

BULLETIN OF THE IRAQ NATURAL HISTORY MUSEUM

Iraq Natural History Research Center & Museum, University of Baghdad

<https://jnhm.uobaghdad.edu.iq/index.php/BINHM/Home>

Copyright © Bulletin of the Iraq Natural History Museum

Online ISSN: 2311-9799-Print ISSN: 1017-8678

Bull. Iraq nat. Hist. Mus.

(2023) 17 (3): 375-407.

<https://doi.org/10.26842/binhm.7.2023.17.3.0375>

ORIGINAL ARTICLE

SURVEY WITH REVISED CHECKLIST OF COMPOSITAE IN THE HERBARIUM OF IRAQ NATURAL HISTORY RESEARCH CENTER AND MUSEUM



Khansaa Rasheed Al-Joboury*♦ and



Sukeyna Abass Aliwy**

* Iraq Natural History Research Center and Museum, University of Baghdad, Baghdad, Iraq.

** Department of Biology, College of Science, University of Baghdad, Baghdad, Iraq.

♦Corresponding author: dr.khansaa@nhm.uobaghdad.edu.iq

Received Date: 17 November 2022, Accepted Date 12 February 2023, Published Date: 20 June 2023



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

ABSTRACT

A survey and revised checklist of the species belonging to the family of Compositae for the specimens which are collected and deposited previously at the herbarium of the Iraq Natural History Research Center and Museum, in addition to the current specimens collected for the period 2016-2021. A total of 85 species belonging to 49 genera and 16 tribes are revised with their synonyms, locality, and distributions, flowering and fruiting period.

Keywords: Checklist, Compositae, Herbarium, Museum, Natural.

INTRODUCTION

Compositae (Asteraceae) are the largest family for the vascular plants (Soares *et al.*, 2022), it comprises four major subfamilies, three of which are represented in Iraq, with more than 1600 genera, around 123 of which occur in Iraq, and some 25000 species, of which 433 species occur in Iraq (Ghazanfar and Edmondson, 2019), which distributed in most countries worldwide and in all habitats (Rahman *et al.*, 2008), except for Antarctica, species of the family account for about 8% - 10% for the angiosperm diversity described worldwide (Schaefer and Essi, 2017). The late Cretaceous palynomorph Compositopollenites in India was evidence that proves the family was around there in this early date (Stevens, 2017).

Compositae are monophyletic, yet resolving the phylogenetic relationships in the family has proven very difficult, this makes it difficult to understand its origin and diversity. Recent molecular clock dating was suggested the Cretaceous origin, but the lack of deep sampling for many genes and representative taxa within the family has obstructed the resolution for migration routes and diversifications which led to the global distribution and tremendous diversity (Mandel *et al.*, 2019). Also, the analyses of morphological and molecular evolutionary required a very well-resolved phylogeny, the previous studies, and the presence of plastid genes, gave support for the monophyly of Asteraceae (Zhang *et al.*, 2021). Most of species that belong to this family are herbaceous, and the rest are trees or shrubs, which

Survey with revised checklist of Compositae

contains essential oil, vegetable milk latex, resins, vitamins, foodstuffs and maybe other active chemical ingredients, it may also be rich in phenols and flavonoids (Hameed *et al.*, 2021).

There are many studies for this plant family in Iraq, such as a study of cuticular indumentums of some species from Asteraceae family (Khaleel and Al-Dobaissi, 2022), also the study of comparative anatomy of peduncles for plant species of Compositae (Asteraceae) family, and a survey of genera of family Asteraceae on Korek mountain in Kurdistan region - Iraq (Mousa, 2018).

The main objective of this study is to conduct a survey and document the specimens at the herbarium of the Iraq Natural History Research Center and Museum and identify the genera and species of this family with determining the locality of their spread so that this is a scientific reference for all researchers about this family in Iraq, especially since these species of this family found in the herbarium have not been previously published.

MATERIALS AND METHODS

Through this study, the author checked all the Asteraceae specimens that were collected in flowering (fl.) and fruiting (fr.) period and kept at the herbarium of the Iraq Natural History Research Center and Museum (BUNH), in addition to the current specimens which were collected by the researcher for the period 2016-2021.

These specimens were identified or confirmed the previous identification by the author, using the identification keys of the Asteraceae in the relevant literature: Rahman *et al.* (2008), Zhu *et al.* (2011), Wilson (2015), Ghazanfar and Edmondson (2019).

RESULTS AND DISCUSSION

The plants of this family, which are found in BUNH, were divided according to the tribes, as mentioned in the Flora of Iraq (Ghazanfar and Edmondson, 2019). A total of 286 specimens for 85 species (6 of them were cultivated species) belonging to 49 genera, 16 tribes are revised in BUNH, *Sphaeranthus strobiliferus* Boiss. & Noë., 1853 is the only endemic species of this family in the herbarium, all species are recorded in the Flora of Iraq, however, there are number of species in the BUNH considered as synonyms for other species. According to the results, it was observed that the genus *Centaurea* L., 1753 has the most number of specimens which was 36 specimens, and has the highest number of species with 10 different species distributed in different physiographic regions of Iraq depending on those that are kept in BUNH.

The results showed, that the widest distributing species is *Achillea aleppica* DC., 1838; this is due to many reasons, including the plant's ability to withstand changing and difficult environmental conditions, so it thrives and continues to survive. It distributes in many physiographic districts (Guest, 1966) such as Jabal Sinjar district (MJS), Sulaimaniya district (MSU), Arbil district (FAR), Ghurfa-Adhaim district (DGA), Central Alluvial Plain district (LCA), Southern Marsh district (LSM). As well a number of species that stored in BUNH

Al-Joboury and Aliwy

described as very rare in Iraq: *Anthemis cotula* L., 1753; *Carlina lanata* L., 1753; *Filago contracta* (Boiss.) Chrtek & Holub, 1963 and *Filago eriocephala* Guss., 1826 (Ghazanfar and Edmondson, 2019). The Asteraceae species found in BUNH are much less than what was recorded in the Flora of Iraq, because of the lack of field trips and the difficult conditions the country went through, which impeded the field trips and led to a lack of collected plants belonging to this family. This study presented for the first time the complete information about the Asteraceae family specimens in BUNH. Most of these species which their details would be presented below, have synonymous names, as well as, common or local names given by the local people, these local names could confuse the researcher because some species shared the same local name or sometimes one species has more than one local name depending on the locations of the specimens collected, following are the details of Asteraceae family specimens in BUNH:

Tribe: Anthemideae Cass.**Genus, *Achillea*** L., 1753

Remark: *Achillea* L. is represented in Iraq by 10 species: *Achillea leppica* DC., *A. arabica* Kotschy, *A. conferta* DC., *A. filipendulina* Lam., *A. fragrantissima* (Forssk.) Sch. Bip., *A. millefolium* L., *A. oligocephala* DC., *A. talagonica* Boiss., *A. vermicularis* Trin., *A. wilhelmsii* C. Koch.

Achillea aleppica D C., 1838

Synonyms: *Achillea trilingulata* Sch.Bip. ex Boiss, 1875

Material examined: (2 Specimens) : Balad, Adhaim (near Balad); fl. and fr. : May-July. BUNH: (13 specimens): Jabal Sinjar, nr Balad Sinjar, Jarmo (E. of Chemchamal), Sudur (the canal heads) on R. Diyala, Bisan valley Sulaimaniya, Adhaim (near Balad), Aski Kalak (Arbil), Fallujah, Darbandikhan (Sulaymaniyah), Al-Kahla District (Maysan), Fatha (Kirkuk and Baiji).

Distribution: Syria, Lebanon, Palestine, Jordan, Turkey, Iran (Ghazanfar and Edmondson 2019).

Remark: This species has 2 subsp. in Iraq: a: subsp. *aleppica*, b: subsp. *densa* (endemic) (Youssef, 2020); local names: Culiik, Giya mesh.

Achillea fragrantissima (Forssk.) Sch.Bip., 1855

Synonyms: *Santolina fragrantissima* Forssk., 1775

BUNH: (1 specimen): Fallujah; fl. and fr. : March-May.

Distribution: Saudi Arabia (Mohammed-Ibtisam and Doka, 2018), Syria, Lebanon, Palestine, Jordan, Sinai, Kuwait, Egypt (Ghazanfar and Edmondson, 2019).

Remark: Local name: Qaisum.

Achillea arabica Kotschy, 1866

Synonyms: *Achillea biebersteinii* Afan., 1959

A. micrantha Willd., 1803

BUNH: (2 specimens): Hijran in Arbil, Salah El Deen Resort in Arbil; fl. and fr.: May-August in the mountains, April- June on the plains.

Survey with revised checklist of Compositae

Remark: This species is registered at herbarium of the Natural History Museum under the name *A. micrantha* Willd. by Mohammad in (1977) and the other sample is diagnosed by Karan (1979); local names: Burzhan, Bejank, Brinda, Brindasi, Tureik Adduban.

Achillea wilhelmsii C.Koch, 1851

Synonyms: *Achillea santolina* auctt., 1753

A. kermanica Gand, 1918

A. krascheninnikovii Afan., 1953

A. teretifolia, 1845

Material examind: (1 specimen): Al Khalis (Diyala); fl. and fr. : March- June.

BUNH: (1 specimen): Sarsank (Dohuk).

Distribution: Iran (Dehshiri and Jozipoor 2014), Syria, Lebanon, Palestine, Jordan, Turkey, Transcaucasia, Afghanistan (Ghazanfar and Edmondson, 2019).

Remark: In GBIF Secretariat (2020), this species is accepted but in flora of Iraq the name *A. wilhelmsii* K.Koch for the same species is accepted.

Achillea talagonica Boiss., 1849

Synonyms: *Achillea tenuifolia* Lam. var. *talagonica* (Boiss.) Bornm., 1849

A. oxylepis Boiss. & Hausskn., 1875

BUNH: (1 specimen): Sudur (the canal heads) on R. Diyala; fl. and fr.: March- August.

Distribution: Iran (Ghazanfar and Edmondson, 2019).

Tribe: Anthemideae Cass.

Genus, *Anthemis* L., 1753

Remark: *Anthemis* L. is represented in Iraq by 34 species, 7 of them are endemic: *Anthemis altissima* L., *A. arvensis* L., *A. brevicuspis* Bornm., *A. coelopoda* Boiss., *A. cotula* L., *A. corymbulosa* Boiss. & Hausskn., *A. deserti* Boiss., *A. gillettii* Iranshahr, *A. hamrinensis* Iranshahr, *A. handel-mazzettii* Eig, *A. haussknechtii* Boiss. & Reut., *A. homalolepis* Eig, *A. hyalina* DC., *A. kotschyana* Boiss., *A. leptophylla* Eig, *A. leucanthemoides* Boiss., *A. maris-mortui* Eig, *A. melanacme* Boiss. & Hausskn., *A. melanolepis* Boiss., *A. melampodina* Delile, *A. micrantha* Boiss. & Hausskn., *A. microlepis* Eig, *A. odontostephana* Boiss., *A. pauciloba* Boiss., *A. plebeia* Boiss. & Noë, *A. pseudocotula* Boiss., *A. rascheyana* Boiss., *A. scariosa* Banks & Sol., *A. schizostephana* Boiss. & Hausskn., *A. susiana* Nábělek, *A. tinctoria* L., *A. tubicina* Boiss. & Hausskn., *A. wettsteiniana* Hand.-Mazz., *A. zoharyana* Eig.

Anthemis cotula L., 1753

Synonyms: *Anthemis cotula* subsp. *psorosperma* (Ten.) Arcang., 1882

A. foetida Lam., 1778

Chamaemelum cotula (L.) All., 1785

C. foetidum (Lam.) Baumg., 1817

Maruta cotula (L.) DC., 1838

Remark: This species is rare in Iraq.

BUNH: (2 specimens): Adiam, Salah Al-Din road; fl. and fr.: March- May.

Al-Joboury and Aliwy

Distribution: Egypt, Italy (Bartolucci *et al.* 2018), Iran (Dehshiri and Jozipoor 2014), Bolivia (Hind, 2011), Spain (Jiménez-Alfaro *et al.*, 2021), The Falkland Islands (Upson and Lewis, 2014), Sierra Nevada (SE Spain) (Lorite, 2016), Asia, European countries, North Africa, America, Australia and New Zealand (Ghazanfar and Edmondson, 2019).

Anthemis tubicina Boiss. & Hausskn., 1875

Synonyms: *Anthemis odontostephana* Boiss. var. *tubicina* (Boiss & Hausskn) Bornm., 1911

BUNH: (3 Specimens): Shaqlawa (in Erbil), Jabal Sinjar; fl. and fr.: March- July.

Distribution: Turkey, Syria and Iran (Ghazanfar and Edmondson, 2019).

Anthemis wettsteiniana Hand.-Mazz., 1913

Synonyms: *Anthemis deltawensis* Eig, 1938

A. deserti-syriaci Eig, 1938

BUNH: (2 Specimens): Fallujah, Rutba; fl. and fr.: April- May.

Distribution: Syria, Iran (Ghazanfar and Edmondson, 2019).

Tribe: Anthemideae Cass.

Genus, *Artemisia* L., 1753

Remark: *Artemisia* L. is represented in Iraq by 7 species: *Artemisia absinthium* L., *A. campestris* L., *A. jordanica* Danin, *A. scoparia* Waldst. & Kitam., *A. sieberi* Besser, *A. splendens* Willd., *A. vulgaris* L.

Artemisia campestris L., 1753

Synonyms: *Artemisia campestris* var. *sosnovskyi* (Krasch.) Poljakov, 1961

A. clausonis Pomel, 1874

A. dniproica Klokov, 1962

Oligosporus campestris (L.) Cass., 1817

O. caudatus (Michx.) Poljakov, 1961

Material examined: (1 specimen): Baqubah; fl. and fr.: April- October.

BUNH: (3 Specimens): Diyala, the southern desert, west Iraq.

Distribution: China, Japan, Russia, Iran, Asia, Europe, America (Ghazanfar and Edmondson, 2019).

Remark: An important medicinal plant (Naqishbandi, 2014).

Artemisia scoparia Waldst. & Kit., 1801

Synonyms: *Artemisia capillaris* Miq., 1866

A. gracilis L'Hér. ex DC., 1838

A. kohatica Klatt, 1878

A. piperita Pall. ex Ledeb., 1833

A. scoparioides Grossh., 1929

A. trichophylla Wall. ex DC., 1838

BUNH: (2 specimens): Sudur (the canal heads) on R. Diyala; fl. and fr.: March- July.

Distribution: Egypt, Russia, Mongolia, Sweden, Czechia, Ukraine, Japan, France, China, India, Poland, Germany, Central and southwest Asia (Ghazanfar and Edmondson, 2019).

Survey with revised checklist of Compositae

Artemisia sieberi Besser, 1836

Synonyms: *Artemisia contra* L., 1771

A. fragrans Eichw., 1835

A. glomerata Sieber ex Spreng., 1826

A. herba-alba var. *laxiflora* Boiss., 1875

Seriphidium incultum (Delile) Y.R.Ling, 1991

BUNH: (1 specimen): Nukhaib; fl. and fr.: March- July.

Distribution: Saudi Arabia (Mohammed–Ibtisam and Doka, 2018), Sierra Nevada (SE Spain) (Lorite, 2016), E Mediterranean across SW Asia to Pakistan and C Asia (Ghazanfar and Edmondson, 2019).

Tribe: Inuleae Cass.

Genus, *Asteriscus* Mill., 1754

Remark: *Asteriscus* Mill. is represented in Iraq by a single species: *Asteriscus pygmaeus* (DC.) Coss. & Durieu.

Asteriscus pygmaeus (DC.) Coss. & Durieu, 1856

Synonyms: *Asteriscus aquaticus* (L.) Less. var. *pygmaeus* DC., 1838

Odontospermum pygmaeum (Coss. & Dur.) Hoffm., 1955

BUNH: (4 specimens): Western desert; fl. And fr.: March- June.

Distribution: Syria, Palestine, Jordan, Kuwait, Bahrain, Qatar, Oman, Yemen, Iran, Kuwait, Afghanistan, Sinai, Pakistan, Macaronesia (Ghazanfar and Edmondson, 2019).

Remark: GBIF Secretariat (2020) listed this species under the name *Pallenis hierichuntica* (Michon) Greuter 1997, while in flora of Iraq (2019) this plant has been diagnosed under the name *Asteriscus pygmaeus* (DC.) Coss. & Durieu.

Tribe: Cynareae Cass.

Genus, *Atractylis* L., 1753

Remark: *Atractylis* L. is represented in Iraq by 3 species: *Atractylis arabica* Rech.f., *A. carduus* (Forssk.) C. Chr., *A. cancellata* L.

Atractylis carduus (Forssk.) C.Chr., 1922

Synonyms: *Atractylis candida* Cuénod, 1911

A. citrina Coss. & Kralik, 1857

A. flava Desf., 1799

Centaurea carduus Forssk., 1775

Material examind: (1 specimen): Baquba (Diyala); fl. and fr.: April- June.

BUNH: (3 Specimens): Shithatha (50 Km. W. Karbala), Baquba (Diyala).

Distribution: Syria, Palestine, Peninsula, Africa, Sinai (Ghazanfar and Edmondson, 2019).

Remark: Number of varieties of this species were recognized in Egypt, but not present in Iraq. Also the species was previously diagnosed in the herbarium under the name *Atractylis flava* Desf. By R. Wheeler Haines.

Atractylis cancellata L., 1753

Al-Joboury and Aliwy

Synonyms: *Acarna caespitosa* Willd., 1830

A. cancellata (L.) All., 1785

Atractylis caespitosa Viv., 1824

A. glomerata Caball., 1935

Carthamus cancellatus (L.) Lam., 1779

BUNH: (3 Specimens): Kirkuk, Adiam, 50 Km. before Khalis; Fl. & fr.: March- May.

Distribution: Iran (Dehshiri and Jozipoor 2014), Saudi Arabia (Osman and Abdein, 2019), Syria, Palestine, Peninsula, Africa, Turkey, Europe (Ghazanfar and Edmondson, 2019).

Tribe: Astereae Cass.

Genus, *Bellis* L., 1753

Remark: *Bellis* L. is represented in Iraq by 2 species: *Bellis annua* L. and *B. perennis* L.

Bellis perennis L., 1753

Synonyms: *Aster bellis* E.H.L.Krause, 1905

Bellis alpina Hegetschw., 1839

B. armena Boiss., 1875

B. hortensis Mill., 1768

Erigeron perennis (L.) Sessé & Moc., 1894

BUNH: (3 specimens): Khalis, Shaqlawa; fl. and fr.: March- June.

Distribution: Spain (Jiménez-Alfaro *et al.*, 2021), Sierra Nevada (SE Spain) (Lorite, 2016), Syria, Palestine, Iran, Turkey, Europe, Cyprus, Transcaucasia, Macaronesia, India, Australia, New Zealand, America Ghazanfar and Edmondson, 2019).

Remark: Local names: Ward Al-Dukmah, Zehrat Al-Rabee' a, Zehrat Al-lulu, Also this species wild in the north of Iraq but cultivated in middle and south.

Tribe: Calenduleae Cass.

Genus, *Calendula* L., 1753

Remark: *Calendula* L. is represented by 9 widely cultivated species, 3 native species in Iraq: *Calendula arvensis* L., *C. officinalis* L., *C. tripterocarpa* Rupr.

Calendula arvensis L., 1763

Synonyms: *Calendula alata* ech.fil., 1989

C. amplexifolia Rchb., 1830

C. bicolor Raf., 1810

C. byzantina DC., 1838

C. crista-galli Viv., 1824

Material examind: (3 specimens): Rashidiya (in Baghdad), Adhaim; fl. and fr.: February – July.

BUNH: (14 specimens): Baghdad, Kut, Suwaira (in Wasit), Al-Na'maniya (Wasit), Hawraman (Sulaymaniyah), Abu Al-Khaseeb (Basra), Adhaim, Jabal Sinjar.

Distribution: Spain (Jiménez-Alfaro *et al.*, 2021), Saudi Arabia (Mohammed-Ibtisam and Doka, 2018), Syria, Palestine, Iran, Turkey, Europe, Cyprus, Afghanistan, Sinai, Egypt,

Survey with revised checklist of Compositae

Morocco, Algeria, Tunisia, Libya, Caucasia, Kuwait, Bahrain, Qatar, Oman, Yemen (Ghazanfar and Edmondson, 2019).

Remark: The local names: Khuzna, Hanwa, Kahla; in herbarium of the Natural History Museum was previously diagnosed under the name *C. persica* C. A. Mey by Lawand L.

Tribe: Cynareae Cass.

Genus, *Carthamus* L., 1754

Remark: *Carthamus* L. is represented in Iraq by 7 species: *Carthamus dentatus* Vahl, *C. lanatus* L., *C. glaucus* M.Bieb., *C. tinctorius* L., *C. oxyacanthus* M.Bieb., *C. persicus* Desf. ex Willd., *C. cardiacus* Hanelt.

Carthamus glaucus M.Bieb., 1798

Synonyms: *Carthamus syriacus* (Boiss.) Čelak., 1885

C. glaucus M. Bieb. Var. *alexandrines* (Boiss. & Heldr.) Boiss., 1875

C. alexandrinus (Boiss & Heldr.) Bornm., 1898

C. glaucus M.Bieb. subsp. *alexandrinus* (Boiss & Heldr.) Hanelt, 1963

BUNH: (3 Specimens): Kirkuk, Jarmo, Jabal Hamrin; fl. and fr.: June- November.

Distribution: Crimea, Turkey, Caucasia, Iran (Ghazanfar and Edmondson, 2019).

Carthamus tinctorius L., 1875

Synonyms: *Centaurea carthamus* E.H.L.Krause, 1906

Calcitrapa tinctoria (L.) Röhl., 1813

Carduus tinctorius Ehrh., 1788

Carthamus glaber Burm.f., 1768

C. tinctorius var. *albus* Alef., 1866

Material examinid: (2 specimens): Abu Ghuraib, Baghdad; fl. and fr.: March – June.

BUNH: There are no previously collected herbarium specimens in the herbarium for this species.

Distribution: New Zealand (Garnock-Jones, 2011), Asia, Africa (Ghazanfar and Edmondson, 2019).

Remark: Cultivated plant; Local names: Bastard Sffron, Safflower, Zafaran.

Carthamus oxyacanthus M.Bieb., 1808

Synonyms: *Carduus flavescens* Willd., 1803

Carthamus oxyacantha subsp. *noeana* Sostak., 1947

BUNH: (3 Specimens): N Baghdad, Abu Ghuraib, Suwaira; fl. and fr.: May – October.

Distribution: Saudi Arabia (El Ghazali and Al-Soqeer, 2013), Iran (Dehshiri and Jozipoor, 2014), Asia, Afghanistan, Pakistan, Transcaucasia (Ghazanfar and Edmondson, 2019).

Tribe: Cynareae Cass.

Genus, *Carduus* L., 1754

Remark: *Carduus* L. is represented in Iraq by 3 species: *Carduus getulus* Pomel, *C. argentatus* L., *C. pycnocephalus* L.

Carduus pycnocephalus L., 1763

Al-Joboury and Aliwy

Synonyms: *C. pycnocephalus* subsp. *Pycnocephalus*, 1763
C. tenuiflorus var. *pycnocephalus* (L.) DC., 1838
C. australis L., 1782
C. albidus M.Bieb., 1808

Material examined: (3 specimens): Baghdad, Zafaraniya; fl. and fr.: March – June.

BUNH: (6 Specimens): Bab Al Mu'adham in Baghdad, Al-fahhama in Baghdad, Baqubah, Shaqlawa.

Distribution: Egypt, New Zealand (Garnock-Jones, 2011), Sierra Nevada (SE Spain) (Lorite, 2016), Spain (Jiménez-Alfaro *et al.*, 2021), Saudi Arabia (Osman and Abdein, 2019), Asia, Iran, Afghanistan, Pakistan, Transcaucasia (Ghazanfar and Edmondson, 2019).

Remark: This species have 3 subspecies: *C. pycnocephalus* subsp. *albidus* (M.Bieb.) Kazmi 1964, *C. pycnocephalus* subsp. *arabicus* (Jacq. ex Murray) Nyman 1879, *C. pycnocephalus* subsp. *breviphyllarius* P.H. Davis 1975.

Genus, *Carlina* L., 1754

Remark: *Carlina* L. is represented in Iraq by 2 species: *Carlina kurdica* Meusel & Kästner and *C. lanata* L.

***Carlina lanata* L., 1753**

Synonyms: *Carlina lanata* var. *proilfera* DC., 1838
Carlina pola Hacq., 1782
Chromatolepis lanata Dulac, 1867

BUNH: (1 Specimen): Dohuk; fl. and fr.: July – August.

Distribution: Italy (Bartolucci *et al.*, 2018), Europe from Spain to Turkey, S Bulgaria, Cyprus, N. Africa (Libya to Morocco), Pakistan, Transcaucasia, Iran (Ghazanfar and Edmondson, 2019).

Remark: This species is rare in Iraq.

Tribe: Cynareae Cass.

Genus, *Centaurea* L., 1753

Remark: *Centaurea* L. is represented in Iraq by 44 species: *Centaurea aggregata* Fisch. & C. A. Mey. ex DC., *C. alveicola* Rech.f., *C. amadanensis* Sch.Bip., *C. ammocyanus* Boiss., *C. aucheri* (DC.) Wagenitz, *C. behen* L., *C. bruguierana* (DC.) Hand.-Mazz., *C. davisii* Wagenitz, *C. delbesiana* Arènes, *C. elegantissima* Bornm., *C. foveolata* Blakelock, *C. fusiformis* Blakelock, *C. gigantea* Sch.Bip. ex Boiss., *C. gudrunensis* Boiss. & Hausskn., *C. hadacii* Wagenitz, *C. handelii* Wagenitz, *Centaurea hyalolepis* Boiss., *C. iberica* Trevir. ex Spreng., *C. imperialis* Hausskn. ex Bornm., *C. intricata* Boiss., *C. koeieana* Bornm., *C. laxa* Boiss. & Hausskn. ex Boiss. & Hausskn., *C. longipedunculata* Sch.Bip. ex Boiss., *C. luristanica* Rech.f., *C. mesopotamica* Bornm., *C. microcnicus* Reese & Sam. ex Rech.f., *C. ochrocephala* Wagenitz, *C. polypodiifolia* Boiss., *C. regia* Boiss., *C. persica* Boiss., *C. postii* Boiss., *C. pseudosinaica* Czerep., *C. rhizantha* C.A.Mey., *C. rigida* Banks & Sol., *C. sinaica* DC., *C. singarensis* Boiss. & Hausskn., *C. solstitialis* L., *C. bruguierana* (DC.) Hand.-Mazz. *C. virgata* Lam.

Survey with revised checklist of Compositae

Centaurea bruguierana (DC.) Hand.-Mazz., 1913

Synonyms: *Centaurea phyllocephala* Boiss., 1846

Tetramorphaea bruguieriana DC., 1838

BUNH: (6 Specimens): Tuz Khurmatu (in Saladin Governorate), Imam Ibrahim (Babil), Baiji; fl. and fr.: June – August.

Distribution: Iran (Dehshiri and Jozipoor, 2014), Turkey, Syria, Afghanistan, C. Asia (Turkmenia to Kazakhstan), Pakistan, Transcaucasia (Ghazanfar and Edmondson, 2019).

Remark: This species has 2 subsp.: *C. bruguierana* subsp. *belangeriana* (DC.) Bornm. 1939, *C. bruguierana* subsp. *bruguierana* (DC.) Hand.-Mazz.1913.

Centaurea behen L., 1753

Synonyms: *Behen album* Garsault, 1764

Centaurea alata Lam., 1785

Microlophus behen (L.) Takht., 1945

BUNH: (4 Specimens): Sarsank, Jabal Sinjar, Balad Sinjar; fl. and fr.: April – August.

Distribution: Turkey, Palestine, Transcaucasia, Iran, Lebanon (Ghazanfar and Edmondson, 2019).

Remark: Local name: Kakhor.

Centaurea iberica Trevir. ex Spreng., 1826

Synonyms: *Calcitrapa iberica* (Trevir. ex Spreng.) Schur, 1866

C. iberica Spreng., 1826

Centaurea macracantha Heldr. ex Boiss., 1875

C. noeana Boiss., 1856

Leucantha iberica (Spreng.) Á.Löve & D.Löve, 1961

Material examind: (2 specimens): Baghdad, Khalis; fl. and fr.: July – August.

BUNH: (6 Specimens): Baghdad, Sarsank, Altun Kupri (Kirkuk), Amara.

Distribution: SE Europe (Greece to Romania and Crimea), Jordan, Palestine, Syria, Lebanon, Turkey, Pakistan, Transcaucasia, Iran, Afghanistan, Kashmir, C. Asia (Ghazanfar and Edmondson, 2019).

Remark: local names: Kassub, Murrair (bitter-wort), Chalba.

Centaurea mesopotamica Bornm., 1906

Synonyms: *Centaurea musili* Velen., 1912

BUNH: (4 Specimens): Fallujah, Baghdad, Baiji, Haditha (Al Anbar); fl. and fr.: April – June.

Distribution: Jordan, Syria, Kuwait, Saudi Arabia (Ghazanfar and Edmondson, 2019) .

Remark: The common name: Chalba.

Centaurea hyalolepis Boiss., 1846

Synonyms: *Calcitrapa hyalolepis* (Boiss.) Holub, 1974

Centaurea pallescens Bové ex DC., 1838

C. pallescens var. *australis* Plitmann, 1973

C. pallescens var. *hyalolepis* (Boiss.) Boiss., 1875

C. pallescens subsp. *hyalolepis* (Boiss.) Holmboe, 1914

Al-Joboury and Aliwy

BUNH: (1 specimen): Baghdad; fl. and fr.: April – June.

Distribution: Jordan, Syria, Cyprus, Palestine, Lebanon, Turkey, Iran (Ghazanfar and Edmondson, 2019).

***Centaurea solstitialis* L., 1753**

Synonyms: *Calcitrapa solstitialis* (L.) Lam., 1778

C. lutea Delarbre, 1800

C. solstitialis (L.) Lam., 1779

Centaurea cyanifolia Poir., 1811

C. parvispina Láng ex Gugler, 1907

BUNH: (4 Specimens): Amadiya (in Duhok). Baqubah, Jarmo (E. of Chemchamal).

Distribution: Iran (Dehshiri and Jozipoor, 2014), Egypt, New Zealand (Garnock-Jones, 2011), Spain (Jiménez-Alfaro *et al.*, 2021), Saudi Arabia (Osman and Abdein, 2019), Jordan, Syria, Cyprus, Palestine, Lebanon, Turkey, Europe, S Russia, Caucasus, C Asia (Turkmenia to Tajikistan) (Ghazanfar and Edmondson, 2019).

Remark: Only one subsp.: *Centaurea solstitialis* subsp. *solstitialis* L. for this species occurs in Iraq.

***Centaurea calcitrapa* L., 1753**

Synonyms: *Calcitrapa lanceolata* Lam., 1779

C. stellaris Hill, 1769

C. vulgaris Bernh., 1800

Centaurea carduifolia Salisb., 1769

BUNH: (1specimen): Taji (north of Baghdad); fl. and fr.: April – June.

Distribution: New Zealand (Garnock-Jones, 2011), Spain (Jiménez-Alfaro *et al.*, 2021); Jordan, Syria, Cyprus, Palestine, Lebanon, Turkey, Iran, Europe, S Russia, Caucasus, C. Asia (Turkmenia to Tajikistan) (Ghazanfar and Edmondson, 2019).

***Centaurea cyanus* L., 1753**

Synonyms: *Cyanus segetum* Hill, 1769

C. arvensis Moench, 1794

Centaurea hoffmanniana Asch., 1899

C. pulchra DC., 1838

C. umbrosa Reut., 1856

BUNH: (3 specimens): Cultivated in Baghdad; fl. and fr.: April – June.

Distribution: New Zealand (Garnock-Jones, 2011), The Falkland Islands (Upson and Lewis, 2014), Europe, Siberia, Caucasus, C Asia (Turkmenia to Tajikistan), N America, Italy, Greece, W Turkey (Ghazanfar and Edmondson, 2019).

Remark: Local names cornflower, Blue- bottle.

***Centaurea rigida* Banks & Sol., 1794**

Synonyms: *Centaurea myriocephala* Sch.Bip. ex Boiss., 1857

C. myriocephala Sch.Bip.ex Boiss., 1875

C. myriocephala var. *schizophylla* (Nábělek) Nábělek, 1929

Survey with revised checklist of Compositae

C. schizophylla Nábělek, 1925

C. russelliana Buek, 1840

BUNH: (2 Specimens): Arbil, Bekhair (Dohuk); fl. and fr.: May – August.

Distribution: Palestine, Turkey, Syria (Ghazanfar and Edmondson, 2019).

Centaurea virgata Lam., 1785

Synonyms: *Acosta virgata* (Lam.) Holub, 1972

Centaurea virgata subsp. *virgate*, 1785

BUNH: (5 Specimens): Haji Omeran, Qara Dagħ, Sarsank; fl. and fr.: May – July.

Distribution: Syria, Lebanon, Turkey, Pakistan, Iran, Afghanistan, C. Asia (Turkmenia) (Ghazanfar and Edmondson, 2019).

Remark: There are 2 subsp.: *C. virgate* subsp. *virgate*, *C. virgata* subsp. *squarrosa* (Boiss.) Gugler, 1907.

Tribe: Gymnarrheneae Cass.

Genus, *Chondrilla* L., 1753

Remark: *Chondrilla* L. is represented in Iraq by a single species: *Chondrilla juncea* L.

Chondrilla juncea L., 1753

Synonyms: *C. acanthophylla* Borkh. ex Rchb., 1831

C. gaudini Hegetschw., 1822

C. hispida Desf., 1829

C. rigens Rchb., 1831

C. viminea Bubani, 1899

BUNH: (2 specimens): Sarsank; fl. and fr.: July- September.

Distribution: C & S Europe (N France to SC Russia, Mediterranean region from Portugal to Turkey), Syria, Lebanon, Turkmenia, Afghanistan, N Africa (Morocco, Algeria, Tunisia) (Ghazanfar and Edmondson, 2019).

Tribe: Cynareae Cass.

Genus, *Chardinia* Desf., 1817

Remark: A monotypic genus has a single species in Iraq: *Chardinia orientalis* (L.) Kuntze.

Chardinia orientalis (L.) Kuntze, 1887

Synonyms: *Chardinia macrocarpa* K.Koch, 1851

C. xeranthemoides Desf., 1817

Xeranthemum annuum var. *orientale* L., 1753

X.orientale (L.) Mill., 1768

BUNH: (8 specimens): Shaqlawa, Jaddala (S. Balad Sinjar), Jabal Sinjar; fl. and fr.: March-June.

Distribution: Iran (Dehshiri and Jozipoor, 2014), Jordan, Syria, Palestine, Pakistan, Turkey, Caucasus, Afghanistan, C Asia (Turkmenia to Tajikistan) (Ghazanfar and Edmondson, 2019).

Remark: Banish iuk, Gia Gur.

Al-Joboury and Aliwy

Tribe: Gymnarrheneae Cass.

Genus, *Cichorium* L., 1753

Remark: *Cichorium* L. is represented in Iraq by 2 species: *Cichorium intybus* L. and *Cichorium pumilum* Jacq.

Cichorium intybus L., 1753

Synonyms: *Cichorium balearicum* Porta, 1887

C. callosum Pomel, 1874

C. intybus var. *sativum* Bisch., 1851

C. intybus var. *glabrum* (C.Presl) Gren. & Godr., 1850

C. intybus var. *genuina* Kurz, 1877

C. intybus f. *sativum* (Gaudin) Bisch., 1851

BUNH: (7 specimens): Bisan valley (Sulaimaniya), Sarsank, Salah alddin Resort, near Khalis, Ashewa Resort (Duhok); fl. and fr.: March- June.

Distribution: New Zealand (Garnock-Jones, 2011), Spain (Jiménez-Alfaro *et al.*, 2021), Jordan, Syria, Palestine, Pakistan, Turkey, Iran, Caucasus, Afghanistan, C Asia (Turkmenia to Tajikistan) (Ghazanfar and Edmondson, 2019).

Remark: Local name: Banish iuk, Gia Gur.

Cichorium pumilum Jacq., 1771

Synonyms: *Cichorium ambiguum* Schult., 1809

C. divaricatum Schousb, 1800

C. dichotomum Link, 1829

C. minimum Port., 1824

C. noeanum Boiss., 1875

BUNH: (2 Specimens): Karradah Maryam (Baghdad); fl. and fr.: May-September.

Distribution: Southern Europe from Portugal to European Turkey, Syria, Iran, Macaronesia, N. Africa (Libya to Morocco), Transcaucasia (Ghazanfar and Edmondson, 2019).

Remark: Local names: Tala Shir, Chaqchaqa; In herbarium of the Natural History Museum was previously diagnosed under the name *C. glandulosum* Boiss. & A.Huet by R. Wheeler Hanise.

Tribe: Cynareae Cass.

Genus, *Cirsium* Mill., 1754

Remark: *Cirsium* Mill. is represented in Iraq by 13 species: *Cirsium arvense* (L.) Scop., *C. canum* (L.) All., *C. ciliatum* (Murray) Moench, *C. elodes* M.Bieb., *C. haussknechtii* Boiss., *C. hygrophilum* Boiss., *C. karduchorum* Petr., *C. lappaceum* (M.Bieb.) Fisch., *C. libanoticum* DC., *C. pubigerum* (Desf.) DC., *C. pseudobracteosum* Davis & Parris, *C. sorocephalum* Fisch. & C.A.Mey., *C. vulgare* (Savi) Ten.

Cirsium libanoticum DC., 1838

Synonyms: *Cirsium apiculatum* DC., 1838

C. kotschyanum Boiss., 1846

C. uliginosum Heldr. ex Boiss., 1849

Survey with revised checklist of Compositae

C. lycaonicum Boiss. & Heldr., 1849

BUNH: (10 Specimens): Ashewa Resort (Duhok), Salah alddin Resort, Sarsank, Sudur, Haji Umran; fl. and fr.: July- September.

Distribution: Syria, Turkey (Ghazanfar and Edmondson, 2019).

Remark: Has 2 subsp.: *C. libanoticum* subsp. *libanoticum* (found in Syria, Lebanon, western Iran), *C. libanoticum* subsp. *arachnoideum* Davis & Parris 1975 (found in Iraq).

Tribe: Gymnarrheneae Cass.

Genus, *Crepis* L., 1753

Remark: *Crepis* L. is represented in Iraq by 11 species: *Crepis alpina* L., *C. aspera* L., *C. elbrusensis* Boiss., *C. foetida* L., *C. kotschyana* (Boiss.) Boiss., *C. kurdica* Rech.f., *C. micrantha* Czerep., *C. pulchra* L., *C. quercifolia* Bornm. & Gauba, *C. sahendi* Boiss. & Buhse, *C. sancta* (L.) Bab.

***Crepis foetida* L., 1753**

Synonyms: *Barkhausia foetida* subsp. *infr*, 1905

B. foetida var. *sinuatodentata* Schur, 1866

Crepis foetida subsp. *eufetida* Domin, 1935

C. foetida subsp. *radicata* Nyman, 1879

C. foetida var. *arenaria* Heuff., 1858

BUNH: (7 specimens): Gara Mountain (Duhok), 10 Km S Baghdad, Samarra, Arbil, Shaqlawa; fl. and fr.: April- July.

Distribution: Italy (Bartolucci *et al.* 2018), New Zealand (Garnock-Jones, 2011), Iran (Dehshiri and Jozipoor, 2014), Spain (Jiménez-Alfaro *et al.*, 2021), Europe, Syria, Lebanon, Turkmenia, Turkey, Caucasus, N Africa (Morocco, Algeria,), C Asia (Turkmenia) (Ghazanfar and Edmondson, 2019).

Remark: 2 subspecies found in Iraq: *C. foetida* subsp. *foetida* 1753, *C. foetida* subsp. *commutate*; the local names: Hodhan, Kalilk zar, Gullikah zar.

***Crepis micrantha* Czerep., 1964**

Synonyms: *Crepis parviflora* Pers., 1807

C. parviflora Desf., 1807

C. breviflora Delile, 1840

C. fuliginosa Webb & Berthel., 1850

C. muricata Sm., 1813

BUNH: (4 Specimens): Tarmiyah (N Baghdad), Shaqlawa, fl. and fr.: April- June.

Distribution: Greece, Syria, Crete, Crimea, Aegean Is., Turkey, Iran, Egypt, C Asia (Turkmenia) (Ghazanfar and Edmondson, 2019).

Remark: Local name: Marair; in herbarium of the Natural History Museum was previously diagnosed under the name *C. parviflora* Desf. by Lawand L.

***Crepis kotschyana* (Boiss.) Boiss., 1875**

Synonyms: *Barkhausia bureniana* (Boiss.) C.Winkl., 1890

B. bureniana (Boiss.) Krasch., 1937

Al-Joboury and Aliwy

B. glanduligera C.Winkl., 1890

B. kotschyana Boiss., 1846

Crepis bureniana Boiss., 1875

BUNH: (1 specimen): Khanaqin; fl. and fr.: April- June.

Distribution: Iran (Dehshiri and Jozipoor, 2014), Afghanistan, Pakistan, Turkey, C. Asia (Turkmenia to Tajikistan) (Ghazanfar and Edmondson, 2019).

Tribe: Cynareae Cass.

Genus, *Crupina* (Pers.) DC., 1810

Remark: *Crupina* (Pers.) DC. is represented in Iraq by 3 species: *Crupina crupinastrum* (Moris) Vis., *C. intermedia* (Mutel) Walp., *C. vulgaris* Cass.

Crupina crupinastrum (Moris) Vis., 1847

Synonyms: *Centaurea crupina* Sibth. & Sm., 1839

C. crupina var. *maculata* Pers., 1807

C. visianii Rouy, 1905

C. crupinastrum f. *morisii* Rouy, 1905

C. crupinastrum f. *visianus* Rouy, 1905

BUNH: (5 Specimens): Jabal Sinjar, Darbandikhan (Sulaimaniyah), Salah alddin Resort, Jabal Sinjar; fl. and fr.: April- July.

Distribution: Iran (Dehshiri and Jozipoor, 2014), Sierra Nevada (SE Spain) (Lorite, 2016), Europe, islands from Spain to Turkey, Iran, Syria, Lebanon, Palestine, Egypt, Transcaucasia, N Africa (Libya to Algeria) (Ghazanfar and Edmondson, 2019).

Tribe: Cynareae Cass.

Genus, *Dipterocome* Fisch. & C.A.Mey., 1835

Remark: *Dipterocome* Fisch. & C. A. Mey. is represented in Iraq by a single species: *Dipterocome pusilla* Fisch. & C. A. Mey.

Dipterocome pusilla Fisch. & C.A.Mey., 1836

Synonyms: *Jaubertia koelpiniodes* Spach, 1850

Koelpinia sessilis Boiss., 1849

BUNH: (1 Specimens): Fatha; fl. and fr.: March- May.

Distribution: Iran, Syria, Palestine, Afghanistan (Ghazanfar and Edmondson, 2019).

Tribe: Heliantheae Cass.

Genus, *Eclipta* L., 1771

Remark: *Eclipta* L. is represented in Iraq by a single species: *Eclipta prostrata* L.

Eclipta prostrata L., 1771

Synonyms: *Anthemis cotula* var. *hierosolymitana* Eig, 1938

A. viridis Blanco, 1845

Bellis racemosa Steud., 1821

Eclipta alba f. *prostrata* (L.) Hassk., 1848

Survey with revised checklist of Compositae

E. erecta L., 1771

Material examined: (1 specimen): Karradah (Baghdad); fl. and fr.: April-May.

BUNH: (9 Specimens): Al-Fahamah (Baghdad), Baqubah, Sudur, Aziziya.

Distribution: Bangladesh (Rahman *et al.*, 2008), India (Adhikari and Babu, 2008), Brazil (Soares *et al.*, 2022), Iran, Syria, Palestine, Afghanistan (Ghazanfar and Edmondson, 2019).

Remark: In herbarium of the Natural History Museum was previously diagnosed under the name *Eclipta alba* f. *prostrata* (L.) Hassk by Lawand L., and another one by R. Wheeler Haires, and the third plant by Rassam I., also found herbarium plant samples diagnosed under the name *Eclipta erecta* L. by Karam M.

Tribe: Calenduleae Cass.

Genus, *Filago* L. 1753

Remark: *Filago* L. is represented in Iraq by 7 species: *Filago anatolica* (Boiss. & Heldr.) Chrtk & Holub, *F. arvensis* L., *F. contracta* (Boiss.) Chrtk & Holub, *F. desertorum* Pomel, *F. eriocephala* Guss., *F. palaestina* (Boiss.) Chrtk & Holub, *F. pyramidata* L.

Filago contracta (Boiss.) Chrtk & Holub, 1963

Synonym: *Evax contracta* Boiss., 1849

BUNH: (1 Specimens): Al Za'franiya; fl. and fr.: June-July.

Distribution: Iran, Syria, Palestine, Afghanistan, Crete, Aegean Is., Cyprus, Egypt, Jordan, Lebanon, Turkey, N Africa (Libya, Algeria) (Ghazanfar and Edmondson, 2019).

Remark: This species rare in Iraq; also In herbarium of the Natural History Museum was previously diagnosed under the name *E. contracta* Boiss by R. Wheeler Harins.

Filago eriocephala Guss., 1826

Synonyms: *Filago germanica* f. *eriocephala* (Guss.) Rouy, 1903

F. germanica subsp. *eriocephala* (Guss.) Arcang., 1882

F. germanica var. *eriocephala* (Guss.) P.Fourn., 1939

F. germanica var. *lanuginosa* (Duby) DC., 1838

F. lanuginosa Req. ex DC., 1838

BUNH: (4 Specimens): Kut, Baghdad, Basrah, Aski Kalak (Arbil); fl. and fr.: June-July.

Distribution: Italy (Iamonic, 2012), Iran, Syria, Palestine; E, S and C Mediterranean, Cyprus, Turkey (Ghazanfar and Edmondson, 2019).

Remark: Rare in the mountain region, also in Herbarium of the Natural History Museum was previously diagnosed under the name *F. germanica* subsp. *eriocephala* (Guss.) Arcang. by Lawand L. and R. Wheeler Haines.

Filago pyramidata L., 1753

Synonyms: *Crepis oporinoides* var. *prostrata* Boiss., 1841

Filago candolleana Parl., 1840

F. decumbens Holmboe, 1914

F. gussonei Lojac., 1902

BUNH: (4 specimens): Kut, Adhaim, Fallujah; fl. and fr.: February-May.

Al-Joboury and Aliwy

Distribution: Italy (Bartolucci *et al.*, 2018), Spain (Jiménez-Alfaro *et al.*, 2021); S. Europe, Aegean Is., Iran, Syria, Palestine; E,S and C Mediterranean, Cyprus, Turkeym Jordan, Arabia, Caucasia, Afghanistan, Pakistan, N Africa, Macaronesia (Madeira, Canary Is., Azores (Ghazanfar and Edmondson, 2019).

Remark: The local names: Qutaina, Qutn, Quttain; also In herbarium of the Natural History Museum was previously diagnosed under the name *F. spathulata* by R. Lawand L., the other herbarium plant by R. Wheeler Haines.

Tribe: Gymnarrheneae Cass.

Genus, *Gundelia* L., 1754

Remark: *Gundelia* L. is represented in Iraq by 2 species: *Gundelia rosea* M.Hossain & Al-Taey and *G. tournefortii* L.

Gundelia tournefortii L., 1753

Synonyms: *Gundelia glabra* Mill., 1768

G. purpurascens Bornm., 1939

G. tenuisecta (Boiss.) Freyn & Sint., 1892

G. tournefortii var. *tenuisecta* Boiss., 1875

G. tournefortii var. *glabra* (Mill.) DC., 1836

BUNH: (3 Specimens): Adhaim, Jabal Hamrin, Baghdad; fl. and fr.: March-July.

Distribution: Egypt, Palestine, Syria, Lebanon, Turkey, Cyprus, Transcaucasia, Iran, Afghanistan, Turkmenia, Algeria (Ghazanfar and Edmondson, 2019).

Remark: The local name: Kaub, Kangar, the fruits of this species used as a source of oil.

Tribe: Anthemideae Cass.

Genus, *Geropogon* L., 1763

Remark: *Geropogon* L. is represented in Iraq by a single species, A monotypic genus: *Geropogon hybridus* (L.) Sch.Bip.

Geropogon hybridus (L.) Sch.Bip., 1850

Synonyms: *Geropogon glabrum* L., 1763

G. australis Spreng., 1826

Tragopogon geropogon Rouy, 1908

T. hybridus L., 1753

T. glaber Hill., 1768

BUNH (1 specimen): Baqubah; fl. and fr.: April-May.

Distribution: S Europe from Portugal to Turkey, Egypt, Iran, Syria, Palestine, Mediterranean Is., Cyprus, Turkey, N Africa (Libya to Morocco), Macaronesia (Madeira, Canary Is.), Transcaucasia (Ghazanfar and Edmondson, 2019).

Remark: Dhanab Al-Faras, horse-tail, Zabib Al-Khail, Aspink, Shaddanak local names, this plant is harmful to sheep and causes death in spring.

Tribe: Cynareae Cass.

Survey with revised checklist of Compositae

Genus, *Gymnarrhena* Desf., 1818

Remark: *Gymnarrhena* Desf. is represented in Iraq by a single species: *Gymnarrhena micrantha* Desf.

Gymnarrhena micrantha Desf., 1818

Synonyms: *Cryptadia euphratensis* Lindl., 1868

Frankia schimperi Steud., 1840

Gymnarrhena balansae Coss. & Durieu ex Coss. & Kralik, 1857

BUNH: (1 specimen): Rutba; fl. and fr.: March-May.

Distribution: Saudi Arabia (Osman and Abdein, 2019), Iran, Syria, Palestine, N Africa, Pakistan (Ghazanfar and Edmondson, 2019).

Remark: local name: Ain Al Buqr.

Tribe: Tageteae Cass.

Genus, *Helianthus* L., 1753

Remark: *Helianthus* L. is represented in Iraq by 3 species: *Helianthus annuus* L., *H. laetiflorus* Pers., *H. tuberosus* L.

Helianthus annuus L., 1753

Synonyms: *Helianthus aridus* Rydb., 1905

H. aridus Rydb., 1905

H. indicus L., 1767

H. jaegeri Heiser, 1948

H. cultus Wenzlaff, 1941

BUNH: (4 specimens): Cultivated in Baghdad, Al Za'franiya; fl. and fr.: April-May.

Distribution: Bangladesh (Rahman *et al.*, 2008), Bolivia (Hind, 2011), Iran, Syria, Palestine, Arabia, N Africa, Pakistan (Ghazanfar and Edmondson, 2019).

Remark: Local names: Sunflower, Ward ash shams, Ain ash shams, Abad ash shams, Shams wa qamar, Qunah Baqan, Gulah barruzhah.

Tribe: Cynareae Cass.

Genus, *Jurinea* Cass., 1821

Remark: *Jurinea* Cass. is represented in Iraq by 4 species: *Jurinea carduiiformis* (Jaub. & Spach) Boiss., *J. inuloides* Boiss. & Hausskn., *J. mesopotamica* Hand.-Mazz., *J. moschus* (Habl.) Bobrov.

Jurinea carduiiformis (Jaub. & Spach) Boiss., 1846

Synonyms: *Outreya carduiiformis* Jaub. & Spach, 1845

BUNH: (5 specimens): Jarmo, Kirkuk; fl. and fr.: May- August.

Distribution: Iran, Afghanistan, Pakistan, Tadjhikistan, Turkmenistan (Ghazanfar and Edmondson, 2019).

Tribe: Cnaphalieae Cass.

Genus, *Ifloga* Cass., 1819

Remark: *Ifloga* Cass. is represented in Iraq by a single species: *Ifloga spicata* (Forssk.) Sch. Bip.

Al-Joboury and Aliwy

Ifloga spicata (Forssk.) Sch.Bip., 1845

Synonyms: *Chrysocoma spicata* Forssk., 1775

Gnaphalium aegyptiacum Pers., 1807

G. ammophilum Wall., 1831

G. chrysocoma Poir., 1812

Ifloga fontanesii Cass., 1822

BUNH: (2 Specimens): Fallujah; fl. and fr.: March- April.

Distribution: S Europe (SE Spain), Iran, Syria, Palestine, Mediterranean Is., Cyprus, Turkey, N Africa (Libya, Tunisia, Algeria, Morocco Morocco), Macaronesia (Canary Is.), Aegean Is., Transcaucasia, Sinia, Arabia, Kuwait, Afghanistan (Ghazanfar and Edmondson, 2019).

Remark: Local names: Hasaj, Hasach.

Tribe: Gymnarrheneae Cass.

Genus, *Koelpinia* Pall., 1776

Remark: *Koelpinia* Pall. is represented in Iraq by only one species: *Koelpinia linearis* Pall.

Koelpinia linearis Pall., 1776

Synonyms: *K. latifolia* C.Winkl., 1890

K. linearis var. *latifolia* (C.Winkl.) Abedin & Ghafoor, 2017

Lapsana koelpinia (Pall.) L.fil., 1782

Rhagadiolus koelpinia (Pall.) F.W.Schmidt, 1795

R. koelpinia Willd., 1804

BUNH: (3 specimens): Fallujah, Abu Al-Khaseeb, W Karbala; fl. and fr.: March- June.

Distribution: Saudi Arabia (Osman and Abdein, 2019), Iran, Syria, Palestine, Turkey, Afghanistan, Turkmenia (Ghazanfar and Edmondson, 2019).

Remark: Local names: Lahya at-tais, Carter, Dickson, Dh iluq carter.

Tribe: Gymnarrheneae Cass.

Genus, *Lactuca* L., 1753

Remark: *Lactuca* L. is represented in Iraq by 10 species: *Lactuca aculeata* Boiss. & Kotschy, *L. microcephala* DC., *L. orientalis* (Boiss.) Boiss., *L. rechingeriana* (Tuisl) N.Kilian & Greuter, *L. saligna* L., *L. sativa* L., *L. scarioloides* Boiss., *L. serriola* L., *L. undulata* Ledeb., *L. viminea* (L.) J.Presl & C.Presl.

Lactuca saligna L., 1753

Synonyms: *Chondrilla crepoides* Lapeyr., 1813

Hieracium salignum (L.) E.H.L.Krause, 1906

Lactuca adulteriana Gren. & Godr., 1779

L. caucasica C.Koch, 1843

L. caucasica var. *major* K.Koch, 1843

L. cyanea C.Koch, 1850

L. vanensis Azn., 1918

L. wallrothii Spreng., 1813

BUNH: (11 specimens): Duhok, Sarsank, Chemchamal, Qaradagh, Tarmiyah, Hilla; fl. and fr.: April- May.

Survey with revised checklist of Compositae

Distribution: New Zealand (Garnock-Jones, 2011), Spain (Jiménez-Alfaro *et al.*, 2021), Iran, Syria, Palestine, Turkey, Europe, Arabia, Lebanon, Caucasia, N. Africa (Egypt, Tunisia, Algeria, Morocco), America (Ghazanfar and Edmondson, 2019).

Tribe: Gymnarrheneae Cass.

Genus, *Launaea* Cass., 1822

Remark: *Launaea* Cass. is represented in Iraq by 5 species: *Launaea angustifolia* (Desf.) Kuntze, *L. capitata* (Spreng.) Dandy, *L. mucronata* (Forssk.) Muschl, *L. nudicaulis* (L.) Hook.f., *L. procumbens* (Roxb.) Ramayya & Rajagopal.

Launaea nudicaulis (L.) Hook.f., 1881

Synonyms: *Ammoseris nudicaulis* (L.) D.Dietr., 1847

Chondrilla nudicaulis L., 1771

Lactuca nudicaulis (L.) Murray, 1780

Rhabdotheca divaricata var. *subnudicaulis* Bolle, 1860

Zollikoferia nudicaulis (L.) Boiss., 1875

BUNH: (4 Specimens): Baghdad, Fallujah, Badra (Wasit), Kut; fl. and fr.: April-June.

Distribution: Saudi Arabia (El Ghazali and Al-Soqeer, 2013), S Spain, Iran, Syria, Palestine, Jordan, Sinai, Arabia (Bahrain, Kuwait, Qatar, Yemen), India, Eritrea, N. Africa (Sahara, Sudan), Macaronesia (Canary Is.) (Ghazanfar and Edmondson, 2019).

Remark: Local names: Eves Dandelion, Huwa, Huwa Al- Ghazal.

Launaea mucronata (Forssk.) Muschl., 1912

Synonyms: *Leontodon mucronatum* Forssk., 1755

Zollikoferia mucronata (Forssk.) Boiss., 1875

Launaea resedifolia (L.) Druce sp. *Mucronata* (Forssk.)Maire, 1937

BUNH: (3 Specimens): Imam Ibrahim, Fallujah, Baghdad; fl. and fr.: March-May.

Distribution: Palestine, Jordan, Egypt, Bahrain, Kuwait, Saudi Arabia, Oman, Yemen, N. Africa (Ghazanfar and Edmondson, 2019).

Remark: has one subsp. *mucronata*, local names: Murara (Murrar, Murrair).

Tribe: Gnaphalieae Cass.

Genus, *Lasiopogon* Cass., 1818

Remark: *Lasiopogon* Cass. is represented in Iraq by only one species: *Lasiopogon muscoides* (Desf.) DC.

Lasiopogon muscoides (Desf.) DC., 1838

Synonyms: *Gnaphalium muscoides* Desf., 1798

Lasiopogon lanatum Cass., 1818

Leysera muscoides (Desf.) Quézel & Santa, 1963

BUNH: (2 specimens): Fallujah desert; fl. and fr.: March-April.

Distribution: Saudi Arabia (Osman and Abdein, 2019), Palestine, Jordan, Syria, Sinai, Lebanon, Iran, Egypt, Iran, Pakistan, N Africa (Morocco to Egypt), Afghanistan, India (Punjab), S Africa, Namibia, Botswana. (Ghazanfar and Edmondson, 2019).

Al-Joboury and Aliwy

Tribe: Gymnarrheneae Cass.

Genus, *Leontodon* L., 1753

Remark: *Leontodon* L. is represented in Iraq by 3 species: *Leontodon asperrimus* (Willd.) Endl., *L. hispidus* L., *L. laciniatus* (Bertol.) Widder.

Leontodon laciniatus (Bertol.) Widder, 1967

Synonyms: *Oporinia laciniata* Bertol., 1843

Millinia persica Boiss., 1843

M. arabica Boiss., 1849

Leontodon arabicus (Boiss.) Boiss., 1875

Scorzoneroides laciniata Bertol., 2006

BUNH: (2 specimens): Fallujah desert; fl. and fr.: March-June.

Distribution: Saudi Arabia (Osman and Abdein, 2019), Palestine, Jordan, Syria, Iran, Egypt, Iran, Caucasus, Kuwait (Ghazanfar and Edmondson, 2019).

Remark: Local names: Ward Hodhan, Murran, Murrar, Murair.

Tribe: Anthemideae Cass.

Genus, *Matricaria* L., 1753

Remark: *Matricaria* L. is represented in Iraq by 2 species: *Matricaria aurea* (Loefl.) Sch.Bip, *M. chamomilla* L.

Matricaria chamomilla L., 1753

Synonyms: *Camomilla patens* Gilib., 1792

Chamaemelum chamomilla (L.) E.H.L.Krause, 1905

C. suaveolens E.H.L.Krause, 1905

Courrantia chamomilloides Sch.Bip., 1845

Leucanthemum chamaemelum Lam., 1779

Matricaria bayeri Kanitz, 1862

Material examind: (2 specimens): Bab Al Moatham (Baghdad), Wasit; fl. and fr.: April-June.

BUNH: (6 specimens): Baghdad, Al- Habbaniyah, Mosul, Albu Hayat (Anbar).

Distribution: Italy (Bartolucci *et al.* 2018), Europe, Palestine, Mediterranean area, Syria, Iran, Turkey (Ghazanfar and Edmondson, 2019).

Matricaria aurea (Loefl.) Sch.Bip., 1860

Synonyms: *Anacyclus aureus* (Loefl.) Lam. ex DC., 1805

Cenocline aurea (Loefl.) C.Koch, 1843

Chamaemelum aureum (Loefl.) E.H.L.Krause, 1905

Cotula aurea Loefl., 1758

Lepidotheca aurea (Loefl.) Kovalevsk., 1962

Perideraea aurea (Loefl.) Willk., 1865

Plagiis aureus (Loefl.) Lindl., 1840

BUNH: (2 specimens): Baghdad, Kut; fl. and fr.: March-June.

Distribution: Italy (Bartolucci *et al.* 2018), Saudi Arabia (Osman and Abdein, 2019).

Survey with revised checklist of Compositae

Remark: local names: Babon, Babunnaj, Baibub; it is considered a very important medicinal plant (Moussa *et al.*, 2015).

Tribe: Gnaphalieae Cass.

Genus, *Micropus* L., 1753

Remark: *Micropus* is represented in Iraq by only one species: *Micropus supinus* L.

Micropus supinus L., 1753

Synonyms: *Filago supina* (L.) Lam., 1779

Gnaphalodes dentata Moench, 1794

BUNH: (1 Specimens): Shaqlawa; fl. and fr.: March-May.

Distribution: SE Portugal, and C&S Spain, Syria, Palestine, Turkey, Caucasia, Iran, N Africa (Morocco, Algeria, Libya) (Ghazanfar and Edmondson, 2019).

Tribe: Cynareae Cass.

Genus, *Notobasis* Cass., 1825

Remark: *Notobasis* Cass. is represented in Iraq by only one species: *Notobasis syriaca* (L.) Cass.

Notobasis syriaca (L.) Cass., 1825

Synonyms: *Carduus obvallatus* Salzm., 1821

C. syriacus L., 1753

Cirsium bracteatum Link, 1834

C. maculatum Moench, 1794

C. syriacum (L.) Gaertn., 1791

BUNH (5 specimens): Sarsank, Mosul; fl. and fr.: April-June.

Distribution: Spain, Crete, Syria, Palestine, Aegean Is., Cyprus, Iran, Azerbaijan (Ghazanfar and Edmondson, 2019).

Tribe: Gymnarrheneae Cass.

Genus, *Picris* L., 1753

Remark: *Picris* L. is represented in Iraq by 5 species: *Picris babylonica* Hand.-Mazz, *P. kotschy* Boiss., *P. longirostris* Sch.Bip., *P. pauciflora* Willd., *P. strigosa* M.Bieb.

Picris longirostris Sch.Bip., 1839

Synonyms: *P. blancheana* Boiss., 1875

P. damascena Boiss. & Gaill, 1875

P. damascena var. *diffusa* Eig, 1939

P. desertorum Nábelek, 1925

BUNH (2 Specimens): Adhaim, Sudur; fl. and fr.: March-June.

Distribution: Syria, Palestine, Jordan, Sinai, Egypt, SW Iran (Ghazanfar and Edmondson, 2019).

Remark: local names: Hodhan, Howithan; In herbarium of the Natural History Museum was previously diagnosed under the name *P. damascena* Boiss. & Gaill.

Al-Joboury and Aliwy

Picris strigosa M. Bieb., 1808

Synonyms: *Picris glaucescens* DC., 1838

P. glomerata K.Koch, 1851

P. persica Gand, 1918

P. turcomanica Gand, 1918

BUNH (2 Specimens): Sarsank, Haji Omeran; fl. and fr.: June-August.

Distribution: Syria, Turkey, Iran, Lebanon, Caucasia, Turkmenia (Ghazanfar and Edmondson, 2019).

Picris babylonica Hand.-Mazz., 1913

Synonyms: *Picris babylonica* var. *dimorphocarpa* Eig, 1939

BUNH (3 Specimens): Fallujah desert, 10 km W of Baghdad; fl. and fr.: March-June.

Distribution: Syria, Palestine, Jordan, Sinai, Egypt, SW Iran (Ghazanfar and Edmondson, 2019).

Remark: Local names: Umrar, Gula zerde, Murrair.

Tribe: Cnaphalieae Cass.

Genus, *Phagnalon* Cass., 1819

Remark: *Phagnalon* Cass. is represented in Iraq by 2 species: *Phagnalon kotschyi* Sch.Bip. ex Boiss and *P. rupestre* (L.) DC.

Phagnalon kotschyi Sch.Bip. ex Boiss., 1875

Synonyms: *Conyza varthemioides* Nábelek, 1925

BUNH: (2 Specimens): Sarsank, Alqosh (northern Iraq); fl. and fr.: June-August.

Distribution: Turkey, Iran, Lebanon (Ghazanfar and Edmondson, 2019).

Phagnalon rupestre (L.) DC., 1836

Synonyms: *Baccharis rupestris* (L.) Desf., 1804

Phagnalon spathulatum Cass., 1826

Conyza rupestris L., 1767

BUNH (2 Specimens): Alqosh (northern Iraq), Mosul; fl. and fr.: April-May.

Distribution: Italy (Iamonic, 2012), Turkey (SE Anatolia), Iran, Lebanon, W C Mediterranean Europe (C S Portugal, Spain, France, Balkans), Cyprus, Palestine, Jordan, Egypt, Arabia (N Yemen) (Ghazanfar and Edmondson, 2019).

Remark: Local names: Kadha.

Tribe: Inuleae Cass.

Genus, *Pulicaria* Gaertn., 1791

Remark: *Pulicaria* Gaertn. is represented in Iraq by 6 species: *Pulicaria crispa* (Forssk.) Benth. Ex Oliv., *P. dysenterica* (L.) Bernh., *P. gnaphalodes* (Vent.) Boiss., *P. guestii* Rech.f. & Rawi, *P. vulgaris* Gaertn.

Pulicaria crispa (Forssk.) Benth. Ex Oliv., 1873

Synonyms: *Pulicaria undulata* subsp. *undulata* (L.) C.A.Mey., 1831

Survey with revised checklist of Compositae

Francoeuria crispa (Forssk.) Cass., 1825

Aster crispus Forssk., 1775

Inula crispa (Forssk.) Pers., 1807

I. odora Forssk., 1775

BUNH (3 specimens): Rustamiya, Al Za'franiya; fl. and fr.: April-June.

Distribution: Saudi Arabia (El Ghazali and Al-Soqeer, 2013), Iran, Turkey (Ghazanfar and Edmondson, 2019).

Remark: Local name: Jifjaf.

Pulicaria gnaphalodes (Vent.) Boiss., 1844

Synonyms: *Inula gnaphalodes* Vent., 1802

Pulicaria gnaphalodes var. *decipiens* Bornm., 1839

Strabonia gnaphalodes (Vent.) DC., 1836

BUNH (2 specimens): Sudur, Khalis; fl. and fr.: May-November.

Distribution: Iran, Afghanistan, Pakistan, C Asia (Turkmenia) (Ghazanfar and Edmondson, 2019).

Remark: The local name: Jifjaf.

Pulicaria dysenterica (L.) Bernh., 1800

Synonyms: *Inula conyzoea* Lam., 1779

Pulicaria dysenterica (L.) Gaertn., 1791

P. dysenterica var. *ramosissima* Lecoq & Lamotte, 1847

P. repens Fisch. ex Trevis., 1819

BUNH: (7 specimens): Rawanduz, Sarsank, Khalis, Darbandikhan, Shaqlawa; fl. and fr.: July-October.

Distribution: Spain (Jiménez-Alfaro *et al.*, 2021), Saudi Arabia (Mohammed-Ibtisam and Doka, 2018) Mediterranean Islands, Cyprus, Syria, Palestine, Lebanon, Turkey, Iran, Caucasia, Afghanistan, C Asia (Turkmenia to Tajikistan), Pakistan, NW. India, W. China, Oman, N Africa (Morocco, Algeria), Tropical Africa (Sudan, Ethiopia) (Ghazanfar and Edmondson, 2019).

Remark: Local name: Zerd shire.

Tribe: Gymnarrheneae Cass.

***Scorzonera* L., 1753**

Remark: *Scorzonera* L. is represented in Iraq by 15 species: *Scorzonera cana* (C.A.Mey.) O.Hoffm., *S. cinerea* Boiss., *S. davisii* Lipsch., *S. lanata* Hoffm., *S. latifolia* (Fisch. & C.A.Mey.) DC., *S. mollis* M.Bieb., *S. mucida* Rech.f., Aellen & Esfand., *S. incisa* DC., *S. papposa* DC., *S. phaeopappa* (Boiss.) Boiss., *S. ramosissima* DC., *S. schweinfurthii* Boiss., *S. semicana* DC., *S. tortuosissima* Boiss., *S. veratrifolia* Fenzl.

Scorzonera veratrifolia Fenzl, 1843

Synonyms: *Lasiospora candidissima* Sch.Bip., 1845

L. veratrifolia (Fenzl) Walp., 1847

Scorzonera bella Lipsch., 1963

BUNH: (2 specimens): Shaqlawa, Bisan valley, Halabja; fl. and fr.: June-July.

Al-Joboury and Aliwy

Distribution: E. Turkey, W. Iran (Ghazanfar and Edmondson, 2019).

Scorzonera papposa DC., 1838

Synonym: *Scorzonera kurdica* Boiss., 1856

BUNH: (1 Specimens): Jabal Hamrin; fl. and fr.: March-May.

Distribution: Saudi Arabia (Osman and Abdein, 2019), Turkey, Iran, Syria, Lebanon, Palestine, Jordan, Kuwait, Transcaucasia (Ghazanfar and Edmondson, 2019).

Remark: Local names: Halakok, Ruba Hela, Erbahle.

Tribe: Gymnarrheneae Cass.

Genus, *Sonchus* L., 1753

Remark: *Sonchus* L. is represented in Iraq by 4 species: *Sonchus glaucescens* Jord., *S. maritimus* L., *S. oleraceus* L., *S. tenerrimus* L.

Sonchus maritimus L., 1759

Synonyms: *Sonchoseris maritima* (L.) Fourr., 1869

Sonchus baburi Popov, 1941

S. hieracioides Willk., 1865

S. littoralis Rchb., 1831

S. otaviensis Dinter, 1932

Material examind: (4 specimens): Baghdad, Al- Zubaydiyah, Badra (Wasit); fl. and fr.: March-July.

BUNH: (11 specimens): Duhok, Sudur, Al- Rashdiya (Baghdad), Qaradagh, Karbala, Suwaira.

Distribution: Mediterranean Europe (Portugal, Spain, W & France, Italy), Cyprus, Syria, Palestine, Jordan, Egypt, Saudia Arabia, Iran, Afghanistan, Pakistan, N Africa (Lybia to Morocco), S Africa, Australia (Ghazanfar and Edmondson, 2019).

Remark: Harfash, Sea sow-thistle.

Sonchus oleraceus L., 1753

Synonyms: *Carduus amplexicaulis* Noronha, 1790

Hieracium oleraceum (L.) Scop., 1772

Sonchus angustissimus H.Lindb., 1932

S. australis hort. ex Trev., 1818

S. ciliatus Lam., 1779

Material examind: (3 specimens): Al- Zubaydiyah, Badra (Wasit), Karada Maryam (Baghdad); fl. and fr.: March-July.

BUNH: (11 specimens): Duhok, Sudur, Al- Rashdiya (Baghdad), Qaradagh, Karbala, Suwaira.

Distribution: India (Adhikari and Babu, 2008), New Zealand (Garnock-Jones, 2011), Saudi Arabia (Osman and Abdein, 2019), Europe, Aegean Is., Cyprus, Syria, Palestine, Lebanon, Sinai, Jordan, Egypt, Iran, Pakistan, Nm Africa, Turkey, Caucasia, Afghanistan, C Asia, Siberia, China, Japan (Ghazanfar and Edmondson, 2019).

Remark: Local names: Umm Al-Halib, Harfash, Merrer.

Sonchus tenerrimus L., 1753

Survey with revised checklist of Compositae

Synonyms: *Sonchus italus* Spreng., 1826

S. perennis (Lange) A.W.Hill, 1938

S. tenerrimus var. *glandulosus* Lange, 1861

S. tenerrimus var. *laevigatus* Lange, 1861

S. tenerrimus var. *spinulosus* Lange, 1861

BUNH: (2 specimens): Basra, Hilla; fl. and fr.: March-April.

Distribution: Mediterranean Europe (from Portugal, Spain, Italy, Sicily and Balkans), Cyprus, Syria, Palestine, Jordan, Egypt, Iran, Pakistan, Macaronesia (Ghazanfar and Edmondson, 2019).

Remark: Local names: Harfash, Clammy Sowthistle.

Tribe: Senecioneae Cass.

Genus, *Senecio* L., 1753

Remark: *Senecio* L. is represented in Iraq by 10 species: *Senecio arenarius* Thunb., *S. cineraria* DC., *S. doriaeformis* DC., *S. eriospermus* DC., *S. glaucus* L., *S. leucanthemifolius* Poir., *S. mollis* Willd., *S. pseudoorientalis* Schischk., *S. racemosus* (M.Bieb.) DC., *S. vulgaris* L.

***Senecio leucanthemifolius* Poir., 1789**

Synonyms: *Senecio apulus* Ten., 1827

S. atlanticus Boiss. & Reut., 1852

S. caroli-malyi Horvatić, 1956

S. humilis Desf., 1799

BUNH: (2 Specimens): Mandali, Geli Ali Beg center; fl. and fr.: March-June.

Distribution: Native in C E Europe, Lebanon, Turkey, Cyprus, Syria, Palestine, Jordan, Egypt, Iran, Pakistan, Caucasia (Ghazanfar and Edmondson, 2019).

Remark: Local names: Halula, Gulilka Haspi, Gulilka zarda.

***Senecio glaucus* L., 1753**

Synonyms: *Senecio chrysanthemifolius* DC., 1838

S. coronopifolius Desf., 1768

S. desfontainei Druce, 1928

S. joppensis Dinsm., 1933

BUNH (2 Specimens): 25 km from Ramadi to Rutba, Rutba; fl. and fr.: February-June.

Distribution: Italy (Bartolucci *et al.*, 2018), Iran (Lotfi *et al.*, 2010), SW Asia from Palestine to Afghanistan, Pakistan, N Africa from Egypt to Morocco, Canary Is (Ghazanfar and Edmondson, 2019).

Remark: Local names: Hodhan, Ba' aj, Word hodhan, Rijla Al-ghurab, Zimlug.

***Senecio vulgaris* L. 1753**

Synonyms: *Erigeron senecio* Sch.Bip. ex Webb & Berthel., 1845

BUNH (2 Specimens): Baghdad, Miqdadiyah (Diyala); fl. and fr.: January-May.

Distribution: Sardinia (Bacchetta *et al.* 2012), Bolivia (Hind, 2011), Spain (Jiménez-Alfaro *et al.*, 2021), The Falkland Islands (Upson and Lewis, 2014), Europe, Aegean Is. to Cyprus,

Al-Joboury and Aliwy

Syria, Palestine, Lebanon, Siberia, Egypt, Iran, N. Africa (Morocco to Libya), Arabia, Turkey, Caucasia, Afghanistan, E. Asia, W E Siberia, N. America (Ghazanfar and Edmondson, 2019).
Remark: Local name: Shaikh Ar-Rabi.

Tribe: Cynareae Cass.

Genus, *Silybum* Adans., 1763

Remark: *Silybum* Adans. is represented in Iraq by only one species: *Silybum marianum* (L.) Gaertn.

Silybum marianum (L.) Gaertn., 1791

Synonyms: *Carduus lactifolius* Stokes, 1812

C. mariae Crantz, 1766

C. marianus L., 1753

C. versicolor Salisb., 1796

Material examined (4 specimens): Karbala, wasite, Karada Maryam (Baghdad), Al Za'franiya; fl. and fr.: March-October.

BUNH (6 Specimens): Baghdad, Sudur, Duhok.

Distribution: New Zealand (Garnock-Jones, 2011), The Falkland Islands (Upson and Lewis, 2014), Native in Mediterranean region, SW Europe and SW Asia, Afghanistan, Pakistan, Australia, S. America, Palestine and Egypt (Ghazanfar and Edmondson, 2019).

Remark: Local name: Gulaghan, Milk Thistle.

Tribe: Inuleae Cass.

Genus, *Sphaeranthus* L., 1753

Remark: *Sphaeranthus* L. is represented in Iraq by only one species: *Sphaeranthus strobiliferus* Boiss. & Noë.

Sphaeranthus strobiliferus Boiss. & Noë, 1856

Synonym: *Sphaeranthus volgensis* Tzvelev, 1991

BUNH (1 specimen): Nasiriyah; fl. and fr.: August.

Remark: Endemic plant.

Tribe: Astereae Cass.

Genus, *Symphyotrichum* Nees, 1832

Remark: *Symphyotrichum* Nees is represented in Iraq by 2 cultivated species: *Symphyotrichum novi-belgii* (L.) G. L. Nesom and *S. subulatum* (Michx.) G. L. Nesom.

Symphyotrichum subulatum (Michx.) G.L.Nesom, 1995

Synonyms: *Aster subulatus* Michx., 1803

A. exilis f. *subalpinus* R.E. Fr., 1906

A. flexicaulis Raf, 1932

Chrysocoma linifolia (Bertero ex DC.) Steud., 1840

Erigeron linifolius Bertero ex DC., 1836

Material examined (2 specimens): Az -Zubaidiyah; fl. and fr.: March- June.

Survey with revised checklist of Compositae

BUNH (16 Specimens): Baghdad, Sulaf resort (Dihok), Shaikh Said (20 Km. W Mandali), Pira Magrun (30 K. N.W. Sulaimaniya), Al- Suwaira (in Wasit), Kakla (Erbil), Al Anbar, Mosul.

Distribution: Syria, Palestine, Iran, Turkey, Europe, Cyprus, Transcaucasia, Macaronesia, India, Australia, New Zealand, America (Ghazanfar and Edmondson, 2019).

Tribe: Gymnarrheneae Cass.

Genus, *Reichardia* Roth, 1785

Remark: *Reichardia* Roth is represented in Iraq by only one species: *Reichardia tingitana* (L.) Roth.

Reichardia tingitana (L.) Roth, 1787

Synonyms: *Picridium discolor* Pomel, 1874

P. hispanicum (Jacq.) Poir., 1816

P. ligulatum Vent., 1804

P. orientale (L.) DC., 1805

P. saharae Pomel, 1875

BUNH (1specimen): Hilla; fl. and fr.: March-April.

Distribution: Mediterranean Europe (Spain, Portugal, Balearic Is. Greece), Cyprus, Syria, Arabia, Palestine, Jordan, Egypt, Turkey, Afghanistan, Iran, Macaronesia, N. Africa (Ghazanfar and Edmondson, 2019).

Tribe: Gymnarrheneae Cass.

Genus, *Rhagadiolus* Juss., 1789

Remark: *Rhagadiolus* Juss. is represented in Iraq by only one species: *Rhagadiolus stellatus* (L.) Gaertn.

Rhagadiolus stellatus (L.) Gaertn., 1791

Synonyms: *Lapsana lamsanifolia* Mill., 1768

L. ramosissima Crantz, 1766

Rhagadiolus lamsanifolius Mirb., 1805

R. leiocarpus (DC.) A.W.Hill, 1839

BUNH (1specimen): Shaqlawa; fl. and fr.: April-July.

Distribution: Mediterranean Europe, Cyprus, Syria, Lebanon, Palestine, Jordan, Egypt, Turkey, Caucasia, Iran, Macaronesia (Canary Is., Madeira), N Africa (Morocco, Algeria, Tunisia) (Ghazanfar and Edmondson, 2019).

Tribe: Heliantheae Cass.

Genus, *Tagetes* L., 1753

Remark: *Tagetes* L. is represented in Iraq by only one species: *Tagetes erecta* L.

Tagetes erecta L., 1753

Synonyms: *Tagetes corymbosa* Sweet, 1829

T. ernestii H. Rob. & Nicolson, 1975

Al-Joboury and Aliwy

T. excelsa Soule, 1996

T. heterocarpha Rydb., 1915

BUNH (1 specimen): Baghdad; fl. and fr. : June- December.

Distribution: Native in of Mexico, Africa (Ghazanfar and Edmondson, 2019).

Tribe: Anthemideae Cass.

Genus, *Urospermum* Scop., 1777

Remark: *Urospermum* Scop.is represented in Iraq by only one species: *Urospermum picroides* (L.) Scop. ex F.W.Schmidt.

Urospermum picroides (L.) Scop. ex F.W.Schmidt, 1795

Synonyms: *Arnopogon asper* (L.) Willd., 1803

A. capensis (Jacq.) Willd., 1803

A. picroides (L.) Willd., 1803

Daumailia spinulosa Arènes, 1949

Tragopogon aculeatus Moench, 1794

BUNH (1 specimen): Badra; fl. and fr.: March- June.

Distribution: South Europe from Portugal to Greece, Mediterranean Is., Arabia, Palestine, Syria, Turkey, Caucasia, Iran, N Africa (Libya to Morocco), Macaronesia, (Canary Is), Australia, S. Africa (Ghazanfar and Edmondson, 2019).

Tribe: Heliantheae Cass.

Genus, *Xanthium* L., 1764

Remark: *Xanthium* L. is represented in Iraq by 2 species: *Xanthium spinosum* L. and *X. strumarium* L.

Xanthium strumarium L., 1753

Synonyms: *Xanthium abyssinicum* Wallr., 1844

X. strumarium var. *revelierei* (Jord. & Fourr.) Rouy, 1910

X. strumarium var. *albertii* Rouy, 1910

X. inerme Gray, 1821

X. brasilicum Velloso, 1829

BUNH (1 Specimens): Rustamiya; fl.and fr.: Jun- February.

Distribution: India (Adhikari and Babu, 2008), Bolivia (Hind, 2011), Europe, America, Palestine, Syria, Turkey, Africa, Jordan (Ghazanfar and Edmondson, 2019).

CONCLUSIONS

We conclude from the current study that the species of the Asteraceae family are distributed in various environments and resist difficult environmental conditions. Therefore, the BUNH contains a good number of specimens of Asteraceae species that were collected during different periods of time and preserved in the herbarium to be an important scientific source for all researchers in the field of plant taxonomy in Iraq. Studying this family is important because it is one of the largest plant families in Iraq with a number of medicinal and food source plant species. A total of 286 specimens for 85 species belonging to 49 genera,

Survey with revised checklist of Compositae

and 16 tribes are revised in BUNH, and all these species are recorded in the Flora of Iraq. However, there are number of species in the BUNH which are considered as synonyms for other species. According to the results, it was observed that the genus *Centaurea* L. has the most number of specimens with 36 specimens of 10 different species. Also, the widest distributing species was *Achillea aleppica* DC.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts for interest to declare.

LITERATURE CITED

- Adhikari, B.S. and Babu, M.M. 2008. Floral diversity of Baanganga Wetland, Uttarakhand, India. *Check List*, 4(3): 279-290. [[Click here](#)]
- Khaleel, A. N. and Al-Dobaissi, I. A. R. M. 2022. Trichomes morphological diversity in some species from related tribes of Asteraceae family in Iraq. *Iraqi Journal of Science*, 63(6): 2362-2372. [[CrossRef](#)]
- Bacchetta, G., Fenu, G. and Mattana, E. 2012. A checklist of the exclusive vascular flora of Sardinia with priority rankings for conservation. *Anales del Jardín Botánico de Madrid*, 69 (1): 81-89. [[CrossRef](#)]
- Bartolucci, F., Peruzzi, L., Galasso, G., Albano, A., Alessandrini, A.N.M.G., Ardenghi, N.M.G., Astuti, G., Bacchetta, G., Ballelli, S., Banfi, E. and Barberis, G., 2018. An updated checklist of the vascular flora native to Italy. *Plant Biosystems-An International Journal Dealing with all Aspects of Plant Biology*, 152(2): 179-303. [[CrossRef](#)]
- Dehshiri, M.M. and Jozipoor, M., 2014. Angiosperms, Kuhdasht gypsum areas, Lorestan, Iran. *Check List*, 10(3): 516-523. [[CrossRef](#)]
- El Ghazali, G. E. B. and Al-Soqeer, A. A. 2013. A checklist of the weed flora of Qassim region, Saudi Arabia. *Australian Journal of Basic and Applied Sciences*, 7(2): 900-905. [[Click here](#)]
- Ghazanfar, S. A. and Edmondson, J. R. 2019. Flora of Iraq (Volume 6). Ministry of Agriculture Republic of Iraq, 530pp.
- Garnock-Jones, P. J. 2011. Checklist of dicotyledons naturalised in New Zealand 19. Asteraceae (Compositae) subfamily Cichorioideae. *New Zealand Journal of Botany*, 25(4): 503-510. [[Click here](#)]
- GBIF Secretariat. 2020. *Achillea santolinoidea* subsp. *wilhelmsii* (K.Koch) Greuter. [[Click here](#)]

Al-Joboury and Aliwy

- Guest, E. 1966. . Flora of Iraq (Volume 1). Ministry of Agriculture Republic of Iraq, 213pp. [[GoogleScholar](#)]
- Hind, D. J. N. 2011. An annotated preliminary checklist of the Compositae of Bolivia. *Version*, 2: 18-03. [[Click here](#)]
- Hameed, A. T., Dawd, S. M. and Al Bahadly, Z. K. 2021. Ecological Study and Peroxidase Activity of Some Medical Plant (Asteraceae) Growth Wildly in Anbar Governorate–Iraq. In *Journal of Physics: Conference Series*, 1818 (1): 012037. [[Click here](#)]
- Iamónico, D. 2012. Updating to the checklist of the Italian vascular flora: Asteraceae, Gnaphalieae. *Lagascalia*, 32: 261-268. [[Click here](#)]
- Jiménez-Alfaro, B., Carlón, L., Fernández-Pascual, E., Acedo, C., Alfaro-Saiz, E., Alonso-Redondo, R., Cires, E., Mazuelas Egido, F. D., Río, S. D., Díaz-González, T. E. and García-González, M. E. 2021. Checklist of the vascular plants of the Cantabrian Mountains. *Mediterranean Botany*, 42: e74570: 1-58. [[Click here](#)]
- Lorite, J. 2016. An updated checklist of the vascular flora of Sierra Nevada (SE Spain). *Phytotaxa*, 261(1): 1-57. [[Click here](#)]
- Lotfi, E., Youseif, M. and Asadi, M. 2010. A revision of Senecio L. (Asteraceae, Senecioneae), in Iran. *Iranian Journal of Botany*, 16 (1): 96-106. [[Click here](#)]
- Mandel, J. R., Dikow, R.B., Siniscalchi, C. M., Thapa, R., Watson, L. E. and Funk, V. A., 2019. A fully resolved backbone phylogeny reveals numerous dispersals and explosive diversifications throughout the history of Asteraceae. *Proceedings of the National Academy of Sciences*, 116(28): 14083-14088. [[Click here](#)]
- Mohammed–Ibtisam, M. I. and Doka, G. M. 2018. Check list of flora and vegetation of Hafer Albatin region, northeastern Saudi Arabia. *MOJ Ecology & Environmental Sciences*, 3: 138-143. [[Click here](#)]
- Mousa, M. O. 2022. A comparative anatomy of peduncles for plant species of Compositae (Asteraceae) family. *Iraq Journal of Desert Studies*, 8(2): 66-78. [[Click here](#)]
- Moussa, M. O., Sabri, N. A. and Alalwany, A. A. 2015. The distribution of some medicinal plants in three zone of Western desert of Iraq. *Anbar Journal of Agricultural Sciences*, 13(1): 288-304. [[Click here](#)]
- Naqishbandi, A. 2014. Plants used in Iraqi traditional medicine in Erbil-Kurdistan region. *Zanco Journal of Medical Science*, 18(3): 811-815. [[Click here](#)]

Survey with revised checklist of Compositae

- Osman, A. K. E. and Abdein, M. A. E. H. 2019. Floristic diversity of Wadi Ar'ar, Saudi Arabia. *Journal of Taibah University for Science*, 13(1): 772-789. [[Click here](#)]
- Rahman, A. H. M. M., Alam, M. S., Khan, S. K., Ahmed, F., Islam, A. K. M. R. and Rahman, M. M. 2008. Taxonomic studies on the family Asteraceae (Compositae) of the Rajshahi division. *Research Journal of Agriculture and Biological Sciences*, 4(2): 134-140. [[Click here](#)]
- Schaefer, J. and Essi, L. 2017. A checklist of Asteraceae from Pedra do Lagarto, Santa Maria, Rio Grande do Sul, Brazil. *Check List*, 13(6): 1075-1090. [[CrossRef](#)]
- Soares, G., Roque, N., Alves, F.V.S., Amorim, V.O., Barbosa, M.L., Guterres, A.V.F., Alves, M. and Loeuille, B. 2022. Using an Asteraceae checklist to understand collection history, species density and conservation implications: a case study in the state of Alagoas, Northeastern Brazil. *Phytotaxa*, 571(1): 21-38. [[Click here](#)]
- Stevens, P. F. 2017. Angiosperm Phylogeny Website. Version 13. Angiosperm Phylogeny Website. Version 14. [[Click here](#)]
- Youssef, S. 2020. Endemic plant species of Iraq: From floristic diversity to critical analysis review. *Journal of Duhok University*, 23(2): 90-105. [[Click here](#)]
- Upson, R. and Lewis, R. 2014. Updated atlas and checklist. Report to Falklands Conservation, 225 pp. [[Click here](#)]
- Zhang, C., Huang, C. H., Liu, M., Hu, Y., Panero, J. L., Luebert, F., Gao, T. and Ma, H. 2021. Phylotranscriptomic insights into Asteraceae diversity, polyploidy, and morphological innovation. *Journal of Integrative Plant Biology*, 63(7): 1273-1293.
- Zhu, S., Yilin, C., Yousheng, C., Yourun, L., Shangwu, L., Xuejun, G., Tiangang, G., Shixin, Z., Ying, L., Christopher, J. H., Qiner, Y., Eckhard, R., Michael, G. G., Bertil, N., Norbert, K., Luc, B., Irina, D. I., Nicholas, H., Charles, J., Randall, J. B., Jan, K., Werner, G., Arne, A. A., John, C. Se., Jan, Š., Susana, E. F., Ludwig, M., Hiroshige, K., Takayuki, K., Leszek, V., Alexander, P. S., Evgeny, V. M. and Günter, G. 2011. Asteraceae (Compositae). *Flora of China*, 20: 1-773. [[Click here](#)]
- Wilson, A. 2015. Flora of Australia, volume 37: Asteraceae 1. Flora of Australia Series. CSIRO Publishing/ Australian Biological Resources Study, 664 pp. [[Click here](#)]

مسح مع قائمة مراجعة للعائلة المركبة *Compositae* في معشب مركز بحوث و
متحف التاريخ الطبيعي

خنساء رشيد الجبوري* و سكينه عباس عليوي**
*مركز بحوث و متحف التاريخ الطبيعي/جامعة بغداد، بغداد، العراق.
**قسم علوم الحياة/كلية العلوم/جامعة بغداد، بغداد، العراق.

تاريخ الاستلام: 2022/11/17، تاريخ القبول: 2023/2/12، تاريخ النشر: 2023/6/20

الخلاصة

اجري مسحاً مع قائمة مراجعة للانواع التي تعود للعائلة المركبة للعينات التي جمعت وحفظت سابقا في معشب مركز بحوث و متحف التاريخ الطبيعي، اضافة للعينات التي جمعت للفترة من 2016-2021. خلال هذه الدراسة. بلغ عدد الانواع الكلي 85 نوعاً تعود لـ 49 جنساً و 16 قبيلة تمت مراجعتها مع مرادفاتها، مواقعها، توزيعها، وفترة التزهير والإثمار.