), Nevşehir (Warncke 1974); Antalya, Mersin (this study) (Fig. 60).

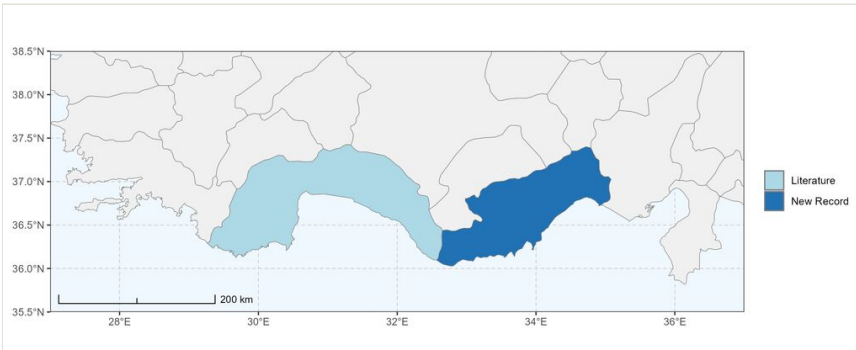


Figure 60. [doi](#)

Distribution of *A. oedichema* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Prangos uechtrizii* Boiss. & Hausskn. **Brassicaceae:** *Isatis* L.

Andrena (Truncandrena) optata Warncke, 1975

Materials

- a. countryCode: TR; stateProvince: Antalya; locality: between Side-Belek; verbatimElevation: 16 m; verbatimLatitude: 36.843; verbatimLongitude: 31.292; eventDate: 13-04-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B8523B85-8F9F-5681-9069-965C64560094
- b. countryCode: TR; stateProvince: Antalya; locality: Side hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 01A6F16A-E56A-5F25-940E-794A32B4787D

Distribution

Albania, Bulgaria, Greece, Iran, Lebanon, Syria, Türkiye and Ukraine (Wood et al. 2020, Wood 2021b, Wood and Monfared 2022).

Distribution in Türkiye: Antalya (Serik, Side), Aydın (Kuşadası), Balıkesir (Ayvalık), Burdur (Acıgöl), Bursa, İstanbul (Üsküdar), İzmir (Selçuk), Konya, Manisa (Warncke 1974); Antalya, Aydın, Manisa (Hazır et al. 2014); Antalya (this study) (Fig. 61).

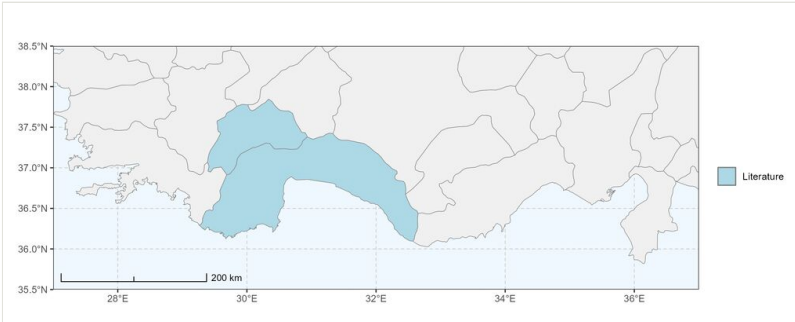


Figure 61. [doi](#)

Distribution of *A. optata* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica arvensis* L., *Raphanus raphanistrum* L. (Lanuza et al. 2025);

Brassicaceae: *Sinapis arvensis* L. **Ranunculaceae:** *Ranunculus marginatus* d'Urv.

Andrena (Chlorandrena) orientana Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 3FE642B6-0EFF-5334-9B83-74B37571417A

Distribution

Bulgaria, Cyprus, Hungary, Iran, Israel and the West Bank, Jordan, Lebanon, North Macedonia, Romania, Syria, Türkiye and Ukraine (Schwenninger 2015, Wood et al. 2020, Wood and Monfared 2022).

Distribution in Türkiye: Adana (Misis), Sakarya (Adapazarı), Antalya (Akseki, Manavgat, Side), Balıkesir (Ayvalık), Bursa (Iznik), Çanakkale (Bigadiç), Denizli (Pamukkale), Diyarbakır, Hatay, İstanbul (Büyükdere), Manisa, Mersin (Tarsus) (

Warncke 1974); Antalya, Aydın, Urfa, Diyarbakır (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 62).



Figure 62. [doi](#)
Distribution of *A. orientana* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Leontodon tuberosus* L., *Sonchus asper* (L.) Hill (Lanuza et al. 2025);

Asteraceae: *Crepis* L.

Andrena (Chlorandrena) panurgimorpha Mavromoustakis, 1957

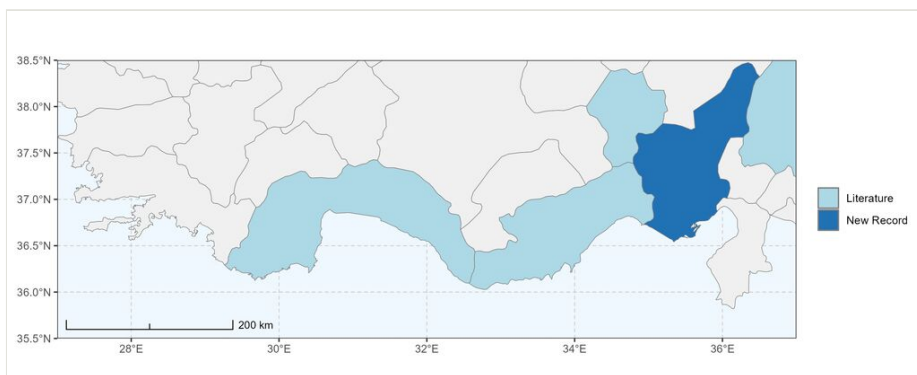
Materials

- countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: D0804C79-2B08-5FF0-9A6F-7410EF8512F3
- countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 83 m; verbatimLatitude: 37.049; verbatimLongitude: 35.357; eventDate: 23-05-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8914B8D7-FC02-506E-9634-39111EEB31E8

Distribution

Albania, Bulgaria, Cyprus, Greece, Iran, Israel and the West Bank, Jordan, Lebanon, Syria, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood 2021b, Wood and Monfared 2022).

Distribution in Türkiye: Balıkesir (Ayvalık), Çanakkale (Truva), Konya (Beyşehir) (Warncke 1966); Erzurum (İspir), Muş (Özbek 1976); Aksaray, Ankara, Antalya, Antep, Aydın, Çorum, Konya, Maraş, Mersin, Nevşehir, Niğde, Rize, Urfa (Hazır 2010); Adana (this study) (Fig. 63).

Figure 63. [doi](#)

Distribution of *A. panurgimorpha* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Centaurea* L., *Tragopogon* L. **Fabaceae:** *Medicago sativa* L., *Melilotus officinalis* (L.) Lam. (Khodarahmi Ghahnavieh and Monfared 2019); **Asteraceae:** *Crepis commutata* (Spreng.) Greuter (Lanuza et al. 2025); **Asteraceae:** *Crepis foetida* subsp. *rhoeadifolia* (M.Bieb.) Čelak.

Andrena (Euandrena) pileata canigica Warncke, 1975

Material

- a. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1496 m; verbatimLatitude: 37.14; verbatimLongitude: 31.875; eventDate: 09-06-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2C1C86EC-CE88-5281-A537-B109A1E2BE30

Distribution

Greece and Türkiye (Wood 2024).

Distribution in Türkiye: Bursa (Uludağ) (Warncke 1974); Bitlis, Hakkari (Wood 2024); Antalya (this study) (Fig. 64 and Fig. 65A-C).

Flower records

Brassicaceae: *Isatis* L.

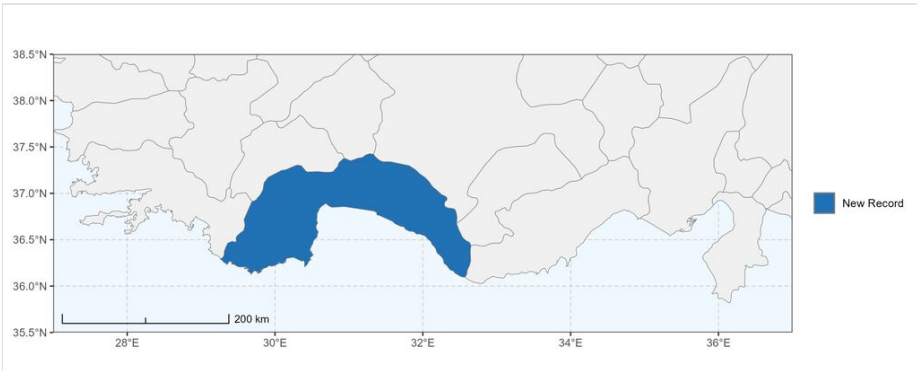


Figure 64. [doi](#)

Distribution of *A. pileata* ssp. *canigica* in the Mediterranean Region of Türkiye.

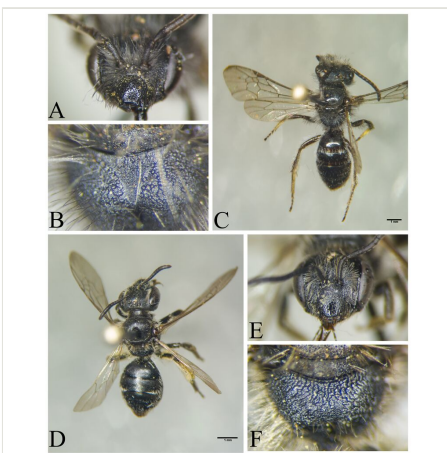


Figure 65. [doi](#)

Andrena pileata ssp. *canigica*, male. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena rugulosa*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Andrena (Plastandrena) pilipes Fabricius, 1781

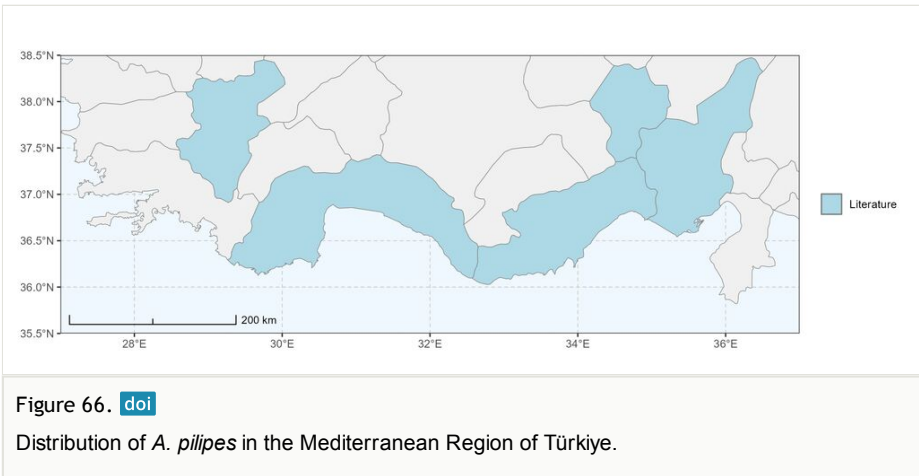
Material

- a. countryCode: TR; stateProvince: Antalya; county: Gazipaşa; locality: Beyrebucak; verbatimElevation: 93 m; verbatimLatitude: 36.216; verbatimLongitude: 32.392; eventDate: 14-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 79F265F9-C5CE-515B-8D0D-22058FD33ECF

Distribution

Afghanistan, Albania, Andorra, Algeria, Austria, Belgium, Bulgaria, China, Corsica, Croatia, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Iran, Italy, Kazakhstan, Latvia, Lithuania, Libya, Luxembourg, Moldova, Monaco, Morocco, Netherlands, Norway, Pakistan, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Spain, Sweden, Switzerland, Tunisia, Turkmenistan, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Denizli (Dazkırı) (Warncke 1969); Adana, Aksaray, Ankara, Antalya, Aydın, İzmir, Kırşehir, Konya, Mersin, Niğde (Hazır 2010, Hazır et al. 2014); Antalya (this study) (Fig. 66).



Flower records

Asteraceae: *Senecio jacobaea* L. (Balfour et al. 2022); **Asparagaceae:** *Asparagus officinalis* L. **Asteraceae:** *Centaurea spinosa* L., *Glebionis coronaria* (L.) Cass. ex Spach, *Leontodon tuberosus* L. **Boraginaceae:** *Echium angustifolium* Mill. **Brassicaceae:** *Bunias orientalis* L., *Hirschfeldia incana* (L.) Lagr.-Foss., *Sisymbrium loeselii* L., *Sisymbrium loeselii* L., *Sisymbrium loeselii* L., *Spiraea* L. **Crassulaceae:** *Petrosedum sediforme* (Jacq.) Grulich **Ericaceae:** *Erica arborea* L., *Rhododendron* L. **Fabaceae:** *Adenocarpus hispanicus* (Lam.) DC. **Lamiaceae:** *Thymbra capitata* (L.) Cav., *Thymus praecox* Opiz **Oxalidaceae:** *Oxalis articulata* Savigny **Papaveraceae:** *Glaucium flavum* Crantz **Rosaceae:** *Crataegus azarolus* L., *Crataegus monogyna* Jacq., *Cydonia oblonga* Mill., *Photinia* Lindl., *Prunus laurocerasus* L. (Lanuza et al. 2025); **Brassicaceae:** *Sinapis arvensis* L.

Andrena (Notandrena) purpureomicans Alfken, 1935

Material

- a. countryCode: TR; stateProvince: Antalya; locality: Burdur road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 12E75408-842E-522A-9BA5-EEA5FAB3A228

Distribution

Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Adana, Ankara, Konya, Hatay (Warncke 1966); Niğde (Ulukışla) (Warncke 1974); Erzurum (İspir), Muş (Özbek 1976); Aksaray, Ankara, Burdur, Konya, Kütahya, Manisa (Hazır 2010, Hazır et al. 2014); Antalya (this study) (Fig. 67).

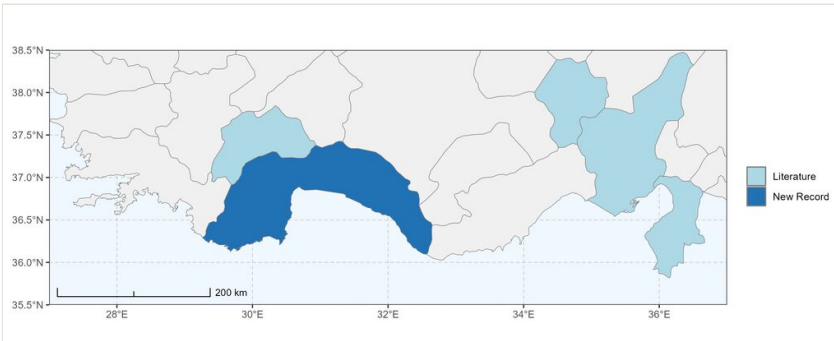


Figure 67. [doi](#)

Distribution of *A. purpureomicans* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss.

Andrena (Melandrena) pyropygia Kreichbaumer, 1873

Materials

- a. countryCode: TR; stateProvince: Karaman; locality: Mut-Ermenek road; verbatimElevation: 1023 m; verbatimLatitude: 36.63; verbatimLongitude: 33.011; eventDate: 05-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 56DD180C-5BF6-5809-9B37-2720796C9556
- b. countryCode: TR; stateProvince: Hatay; locality: between Yayladağ and Samandağ; verbatimElevation: 450 m; verbatimLatitude: 35.923; verbatimLongitude: 36.054;

eventDate: 27-04-2008; individualCount: 1; sex: male; recordedBy: Fatih Dikmen;
 identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID:
 815DDB1F-7F5C-5CFB-8CF3-2DA27D78E6E1

Distribution

Cyprus, Greece, Iran, Israel and the West Bank, Lebanon, Russia, Syria, the Caucasus, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood et al. 2020, Wood and Monfared 2022).

Distribution in Türkiye: Amanos Mountains, Amasya, Bursa, Toros Mountains (Warncke 1966); Aydın (Kuşadası) (Warncke 1969); Aydın, Çorum, Mersin (Hazır 2010, Hazır et al. 2014); Hatay, Karaman (this study) (Fig. 68).

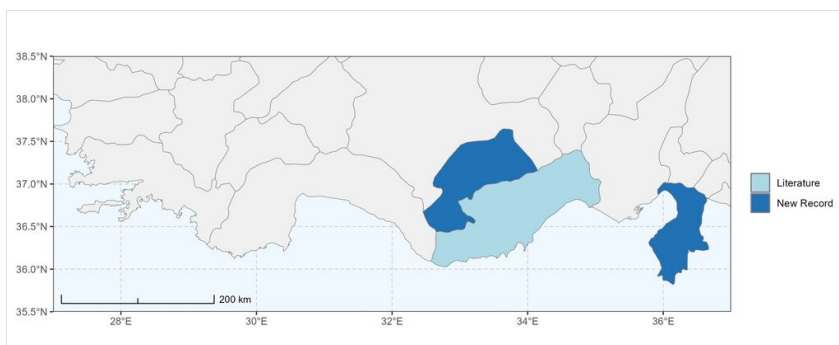


Figure 68. [doi](#)

Distribution of *A. pyropygia* in the Mediterranean Region of Türkiye.

Flower records

Resedaceae: *Reseda lutea* var. *lutea* L.

Andrena (Truncandrena) rufomaculata Friese, 1921

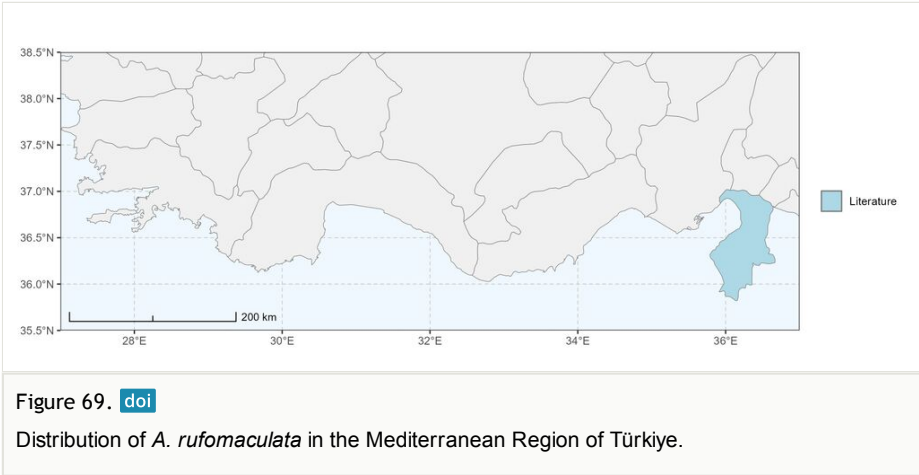
Material

- a. countryCode: TR; stateProvince: Hatay; locality: between Kırıkhan and Hassa; verbatimElevation: 131 m; verbatimLatitude: 36.564; verbatimLongitude: 36.402; eventDate: 22-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: FA74A199-1B63-5775-A765-EA2A5CDB507A

Distribution

Iran, Iraq, Israel and West Bank, Jordan, Lebanon, Syria and Türkiye (Wood et al. 2020, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Amanos Mountains (Warncke 1966); Hatay (Hazır 2010, Hazır et al. 2014); Hatay (this study) (Fig. 69).



Flower records

Brassicaceae: *Sisymbrium* L.

Andrena (Euandrena) rufula Schmiedeknecht, 1883

Material

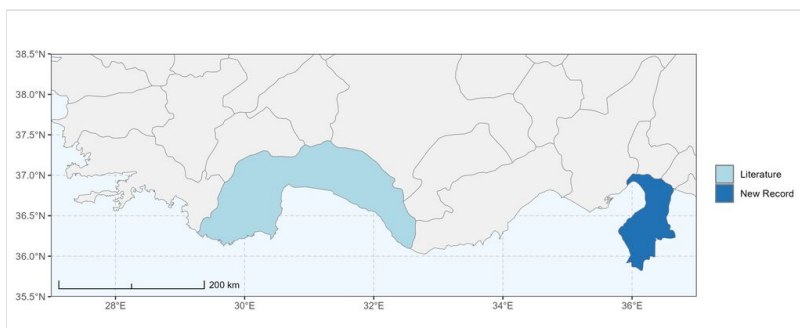
- a. countryCode: TR; stateProvince: Hatay; locality: Yayladağ; verbatimElevation: 423 m; verbatimLatitude: 35.908; verbatimLongitude: 36.078; eventDate: 22-03-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: E15A5BB1-4FD4-5740-A6B2-E37668098ABC

Distribution

Austria, France, Greece, Hungary, Israel and the West Bank, Italy, Lebanon, Netherlands, North Macedonia, Romania, Slovakia, Spain, Switzerland, Syria, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Scheuchl and Willner 2016, Wood et al. 2020, Pisanty et al. 2022).

Distribution in Türkiye: Toroslar (Warncke 1974); Antalya (Pisanty et al. 2022); Hatay (this study) (Fig. 70).

Flower records: **Buxaceae:** *Buxus sempervirens* L. **Plantaginaceae:** *Globularia vulgaris* L. **Rosaceae:** *Pyrus communis* L. (Lanuza et al. 2025); **Asteraceae:** *Senecio vernalis* Waldst. & Kit.

Figure 70. [doi](#)Distribution of *A. rufula* in the Mediterranean Region of Türkiye.

Andrena (Micrandrena) rugothorace Warncke, 1965

Materials

- a. countryCode: TR; stateProvince: Adana; locality: Çukurova University, Balcalı Campus; verbatimElevation: 145 m; verbatimLatitude: 37.065; verbatimLongitude: 35.366; eventDate: 20-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 21B1FBDD-310F-5027-BC6B-C83455949280
- b. countryCode: TR; stateProvince: Muğla; county: Marmaris; verbatimElevation: 9 m; verbatimLatitude: 36.985; verbatimLongitude: 28.216; eventDate: 02-04-2009; individualCount: 5; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 1E22372D-3CE0-59D9-BA04-0C81CEBD4600
- c. countryCode: TR; stateProvince: Muğla; county: Datça; verbatimElevation: 1 m; verbatimLatitude: 36.802; verbatimLongitude: 27.866; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: BA6D44FC-8E19-5F7B-BC39-7A6EAADF67AA
- d. countryCode: TR; stateProvince: Antalya; locality: Akseki-Konya road; verbatimElevation: 1262 m; verbatimLatitude: 37.117; verbatimLongitude: 31.777; eventDate: 09-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DC425280-782A-5CFE-B3BE-6C58441C1F98
- e. countryCode: TR; stateProvince: Antalya; county: Gazipaşa; locality: Zeytinada; verbatimElevation: 379 m; verbatimLatitude: 36.144; verbatimLongitude: 32.471; eventDate: 14-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 28D32FB9-9375-5D70-9530-BFF33D9C033E

Distribution

Albania, Armenia, Azerbaijan, Georgia, Greece, Israel and the West Bank, North Macedonia and Türkiye (Gusenleitner and Schwarz 2002, Wood 2024).

Distribution in Türkiye: Ankara (Gölbaşı), Balıkesir (Ayvalık), Bolu (Gerde), Bursa (Karacabey), Burdur, Diyarbakır, Edirne, Erzurum (İspir), İstanbul (Belgrad Ormanı, Büyükdere, Üsküdar), Karaman (Madenşehir), Nevşehir, Niğde (Ulukışla) (Warncke 1974); Adana, Antalya, Muğla (this study) (Fig. 71).

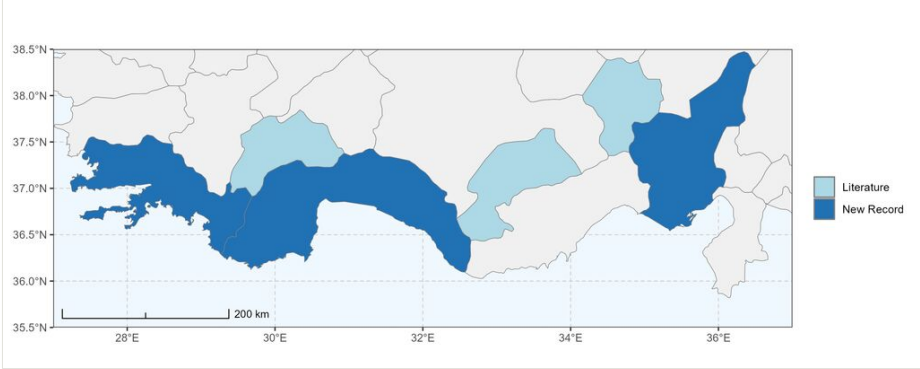


Figure 71. [doi](#)

Distribution of *A. rugothorace* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Pimpinella peregrina* L. **Asteraceae:** *Tripleurospermum* Sch.Bip. (Lanuza et al. 2025); **Asteraceae:** *Anthemis chia* L., *Anthemis pseudocotula* Boiss., *Calendula arvensis* L. **Cistaceae:** *Cistus* L.

Andrena (Micrandrena) rugulosa Stöckhert, 1935

Material

- a. countryCode: TR; stateProvince: Niğde; locality: Çamardı road; verbatimElevation: 1570 m; verbatimLatitude: 37.886; verbatimLongitude: 35.111; eventDate: 23-05-2008; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0E183282-C210-5BCA-A789-A8D6E7E5A0F4

Distribution

Albania, Austria, Bulgaria, Croatia, Czechia, France, Germany, Greece, Iran, Italy, Lebanon, North Macedonia, Poland, Romania, Slovakia, Slovenia, the Caucasus and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Erzurum (Warncke 1974); Niğde (this study) (Fig. 65D-F and Fig. 72).

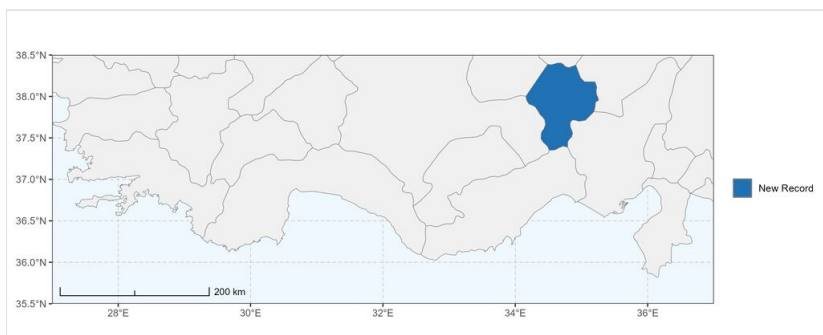


Figure 72. [doi](#)

Distribution of *A. rugulosa* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Brassica* L.

Andrena (*Taeniandrena*) *russula* Lepeletier, 1841

Materials

- a. countryCode: TR; stateProvince: Muğla; county: Datça; verbatimElevation: 1 m; verbatimLatitude: 36.802; verbatimLongitude: 27.866; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: B9BD5383-60FC-5AD2-8F18-4B754F44B212
- b. countryCode: TR; stateProvince: Muğla; county: Marmaris; verbatimElevation: 9 m; verbatimLatitude: 36.985; verbatimLongitude: 28.216; eventDate: 02-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DBE64CC4-5CA9-5EA0-9B3E-BDF6AF6EA8CD

Distribution

Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Ireland, Israel and the West Bank, Italy, Jordan, Latvia, Lebanon, Lithuania, Luxembourg, Montenegro, Morocco, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Tunisia, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Praz et al. 2022, Wood and Monfared 2022).

Distribution in Türkiye: Ankara (Kızılcahamam), Antalya (Akseki), Balıkesir (Ayvalık), Bolu, Erzurum, Konya (Beyşehir), Manisa (Akhisar), Mersin (Gülek) (Warncke 1974); Muğla (this study) (Fig. 73).

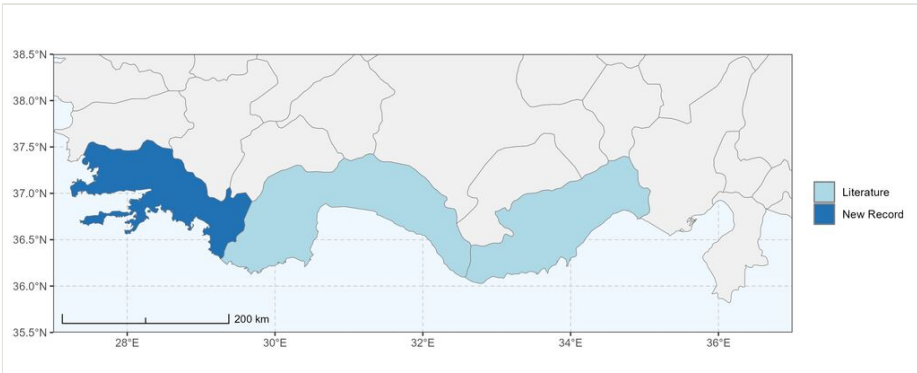


Figure 73. [doi](#)

Distribution of *A. russula* in the Mediterranean Region of Türkiye.

Flower records

Cistaceae: *Cistus* L.

Andrena (Opandrena) schencki Morawitz, 1866

Material

- a. countryCode: TR; stateProvince: Muğla; county: Datça; locality: Ballık hill; verbatimElevation: 0 m; verbatimLatitude: 36.808; verbatimLongitude: 27.901; eventDate: 04-04-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 07AA8994-9592-5E35-A34D-A4F752E67E3E

Distribution

Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Denmark, France, Georgia, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syria, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytsnjuk et al. 2008, Wood and Monfared 2022).

Distribution in Türkiye: Mersin (Namrun) (Warncke 1969); Amanos Mountains, Balıkesir (Ayvalık), Konya (Beyşehir), Erzurum (Oltu, Hınıs, Pasinler, Horasan) (Özbek 1976); Ankara, Antalya, Aydın, Balıkesir, Çankırı, Çorum, Konya, Kütahya, Mersin (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 74).

Flower records

Fabaceae: *Trifolium pratense* L. (Lanuza et al. 2025); **Asteraceae:** *Glebionis segetum* (L.) Fourr.

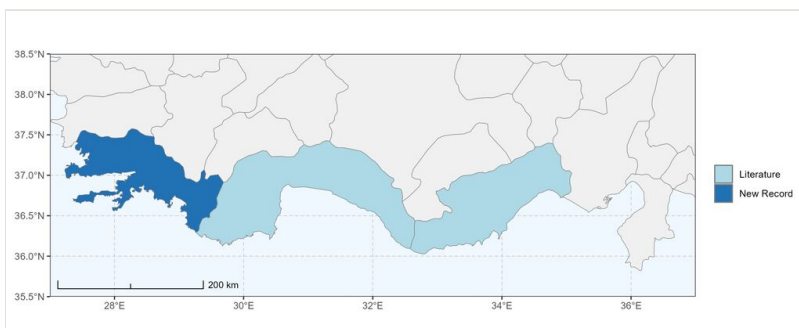


Figure 74. [doi](#)

Distribution of *A. schencki* in the Mediterranean Region of Türkiye.

Andrena (Truncandrena) schmiedeknechti Magretti, 1883

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Güzlek Plateau; verbatimElevation: 1414 m; verbatimLatitude: 36.654; verbatimLongitude: 33.107; eventDate: 04-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 22570572-90D6-5C23-B2D2-2F23AA34F224

Distribution

Algeria, Armenia, Azerbaijan, Georgia, Greece, Italy, Morocco, Tunisia, and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Balıkesir (Ayvalık), Sakarya (Adapazarı) (Warncke 1966); Bursa (Mustafakemalpaşa), Çanakkale (Bigadiç), İzmir (Selçuk), Kars (Sarıkamış), Karaman (Madeneşhri), Kayseri (Yenişehir), Manisa, Nevşehir (Ürgüp), Niğde (Ulukışla) (Warncke 1974); Ankara, Antalya, Aydın, Karaman, Konya, Mersin (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 75).

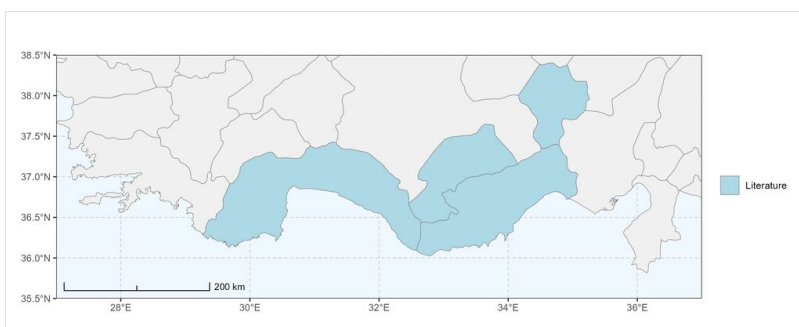


Figure 75. [doi](#)

Distribution of *A. schmiedeknechti* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Sisymbrium altissimum* L.

Andrena (Scitandrena) scita Eversmann, 1852

Materials

- a. countryCode: TR; stateProvince: Karaman; locality: Mut-Ermenek road; verbatimElevation: 1023 m; verbatimLatitude: 36.63; verbatimLongitude: 33.011; eventDate: 05-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: CDE10BDB-C4C8-50B7-B11D-C55E6ECCF461
- b. countryCode: TR; stateProvince: Karaman; locality: Mut-Ermenek road; verbatimElevation: 1023 m; verbatimLatitude: 36.63; verbatimLongitude: 33.011; eventDate: 05-06-2009; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 947F33CD-11F9-5B23-87CF-BDBFC673AB26
- c. countryCode: TR; stateProvince: Afyon; county: Dazkırı; locality: Örtülü village exit; verbatimElevation: 891 m; verbatimLatitude: 37.899; verbatimLongitude: 29.753; eventDate: 12-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 232D8AA0-49E1-5F05-94B7-96F166FFFF36

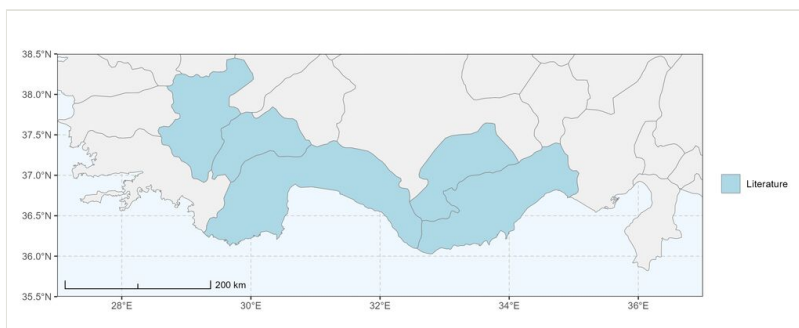
Distribution

Albania, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Georgia, Greece, Hungary, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, North Macedonia, Romania, Russia, Serbia, Slovakia, Slovenia, Syria, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022).

Distribution in Türkiye: Aksaray, Ankara, Bilecik, Çanakkale (Truva), Denizli (Çardak, Pamukkale), Kayseri (Erciyes), Konya (Beyşehir), Toroslars (Warncke 1966); Erzurum (Oltu, Tortum, İspir, Horasan, Hınıs) (Özbek 1976); Aksaray, Ankara, Antalya, Aydın, Balıkesir, Burdur, Çanakkale, Denizli, Karabük, Karaman, Kırşehir, Kütahya, Mersin, Nevşehir (Hazır 2010, Hazır et al. 2014); Afyon, Karaman (this study) (Fig. 76).

Flower records

Brassicaceae: *Cakile maritima* Scop., *Hirschfeldia incana* (L.) Lagr.-Foss. (Lanuza et al. 2025); **Brassicaceae:** *Brassica elongata* Ehrh., *Erysimum crassipes* Fisch. & C.A.Mey.

Figure 76. [doi](#)Distribution of *A. scita* in the Mediterranean Region of Türkiye.

Andrena (Micrandrena) spreta Pérez, 1895

Materials

- a. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EFF39067-B513-5581-BB1E-DF9E8C0A271D
- b. countryCode: TR; stateProvince: Hatay; locality: Belen Pass; verbatimElevation: 274 m; verbatimLatitude: 36.46; verbatimLongitude: 36.279; eventDate: 21-03-2009; individualCount: 1; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 5B371ECD-FBA6-5A12-B1A6-9FEB6C214775
- c. countryCode: TR; stateProvince: Hatay; locality: between Harbiye-Yayladağ; verbatimElevation: 471 m; verbatimLatitude: 36.123; verbatimLongitude: 36.171; eventDate: 21-03-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2A8D4DDA-4346-5B67-89C5-EFE2CAB4176F
- d. countryCode: TR; stateProvince: Antalya; locality: Side Hotels; verbatimElevation: 13 m; verbatimLatitude: 36.79; verbatimLongitude: 31.399; eventDate: 13-04-2009; individualCount: 3; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 479E7653-3392-5074-B5EA-F110A26AAE22
- e. countryCode: TR; stateProvince: Mersin; county: Anamur; verbatimElevation: 21 m; verbatimLatitude: 36.092; verbatimLongitude: 32.808; eventDate: 06-06-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 0D17F19C-C904-57A2-AED5-606FDFF97501

Distribution

Afghanistan, Albania, Algeria, Azerbaijan, Belgium, Croatia, Cyprus, Egypt, France, Greece, Iran, Israel and the West Bank, Italy, Libya, Morocco, Spain, Syria, Tunisia and Türkiye (Gusenleitner and Schwarz 2002, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Antep, Antalya, Diyarbakır, Malatya, Mersin (Mut, Silifke, Tarsus), Osmaniye, Urfa (Warncke 1974); Antalya, Hatay, Mersin (this study) (Fig. 77).

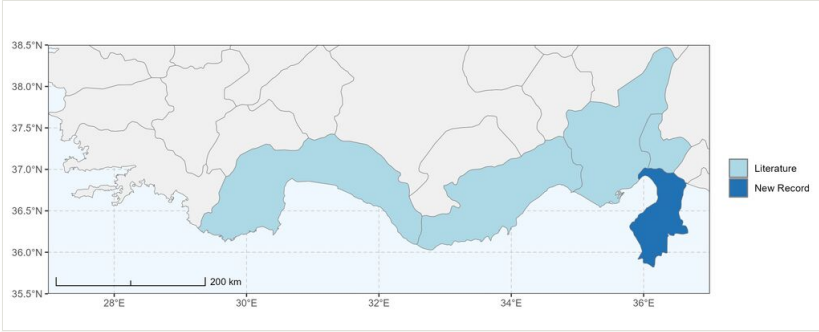


Figure 77. [doi](#)

Distribution of *A. sprete* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Elaeoselinum* W.D.J.Koch ex DC. (Lanuza et al. 2025); **Brassicaceae:** *Hirschfeldia incana* (L.) Lagr.-Foss., *Barbarea plantaginea* DC., *Sisymbrium* L.

Andrena (Euandrena) symphyti Schmiedeknecht, 1883

Material

- a. countryCode: TR; stateProvince: Niğde; county: Çamardı; locality: Pınarbaşı; verbatimElevation: 1512 m; verbatimLatitude: 37.878; verbatimLongitude: 35.107; eventDate: 23-05-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: BBD6BE77-07F0-587A-A89C-C607E7700554

Distribution

Albania, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France, Georgia, Germany, Gibraltar, Greece, Iran, Iraq, Italy, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Spain, Switzerland, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Pisanty et al. 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Topraklı), Ankara, Erzurum (Horasan, Oltu), Gümüşhane, Hatay, İstanbul, Karaman (Madenşehir), Konya (Akşehir, Sarayönü), Mardin (Tanyeri), Mersin (Mut, Gülek), Nevşehir (Ürgüp), Rize (Çinçiva) (Warncke 1974); Erzurum (Özbek 1976); Aydın (Hazır 2010, Hazır et al. 2014); Kahramanmaraş (Pisanty et al. 2022); Niğde (this study) (Fig. 78).

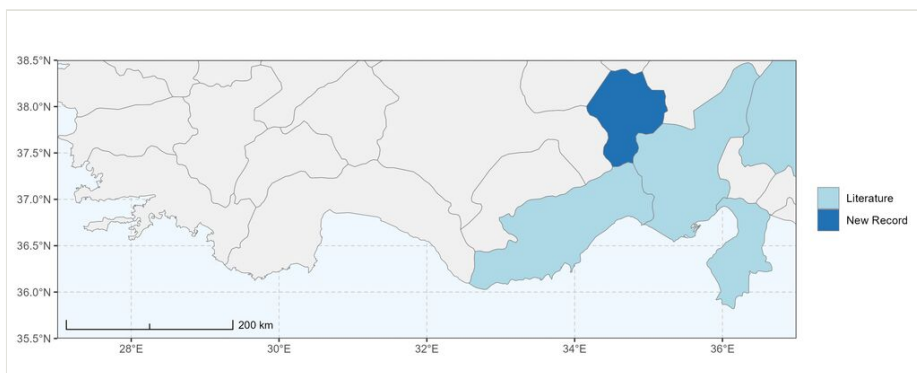


Figure 78. [doi](#)

Distribution of *A. symphyti* in the Mediterranean Region of Türkiye.

Andrena (Taeniandrena) taedium Wood, 2023

Materials

- a. countryCode: TR; stateProvince: Muğla; locality: Datça road, Turunç; verbatimElevation: 347 m; verbatimLatitude: 36.774; verbatimLongitude: 28.22; eventDate: 03-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: F276417C-530B-5D55-94B8-8D849D2E1798
- b. countryCode: TR; stateProvince: Niğde; county: Pozantı; locality: Alihoca village exit; verbatimElevation: 1171 m; verbatimLatitude: 37.483; verbatimLongitude: 34.705; eventDate: 23-05-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 4EEBCC15-ACB5-5BCE-830C-1ACFB55E4ED5
- c. countryCode: TR; stateProvince: Antalya; locality: Saklıkent road, 4 km; verbatimElevation: 1759 m; verbatimLatitude: 36.87; verbatimLongitude: 30.343; eventDate: 11-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: DBC1ACAC-3318-52CB-9A82-1917FD7B38A4

Distribution

Greece, Iran, Lebanon and Türkiye (Wood 2023a).

Distribution in Türkiye: Adana, Adıyaman, Ağrı, Aydın (Çine), Bolu, Kars, Malatya, Muğla, Nevşehir (Göreme), Niğde (Çamardı), Siirt, Şırnak (Wood 2023a); Antalya, Muğla, Niğde (this study) (Fig. 79).

Flower records

Brassicaceae: *Lepidium chalepense* L., **Fabaceae:** *Securigera libanotica* (Boiss.) Lassen, *Trigonella kotschy* Fenzl.

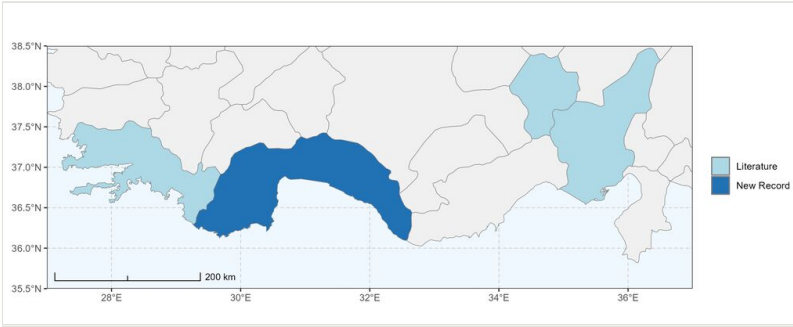


Figure 79. [doi](#)

Distribution of *A. taedium* in the Mediterranean Region of Türkiye.

Andrena (Melandrena) thoracica (Fabricius, 1775)

Material

- a. countryCode: TR; stateProvince: Niğde; locality: Ulukışla road, 3 km before Kolsuz Pass; verbatimElevation: 1305 m; verbatimLatitude: 37.374; verbatimLongitude: 34.833; eventDate: 22-05-2008; individualCount: 2; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C1C79A05-6629-5955-9AFF-FCB92B4A821C

Distribution

Algeria, Austria, Belgium, Bulgaria, China, Corsica, Croatia, Cyprus, Denmark, Estonia, France, Germany, Great Britain, Greece, Hungary, Iran, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Türkiye, Ukraine and Uzbekistan (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Amasya, Balıkesir (Ayvalık), Eskişehir (Sivrihisar), Manisa (Warncke 1966); Van (Işık Mountain) (Warncke 1969); Ankara, Aydın, Erzurum, Muğla (Yatağan), Sivas (Hazır 2010, Hazır et al. 2014); Afyon (Sultandağı) (Güler et al. 2015); Niğde (this study) (Fig. 80 and Fig. 81A-C).

Flower records

Amaryllidaceae: *Allium* L., *Narcissus* L. **Apiaceae:** *Anthriscus* Pers., *Heracleum sphondylium* L. **Asteraceae:** *Achillea millefolium* L., *Anthemis* L., *Arctium minus* (Hill) Bernh., *Bellis perennis* L., *Centaurea nigra* L., *Cirsium* Mill., *Crepis* L., *Petasites* Mill., *Senecio* L., *Sonchus* L., *Taraxacum* F.H.Wigg., *Tussilago farfara* L. **Brassicaceae:** *Cardamine pratensis* L. **Caryophyllaceae:** *Stellaria* L. **Convolvulaceae:** *Convolvulus arvensis* L. **Cornaceae:** *Cornus sanguinea* L. **Cucurbitaceae:** *Bryonia dioica* Bojer **Fagaceae:** *Castanea sativa* Mill. **Lamiaceae:** *Glechoma hederacea* L., *Lamium*

album L. **Lauraceae:** *Laurus nobilis* L. **Malvaceae:** *Tilia* L. **Oleaceae:** *Ligustrum vulgare* L. **Onagraceae:** *Chamaenerion angustifolium* (L.) Scop. **Orchidaceae:** *Herminium* L. **Papaveraceae:** *Papaver* L. **Ranunculaceae:** *Caltha palustris* L., *Clematis vitalba* L., *Ranunculus ficaria* L., *Ranunculus* L. **Rosaceae:** *Filipendula ulmaria* (L.) Maxim., *Potentilla* L., *Prunus* L., *Pyrus* L., *Rubus fruticosus* agg. L., *Rubus* L. **Salicaceae:** *Salix* L., *Salix triandra* L. **Sapindaceae:** *Acer campestre* L., *Acer pseudoplatanus* L., *Acer* L. (Balfour et al. 2022); **Cistaceae:** *Cistus ladanifer* L. (Lanuza et al. 2025); **Brassicaceae:** *Nasturtium officinale* R.Br.

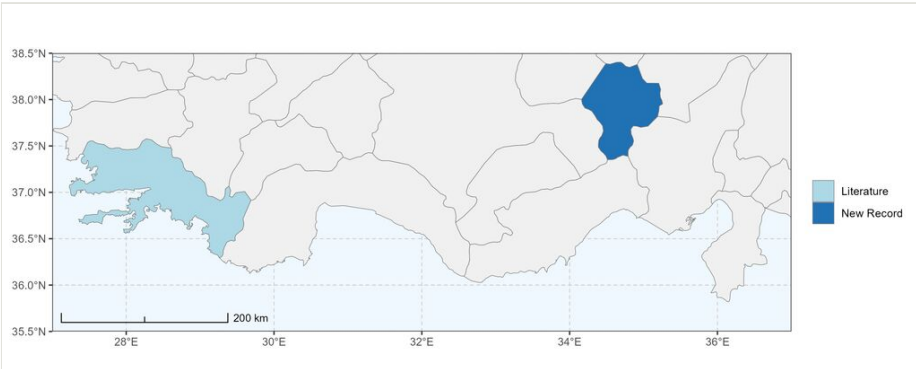


Figure 80. [doi](#)

Distribution of *A. thoracica* in the Mediterranean Region of Türkiye.

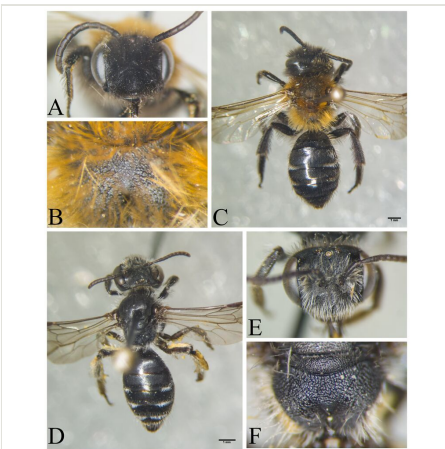


Figure 81. [doi](#)

Andrena thoracica, male. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C). *Andrena torda*, female. Habitus, dorsal view (D), head, frontal view (E), propodeum, dorsal view (F).

Andrena (Cordandrena) torda Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Muğla; locality: Datça road; verbatimElevation: 278 m; verbatimLatitude: 36.797; verbatimLongitude: 28.709; eventDate: 03-04-2009; individualCount: 9; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: A6D7F031-6350-5219-A943-88DD2B64E82E

Distribution

Cyprus, Greece, Iran, Iraq, Israel and West Bank, Lebanon and Türkiye (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Wood et al. 2024).

Distribution in Türkiye: Konya (Beyşehir, Sarayönü) (Warncke 1966); Ankara, Aydın, (Beyşehir), Diyarbakır (Warncke 1974); Aydın (Hazır et al. 2014); Muğla (this study) (Fig. 81D-F and Fig. 82).

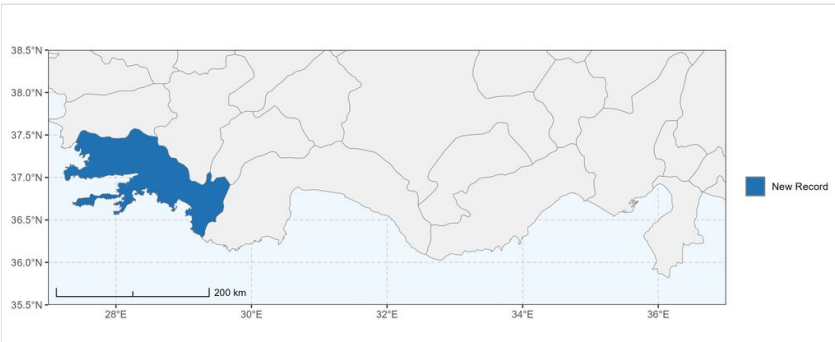


Figure 82. [doi](#)

Distribution of *A. torda* in the Mediterranean Region of Türkiye.

Flower records

Apiaceae: *Tordylium apulum* L. **Asteraceae:** *Anthemis chia* L.

Andrena (Simandrena) transitoria Morawitz, 1871

Material

- a. countryCode: TR; stateProvince: Kahramanmaraş; locality: East of vineyard houses; verbatimElevation: 1288 m; verbatimLatitude: 37.634; verbatimLongitude: 36.957; eventDate: 01-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 44670737-31F5-533B-9DD0-36C9D43BD9AB

Distribution

Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Hungary, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Moldova, North Macedonia, Romania, Russia, Serbia, Slovakia, Syria, Turkmenistan, Türkiye and Ukraine (Warncke 1974, Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Ankara, Elazığ, Eskişehir, Hatay, Konya (Beyşehir), Nevşehir (Ürgüp) (Warncke 1966); Erzurum (Tortum), Kars (Kağızman) (Özbek 1976); Aksaray, Ankara, Antalya, Bolu, Burdur, Antep, Isparta, Kırşehir, Konya, Kütahya, Nevşehir (Hazır 2010, Hazır et al. 2014); Kahramanmaraş (this study) (Fig. 83).

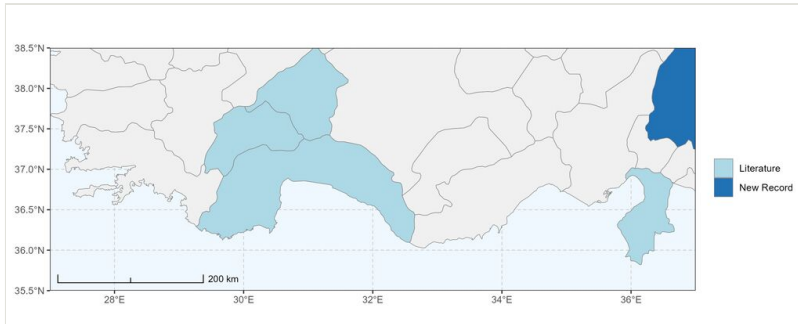


Figure 83. [doi](#)

Distribution of *A. transitoria* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Centaurea virgata* Lam.

Andrena (Truncandrena) truncatilabris Morawitz, 1877

Materials

- a. countryCode: TR; stateProvince: Burdur; locality: Antalya road, Korkuteli turn; verbatimElevation: 783 m; verbatimLatitude: 37.313; verbatimLongitude: 30.49; eventDate: 29-05-2009; individualCount: 4; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: EE9C4F66-7B76-5B15-A037-C5BA6F64EC3B
- b. countryCode: TR; stateProvince: Mersin; locality: Elmalıkuzu village; verbatimElevation: 1381 m; verbatimLatitude: 36.423; verbatimLongitude: 33.05; eventDate: 07-06-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 75A2941A-A5FD-56B4-9ECF-BC452D3DC16A
- c. countryCode: TR; stateProvince: Antalya; locality: Korkuteli-Finike road; verbatimElevation: 1346 m; verbatimLatitude: 36.949; verbatimLongitude: 30.131; eventDate: 10-06-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 9D97F152-F711-58E8-AE4E-4CA5A72AD98C

Distribution

Albania, Algeria, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Georgia, Greece, Hungary, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Montenegro, Morocco, North Macedonia, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Syria, Tunisia, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Adana, Amanos Mountains, Ankara, Balıkesir (Ayvalık), Konya, Mersin (Tarsus), Sakarya (Adapazarı) (Warncke 1966); Erzurum (Tortum, Oltu, Narman, İspir, Horasan), Kars, Muş (Özbek 1976); Adana, Aksaray, Amasya, Ankara, Antalya, Antep, Aydın, Balıkesir, Burdur, Çanakkale, Çorum, Hatay, Isparta, Maraş, Karaman, Kırşehir, Konya, Kütahya, Mersin, Muğla, Nevşehir, Sivas, Yozgat (Hazır 2010, Hazır et al. 2014); Antalya, Burdur, Mersin (this study) (Fig. 84).

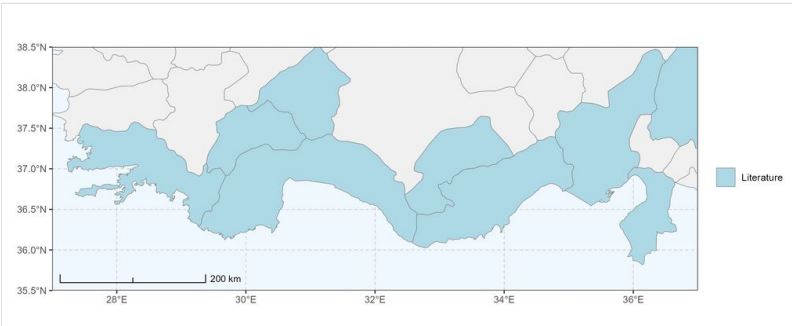


Figure 84. [doi](#)

Distribution of *A. truncatibris* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Hirschfeldia incana* (L.) Lagr.-Foss., *Diplotaxis tenuifolia* (L.) DC.

Fabaceae: *Medicago* L. **Geraniaceae:** *Erodium cicutarium* subsp. *cutarium* (L.) L. Hér.

Andrena (Truncandrena) tscheki tritica Warncke, 1965

Material

- a. countryCode: TR; stateProvince: Hatay; county: Yayladağ; locality: Harbiye; verbatimElevation: 471 m; verbatimLatitude: 36.123; verbatimLongitude: 36.171; eventDate: 22-03-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen;

identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID:
C9FC2BB7-7585-5E7F-8E3A-898CAB1EC9A7

Distribution

Greece, Israel and the West Bank and Türkiye (Gusenleitner and Schwarz 2002).

Distribution in Türkiye: Bolkar Mountains (Warncke 1966); Karaman (Göktepe), Uşak (Elma Mountains) (Warncke 1974); Aydın (Hazır et al. 2014); Hatay (this study) (Fig. 85).

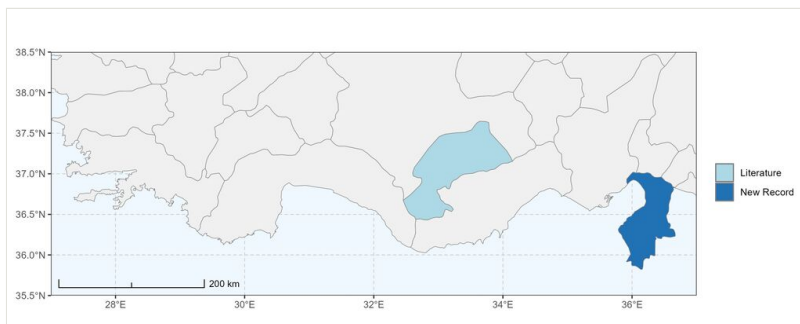


Figure 85. [doi](#)

Distribution of *A. tscheki* ssp. *tritica* in the Mediterranean Region of Türkiye.

Flower records

Lamiaceae: *Ballota saxatilis* subsp. *brachyodonta* (Boiss.) P.H.Davis & Doroszenko.

Andrena (Holandrena) variabilis Smith, 1853

Materials

- a. countryCode: TR; stateProvince: Adana; county: Tufanbeyli; locality: 5 km from Pınarlar village; verbatimElevation: 1451 m; verbatimLatitude: 36.245; verbatimLongitude: 36.289; eventDate: 02-07-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 2DAE3764-A642-584E-BFEA-C2C3B0567F24
- b. countryCode: TR; stateProvince: Mersin; locality: Mut-Gülнар road; verbatimElevation: 993 m; verbatimLatitude: 36.423; verbatimLongitude: 33.488; eventDate: 22-07-2009; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 03CEA0D2-BEB7-54E5-A1E3-F5A604888A35

Distribution

Albania, Algeria, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France, Georgia, Germany, Greece, Hungary, Iran, Israel and the

West Bank, Italy, Jordan, Lebanon, Moldova, Montenegro, Morocco, North Macedonia, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, Syria, Turkmenistan, Türkiye and Ukraine (Gusenleitner and Schwarz 2002, Osytshnjuk et al. 2008, Wood and Monfared 2022, Ascher and Pickering 2025).

Distribution in Türkiye: Amanos Mountains, İstanbul (Warncke 1966); İzmir (Ensetepe) (Warncke 1969); Erzurum (İspir), Iğdır (Tuzluca) (Özbek 1976); Adana, Ankara, Konya, Sivas (Hazır 2010, Hazır et al. 2014); Adana, Mersin (this study) (Fig. 86).

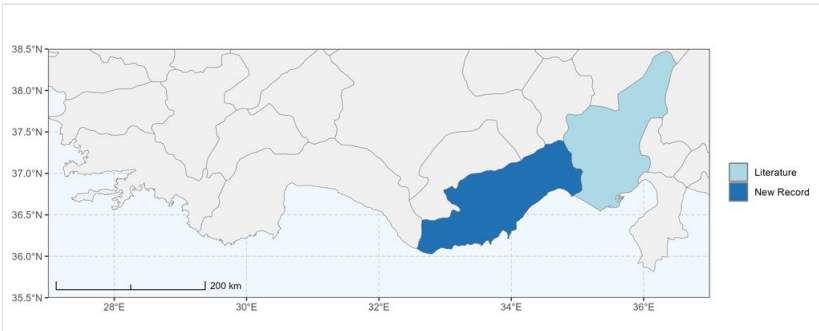


Figure 86. [doi](#)

Distribution of *A. variabilis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Cirsium arvense* (L.) Scop. **Fabaceae:** *Genista acanthoclada* DC.
Lamiaceae: *Thymbra capitata* (L.) Cav. (Lanuza et al. 2025); **Apiaceae:** *Eryngium campestre* var. *virens* Link **Asteraceae:** *Echinops pungens* var. *pungens* Trautv.
Boraginaceae: *Echium italicum* L.

Andrena (Simandrena) vetula Lepeletier, 1841

Material

- a. countryCode: TR; stateProvince: Mersin; county: Mut; locality: Sarıkavak road; verbatimElevation: 665 m; verbatimLatitude: 36.565; verbatimLongitude: 33.63; eventDate: 25-04-2008; individualCount: 2; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 28B1C3E9-D074-551A-B46A-C6D8C442FD37

Distribution

Algeria, Azerbaijan, Croatia, Cyprus, Egypt, France, Georgia, Greece, Iran, Israel and the West Bank, Italy, Jordan, Lebanon, Libya, Morocco, Portugal, Russia, Spain, Syria, Tajikistan, Tunisia, Turkmenistan, Türkiye, Uzbekistan and Yemen (Gusenleitner

and Schwarz 2002, Wood and Monfared 2022, Wood et al. 2024, Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Karataş), Mersin (Mut, Silifke, Tarsus) (Warncke 1966); Amasya, Ankara (Warncke 1974); Erzurum (Narman, Oltu, Tortum) (Özbek 1976); Adana, Ankara, Antep, Çorum, Hatay, Mersin, Osmaniye, Urfa (Hazır 2010, Hazır et al. 2014); Mersin (this study) (Fig. 87).

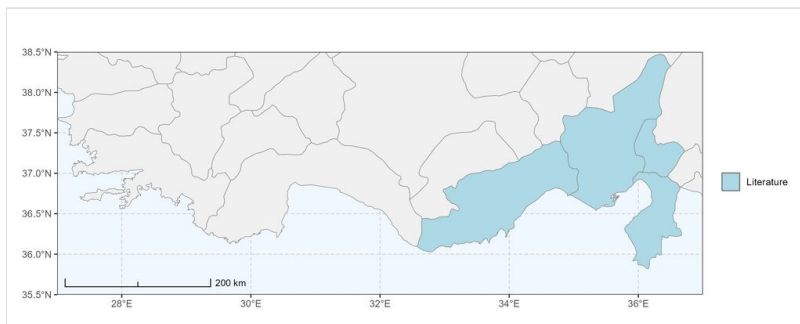


Figure 87. [doi](#)

Distribution of *A. vetula* in the Mediterranean Region of Türkiye.

Flower records

Brassicaceae: *Diplotaxis tenuifolia* (L.) DC.

Andrena (Ulandrena) westensis Warncke, 1965

Materials

- a. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Özal Bay; verbatimElevation: 0 m; verbatimLatitude: 36.924; verbatimLongitude: 28.177; eventDate: 02-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: C95E5840-4E46-531B-BAAE-249CEFF142A8
- b. countryCode: TR; stateProvince: Muğla; county: Marmaris; locality: Bördübet road; verbatimElevation: 195 m; verbatimLatitude: 36.857; verbatimLongitude: 28.126; eventDate: 04-04-2009; individualCount: 1; sex: female; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 8E0234F8-27AA-545B-B95F-C6B57758EB06

Distribution

Greece and Türkiye (Ascher and Pickering 2025).

Distribution in Türkiye: Adana (Gülek), Ankara, Antalya (Anamur, Finike), Çanakkale (Bigadiç), Manisa (Warncke 1974); Antalya, Aydın (Hazır 2010, Hazır et al. 2014); Muğla (this study) (Fig. 88).

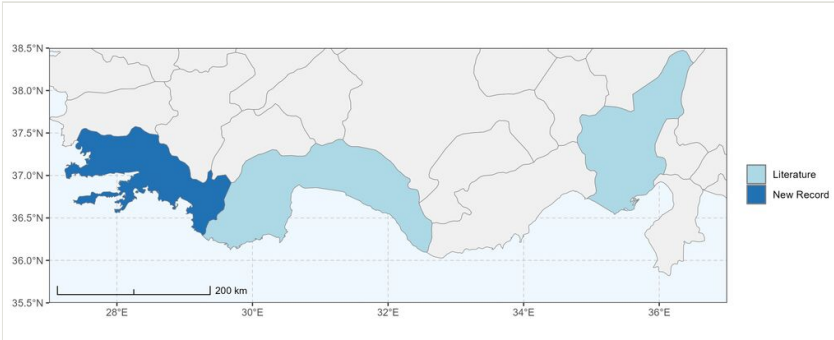


Figure 88. [doi](#)

Distribution of *A. westensis* in the Mediterranean Region of Türkiye.

Flower records

Asteraceae: *Crepis commutata* (Spreng.) Greuter, *Hypochaeris achyrophorus* L., *Leontodon tuberosus* L. **Cistaceae:** *Cistus salviifolius* L. (Lanuza et al. 2025); **Asteraceae:** *Crepis sancta* (L.) Bornm., *Crepis* L.

Andrena incertae sedis wolfi Gusenleitner & Scheuchl, 2000

Material

- a. countryCode: TR; stateProvince: Hatay; locality: between Reyhanlı and Antakya; verbatimElevation: 85 m; verbatimLatitude: 36.252; verbatimLongitude: 36.519; eventDate: 21-03-2009; individualCount: 4; sex: male; recordedBy: Fatih Dikmen; identifiedBy: Thomas J. Wood; collectionCode: ZMUI; occurrenceID: 25D7A3B0-E7B2-5948-BB32-B06CB74F6AEE

Distribution

Israel and the West Bank, Jordan, Syria and Türkiye* (Gusenleitner and Schwarz 2002, Ghisbain et al. 2023).

Distribution in Türkiye: *Hatay (new record for Türkiye) (Fig. 89 and Fig. 90).

Flower records

Brassicaceae: *Erucaria microcarpa* Boiss. **Caryophyllaceae:** *Silene aegyptiaca* (L.) L.f. (Pisanty et al. 2016); **Brassicaceae:** *Ochthodium aegyptiacum* (L.) DC.

Analysis

The table below (Table 1) summarises 81 species of *Andrena* bees collected from the Mediterranean Region of Türkiye. It provides taxonomic classification, subgenus

information and authorship details. This compilation offers valuable data on the diversity and distribution of *Andrena* species in this biologically rich area.

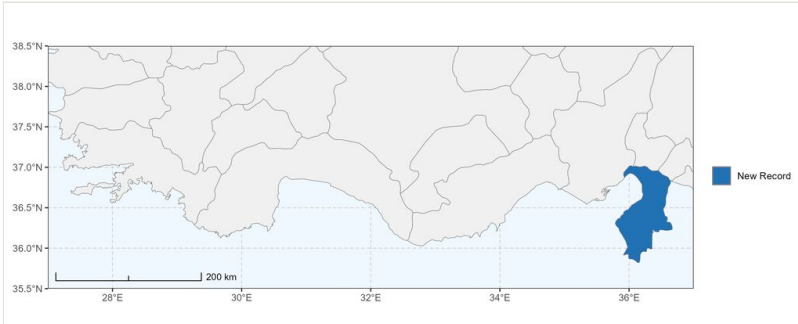


Figure 89. [doi](#)

Distribution of *A. wolffi* in the Mediterranean Region of Türkiye.

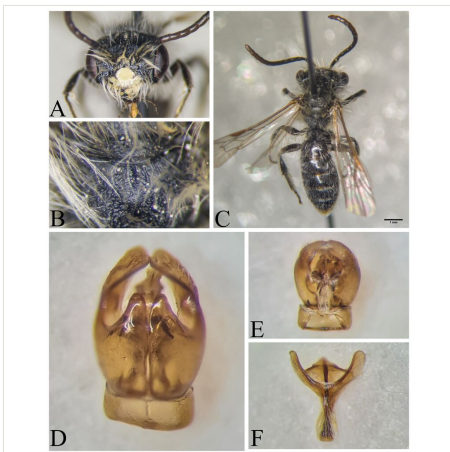


Figure 90. [doi](#)

Andrena wolffi, male. Head, frontal view (A); propodeum, dorsal view (B); habitus, dorsal view (C); genital capsule, dorsal view (D); genital capsule, ventral view (E); S7 and S8 (F).

Table 1.

Species List of *Andrena* Bees from the Turkish Mediterranean Area.

Subgenus	Taxon priority	Author
<i>Aciandrena</i>	<i>Andrena lamiana</i>	Warncke, 1965
<i>Aenandrena</i>	<i>Andrena bisulcata</i>	Morawitz, 1877
<i>Brachyandrena</i>	<i>Andrena colletiformis</i>	Morawitz, 1873
<i>Campylogaster</i>	<i>Andrena erberi</i>	Morawitz, 1871
<i>Chlorandrena</i>	<i>Andrena astica</i>	Warncke, 1967

Subgenus	Taxon priority	Author
	<i>Andrena cinereophila</i>	Warncke, 1965
	<i>Andrena exquisita</i>	Warncke, 1975
	<i>Andrena humabilis</i>	Warncke, 1965
	<i>Andrena orientana</i>	Warncke, 1965
	<i>Andrena panurgimorpha</i>	Mavromoustakis, 1957
<i>Chrysandrena</i>	<i>Andrena fulvago</i>	(Christ, 1791)
	<i>Andrena glandaria</i>	Warncke, 1975
	<i>Andrena hesperia</i>	Smith, 1853
<i>Cordandrena</i>	<i>Andrena cordialis</i>	Morawitz, 1877
	<i>Andrena cypria</i>	Pittioni, 1950
	<i>Andrena torda</i>	Warncke, 1965
<i>Cryptandrena</i>	<i>Andrena brumanensis</i>	Friese, 1899
<i>Euandrena</i>	<i>Andrena bicolor</i>	Fabricius, 1775
	<i>Andrena pileata</i> ssp. <i>canigica</i>	Warncke, 1975
	<i>Andrena rufula</i>	Schmiedeknecht, 1883
	<i>Andrena symphyti</i>	Schmiedeknecht, 1883
<i>Fuscandrena</i>	<i>Andrena iliaca</i>	Warncke, 1969
<i>Hamandrena</i>	<i>Andrena nasuta</i>	Giraud, 1863
<i>Holandrena</i>	<i>Andrena flavilabris</i>	Schenck, 1874
	<i>Andrena forsterella</i>	Osytsnjuk, 1978
	<i>Andrena labialis</i>	(Kirby, 1802)
	<i>Andrena variabilis</i>	Smith, 1853
<i>Leimelissa</i>	<i>Andrena fallax</i>	Eversmann, 1852
<i>Melanapis</i>	<i>Andrena fuscosa</i>	Erichson, 1835
<i>Melandrena</i>	<i>Andrena flavipes</i>	Panzer, 1799
	<i>Andrena hungarica</i> ssp. <i>macroura</i> *	Warncke, 1975
	<i>Andrena limata</i>	Smith, 1853
	<i>Andrena magna</i>	Warncke, 1965
	<i>Andrena nigroaenea</i>	(Kirby, 1802)
	<i>Andrena nitidemula</i>	Scheuchl & Hazir, 2012
	<i>Andrena pyropygia</i>	Kreichbaumer, 1873
	<i>Andrena thoracica</i>	(Fabricius, 1775)
<i>Micrandrena</i>	<i>Andrena alfkenella</i>	Perkins, 1914
	<i>Andrena alfkenelloides</i>	Warncke, 1965
	<i>Andrena alutacea</i>	Stöckhert, 1942
	<i>Andrena cedricola</i>	Wood, 2020

Subgenus	Taxon priority	Author
	<i>Andrena enslinella</i>	Stöckert, 1924
	<i>Andrena floricola</i>	Eversmann, 1852
	<i>Andrena immaculata</i>	Warncke, 1975
	<i>Andrena minutula</i>	(Kirby, 1802)
	<i>Andrena oediconema</i>	Warncke, 1975
	<i>Andrena rugothorace</i>	Warncke, 1965
	<i>Andrena rugulosa</i>	Stöckert, 1935
	<i>Andrena spreta</i>	Pérez, 1895
<i>Nobandrena</i>	<i>Andrena nobilis</i>	Morawitz, 1873
<i>Notandrena</i>	<i>Andrena aerinifrons</i>	Dours, 1873
	<i>Andrena purpureomicans*</i>	Alfken, 1935
<i>Opandrena</i>	<i>Andrena schencki</i>	Morawitz, 1866
<i>Plastandrena</i>	<i>Andrena bimaculata</i>	(Kirby, 1802)
	<i>Andrena pilipes</i>	Fabricius, 1781
<i>Poecilandrena</i>	<i>Andrena crassana</i>	Warncke, 1965
	<i>Andrena laticeps</i>	Morawitz, 1877
<i>Scitandrena</i>	<i>Andrena scita</i>	Eversmann, 1852
<i>Simandrena</i>	<i>Andrena cinnamonea*</i>	Warncke, 1975
	<i>Andrena dorsata</i>	(Kirby, 1802)
	<i>Andrena gasparella</i>	Patiny, 1998
	<i>Andrena lepida</i>	Schenck, 1861
	<i>Andrena transitoria</i>	Morawitz, 1871
	<i>Andrena vetula</i>	Lepeletier, 1841
<i>Taeniandrena</i>	<i>Andrena russula</i>	Lepeletier, 1841
	<i>Andrena taedium</i>	Wood, 2023
<i>Truncandrena</i>	<i>Andrena combusta</i>	Morawitz, 1876
	<i>Andrena optata</i>	Warncke, 1975
	<i>Andrena rufomaculata</i>	Friese, 1921
	<i>Andrena schmiedeknechti</i>	Magretti, 1883
	<i>Andrena truncatilabris</i>	Morawitz, 1877
	<i>Andrena tscheki</i> ssp. <i>tritica</i>	Warncke, 1965
<i>Ulandrena</i>	<i>Andrena abbreviata</i>	Dours, 1873
	<i>Andrena fulvitaris</i>	Brullé, 1833
	<i>Andrena isabellina</i>	Warncke, 1969
	<i>Andrena kriechebaumeri</i>	Schmiedeknecht, 1883
	<i>Andrena neocyprica</i>	Mavromoustakis, 1956

Subgenus	Taxon priority	Author
	<i>Andrena westensis</i>	Warncke, 1965
<i>incertae sedis</i>	<i>Andrena discordia</i>	Wood, 2023
	<i>Andrena monacha</i>	Warncke, 1965
	<i>Andrena wolffi</i> **	Gusenleitner & Scheuchl, 2000

*: endemic to Türkiye (*Andrena hungarica macroura* Warncke, 1975 subspecies is endemic for Türkiye).

** : new record for Türkiye.

Biogeographical distribution

This study documented a total of 26 subgenera and 81 *Andrena* taxa in the Mediterranean Region of Türkiye. Amongst these taxa, *Andrena wolffi* was identified as a new record for the Turkish fauna. Subgeneric richness (Table 1) was highest in *Micrandrena* (12 species) and *Melandrena* (8 species), indicating that these groups contribute substantially to the regional *Andrena* diversity. Provincial distribution analyses revealed that *A. alfkenelloides*, *A. flavipes*, *A. fulvitaris*, *A. labialis*, *A. minutula* and *A. truncatilabris* were the most widespread species across the Mediterranean provinces. The complete provincial distribution of all 81 species is presented in Table 2, while the number of newly-recorded species by province is detailed in Table 3.

Table 2.

Distribution of *Andrena* (Hymenoptera, Andrenidae) species in the provinces of the Turkish Mediterranean Region, with records compiled from literature and new collections.

<i>Andrena</i> species	Literature Records	Collection Records
<i>Andrena abbreviata</i>	Adana, Antalya, Denizli, Mersin	Antalya, Mersin
<i>Andrena aerinifrons</i>		Hatay*
<i>Andrena alfkenella</i>	Adana	Hatay*
<i>Andrena alfkenelloides</i>	Adana, Antalya, Burdur, Denizli, Hatay, Mersin, Niğde, Osmaniye	Osmaniye
<i>Andrena alutacea</i>	Mersin	Mersin
<i>Andrena astica</i>	Adana, Kahramanmaraş	Adana, Hatay*
<i>Andrena bicolor</i>	Antalya	Hatay*
<i>Andrena bimaculata</i>	Adana	Hatay*
<i>Andrena bisulcata</i>	Adana, Hatay, Karaman, Mersin	Mersin
<i>Andrena brumanensis</i>	Adana, Antalya, Mersin	Antalya, Muğla*
<i>Andrena cedricola</i>		Niğde*

<i>Andrena</i> species	Literature Records	Collection Records
<i>Andrena cinereophila</i>	Antalya, Kahramanmaraş, Mersin	Adana*, Hatay*, Mersin, Muğla*
<i>Andrena cinnamomea</i>	Antalya, Hatay, Mersin	Hatay
<i>Andrena colletiformis</i>	Adana, Antalya, Burdur, Denizli, Karaman	Mersin*
<i>Andrena combusta</i>	Mersin	Mersin
<i>Andrena cordialis</i>	Burdur, Hatay	Burdur
<i>Andrena crassana</i>	Antalya, Hatay, Mersin, Muğla	Burdur*
<i>Andrena cypria</i>	Burdur, Mersin, Niğde	Muğla*
<i>Andrena discordia</i>	Mersin	Mersin
<i>Andrena dorsata</i>	Adana, Antalya, Burdur, Denizli, Hatay, Isparta, Kahramanmaraş, Mersin	Niğde*
<i>Andrena enslinella</i>	Antalya, Isparta	Niğde*
<i>Andrena erberi</i>	Adana	Mersin*
<i>Andrena exquisita</i>	Kahramanmaraş	Hatay*
<i>Andrena fallax</i>	Antalya, Burdur, Mersin, Niğde	Antalya
<i>Andrena flavilabris</i>		Burdur*
<i>Andrena flavipes</i>	Adana, Antalya, Burdur, Denizli, Hatay, Kahramanmaraş, Karaman, Mersin, Muğla	Antalya, Hatay, Kahramanmaraş, Mersin, Niğde*
<i>Andrena floricola</i>	Adana, Denizli, Mersin	Mersin
<i>Andrena forsterella</i>	Adana, Antalya, Hatay, Mersin	Adana, Kahramanmaraş*, Muğla*
<i>Andrena fulvago</i>		Kahramanmaraş*
<i>Andrena fulvitaris</i>	Adana, Antalya, Karaman, Mersin, Muğla, Niğde	Burdur*
<i>Andrena fuscosa</i>	Adana, Antalya	Adana, Antalya
<i>Andrena gasparella</i>		Antalya*
<i>Andrena glandaria</i>	Antalya, Muğla	Adana*, Hatay*, Mersin*, Muğla
<i>Andrena hesperia</i>	Adana, Antalya, Burdur, Kahramanmaraş, Mersin, Muğla	Adana, Hatay*
<i>Andrena humabilis</i>	Adana, Antalya, Kahramanmaraş, Mersin	Adana, Hatay*, Muğla*, Osmaniye*
<i>Andrena hungarica</i>		Muğla*
<i>Andrena iliaca</i>		Hatay*
<i>Andrena immaculata</i>		Antalya*
<i>Andrena isabellina</i>	Hatay	Hatay

Andrena species	Literature Records	Collection Records
<i>Andrena kriegbaumeri</i>	Antalya, Mersin, Muğla	Mersin, Muğla
<i>Andrena labialis</i>	Antalya, Burdur, Denizli, Karaman, Mersin, Niğde	Adana*, Mersin
<i>Andrena lamiana</i>	Adana, Hatay, Mersin	Muğla*
<i>Andrena laticeps</i>	Mersin, Niğde	Niğde
<i>Andrena lepida</i>	Adana, Antalya, Burdur, Kahramanmaraş, Karaman	Hatay*
<i>Andrena limata</i>	Adana, Antalya, Burdur, Denizli, Muğla	Antalya
<i>Andrena magna</i>	Niğde	Denizli*
<i>Andrena minutula</i>		Antalya*, Muğla*, Osmaniye*
<i>Andrena monacha</i>	Adana, Antalya, Muğla, Osmaniye	Mersin*
<i>Andrena nasuta</i>	Karaman, Niğde	Mersin*
<i>Andrena neocyprica</i>	Antalya, Hatay, Kahramanmaraş, Mersin, Muğla	Mersin
<i>Andrena nigroaenea</i>	Adana, Antalya, Muğla	Antalya
<i>Andrena nitidemula</i>	Burdur, Mersin	Mersin, Niğde*
<i>Andrena nobilis</i>	Adana, Burdur, Karaman, Mersin	Antalya*, Mersin
<i>Andrena oedicephala</i>	Antalya	Antalya, Mersin*
<i>Andrena optata</i>	Antalya, Burdur	Antalya
<i>Andrena orientana</i>	Adana, Antalya, Denizli, Hatay, Mersin	Muğla*
<i>Andrena panurgimorpha</i>	Antalya, Kahramanmaraş, Mersin, Niğde	Adana*
<i>Andrena pileata</i> ssp. <i>canigica</i>		Antalya*
<i>Andrena pilipes</i>	Adana, Antalya, Denizli, Mersin, Niğde	Antalya
<i>Andrena purpureomicans</i>	Adana, Burdur, Hatay, Niğde	Antalya*
<i>Andrena pyropygia</i>	Mersin	Hatay*, Karaman*
<i>Andrena rufomaculata</i>	Hatay	Hatay
<i>Andrena rufula</i>	Antalya	Hatay*
<i>Andrena rugothorace</i>	Burdur, Karaman, Niğde	Adana*, Antalya*, Muğla*
<i>Andrena rugulosa</i>		Niğde*
<i>Andrena russula</i>	Antalya, Mersin	Muğla*
<i>Andrena schencki</i>	Antalya, Mersin	Muğla*

<i>Andrena</i> species	Literature Records	Collection Records
<i>Andrena schmiedeknechti</i>	Antalya, Karaman, Mersin, Niğde	Mersin
<i>Andrena scita</i>	Antalya, Burdur, Denizli, Karaman, Mersin	Karaman
<i>Andrena spreta</i>	Adana, Antalya, Mersin, Osmaniye	Antalya, Hatay*, Mersin
<i>Andrena symphyti</i>	Adana, Hatay, Kahramanmaraş, Mersin	Niğde*
<i>Andrena taedium</i>	Adana, Muğla, Niğde	Antalya*, Muğla, Niğde
<i>Andrena thoracica</i>	Muğla	Niğde*
<i>Andrena torda</i>		Muğla*
<i>Andrena transitoria</i>	Antalya, Burdur, Hatay, Isparta	Kahramanmaraş*
<i>Andrena truncatilabris</i>	Adana, Antalya, Burdur, Hatay, Isparta, Kahramanmaraş, Karaman, Mersin, Muğla	Antalya, Burdur, Mersin
<i>Andrena tscheki</i> ssp. <i>tritica</i>	Karaman	Hatay*
<i>Andrena variabilis</i>	Adana	Adana, Mersin*
<i>Andrena vetula</i>	Adana, Hatay, Mersin, Osmaniye	Mersin
<i>Andrena westensis</i>	Adana, Antalya	Muğla*
<i>Andrena wolffi</i>		Hatay*

*New provincial record.

Table 3.

Number of newly-recorded species by province in the Mediterranean Region of Türkiye.

Province	New Records
Hatay	17
Muğla	14
Antalya	8
Niğde	8
Mersin	7
Adana	5
Burdur	3
Kahramanmaraş	3
Osmaniye	2
Karaman	1
Denizli	1

Discussion

Situated at the confluence of three major biogeographical realms (Mediterranean, Euro-Siberian and Irano-Turanian), Türkiye supports an exceptionally rich apifauna. However, despite this significant species diversity, knowledge regarding the distribution and systematics of the local *Andrena* fauna remains fragmented and comprehensive faunistic inventories are notably lacking (Güler 2011, Hazır et al. 2014, Güler et al. 2014, Dikmen 2018, Wood 2023a, Wood 2023b). In this context, the present study provides a significant contribution to filling this gap by documenting 81 *Andrena* taxa in the Mediterranean Region, a critical biodiversity hotspot. Amongst the sampled locations, species were observed to be most concentrated in the provinces of Hatay, Muğla and Antalya (Table 3). Our analyses of provincial distribution patterns identified *A. alfenelloides*, *A. flavipes*, *A. fulvitaris*, *A. labialis*, *A. minutula* and *A. truncatilabris* as the most widespread taxa across the Mediterranean Region. This faunistic composition is highly consistent with previous large-scale studies of Turkish *Andrena* fauna (e.g. Hazır (2010), Hazır et al. (2014)), particularly with regard to the dominance of *A. truncatilabris*, *A. labialis* and *A. flavipes*.

The ubiquity of these species is likely due to their broad ecological plasticity and life-history traits. For instance, *A. truncatilabris*, reported by Hazır (2010) as the most widespread species in Türkiye with a preference for steppe habitats, clearly maintains a strong presence in the Mediterranean zone, indicating a high tolerance for varying climatic conditions. Similarly, the extensive distribution of *A. flavipes* is well supported by literature: Warncke (1974) described it as ubiquitous and Özbek (1975, 1978) linked its success to its bivoltine phenology (two generations per year) and polylectic foraging behaviour (Hazır 2010). These traits enable *A. flavipes* to exploit a diverse array of floral resources over a prolonged flight period, facilitating its colonisation of various habitats, including agricultural landscapes.

An analysis of the recorded faunal composition reveals a relatively low rate of endemism; only three of the 81 taxa (*Andrena hungarica* ssp. *macroura*, *A. purpureomicans* and *A. cinnamonea*) are known endemics (approx. 3.7%). Regional distribution analysis further supports this pattern. Approximately 9% (7 taxa) of the studied fauna are restricted to the Mediterranean Region within the scope of these data. However, the vast majority (91%) are also recorded in other geographical regions of Turkey. This low level of endemism suggests that the regional fauna is not highly isolated, but is rather dominated by species with wider geographical ranges; this contrasts with the pattern seen on the main Anatolian Plateau and in mountains areas (Warncke 1974).

Amongst the endemic taxa, *Andrena hungarica* ssp. *macroura* is of particular interest due to its complex taxonomy and distribution. Recent assessments show that the nominate form, *Andrena hungarica* Friese, 1887, is restricted to the Pannonian Basin. Furthermore, *A. h.* ssp. *khursiensis* Osytshnjuk, 1994 is now considered a junior synonym of *A. quadimaculata* Friese, 1921 (Wood and Bossert 2025). As a result, *A. h.* ssp. *macroura* remains the only valid lineage of this group, endemic to Anatolia. Previously, literature

described this subspecies as a steppe element found only in the high-altitude regions of Central and Eastern Anatolia (Warncke 1974). Therefore, its discovery in a coastal Mediterranean locality (Muğla) is surprising, as this habitat differs significantly from its typical range. Despite this difference in climate, the morphology of our specimens matches the diagnostic description of the subspecies perfectly, confirming the identification (Fig. 37D-F). We hypothesise that this isolated coastal population may be a glacial relict that remained after populations moved to lower altitudes during the cooler periods of the Pleistocene. Alternatively, this finding suggests that *Andrena hungarica* ssp. *macroura* has higher ecological plasticity than previously thought. Future studies using molecular data and ecological modelling are needed to determine if this population is a separate cryptic lineage or simply shows the species' ability to adapt.

The most notable faunistic outcome of this study is the first record of *Andrena wolffi* from Türkiye. The identification is unequivocally supported by the morphology of the collected male specimens; specifically, the structure of the genital capsule and the hidden sterna (S7 and S8) exhibit complete congruence with the diagnostic characters described and illustrated by Pisanty et al. (2016) (Fig. 90). Historically, the known distribution of *A. wolffi* has been concentrated in the Levant (Gusenleitner and Schwarz 2002, Ghisbain et al. 2023). Consequently, the discovery of *Andrena wolffi* in southern Türkiye suggests two plausible scenarios: (1) the species is undergoing a natural northward range expansion, potentially driven by current climatic dynamics or (2) it was previously overlooked due to insufficient sampling intensity in suitable habitats during earlier faunistic surveys.

Beyond the distributional patterns, ecological data obtained from field surveys elucidate the critical floral associations of the regional *Andrena* community. Our results exhibit a strong concordance with literature records regarding the dominance of key plant families; however, slight variations in preference hierarchies were observed. While aggregated literature data generally position Asteraceae (hosting 25 species) as the primary pollen source, followed by Brassicaceae (22 species) and Fabaceae (16 species), our field observations revealed a slight dominance of Brassicaceae, which supported the highest diversity of *Andrena* taxa (38 species), followed closely by Asteraceae (35 species). Whereas published records most frequently identify *Crepis* (14 species), *Brassica* (11 species) and *Senecio* (10 species) as key foraging genera for *Andrena*, our field observations reveal a different pattern of floral use. In our dataset, the genera *Crepis* (18 species), *Sisymbrium* (9 species) and *Hirschfeldia* (8 species) were recorded as the most frequently visited. Notably, *Crepis* stands out as a consistently important floral resource, ranking as the top genus in both literature-based records and our field data. Additionally, the dietary classifications and specific floral specialisations of the documented *Andrena* species are summarised in Table 4.

Table 4.

Host plant use and dietary classification for selected *Andrena* species from the Mediterranean Region of Turkey. Much unpublished data will be published in the near future as part of a revision of the *Andrena* of the southern Balkans (Wood 2026).

Species	Host range	Literature
<i>Aciandrena</i>		
<i>A. lamiana</i> Warncke	Probably broadly oligolectic on Brassicaceae	Wood, <i>unpublished data</i>
<i>Aenandrena</i>		
<i>A. bisulcata</i> Morawitz	Unclear, strongly associated with Brassicaceae	
<i>Brachyandrena</i>		
<i>A. colletiformis</i> Morawitz	Unclear, probably polylectic with a strong preference for Apiaceae	Wood (2023a); Wood, <i>unpublished data</i>
<i>Campylogaster</i>		
<i>A. erberi</i> Morawitz	Unknown	
<i>Chlorandrena</i>		
<i>A. astica</i> Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, <i>unpublished data</i> ; inferred from phylogenetic position
<i>A. cinereophila</i> Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, <i>unpublished data</i>
<i>A. exquisita</i> Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, <i>unpublished data</i>
<i>A. humabilis</i> Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, <i>unpublished data</i>
<i>A. orientana</i> Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, <i>unpublished data</i>
<i>A. panurgimorpha</i> Mavromoustakis	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood, <i>unpublished data</i>
<i>Chrysandrena</i>		
<i>A. fulvago</i> Christ	Broadly oligolectic (Asteraceae: Cichorioideae)	Westrich (1989)
<i>A. glandaria</i> Warncke	Broadly oligolectic (Asteraceae: Cichorioideae)	Inferred from phylogenetic position
<i>A. hesperia</i> Smith	Broadly oligolectic (Asteraceae: Cichorioideae)	Wood (2023a)
<i>Cordandrena</i>		
<i>A. cordialis</i> Morawitz	Polylectic	Wood, <i>unpublished data</i>
<i>A. cypria</i> Pittioni	Probably polylectic	Wood, <i>unpublished data</i>
<i>A. torda</i> Warncke	Probably polylectic	Wood, <i>unpublished data</i>
<i>Cryptandrena</i>		

Species	Host range	Literature
<i>A. brumanensis</i> Friese	Possibly broadly oligolectic (Fabaceae)	Wood, <i>unpublished data</i>
<i>Euandrena</i>		
<i>A. bicolor</i> Fabricius	Polylectic	Westrich (1989)
<i>A. pileate</i> ssp. <i>canigica</i> Warncke	Polylectic	Wood, <i>unpublished data</i>
<i>A. rufula</i> Schmiedeknecht	Polylectic	Westrich (1989)
<i>A. symphyti</i> Schmiedeknecht	Broadly oligolectic (Boraginaceae)	Westrich (1989)
<i>Fuscandrena</i>		
<i>A. iliaca</i> Warncke	Unknown, possibly broadly oligolectic on Brassicaceae	Wood, <i>unpublished data</i>
<i>Hamandrena</i>		
<i>A. nasuta</i> Giraud	Narrowly oligolectic on <i>Anchusa</i> (Boraginaceae)	Westrich (1989)
<i>Holandrena</i>		
<i>A. flavilabris</i> Schenck	Polylectic	Manderey et al. (2008)
<i>A. forsterella</i> Osytshnjuk	Polylectic	Wood, <i>unpublished data</i>
<i>A. labialis</i> Kirby	Polylectic with a strong preference (Fabaceae)	Wood and Roberts (2017)
<i>A. variabilis</i> Smith	Polylectic	Wood, <i>unpublished data</i>
<i>Leimelissa</i>		
<i>A. fallax</i> Eversmann	Narrowly oligolectic on <i>Onobrychis</i> (Fabaceae)	Wood, <i>unpublished data</i>
<i>Melanapis</i>		
<i>A. fuscosa</i> Erichson	Polylectic	Wood (2023a)
<i>Melandrena</i>		
<i>A. flavipes</i> Panzer	Polylectic	Westrich (1989), Wood and Roberts (2017)
<i>A. hungarica</i> ssp. <i>macroua</i> Warncke	Unknown, probably polylectic	Inferred from phylogenetic position
<i>A. limata</i> Smith	Polylectic	Westrich 1989
<i>A. magna</i> Warncke	Unknown, probably polylectic	Inferred from phylogenetic position
<i>A. nigroaenea</i> Kirby	Polylectic	Westrich (1989), Wood and Roberts (2017)
<i>A. nitidemula</i> Scheuchl & Hazir	Unknown, probably polylectic	Inferred from phylogenetic position
<i>A. pyropygia</i> Kreichbaumer	Unknown, probably polylectic	Inferred from phylogenetic position
<i>A. thoracica</i> Fabricius	Polylectic	Westrich (1989), Wood and Roberts (2017)
<i>Micrandrena</i>		

Species	Host range	Literature
<i>A. alfenella</i> Perkins	Polylectic	Westrich (1989); Wood, <i>unpublished data</i>
<i>A. alfenelloides</i> Warncke	Unknown	
<i>A. alutacea</i> Stöckhert	Broadly oligolectic on Apiaceae	Schmid-Egger and Scheuchl (1997)
<i>A. cedricola</i> Wood		
<i>A. enslinella</i> Stöckhert	Possibly broadly oligolectic (Brassicaceae)	Schmid-Egger and Scheuchl (1997)
<i>A. floricola</i> Eversmann	Broadly oligolectic (Brassicaceae)	Westrich (1989)
<i>A. immaculata</i> Warncke	Unknown	
<i>A. minutula</i> Kirby	Polylectic	Westrich (1989)
<i>A. oediconema</i> Warncke	Unknown	
<i>A. rugothorace</i> Warncke	Broadly oligolectic (Asteraceae: Asteroidae)	Wood, <i>unpublished data</i>
<i>A. rugulosa</i> Stöckhert	Polylectic	Westrich (1989)
<i>A. spreta</i> Pérez	Polylectic with a strong preference (Brassicaceae)	Wood (2023a)
Nobandrena		
<i>A. nobilis</i> Morawitz	Broadly oligolectic (Brassicaceae)	Schmid-Egger and Scheuchl (1997)
Notandrena		
<i>A. aerinifrons</i> Dours	Broadly oligolectic (Brassicaceae)	Wood (2023a)
<i>A. purpureomicans</i> Alfken	Probably broadly oligolectic (Brassicaceae)	Inferred from phylogenetic position
Opandrena		
<i>A. schencki</i> Morawitz	Polylectic	Westrich (1989)
Plastandrena		
<i>A. bimaculata</i> Kirby	Polylectic	Westrich (1989)
<i>A. pilipes</i> Fabricius	Polylectic	Westrich (1989)
Poecilandrena		
<i>A. crassana</i> Warncke	Narrowly oligolectic on <i>Legousia</i> (Campanulaceae)	Wood, <i>unpublished data</i>
<i>A. laticeps</i> Morawitz	Unknown	
Scitandrena		
<i>A. scita</i> Eversmann	Polylectic	Wood, <i>unpublished data</i>
Simrandrena		
<i>A. cinnamonea</i> Warncke	Unknown	
<i>A. dorsata</i> Kirby	Polylectic	Westrich (1989), Wood and Roberts (2017)
<i>A. gasparella</i> Patiny	Unknown	
<i>A. lepida</i> Schenck	Polylectic	Westrich (1989)
<i>A. transitoria</i> Morawitz	Unknown	

Species	Host range	Literature
<i>A. vetula</i> Lepeletier	Broadly oligolectic (Brassicaceae)	Wood (2023a)
<i>Taeniandrena</i>		
<i>A. russula</i> Lepeletier	Broadly oligolectic (Fabaceae)	Westrich (1989)
<i>A. taedium</i> Wood	Unknown, but certainly associated with Fabaceae	
<i>Truncandrena</i>		
<i>A. combusta</i> Morawitz	Probably broadly oligolectic (Brassicaceae)	Inferred from phylogenetic position
<i>A. optata</i> Warncke	Broadly oligolectic (Brassicaceae)	Wood, <i>unpublished data</i>
<i>A. rufomaculata</i> Friese	Probably broadly oligolectic (Brassicaceae)	Inferred from phylogenetic position
<i>A. schmiedeknechti</i> Magretti	Broadly oligolectic (Brassicaceae)	Wood, <i>unpublished data</i>
<i>A. truncatilabris</i> Morawitz	Broadly oligolectic (Brassicaceae)	Schmid-Egger and Scheuchl (1997)
<i>A. tscheki</i> ssp. <i>tritica</i> Warncke	Broadly oligolectic (Brassicaceae)	Westrich (1989); Wood, <i>unpublished data</i>
<i>Ulandrena</i>		
<i>A. abbreviata</i> Dours	Broadly oligolectic (Asteraceae; Asteroideae)	Wood, <i>unpublished data</i>
<i>A. fulvitaris</i> Brullé	Broadly oligolectic (Asteraceae; Asteroideae)	Wood, <i>unpublished data</i>
<i>A. isabellina</i> Warncke	Broadly oligolectic (Asteraceae; Cichorioideae)	Wood, <i>unpublished data</i>
<i>A. kriechbaumeri</i> Schmiedeknecht	Broadly oligolectic (Asteraceae; Cichorioideae)	Wood, <i>unpublished data</i>
<i>A. neocyprica</i> Mavromoustakis	Broadly oligolectic (Asteraceae; Asteroideae)	Wood, <i>unpublished data</i>
<i>A. westensis</i> Warncke	Broadly oligolectic (Asteraceae; Cichorioideae)	Wood, <i>unpublished data</i>
<i>incertae sedis</i>		
<i>A. discordia</i> Wood	Unknown	
<i>A. monacha</i> Warncke	Unknown	
<i>A. wolffi</i> Gusenleitner & Scheuchl	Unknown	

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