

A CHECKLIST OF VASCULAR PLANTS OF THE GARMIAN REGION IN KURDISTAN, IRAQ

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ABSTRACT:

The current study is based on the fieldwork and study of the vascular plants of the Garmian region (Sulaimani district, Kurdistan, Iraq) from late April 2021 through September 2024, during which period 5,500 plant specimens were collected in 145 different waypoints. A total of 79 families (five each in ferns and gymnosperms, 15 in monocots, and 59 in dicots), 336 genera (two species in Pteridaceae and one species in each of Equisetaceae, Adiantaceae, and Aspleniaceae and one in gymnosperms families, 79 in monocots, and 250 in dicots), and 712 species (six of ferns and gymnosperms, 138 of monocots, and 568 of dicots) were identified. The five greatest families in this study are Asteraceae (47 genera, 107 species), Poaceae (39 genera, 83 species), Fabaceae (24 genera, 81 species), Brassicaceae (19 genera, 36 species), and Lamiaceae (15 genera, 34 species). These families account for 47.89% of the total vascular plant species collected in the region, and the richest genus is *Astragalus* L., with 15 species.

KEYWORDS: Flora, Checklist, Garmian region, Kurdistan, Southwest Asia.

1. INTRODUCTION:

Garmian region is part of the extensive Zagros Mountain steppe ecoregion of the Irano-Turanian Region (www.wwf.org). The Irano-Turanian Region is one of the world's great phytogeography zones of arid lands. It has great importance in water and soil conservation, biodiversity, and plant richness. Assessing plant species or the botanical surveying of a vegetal community is a basic operation to correctly identify a vegetal association and to separate it from others in the field (Chifu *et al.*, 2014). It is important to investigate the vegetation cover in a certain area, know the families, genus, and species of plants, and further information about plant density, frequency, and the area covered with plants. Also, to investigate all types of plants, such as wild plants, cultivated plants, pasture plants, and those used to control desertification phenomena. On an area basis, herbs contribute significantly to the world's land surface, and an important share is devoted to grazing. The vegetation structure is as important as climate in shaping ecosystem functioning in the study region. (Gaitan *et al.*, 2014).

Taxonomic studies of this wealth help to know and identify the species and their numbers (Al-Rawi, 1964). Floristic studies have taken good steps in different regions of Kurdistan Iraq. The research has been done through numerous studies and various excursions (Zohary, 1946). Earlier studies on vascular plants across various regions of Kurdistan Iraq have been done which are including; the survey of vascular plants in Sinjar Mountain, which identified 638 plant species (Khalaf, 1980); the survey of vascular plants in Piramagrun Mountains, which identified 542 plant species (Faris, 1983); the survey of vascular plants in Haibat Sultan Mountain and surrounding areas, which yielded 325 plant species (Haedar, 2003); the survey of vascular plants in Darband Gomaspan and surrounding areas in Erbil Province (Ahmed, 2010); the survey of vascular plants in the Hawraman Region of Kurdistan/Iraq, which identified 951 plant species (Ahmad, 2013); the survey of Azmar-Goizha Mountain which determined 666 species (Ahmad and salih, 2018); the survey of

Qiwana Mountain which added 670 taxa are founded; the survey of vascular plants in the Gmo Region of Kurdistan/Iraq, which identified 738 plant species (Hama, 2020); which the survey of vascular plants of Qaradagh Mountain, which added 970 plant taxa (Ahmad and Salih, 2019, and the survey of vascular plants in Bani Harir Mountain (MRO) in the Kurdistan region/Iraq, which identified 73 families, 275 genera, and 412 plant species (Saeed, 2021).

The main objectives of this study are maintaining the documentation of the vascular plants in the Garmian region, improving the comprehensive conservation program in order to conserve the plant diversity in the region, and providing essential data for future ecological studies in the region

2. MATERIAL AND METHODS

Materials

The study, conducted from 2021 to 2024, focused on vascular plants in the Garmian region of Kurdistan, Iraq. The research involved an intensive collection of plants, a literature survey, and identification using Iraqi and neighboring floras. The study focused on different topographical areas in the Garmian region, starting from the lowest and gradually ascending to the highest elevations. All specimens collected during the field study were identified, numbered, classified, and deposited in the herbaria of the College of Agricultural Engineering Sciences, University of Sulaimani (SAUFA), and Kurdistan Botanical Foundation (KBFH).

Methods

Plant Collection:

In this study, over 5,500 specimens were collected from 145 waypoints during 96 field excursions. To prevent redundancy and ambiguity during data collection and processing, each species gathered at a specific waypoint was assigned a distinct number from a continuous series. For each collection number, the following data were documented: coordinates (longitude and

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latitude), altitude, collection date, precise locality, ecological information, and names and numbers of collectors.

Plant Identification:

The identification process depended on the available flora—journals, scientific papers, plant field guides, and dissertations pertinent to the flora of Iraq and neighboring countries. Upon completing the identification of all specimens, around 706 species were recognized, encompassing around 336 genera and approximately 79 families. An alphabetical arrangement of all scientific names from the family to the species ranks is utilized for convenient reference. Family classifications and generic assignments, according to Mabberley (2018) and the Angiosperm Phylogeny Website. Garmian is located between 34°25'28"N and 35°08'12"N and 44°51'24"E and 45°53'51"E. The altitudes of the studied area ranged from a low of 141 meters near the Kalar district to a high of 1,802 meters at the peak of Bamo Mountain. The proposed area includes several mountains northeast of the study area, forming the border with Iran. The important part of this land consists of foothills, such as those extending from Bawanur to Darbandikhan and the foothills along the Iranian border. Garmian shares approximately 148.17 km of its border with Iran. The largest part of Garmian is characterized by a steppe plain, particularly in the central and southern regions of the study area. The Sirwan River tributaries flow through this area from north to south, covering about 117.91 km. The total area of the study region is approximately 2981.31 km² (Figure 1). This study concentrated on specific locations, including Mount Bamo near

the Maidan subdistrict, both banks of the Sirwan River flowing from northeast to southeast, and the Garmian plains, especially in the Kalar and Kifri districts

Location and Geological Setting of the Study Area

Location

Garmian is in the Kurdistan region of Iraq, located south of the Sulaimani governorate. It is a part of the extensive Zagros Mountain steppe ecoregion (Buringh, 1960), or as described by Rahimi *et al.* (2024), this area is identified as part of the Kurdo-Zagrosian system. Garmian is located between 34°25'28"N and 35°08'12"N to 44°51'24"E and 45°53'51"E. The altitudes of the studied area ranged from a low of 141 meters near the Kalar district to a high of 1,802 meters at the peak of Bamo Mountain. The proposed area includes several mountains to the northeast of the study region, forming the border with Iran. An important part of this land consists of foothills extending from Bawanur to Darbandikhan and the foothills along the Iranian border. Garmian shares approximately 148.17 km of its border with Iran. The largest part of Garmian is characterized by a steppe plain, particularly in the central and southern regions of the study area. The Sirwan River tributaries flow through this area from north to south, covering about 117.91 km. The total area of the study region is approximately 2981.31 km² (Figure 1). This study concentrated on specific locations, including Mount Bamo near the Maidan subdistrict, both banks of the Sirwan River flowing from northeast to southeast.

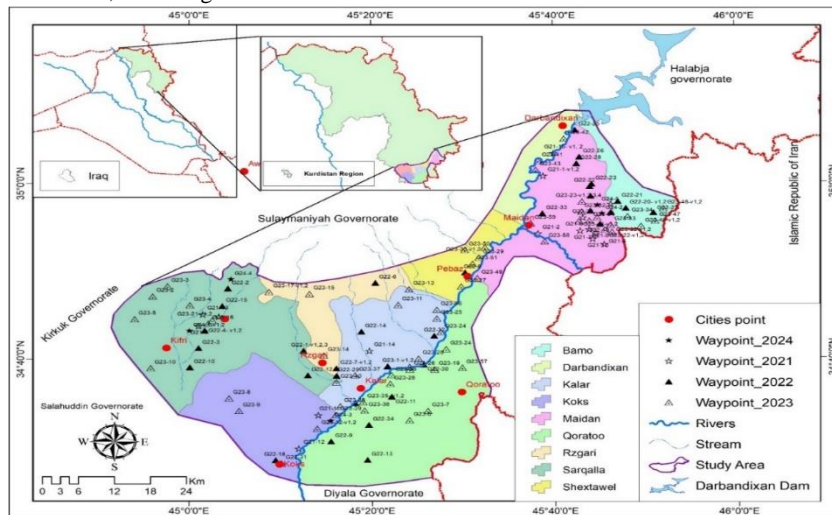


Figure 1: The location of the study area.

Geological Setting of the Study Area

The geology of the study area consists of the various formations and rock depositions:

1. Fatha Formation (Lower Fars): Fatha Formation is widely exposed in Iraq, and it has a widespread extension in Iraq. In the study area, particularly in the Bamo area, the Fatha formation appears. This part of the formation comprises layers of gypsum, red claystone, marl, and limestone. There are also some beds of sandstone in the upper part of the formation (Karim, 1997). Regionally, the formation is divided into two members; the lower member lacks red mudstone, and the upper member comprises a cyclic succession of red mudstone and gypsum. The thickness of the formation is about 110 meters (Jassim and Goff, 2006). The depositional environment of the Fatha formation is high to moderate energy, shallow-water environments, which were deposited during the Middle Miocene age (Al-Juboury & McCann, 2008).

2. Injana Formation (Upper Fars): The Injana Formation is exposed in the Maidan area, northeast of the study area. This formation consists of clastic materials of sandstone, red and green mudstones, and siltstone (Sissakian, 2012). The Injana Formation dates back to the Late Miocene; geologists accept this age. The depositional environment of the formation is a coastal area and fluviolacustrine system (Jassim and Goff, 2006).

3. Mukdadia formation (Lower Bakhtiari): This formation is expanded to both sides of the Sirwan River and occupies the north part of the study area in the Maidan and Pebaz. Lithologically, it is composed predominantly of thick conglomerates interbedded with sandstone and mudstone beds. The pebbles within the pebbly sandstones are up to 6 cm in size, mostly chert, quartz, carbonates, and subordinate igneous and metamorphic rocks. The conglomerates are containing clasts derived from various sources, reflecting active tectonic uplift and erosion (Sissakian *et al.*, 2014). The formation's age was designed to be the late Miocene-Pliocene. The primary color of the rocks is grey. The formation was deposited in a fluvial

environment in a rapid subsidence foredeep basin (Jassim *et al.*, 1984).

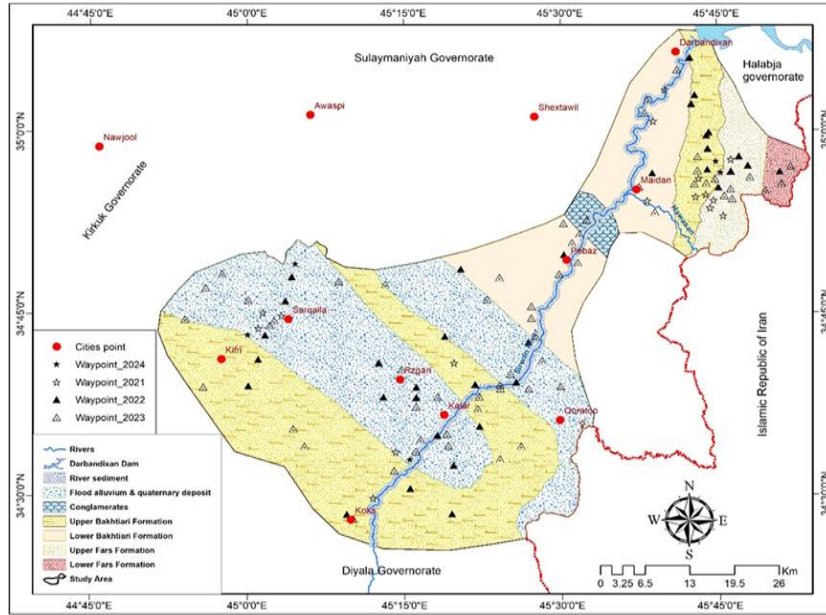


Figure 2: Geological formation of the Garmian region.

4. Bai Hassan Formation (Upper Bakhtiari): The Lower and Upper Bakhtiari Formations are highly similar in lithology, while the difference is in the size of the boulders, which is rich in the later formation. Majeed (2021) studied the formation based on its grain size and indicated that the Bai Hassan Formation was deposited in the fluvial environment through a sudden flood transgression associated with high flow and turbulence; these materials were filled in the synclines that occurred by the latest plate movements in the area during the lower Pliocene.

5. Bamo Conglomerates: The Bamo conglomerates commonly consist of polymictic conglomerates with angular-to-subangular clasts, and the matrix is almost sand and silt materials (Al-Kubaisi and Al-Saadi, 2020; Jassim and Goff, 2006). These clasts are interpreted as alluvial fan deposits, formed in response to tectonic uplift in the Zagros fold-thrust belt (Buday and Jassim, 1987). This bed is usually correlated with the Lower Bakhtiari Formation.

6. Quaternary deposits: These sediments are exposed in the wide area in the Sarqala and Rzgari areas and also in the narrow belt (west-east trends) north of Kalar. These deposits primarily consist of poorly sorted materials derived from variable lithology and multiple sources, including ophiolites and thrust sheets.

Petrographic analyses reveal fragments of chert, carbonate, feldspar, and quartz, while heavy minerals such as pyroxene, amphibole, and zircon are present. Clay minerals identified chlorite and palygorskite, alongside quartz and calcite (Qader and Majeed, 2022). The deposits are geologically rarely studied except for the mentioned study.

7. River sediments: The sediments show a mix of coarse clastics and finer materials from the surrounding Zagros Fold-Thrust Belt. Lithological variations influence sediment transport and deposition along the river, with higher energy flows carrying coarser sediments downstream (Qader and Majeed, 2022). The sediments are influenced by the factors of weathering, tectonics, vegetation, and human activities (Ali *et al.*, 2016), which were deposited during the Middle Miocene age (Al-Juboury and McCann, 2008)

2–4 vegetation zones in the Garmian region

Although it can occasionally be challenging to determine the delineation between distinct plant zones, two relatively well-defined types of vegetation can nevertheless be identified in the Garmian area (Figure 3).

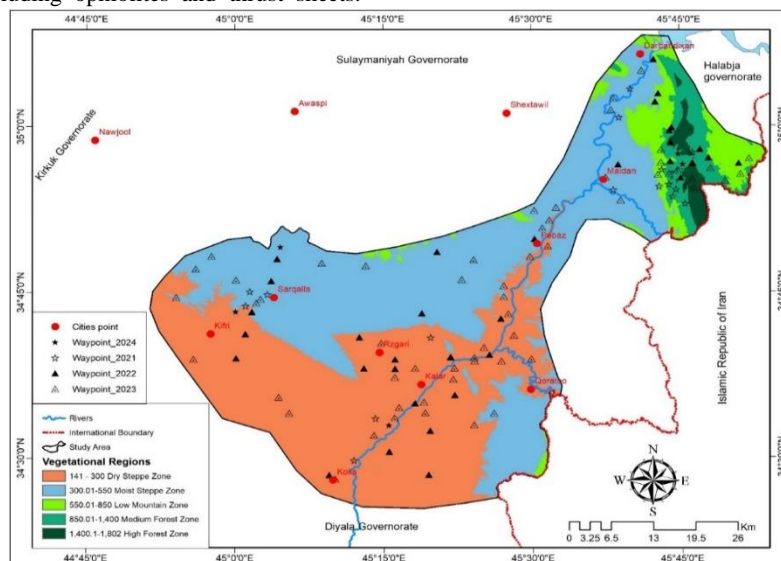


Figure 3: Vegetation zones of Garmian region.**Steppe Zone**

This region extends from the northeastern part of the study area, specifically from the foothills of Darbandikhan in the northeast and the slopes of Bamo Mountain in the east to the semi-dry plains south of the Kifri district. This territory encompasses around 2639.36 km², constituting 88.53% of the overall Garmian region, with an elevation ranging from 141 to 500 meters. Gillett (1948) proposed the titles "Dry steppe" and "Moist steppe" for the two separate zones across the region.

Dry Steppe Zone

This area spans the plains of Pebaz Land, adjacent to the Kalar district, stretching towards the dry steppe zone between Rizgari and Kifri to the west and culminating at the Kokz subdistrict in the southwest. This region encompasses roughly 1312.55 km², constituting 43.88% of the whole Garmian area, with altitudes varying from 141 to 300 meters, dominated by *Centaurea spp.*, *Eruca sativa*, *Anthemis spp.*, *Silybum marianum* and *Carthamus oxycantha*.

Moist Steppe Zone

This area commences at the foothills near Darbandikhan and extends southwest through the Maidan lowlands, culminating at the boundaries of the Awa-Spi district (Khan Rustam Agha). It encompasses significant portions of the Darbandikhan, Sheikh Tawil, Pebaz, and Sarqala sub-districts. This area encompasses roughly 1,326.81 km², constituting 44.36% of the overall Garmian region, with altitudes varying from 350 to 500 meters. The primary habitats of this region are:

- A. Steppe non-irrigated fields are predominantly characterized by *Aegilops spp.* and *Poa bulbosa* (grasses), as well as *Centaurea iberica*, *Carthamus oxycantha*, and *Sinapis arvensis* (herbs).
- B. Steppe irrigation fields are primarily characterized by *Hordeum spp.* and *Avena spp.* (grasses), and *Eruca sativa* (herb), *Prosopis farcta* and *Glycyrrhiza glabra* (Fabaceae subshrubs).
- C. The foothills are characterized by *Fumaria spp.*, *Gundelia tournefortii*, and *Papaver glaucum* (herbs), as well as *Capparis spinosa* and *Prunus arabica*.
- D. Riverian forest of plains is characterized by the Sirwan and Hawasan Rivers in the Garmian region, where *Populus euphratica*, *Phragmites australis*, *Tamarix spp.*, and *Rubus sanctus* are the predominant plants.
- E. Submerged river or canal vegetation: these regions are predominantly characterized by *Potamogeton nodosus*.

Forest Region

The minimum height of this zone often reaches approximately 500 meters, ascending to 1,802 meters at the summit of Bamo Mountain in the eastern Garmian region. This area is acknowledged as one of the most significant in the region due to its biodiversity and is distinguished by oak forests. Situated to the northeast and east of the study area along the Iranian-Iraqi border, it encompasses the Bamo and Khoshk mountains, along with several highlands in the Darbandikhan and Bamo districts. The total area of this zone is approximately 341.9 km², representing 11.43% of Garmian's overall area. The Garmian forest zone can be classified into three subzones based on elevation.

- A. Low Sub-zone: This is the first sub-zone that extends from 500 m to 850 m and encompasses 179.81 km² of the overall forest zone area, dominated by *Quercus aegilops*, *Ficus carica*, *Rhus coriaria*, and *Paliurus spina-christi*.
- B. Medium Sub-zone: This is the second largest area within the mountain forest zones of the Garmian region, encompassing 117.41 km², representing 26.65% of the overall forest mountain zones, dominated by *Quercus aegilops*, *Pistacia Shinjuku*,

Platanus orientalis, *Crataegus azarolus*, *Marrubium vulgare*, and *Onosma rostellatum*.

C. High Sub-zone: This is the highest part of the Garmian region, starting from 1400 m to 1802 m at the peak of Bamo Mountain. This sub-zone encompasses around 44.36 km², constituting 10% of the overall mountain forest zone area in the Garmian region, dominated by *Quercus aegilops* and *Q. brantii*.

3-Result and discussion

The following list covers all vascular plant species of the Garmian region. It is based on collections made during the current study from Sep. 2021 to May 2024, as well as on distributions in volumes of the Flora of Iraq and Flora Iranica and on collections of herbariums inside and outside of Iraq. The total species count this study covers is 706, taxa of which 642 were collected in the current study.

This study reported 712 taxa of vascular plants over 79 families, along with four more families—Pteridaceae (two species), Equisetaceae (one species), Adiantaceae (one species), and Aspleniaceae. There are 15 monocotyledon families, encompassing 138 species: Amaryllidaceae (10 spp.), Asparagaceae (10 spp.), Araceae (2 species), Asphodelaceae (1 spp.), Cyperaceae (11 spp.), Iridaceae (5 spp.), Ixioliriaceae (1 spp.), Juncaceae (4 spp.), Liliaceae (3 spp.), Linaceae (1 spp.), Orchidaceae (3 spp.), Poaceae (83 spp.), and Typhaceae (2 spp.), Potamogetonaceae (1 species), and Hydrocharitaceae (1 species), along with 568 species in 59 dicotyledon families. All species discussed in the study were identified utilizing all accessible floristic and monographic literature. The total number of these taxa is distributed throughout 336 genera, comprising five in ferns, 79 in monocots, and 251 in dicots. Incomplete collections devoid of flowers and/or fruits precluded species identification. The items are not consecutively numbered in the text and are omitted from the previously specified totals, as some or all may relate to species already considered in this study. The five prominent families, listed in descending order, are Asteraceae (107 species), Poaceae (83 species), Fabaceae (81 species), Brassicaceae (36 species), and Lamiaceae (34 species). Collectively, these five families account for 341 of the 712 species, constituting 47.89% of the overall Garmian flora. This study identified endemic plant species and clarified their locations in several places in the Garmian area (Figure 4).

An alphabetical arrangement of all scientific names is utilized for simple reference, from the family level to species and intraspecific ranks (subspecies or variations). Species distribution beyond Kurdistan, Iraq, is primarily documented for Southwest Asia. Mabberley (2017), the Angiosperm Phylogeny Website (<http://www.mobot.org/MOBOT/research/APweb>), and the International Plant Names Index website (<http://www.ipni.org>) were consulted for delineating family, genus, and species boundaries.

The subsequent scientific names, acronyms, and symbols provide information regarding each taxon. An asterisk (*) signifies a novel record reported for the first time in the current study for the Garmian area; two asterisks (**) indicate a new record for the Sulaimani district (MSU) and the Persian Foothills District (FPF);

Plant life cycles can be classified as annuals (a), biennials (b), and perennials (p). Field occurrence: frequent (c), occasional (o), rare (r), and extremely rare (vr). Reproductive condition: flowering (fl) and fruiting (fr). Geographical distribution: for additional districts in Iraq (M), as well as for Iran (I), Syria (S), and Turkey (T). Figures 21, 22, 23, and 24 correspond to the collection years 2021, 2022, 2023, and 2024, respectively.

In addition to the gatherings made from the Garmian region in this study, collections cited in the Flora of Iraq and/or Flora Iranica are listed under the heading "Other collections," in which localities, collectors, collection numbers, and herbaria housing these collections are given.

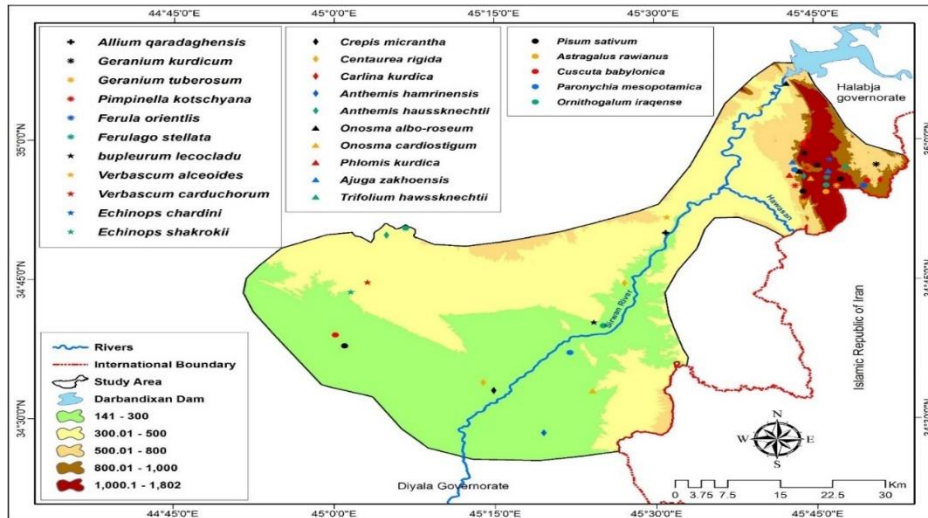


Figure 4: Distribution of Endemic and near-endemic species in Garmian region.

Systematic plant list **ACERACEA**

1. *Acer monspessulanum* L. subsp. *Persicum*
(p, c, fr; M, I, S, T): 21(182), 21(316).

2. AMARANTHACEAE

2. *Amaranthus albus* L.
(* , a, o, fl, fr; M, I, S, T): 22(861), 22(186), 23(401), 23(1533), 23(1588), 23(1769), 23(1860), 23(1887), 23(2021), 23(2169), 23(2210).
3. *Amaranthus viridis* L.
(** , a, o, fl, fr; M, T): 22(414), 22(860), 22(881), 22(1012), 22(1059), 23(1490), 23(1534), 23(1813), 23(1840), 23(1894).
4. *Chenopodium album* L.

(* , a, o, fl, fr; M, I, S, T): 21(366), 22(18), 22(94), 22(400), 22(501), 22(859), 22(886), 23(43), 23(317), 23(483), 23(1284), 23(1359), 23(1426), 23(1469), 23(1517), 23(1589), 23(1778).

5. *Cornulaca monacantha* Delile
(** , p, o, fl; M, I): 22(1066), 23(2280).

6. *Halocharis sulphurea* (Moq.) Moq.
Other collections: Jabal Hamrin, Shahraban, Haines 1453.

7. *Halothamnus iragensis* Botsch.
Other collections: between Shahraban & Jalawla by Rechinger 8080a, b.

8. *Noaea kurdica* Eig
(* , p, r, fl, fr; M): 23(2223), 23(2276).

9. *Noaea mucronata* (Forssk.) Aschers. & Schweinf.
(* , p, c, fl, fr; M, I, S, T): 21(357).

10. *Salsola vermiculata* L.
Other collections: Khanaqin, Rogers 406.

11. *Salsola inermis* Forssk.
Other collections: at Jabal Hamrin and Shahraban, Haines 1435.

3. AMARYLLIDACEAE

12. *Allium atroviolaceum* Boiss.
(* , p, o, fl, fr; M, I, T) 22(623), 24(14), 24(14).

13. *Allium cepa* L.
(p, c, fl, fr; M, I, S, T): 24(67).

14. *Allium dictyoprasum* C.A.Mey. ex Kunth
(** , p, o, fl; M, I, S, T): 22(722), 23(843), 23(2091).

15. *Allium longisepalum* Bertol.
(, c, fl, fr; M, I, S, T): 22(54), 23(99), 23(127), 23(404), 23(582), 23(684), 23(751), 23(866).

16. *Allium macrochaetum* Boiss. & Hausskn.
(* , p, o, fl; M, I, S, T): 21(36).

17. *Allium pallens* L.
(** , p, r, fl, M, I, S, T): 22(99).

18. *Allium paniculatum* L.
(* , p, c, fl; M, I, S, T): 22(723), 23(1682), 24(45).

19. *Allium pustulosum* Boiss. & Hausskn.
(* , p, o, fl; M, I): 24(66).

20. *Allium sindjarensis* Boiss. & Hausskn. ex Regel.
(* , p, c, fl; M, I, S, T): 22(177), 23(524).

21. *Allium stamineum* Boiss.
(* , p, c, fl; M, I, S, T): 23(1044), 23(2147), 23(1447), 23(1516), 24(5).

4. ANACARDIACEAE

22. *Pistacia khinjuk* stocks
(* , p, f, fl; M, I, S, T): 21(103), 21(158), 21(181), 21(221), 21(453), 22(784), 22(1085) 23(1689), 23(2075), 23(2175).

23. *Rhus coriaria* L.
(* , p, fr; M, I, S, T): 24(86).

5. APOCYNACEAE

24. *Nerium oleander* L. (p, c, fr, fl; M, I, S, T) 21(152), 21(314), 21(427), 21(452), 22(166), 22(615), 22(902), 23(1744), 23(1928), 23(1960), 23(2046), 23(2185), 23(2257).

6. APIACEAE

25. *Ainsworthia trachycarpa* Boiss.
(* , a, o, fl, fr; M, I, T): 23(1456), 23(2080).

26. *Anethum graveolens* L.
(* , a, o, fl, fr; M, I, S, T): 22(756).

27. *Artemisia squamata* L.
(a, c, fl, fr; M, I, S, T): 22(55), 22(665), 23(1056), 23(1187), 23(1699), 23(1742).

28. *Bunium paucifolium* DC.
(* , p, c, fl, fr; M, I, S, T): 22(590), 23(1639).

29. *Bunium verruculosum* C.C. Towns.
(* , p, vr, fl, fr; M, I, T): 23(1583).

30. *Bupleurum lancifolium* Hornem. Var. *Heterophyllum*
(* , p, o, fl, fr; M, I, S, T): 22(271), 22(407), 23(59), 23(330), 23(370), 23(506), 23(545), 23(618), 23(655), 23(730), 23(824), 23(1235), 23(1323).

31. *Bupleurum leucocladum* Boiss.
(** , a, o, fr; M, I, S): 23(950).

32. *Chaerophyllum nodosum* Crantz
(* , a, o, fl, fr; M, I, S, T): 22(60).

33. *Daucus carota* L.
(*, a or b, fl, fr; M, I, S, T): 22(59), 22(266), 22(319), 22(374), 22(460), 22(502), 22(529), 22(621), 22(716), 22(757), 22(862), 23(925), 23(1057), 23(1388), 23(1424), 23(1523), 23(1541), 23(1757), 23(2265).
34. *Ducrosia flabellifolia* Boiss.
(**, p, r, fr; M, I, S): 23(790).
35. *Eryngium campestre* L.
(*, p, o, fl, fr; M, I, S, T): 23(1745).
36. *Eryngium creticum* Lam.
(*, p, o, fl; M, I, S, T): 22(620), 22(718), 22(736), 22(758), 22(819), 23(2098).
37. *Eryngium pyramidale* Boiss. & Hausskn.
(*, p, r, fl; M, I, S, T): 23(2157).
38. *Eryngium thyrsoideum* Boiss.
(*, p, c, fl, fr; M, I, T): 23(2123), 21(2139).
39. *Ferula orientalis* L.
(*, p, vr, fl, fr; M, I, T): 23(2012).
40. *Ferula sphenobasis* C.C. Towns.
Other collections: 20 km SSW Khanaqin, Haines 1908.
41. *Ferulago macrocarpa* (Fenzl) Boiss.
(*, p, o, fl, fr; M, I, S, T): 22(714), 22(737), 22(818), 23(2074).
42. *Ferulago stellata* Boiss.
(*, p, c, fl, fr; M, I, S, T): 23(1111).
43. *Heptaptera isoptera* (DC.) Tutin
(p, o, fr; M, I, S, T): 22(817).
44. *Lagoecia cuminoides* L.
(a, o, fl, fr; M, I, S, T): 22(549), 23(1168).
45. *Leiotulus secacul* (Mill.) Pimenov & Ostr.
(*, p, f, fl, fr; M, I, S, T): 23(60), 23(1104), 23(1640).
46. *Lisaea strigosa* (Banks & Sol.) Eig
(**, a, o, fl, fr; M, I, S, T): 22(715).
47. *Oliveria decumbens* Vent.
(*, a, c, fl, fr; M, I, S, T): 23(1865), 24(8).
48. *Opopanax hispidus* (Friv.) Griseb.
(*, p, o, fl, fr; M, I, S, T): 23(2076).
49. *Pimpinella brachyclada* Rech.f. & Riedl
(*, p, f, fl; M): 22(785), 23(1698).
50. *Scandix stellata* Banks & Sol.
(*, a, c, fl, fr; M, I, S, T): 22(176), 23(788), 23(1026).
51. *Smyrniium cordifolium* Boiss.
(*, p, c, fl, fr; M, I, S, T): 22(548), 23(548).
52. *Tordylium aegyptiacum* (L.) Lam
(*, a, c, fl, fr; M, S, T): 23(924).
53. *Torilis chrysocarpa* Boiss. & Balansa
(*, a, vr, fr; M, I, S): 22(654), 22(717).
54. *Torilis leptocarpa* (Hochst.) C.C. Towns.
(*, a, r, fl, fr; M, I, S, T): 22(215), 23(1789), 23(1823).
55. *Torilis leptophylla* (L.) Reichb.
(*, a, c, fl, fr; M, I, S, T): 22(318), 22(375), 22(461), 22(581), 23(1108), 23(1164), 23(1641), 23(1701).
56. *Torilis tenella* (Del.) Reichb.
(*, a, o, fl, fr; M, I, S, T): 22(78), 23(543), 23(805).
57. *Zosima absinthiifolia* (Vent.) Link
(*, p, c, fr; M, I, S, T): 23(1166), 23(1658).
7. ARACEAE
58. *Biarum bovei* Blume
(**, p, vr, fl, fr; M, I, T): 23(84), 23(354).
59. *Biarum straussii* Engl.
(**, p, r, fl; M, I): 23(717).
8. ASPARAGACEAE
60. *Bellevalia glauca* (Lindl) Kunth amd Enum.
(*, p, c, hr, fl; M, I, T): 22(244), 23(71), 23(523).
61. *Bellevalia kurdstanica* Feinbrun in Pal.
(*, p, o, hr, fl; M, I): 22(87).
62. *Bellevalia mosheovii* Feinburn
63. *Bellevalia olivierii* (Baker) Wendelbo
(*, p, o, hr, fr; M, I, S, T): 23(71), 23(1088).
64. *Dipcadi erythraeum* Webb & Berthel.
65. *Muscari comosum* (L.) Mill.
(*, p, o, hr, fr; M, I, S, T): 22(20), 22(172).
66. *Muscari longipes* Boiss
(*, p, c, hr, fl, fr; M, I, S, T): 23(248), 23(402), 23(584), 23(718), 23(817).
67. *Ornithogalum cuspidatum* Bertol.
(*, p, c, hr, fl, fr; M, I, T): 22(197), 23(401), 23(818), 23(1087), 23(1138), 23(1630).
68. *Ornithogalum iraqense* Feinbrun
(p, o, hr, fl; M, I, S, T): 23(807), 23(1043), 23(1087), 23(1206).
- Ornithogalum neurostegium* Boiss. & Bl.
(*, p, o, hr, fl; M, I, S): 23(100), 23(117), 23(172), 23(209), 23(247), 23(583).
9. ASPHODELACEAE
69. *Asphodelus tenuifolius* Cav.
(*, a, c, hr, fl, fr; M, I, S): 22(21), 23(45).
10. ASPLENIACEAE
70. (*Asplenium ceterach* L. subsp. *ceterch*)
(**, a, c; M, I, S, T): 22(800), 24(42).
11. ASTERACEAE
71. *Achillea aleppica* DC. subsp. *aleppica*
(*, p, c, fl; M, I, S, T): 22(357), 23(515).
72. *Achillea ageratum* L.
(**, p, vr, fl; M): 23(1676).
73. *Achillea wilhelmsii* C.Koch
(*, p, f, fl; M, I, S, T): 21(286).
74. *Anthemis arvensis* L.
(*, a, o, fl; M, I, T): 21(25), 21(144), 22(273), 22(350), 22(384), 23(35), 23(139), 23(286), 23(409), 23(516), 23(553), 23(681), 23(1183), 23(1483).
75. *Anthemis haussknechtii* Boiss. & Reut.
(a, vr, fl, fr; M, I, T): 22(25), 22(81), 22(209), 23(768), 23(1118).
76. *Anthemis hyalina* DC.
(**, a, r, fl; M, I, S, T): 23(70).
77. *Anthemis pseudocotula* Boiss.
(*, a, f, fl; M, I, S, T): 21(160), 22(465), 23(113), 23(214), 23(361), 23(607), 23(725), 23(846), 23(908), 23(1022), 23(1075), 23(1221), 23(1260), 23(1387), 23(1482), 23(1755).
78. *Anthemis tubicina* Boiss. & Hausskn.
(*, a, f, fl; M, I, S, T): 21(17), 21(87), 21(108), 21(241), 21(288), 22(562), 22(661), 22(686), 23(286), 23(1492), 23(1568).
79. *Anthemis wettsteiniana* Hand.-Mazz.
(a, f, fl; M, I, S): 23(167), 23(1614).
80. *Anthemis sp.*
(*, a, o, fl; M): 22(14).
81. *Atractylis cancellata* L.
(*, a, o, fl, fr; M, I, S, T): 21(91), 21(302), 23(454), 23(677), 23(911), 23(954), 23(1074), 23(1330), 23(1399), 23(1487), 23(1706).
82. *Calendula alata* Rech.f.
Other collections: 7 km South of Darbandikhan, Barkley & al 118 (BUA).
83. *Calendula arvensis* L.
(*, a, c, fl, fr; M, I, S, T): 22(28), 22(118), 22(159), 23(5), 23(770).
84. *Calendula tripterocarpa* Rupr.
(**, a, c, fl, fr; M, I, S): 21(15), 21(41), 21(232), 22(392), 22(469), 23(41), 23(68), 23(137), 23(169), 23(212), 23(268), 23(360), 23(412), 23(440), 23(513), 23(576), 23(609), 23(881), 23(1068), 23(1288), 23(1334), 23(1369), 23(1406), 23(1485), 23(1528), 23(1607), 23(1854).
85. *Carduus arabicus* Jacq
Other collections: Khanaqin, Rechingen 14135.

86. *Carduus argentatus* L.
(* , a, o, fl; M, S, T): 22(129).
87. *Carduus pycnocephalus* L.
(* , a, c, fl, fr; M, I, S, T): 21(42), 22(150), 22(185), 22(248), 22(352), 22(391), 22(523), 22(531), 23(6), 23(140), 23(170), 23(287), 23(407), 23(445), 23(577), 23(682), 23(851), 23(907), 23(1023), 23(1181), 23(1269), 23(1416), 23(1673).
88. *Carduus getulus* Pomel
Other collections: between Khanaqin & Baquba, Hadac 560.
89. *Carlina kurdica* Meusel & Kästner
(* , p, f, fl, fr; M, S, T): 22(808), 23(2086), 23(2118), 23(2149).
90. *Carthamus dentatus* (Forssk.) Vahl.
(** , p, vr, fl; M, S, T):
91. *Carthamus glaucus* M. Bieb.
(* , a, o, fl; M, I, T): 22(807), 22(864), 23(2002), 23(2107).
92. *Carthamus oxyacanthus* M. Bieb.
(* , a, c, fl, fr; M, I, S): 21(391), 21(415), 22(134), 22(358), 22(390), 22(417), 22(763), 22(806), 22(910), 23(1267), 23(1336), 23(1386), 23(1484), 23(1782), 23(1869), 23(1937), 23(1940), 23(1996), 23(2065).
93. *Carthamus persicus* Desf. & Willd.
(* , a, r, fl; M, I, S, T): 23(684), 23(1563), 23(1730), 23(1998), 23(1999), 23(2018).
94. *Centaurea aggregata* Fisch. & C.A.Mey.
(* , p, c, fl, fr; M, I, T): 23(1617), 23(1721).
95. *Centaurea behen* L.
(* , p, o, fl, fr; M, I, T): 22(532), 22(694), 22(742).
96. *Centaurea benedicta* (L.) L. var. *benedicta*
(a, o, fl, fr; M, I, S, T): 21(180), 23(446), 23(1019), 23(1565).
97. *Centaurea brugiareana* (DC.) Hand.-Mazz.
(* , a, c, fl, fr; M, I, S, T): 22(246), 22(683), 22(803), 22(836), 22(1052), 23(1337), 23(1414), 23(1531), 23(1570), 23(1608), 23(1728), 23(1754), 23(1868), 23(1962), 23(2105), 23(2170).
98. *Centaurea gigantea* Sch. Bip. & Boiss
(* , b, c, fl, f; M, T): 23(2136), 23(2171).
99. *Centaurea gudrunensis* Boiss. & Hausskn
(* , p, r, fl, fr; M): 23(773).
100. *Centaurea hyalolepis* Boiss.
(* , a, c, fl, fr; M, I, S, T): 21(92), 23(258), 22(392), 22(80), 22(249), 22(349), 22(388), 22(467), 23(524), 23(125), 23(913), 23(1264), 23(1335), 23(1353), 23(1411), 23(1479), 23(1530), 23(1564), 23(1609), 23(1848), 23(1867), 23(1934), 23(2263).
101. *Centaurea iberica* Trev. ex Spreng
(* , p, c, fl; M, I, S, T): 21(414), 22(597), 22(764), 22(896), 23(1935).
102. *Centaurea irritans* Wagenitz
(* , p, r, fl; M, I): 22(788), 23(1662), 23(2337).
103. *Centaurea regia* Boiss.
(* , b, vr, fl, fr; M, I, S, T): 21(327), 22(628), 23(1672), 23(2156).
104. *Centaurea rigida* Banks & Sol.
(* , p, o, fl, fr; M, S, T): 21(208), 21(307), 23(514), 23(1268), 23(1661), 23(2338).
105. *Centaurea spectabilis* (DC.) Sch.Bip.
(* , p, r, fl, fr; Mm, I, T): 23(2023).
This species can easily be distinguished from others by the leaves, which are not decurrent or only slightly so.
106. *Centaurea solstitialis* L.
(* , p, o, fl, fr; M, I, S, T): 22(595), 22(693), 22(765), 22(804), 23(1067), 23(1726), 23(1753), 23(1995), 23(2173).
107. *Centaurea virgata* Lam.
(* , p, f, fl, fr; M, S, T): 22(830).
108. *Cichorium intybus* L.
(* , p, c, fl; M, I, T): 22(191), 22(608), 23(1283), 23(1480), 23(1801).
109. *Cichorium pumilum* Jacq.
(* , a, c, fl; M, I, S, T): 21(355), 21(389), 21(2021), 22(691), 23(423), 23(1072), 23(1259), 23(1340), 23(1413), 23(1493), 23(1731), 23(1752).
110. *Chardinia orientalis* (L.) Kuntz
(* , a, o, fl, fr; M, I, S, T): 21(218), 23(1718), 23(1179), 23(774).
111. *Cota tinctoria* (L.) J.Gay
(** , p, r, fl; M, I, S, T): 23(1612), 23(2127).
112. *Cousinia haussknechtii* C. Winkler
(* , p, o, fl, fr; M, I): 22(809), 23(2121), 23(2246), 24(74).
113. *Cousinia* sp
(* , p, -, fl, fr; M): 22(794), 22(825), 23(2155).
114. *Crepis alpina* L.
(* , p, c, fl, fr; M, I, T): 21(525), 23(1615).
115. *Crepis foetida* L. subsp. *commutata* (Spreng.) Bab.
(* , p, a, fl, fr; M, I, S, T): 21(60), 22(277), 23(298), 23(663), 23(7), 23(40), 23(112), 23(171), 23(213), 23(289), 23(579), 23(677), 23(728), 23(847), 23(912), 23(957), 23(1069), 23(1180), 23(1348).
116. *Crepis kotschyana* (Boiss.) Boiss.
(* , a, c, fl, fr; M, I, S, T): 22(303), 22(898), 23(362). *Crepis micrantha* Czerep.
(* , a, o, fl, fr; M, In, S, T): 21(354).
117. *Crepis pulchra* L.
(* , a, r, fl, fr; M, I, S, T): 21(171).
118. *Crepis sahendii* Boiss. & Buhse.
(** , p, r, fl, f; M, I, T): 22(535).
119. *Crepis sancta* (L.) Bornm
(a, c, fl, fr; M, I, S, T): 21(40), 23(413).
120. *Crupina crupinastrum* (Moris) Vis.
(* , a, c, fl, fr; M, I, S, T): 21(115), 21(212), 22(299), 22(468), 23(767), 23(844), 23(1143), 23(1184), 23(1660).
12. *Crupina vulgaris* Pers. & Cass.
(** , a, vr, fl, fr; M, I, T): 22(560), 23(1616).
122. *Echinops chardinii* Boiss. & Buhse
(* , p, c, fl, fr; M, I): 22(826), 22(828), 22(865), 23(1964), 23(2112).
123. *Echinops fraudator* C.C.Towns.
(* , p, f, fl, fr; M, I): 21(313), 22(275), 22(348), 23(419), 22(561), 22(596).
124. *Echinops orientalis* Trautv.
(* , p, c, fl, fr; M, I, T): 22(792), 22(897), 23(1966), 23(1983), 23(1992), 23(2099), 23(2102), 23(2150).
125. *Echinops parviflorus* Boiss. & Buhse
(* , p, vr, fl, fr; M, I, T): 23(2068), 23(2140).
126. *Echinops polyceras* Boiss.
(** , p, vr, fl, fr; M, S): 22(530), 22(829), 22(1087), 23(2023), 23(2148), 24(39), 24(91).
127. *Echinops shakrokii* S.A.Ahmad
(* , p, vr, fl, fr; M): 24(64).
128. *Echinops* sp
(* , p, o, fl; M): 23(1994).
129. *Eclipta prostrata* (L.) L.
(* , a, f, fl; M): 23(2178).
130. *Erigeron bonariensis* L.
(* , a, c, fl, fr; M, I, S, T): 21(349), 21(411), 22(245), 22(835), 22(944), 22(977), 23(1819), 23(1871), 23(1905), 23(2057).
131. *Erigeron canadensis* L.
(* , a, f, fl, fr; M, I, S, T): 22(1054), 23(2193), 23(2203).
132. *Filago desertorum* Pomel
Other collections: Khanaqin, Reching 9055 a, b.
133. *Geropogon hybridus* (L.) Sch.Bip.
(* , a, c, fl, fr; M, I, S, T): 22(685), 24(41).
134. *Gundelia tournefortii* L.
(* , p, c, fl; M, I, S, T): 21(43), 22(114), 22(276), 22(386), 22(748), 23(211), 23(517), 23(578), 23(679), 23(855), 23(915), 23(1619).
135. *Hedypnois rhagadioloides* (L.) F.W. Schmidt
subsp. *cretica* (L.) Hayek
Other collections: Shahraban, Reching 9736.
136. *Helianthus tuberosus* L.
(** , p, f, fl; M, I, S, T): 23(2283).
137. *Jurinea carduiiformis* (Jaub. & Spach) Boiss.
(* , b, f, fr; M, I): 23(1707), 23(2010).
138. *Klasea cerinthifolia* (Sm.) Greuter & Wagenitz
(p, vr, fl; M, I, S, T): 22(739).

139. *Koelpinia chrysoglochis* Rech.f.
Other collections: Naft Khana, Hadac 683(PR).
140. *Koelpinia linearis* Pall.
(* , a, f, fr; M, I, S, T): 23(114), 23(166), 23(410), 23(610), 23(680), 23(726), 23(849), 23(955), 23(1070).
Other collections: between Shahraban & Jalawla, Rechingen 14228 (W).
141. *Lactuca orientalis* (Boiss.) Boiss.
(* , p, o, fr; M, I, S, T): 23(2110).
142. *Lactuca saligna* L.
(a, o, fr: M, I, S, T): 22(831), 22(945), 23(1996), 23(1997), 23(2130).
143. *Lactuca scarioloides* Boiss.
(* , b, o, fr; M, I, T): 22(767), 22(834), 22(895), 22(947), 22(978), 22(1009), 22(1018), 22(1079), 23(1785), (1919), 23(2071).
144. *Lactuca tuberosa* Jacq.
(* , p, o, fr; M, I, S, T): 22(533), 23(1675).
145. *Lactuca undulata* Ledeb.
(* , a, o, fr; M, I, S, T): 22(1056), 22(1078).
146. *Matricaria aurea* (Loefl.) Sch.Bip.
(* , a, r, f, fl; M, I, S, T): 22(353), 22(359).
147. *Notobasis syriaca* (L.) Cass.
(* , a, c, M, I, S, T): 21(264), 22(136), 22(211), 22(244), 22(354), 22(385), 22(418), 22(466), 22(491), 22(525), 22(558), 23(4), 23(319), 23(487), 23(724), 23(850), 23(910), 23(953), 23(1024), 23(1071), 23(1146), 23(1262), 23(1303), 23(1332), 23(1385), 23(1481), 23(1532).
148. *Onopordum heteracanthum* C.A. Mey.
(* , b, f, fl, fr; M, I, S, T): 21(352), 23(1560), 24(73).
149. *Onopordum leptolepis* DC.
(** , b, vr, fl, fr; M, I): 23(490).
150. *Onopordum illyricum* L.
(* , b, c, fl, fr; M, I, T): 21(324), 22(629), 22(687), 22(741), 23(676), 23(1674).
151. *Phagnalon kotschyi* Sch.Bip.
(* , p, c, fl, fr; M, I, S, T): (789), 23(2152), 23(2166).
152. *Phagnalon rupestre* (L.) DC.
(* , p, o, fl, fr; M, I, S, T): 21(107), 23(1681).
153. *Picnomon acarna* (L.) Cass
(* , a, f, fl; M, I, S, T): (23(1791), 23(2097), 23(2106).
154. *Picris babylonica* Hand.-Maz.
Other collections: between Shahraban & Jalawla, Rechingen 14215(W).
155. *Picris longirostris* Schulz-Bip.
Other collections: Darbandikhan, Haines.
156. *Pseudopodospermum papposum* (DC.) Zaika, Sukhor. & N. Kilian
(* , p, vr, fl, fr; M, I, T): 22(186), 23(723).
157. *Pseudopodospermum semicanum* (DC.) Zaika, Sukhor. & N. Kilian
(* , p, f, fl, M, I, S, T): 23(772), 23(853), 23(1092).
158. *Pulicaria dysenterica* (L.) Bernh.
(* , p, c, fl; M, I, S, T): 21(409).
159. *Pulicaria gnaphalodes* (Vent.) Boiss.
(p, f, fl, fr; M, I): 22(966), 23(1820), 23(1933), 23(1958), 23(2052), 23(2119), 23(2298).
160. *Pulicaria vulgaris* Gaertn.
(* , a, r, fl, fr; M, I, T): 21(390), 22(605), 22(1100), 23(1567).
161. *Rhagadiolus papposus* (Boiss. & Buhse)
(p, o, fl, fr; M, I, S, T): 23(2300).
162. *Scorzonera phaeopappa* Boiss.
(* , p, r, fl; M, I, T): 22(301), 23(39).
163. *Scolymus maculatus* L.
(* , a, o, fl; M, I, S, T): 23(1329).
164. *Senecio glaucus* L.
(* , a, c, fl, fr; M, I, S, T): 21(16), 21(38), 21(59), 22(149), 22(274), 22(302), 22(534), 22(559), 22(630), 22(662), 23(69), 23(141), 23(359), 23(408), 23(611), 23(683), 23(769), 23(848), 23(906), 23(1116), 23(1182), 23(1258), 23(1494), 23(1613).
165. *Senecio vulgaris* L.
Other collections: Khanaqin, Rechingen 14249.
166. *Silybum marianum* (L.) Gaertn
(a, c, fl, fr; M, I, S, T): 21(99), 22(124), 22(355), 22(413), 22(768), 23(318), 23(461), 23(488), 23(593), 23(909), 23(1021), 23(1077), 23(1440), 23(1491), 23(1562), 23(1800).
167. *Sonchus asper* (L.) Hill
(* , p, o, fl, fr; M, I, T): 21(412), 22(15), 22(943), 23(921), 23(1606), 23(1849).
168. *Sonchus oleraceus* L.
(* , a or b, o, fl; fr; M, I, S, T): 22(82), 22(119), 22(1055), 22(1080), 23(457), 23(489), 23(1368), 23(1569), 23(1870), 23(1903), 23(1938).
169. *Sonchus tenerrimus* L.
(* , a, f, fl, fr; M, I, S, T): 21(237), 22(837), 22(976).
170. *Taraxacum sonchoides* (D. Don) Sch.Bip.
(* , p, o, fl; M, I, S, T): 23(2159).
171. *Tragopogon buphthalmoides* (DC.) Boiss.
(* , p, f, fl; M, I, S, T): 22(805).
172. *Tragopogon coelesyriacus* Boiss.
(* , b, o, fl, fr; M, I, S, T): 22(740), 23(411), 23(1119), 23(1654).
173. *ragopogon dubius* Scop.
(** , b, o, fl; M, T): 23(1618).
174. *Urospermum picroides* (L.) Scop. ex F.W. Schmidt
(a, c, fl, fr; M, I, S, T): 21(39), 21(110), 21(176), 22(120), 22(183), 22(212), 22(245), 22(308), 22(387), 22(470), 22(594), 22(751), 23(1025), 23(1176), 23(1177), 23(1333), 23(1802).
175. *Xanthium strumarium* L.
(* , p, c, fr; M, I, S, T): 21(444), 22(478), 22(851), 22(928), 23(986), 23(1825), 23(2190), 23(2250), 23(2300).
176. *Xeranthemum annuum* L.
(* , a, vr, fl, fr; M, In, T): 23(1680), 23(2128), 23(2164).

12. BERBERIDACEAE

177. *Leontice leontopetalum* L.
(p, o, fl, fr; M, I, S, T): 22(194), 23(54), 23(305), 23(343), 23(816), 23(1106).

13. BORAGINACEAE

178. *Anchusa azurea* Mill.
(* , p, c, fl, fr; M, I, S, T): 21(90), 21(128), 21(265), 21(308), 22(93), 22(115), 22(264), 22(313), 22(433), 22(634), 22(876), 22(912), 22(984), 23(16), 23(30), 23(123), 23(159), 23(216), 23(294), 23(447), 23(546), 23(645), 23(841), 23(886), 23(1038), 23(1134), 23(1152), 23(1227), 23(1371), 23(1506), 23(1629), 23(1773), 23(1866)
179. *Arnebia decumbens* (Vent.) Coss. & Kral.
Other collections: Khanaqin, Rechingen 14139.
180. *Arnebia linearifolia* DC.
Other collections: between Shahraban & Jalawla, Rechingen 14218.
181. *Borago officinalis* L.
(** , a, vr, fl; M, T): 22(232).
182. *Caccinia macranthera* (Banks & Sol.) Brand
Other collections: Khanaqin, Haines 1906.
183. *Echium italicum* L.
(* , p, f, fl, fr; M, I, S, T): 22(680), 22(-877), 23(1732), 23(2018).
184. *Heliotropium lasiocarpum* Fisch. & C.A. Mey.
(* , a, c, fl, fr; M, I, S, T): 22(902), 23(1842), 23(2192).
185. *Nonea caspica* (Willd.) G. Don
Other collection: Darbandikhan, Haines 1939.
186. *Nonea melanocarpa* Boiss.
(* , p, r, fl, fr; M, I, S, T): 23(1600).
187. *Onosma alborosea* Fisch. & C.A. Mey.
(* , p, o, fl; M, I, S, T): 22(306), 22(875), 23(1086), 23(1710), 23(2000).
188. *Onosma cardiostegium* Bornm.
(* , p, r, fl; M, I): 22(572), 23(152), 23(1207).
189. *Onosma macrophylla* Bornm. var. *angustifolia* Bornm.
(* , p, f, fl, fr, M, I, T): 22(127), 23(643), 23(721), 23(1417).

190. *Onosma orientale* L.
Other collections: Darbadikhan, Barkley 7725 (BUA).
191. *Onosma rostellata* Lehm.
(* , p, f, fl, fr; M, I, T): 22(786), 23(1652).
192. *Onosma wheeler-hainsei* H. Riedl
Other collections: Khanaqin, Haines s.n. (holo), (E).
193. *Rochelia disperma* (L.f.) C. Koch
(* , a, o, fr; M, I, S, T): 23(792).

14. BRASSICACEAE

194. *Aethionema carneum* (Banks & Sol.) B. Fedtch.
(* , a, o, fr; M, I, S, T): 23(828), 23(1109).
195. *Alyssum minus* (L) Rothm. var. *micranthum* (C. A. Merry) Dudley
(* , a, o, fl, fr; M, I, S, T): 21(3), 21(143).
196. *Alyssum strigosum* Banks & Sol.
(* , f, fr; M, I, S, T): 22(305).
197. *Alyssum szovitsianum* Fisch. & C.A.Mey.
(* , a, c, fr; M, I, S, T): 22(2352), 23(1114),
198. *Biscutella didyma* L.
(a, c, fr; M, I, S, T): 21(6), 21(28), 21(130), 21(156), 22(304), 22(638), 23(696), 23(795), 23(1155).
199. *Brassica deflexa* Boiss.
(* , a, o, fr; M, I, S, T): 23(357).
200. *Brassica nigra* (L.) W. D. J. Koch
(* , a, o, fl, fr; M, I, S, T): 23(549), 23(1325), 23(00).
201. *Calepina irregularis* (Asso) Thell.
(b, o, fl, fr; M, I, S, T): 21(262), 23(1012).
202. *Carrichtera annua* (L.) DC.
203. *Clypeola lappacea* Boiss.
(* , a, o, fr; M, I, S, T): 23(606).
204. *Coincya tournefortii* (Gouan) Alcaraz
(* , a, o, fl, fr; M, I, S, T): 22(520), 23(1507).
205. *Diplotaxis erucoides* (L.) DC.
(* , a, o, fl, fr; M, I, S): 22(17), 22(624), 23(122), 23(193), 23(306), 23(358), 23(475), 23(604), 23(624), 23(959), 23(1046), 23(1836).
206. *Diplotaxis harra* (Forssk.) Boiss.
(b, c, fl, fr; M, I, S): 21(259).
207. *Eruca vesicaria* subsp. *sativa* (Miller) Thell.
(* , a, c, fl, fr; M, I, S, T): 21(14), 21(194), 21(235), 21(278), 21(305), 2(347), 22(1), 22(30), 22(91), 22(141), 22(403), 22(404), 22(429), 23(19), 23(37), 23(72), 23(87), 23(119), 23(194), 23(274), 23(433), 23(547), 23(690), 23(697), 23(736), 23(826), 23(1049), 23(1326), 23(1377), 23(1444), 23(1586).
208. *Erucaria crassifolia* Delile
(** , a, vr, fl, fr; M): 22(128), 23(74), 23(455), 23(735), 23(1045).
209. *Glastaria glastifolia* Kuntze
(* , a, c, fl, fr; M, S, T): 22(50).
210. *Erucaria hispanica* (L.) Druce
(* , a, c, fl, fr; M, I, S, T): 21(268), 23(36), 23(91), 23(118), 23(195), 23(268), 23(273), 23(268), 23(603), 23(927), 23(1242).
211. *Hirschfeldia incana* (L.) Lagr. -Foss
(* , a, o, fr; M, I, S, T): 21(246), 23(2353).
212. *Iberis acutioloba* Bertol.
(* , a, o, fl, fr; M, S, T): 22(56), 23(242).
213. *Isatis cappadocica* Desv.
(* , p, o, fr; M, In, S, T): 21(165), 22(537), 23(1643).
214. *Isatis cochlearis* Boiss
(** , b, c, fl, fr; M, I, T): 22(32).
215. *Isatis lusitanica* L.
(* , a, c, fl, fr; M, I, S, T): 22(412), 23(733), 23(1156).
216. *Lepidium aucheri* Boiss.
(** , a, r, fl, fr; M, I, S): 22(92), 23(2295).
217. *Lepidium draba* L.
(* , a, o, fr; M, I, S, T): 21(191), 21(335), 21(343), 22(89), 22(458), 22(586), 23(1113), 23(1642).
218. *Leptaleum filifolium* (Willd.) DC.
between Jalaula & Muqdadiya, Reching 14229.

219. *Matthiola longipetala* (Vent.) DC.
(* , a, c, fl, fr; M, I, S, T): 22(29), 22(187), 22(270), 22(321), 23(81), 23(90), 23(121), 23(196), 23(276), 23(391), 23(531), 23(601), 23(698), 23(737), 23(827), 23(1048), 23(1243), 23(2004).
220. *Nasturtium officinale* R. Br.
(* , p, c, fl, fr; M, I, S, T): 22(236), 23(1941).
221. *Neslia apiculata* Fisch.
(* , a, o, fl, fr; M, I, S, T): 23(1686).
222. *Parlatoria cakiloidea* Boiss.
(* , a, o, fl, fr; M, I, T): 21(78).
223. *Raphanus raphanistrum* L.
(* , a, o, fl, fr; M, I, T): 22(320).
224. *Raphanus sativus* L.
(* , b, c, fr; M, I, S, T): 22(67), 22(519).
225. *Sinapis arvensis* L.
(* , a, c, fl, fr; M, I, S, T): 23(31), 23(639), 23(734), 23(928), 23(1050), 23(1245), 23(1430), 23(1804).
226. *Sinapis aucheri* x *Sinapis arvensis*
(* , a, o, fl, fr; M): 21(179).
227. *Sinapis* sp
(* , a, c, fl; M, I, S, T): 22(322), 22(402), 23(34), 23(120), 23(223), 23(275), 23(392), 23(794).
228. *Sisymbrium irio* L.
(* , a, o, fl, fr; M, I, S, T): 22(265), 23(31), 23(307), 23(476).
229. *Sisymbrium runcinatum* Lag. ex DC.
(* , a, r, fl, fr; M, I, S): 23(1047).
230. *Strigosella africana* (L.) Boch.
(* , a, o, fl, fr; M, I, S, T): 23(17), 23(33), 23(459), 23(699).

15. CAMPANULACEAE

231. *Campanula perpusilla* DC.
Other collections: Darbandikhan, Haines 2165.
232. *Campanula propinqua* Fisch.
(* , a, o, hr, fl, fr; M, I, S, T): 21(5), 21(62), 23(1051), 23(1153), 23(1656).

16. CANNABACEAE

233. *Ciltis australis* var. *caucasica* (Willd)
(* , p, o, fl, fr; M, In, S, T): 21(159), 23(455).

17. CAPPARACEAE

234. *Capparis spinosa* L. var. *leucohylla* (DC.) Boiss.
(p, c, fl, fr; M, I, S, T): 21(105), 321(363), 22(327), 22(544), 22(956), 22(985), 22(1013), 23(1585), 23(1834).
235. *Capparis spinosa* L. var. *parviflora* (Boiss.) Boiss.
(p, o, fl, fr; M, I, S, T): 21(312), 22(695), 22(857), 23(1984), 23(2104), 23(2126).

18. CAPRIFOLIACEAE

236. *Cephalaria dichetophora* Boiss
(* , a, o, hr, fl, fr; M, I, S, T): 22(688), 22(791).
237. *Cephalaria syriaca* (L.) Schard.
(a, c, fl, fr; M, I, S, T): 22(664).
238. *Valerianella dentata* (L.) Poll.
239. *Valerianella deserticola* Hadač
(** , a, o, fl, fr; M, I, S): 23(686).
240. *Valerianella coronata* (L.) DC.
(* , a, o, fr; M, I, S, T): 23(2345).
241. *Valerianella kotschy* Boiss.
(* , a, o, fl, fr; M, I, S, T): 22(231).
242. *Valerianella muricata* (Stev.)
(a, o, fl, fr; M, I, T): 22(359).
243. *Valerianella oxyrhyncha* Fisch.
(a, o, fl, fr; M, I, T): 23(115).
244. *Valerianella vesicaria* (L.) Moench.

(a, o, fl, fr; M, I, S, T): 21(150), 22(34), 23(116), 23(176), 23(250), 23(685), 23(821), 23(887), 23(951), 23(1175), 23(1239), 23(1687).

19. CARYOPHYLLSCEAE

245. *Arenaria leptocladus* (Rchb.) Guss.
(*, a, c, fl, fr; M): 23(1016).
246. *Arenaria serpyllifolia* L.
(**, a, vr, fl, fr; M, I, S, T): 23(1017).
247. *Cerastium dicotomum* L.
(*, a, f, fl; M, I, T): 23(1638).
248. *Dianthus siphonocalyx* Blakelock
(*, p, c, fl, fr, M, T): 23(2094).
249. *Dianthus strictus* subsp. *strictus* var. *subenervis* Banks & Soland
(*, p, c, fl, fr; M, I, T): 21(81), 22(678), 23(1590), 23(1748).
250. *Dianthus strictus* subsp. *velutinus* (Boiss.) Greuter & Burdet
(*, p, o, fl, fr; M, S): 23(2134); 22(632).
251. *Dianthus zonatus* var. *hypochlorus* (Boss. & Helder) Reeve
(**, p, vr, fl, fr; M, S, T): 23(2134).
252. *Gypsophila pilosa* Hudson
(*, a, c, fl, fr; M, I, S, T): 21(267), 22(239), 22(324), 22(432), 23(163), 23(240), 23(328), 23(399), 23(435), 23(521), 23(554), 23(600), 23(673), 23(749), 23(916), 23(1317), 23(1378), 23(1410), 23(1468), 23(1517).
253. *Hernaria hemistemon* J. Gay
(**, p, o, fl, fr; M, I, S): 21(48), 23(1014), 23(1248), 23(1346), 23(1573).
254. *Loeflingia hispanica* L.
Other collections: Shahraban, Rechinger 9725.
255. *Mesostemma gypsophiloides* (Fenzl) M. T. Sharples & E. A. Tripp
(*, p, f, fr; M, I, S, T): 23(2013).
256. *Pteranthus dichotomus* Forrsk.
257. *Silene ampullata* Boiss.
(*, p, f, fl, fr; M, I, S, T): 23(2162).
258. *Silene apetala* Wild.
(**, a, o, fr; M, I, S, T): 21(11), 21(252), 21(304), 22(48), 22(84), 22(205), 22(326), 22(455), 23(66), 23(131), 23(239), 23(325), 23(354), 23(397), 23(473), 23(518), 23(598), 23(747), 23(918), 23(1375), 23(1428), 23(1852), 23(190).
259. *Silene colorata* subsp. *oliveriana* (Oth) Rohrb.
(**, a, o, fl, fr; M, I, S, T): 21(37), 22(284), 23(165), 23(355), 23(689), 23(867), 23(919), 23(1151).
260. *Silene coniflora* Nees & Oth
(*, a, f, fl, fr; M, I, S, T): 22(75), 22(488), 23(132), 23(398), 23(520), 23(551), 23(597), 23(746).
261. *Silene conoedia* L.
(*, a, o, fl, fr; M, I, T): 22(206), 23(324), 23(672), 23(1110), 23(1289), 23(1574), 23(1779).
262. *Silene longipetala* Vent.
(*, p, o, fl, fr; M, I, S, T): 23(1712).
263. *Silene microsperma* Fenzl
(*, a, r, fr; M, I): 23(1512), 23(1575), 23(1969).
264. *Silene rubella* L.
Other collections: Khanaqin, Rechinger 14127.
265. *Silene vivianii* Steudel
Other collections: Khanaqin, Rechinger 9054.
266. *Saponaria* sp.
(a, M): 23(720), 23(1027).
267. *Stellaria media* (L.) Vill.
(*, a, o, fl; M, I, S, T): 21(249).
268. *Vaccaria hispanica* (Mill.) Rauschert
(*, a, c, fl, fr; M, I, T): 21(82), 21(234), 23(276), 23(345), 22(207), 22(258), 23(325), 22(431), 22(487), 22(504), 22(616), 22(782), 22(871), 23(16423 (400), 23(472), 23(484), 23(519), 23(550), 23(599), 23(688), 23(748), 23(868), 23(917), 23(952),

23(1015), 23(1247), 23(1297), 23(1316), 23(1348), 23(1423), 23(1467), 23(1513), 23(1571), 23(1671), 23(2266).

269. *Velezia rigida* L.

(* , a, c, fl, fr; M, T): 22(633), 22(657), 23(1319), 23(1670).

20. CISTACEAE

270. *Fumana arabica* (L.) Spach.
(*, p, o, fl; M, I, S, T): 23(2145).
271. *Helianthemum ledifolium* subsp. *lasiocarpum* (Willk.) Rech. F.
(*, a, o, fl, fr; M, I, T): 21(117), 22(102), 22(568), 23(174), 23(292), 23(405), 23, 23(529), 23(581), 23(671), 23(750), 23(805), 23(813), 23(1115), 23(1646).

21. CLEOMACEAE

272. *Cleome amblycarpa* Barranté & Murb.
(a, o, fr; M, I, S, T): 23(2037)
273. *Cleome glaucescens* DC.
(a, o, fl, fr; M, I, S, T): 23(764).
274. *Cleome quinquerivaria* DC.
(p, c, fl; M, I, S, T): 22(1075), 22(1111), 23(2042), 23(2072), 23(2219), 23(2279).

22. CONVULVULACEAE

275. *Convolvulus arvensis* L.
(*, p, c, fl, fr; M, I, S, T): 21(233), 21(255), 21(269), 21(275), 21(282), 21(337), 21(380), 21(405), 22(140), 22(311), 22(398), 22(514), 22(622), 22(754), 22(763), 22(846), 22(927), 22(950), 22(1003), 22(1043), 22(1050), 22(1069), 22(1096), 23(466), 23(481), 23(1787), 23(1809), 23(1833), 23(1881), 23(1972), 23(2207), 23(2307).
276. *Convolvulus cephalopodus*
277. *Convolvulus chondrilloides* Boiss. Var. *chondrilloides*
(*, p, r, fl, fr; M, I, T): 23(2073), 23(2082), 23(2124), 23(2243).
278. *Convolvulus hamrinensis* Rech. f.
Other collections: Muqdadaya, Rechinger 8083 (holo, W).
279. *Convolvulus leptocladus* Boiss.
Other collections: Karati, Khanaqin, Rawi 5720.
280. *Convolvulus kotschyanus* Boiss.
(**, p, r, fl, fr; M, S, T): 21(419).
281. *Convolvulus reticulatus* subsp. *reticulata* 23(1991)
282. *Convolvulus stachydifolius* Choisy
(*, p, fl; M, I, S, T): 21(280), 22(55), 22(233), 22(312), 22(503), 22(926), 23(265), 23(309), 23(533), 23(667), 23(716), 23(802), 23(814), 23(1287).
283. *Cuscuta babylonica* Aucher ex Choisy
(*, p, o, fl, M, I, S, T): 22(990), 23(2103).
284. *Cuscuta compestris* Yuncker
(*, a, r, fl, fr; M, I): 21(377), 21(439), 22(845), 22(948), 23(1955).
285. *Cuscuta lehmanniana* Bunge
(*, a, c, fl; M, I, S, T): 23(666), 23(815), 23(1042).
286. *Ipomoea purpurea* (L.) Roth.
(*, p, f, fl; M): 21(9), 22(1070).

23. CRASSULACEAE

287. *Sedum caespitosum* (CAV.) DC.
(*, a, o, hr, fl, fr; M, S, T): 23(631).
288. *Umblicus horizontalis* var. *intermedius* Boiss.
(*, p, o, hr, fl, fr; M, I, S, T): 21(163), 22(557).
289. *Umblicus tropaeolifolius* Boiss.
(*, p, o, hr, fl, fr; M, I, S, T): 21(163), 22(557).

24. CUCURBITACEAE

2890. *Citrullus colocynthis* (L.) Schrad.
(p, c, fl, fr; M, I, S, T): 21(437), 22(785), 22(869), 22(878), 22(953), 23(1774), 23(2211).

25. **CYPERACEAE**

291. *Bolboschoenus maritimus* (L.) Palla
(*, p, c, hr, fl, fr; M, I, S, T):
292. *Cyperus glaber* L.
(*, a, o, hr, fl, fr; M, I, S, T): 21(430), 22(981).
293. *Cyperus iria* L.
(a, r, hr, fl, fr; M, I, S, T): 22(1007), 23(1891), 23(2064), 23(2181).
294. *Cyperus longus* L.
(*, p, o, hr, fr; M, I, S, T): 23(1737).
295. *Cyperus michelianus* (L.) Delile
(**, a, o, hr, f, fr; M, I, S, T): 22(1099).
296. *Eleocharis atropurpurea* (Retz.) Presl
Other collections: Darbandikhan, Haines 2024 (E).
297. *Fimbristylis bisumbellata* (Forssk.) Bub.
(**, a, o, hr, fl, fr; M, I, S, T): 22(962), 23(1818), 23(2041), 23(2060).
298. *Pycnus polystachyos* (Rotch.)
(**, a, vr, hr, fl; M):
299. *Schenoplectus lacustris* (L.) Palla
(***, p, vr, hr, fr; M): 23(2026).
300. *Schenoplectus litoralis* (Schard.)
(*, p, c, hr, fl, fr; M, I, S): 21(386), 22(1084).
301. *Scripocedes holoschoenus* L.
(*, p, r, hr, fl, fr; M, I, S, T): 22(675), 22(746), 23(1282), 23(1392), 23(1735).
302. *Torulinum odoratum* (L.) Hooper in Kew
(**, a, o, hr, fl, fr; M): 21(351), 21(421), 22(772), 22(980), 22(1024), 22(1083), 22(1098), 23(1431), 23(1546), 23(1832), 23(2252), 23(2286).

25. **DIPSACACEAE**

303. *Pterocephalus plumosus* (L.) Coult
(*, a, c, hr, fl, fr; M, I, S, T): 21(85), 21(325), 22(540), 22(585), 22(783), 23(1540), 23(1688).
304. *Scabiosa brachycarpa* Boiss.
(**, p, o, fl, fr; M, I, S): 23(1993).
305. *Scabiosa divaricata* Jacq.
(**, a, f, hr, fl, fr; M, S, T): 22(584).
306. *Scabiosa leucactis* Patzak.
(*, a, o, hr, fl, fr; M, I): 23(822), 23(1061).
307. *Scabiosa palaestina* var. *palaestina* Boiss.
(*, a, c, hr, fl, fr; M, I, S, T): 21(51), 22(721), 22(814).
308. *Scabiosa porphyronera* Blakelock
(**, a, f, hr, fl, fr; M, I, S): 23(584).

26. **EPHEDRACEAE**

309. *Ephedra transitoria* Riedl
Other collections: Kifri, Gillett & Rawi 7411.

27. **EQUISETACEAE**

310. *Equisetum ramosissimum* Desf.
(p, f, fr; M, I, S, T): 21(360), 22(95), 22(914), 23(2231), 23(2287).

28. **EUPHORBIACEAE**

311. *Andrachne aspera* spreng.
(*, p, o, fl, fr; M, I, T): 22(218), 23(67), 23(1980), 23(2217)
312. *Andrachne telephioides* L.
(p, c, fl, fr; M, I, S, T): 21(318), 21(356), 22(237), 22(938), 22(1058), 22(1082), 23(270), 23(1651), 23(1855), 23(1900), 23(2167), 23(2208).
313. *Chrozophora tinctoria* L.
(a, c, hr, fl, fr; M, I, S, T): 21(404), 22(844), 22(866), 22(888), 22(939), 22(975), 22(1004), 22(1029), 22(1103), 23(1412), 23(1579), 23(1764), 23(1806), 23(1843), 23(1876), 23(1886), 23(1931), 23(1970), 23(2054), 23(2186), 23(2214), 23(2302).
314. *Euphorbia chamaesyce* L.

- (a, o, hr, fl, fr; M, I, S, T): 21(263), 21(416), 21(4442), 21(445), 22(770), 22(841), 23(1899), 23(1932).
315. *Euphorbia denticulata* Lam.
(**, p, c, fl, fr; M, I, S, T): 21(336), 22(570), 22(816), 22(868), 23(779), 23(1132), 23(1708), 23(2025), 23(2132).
316. *Euphorbia falcata* L.
(a, c, fl, fr; M, I, S, T): 22(710), 23(1250), 23(1403), 23(1877).
317. *Euphorbia granulata* Forssk.
Other locations: 45 km North of Jalawla, Rawi *et al* 29511.
318. *Euphorbia helioscopia* L.
(*, a, c, fl, fr; M, I, S, T): 21(204), 21(287), 22(64), 22(135), 23(14), 23(15), 23(464), 23(830), 23(1011).
319. *Euphorbia hirta* L.
(**, a, r, hr, fl, fr; S): 22(842), (1057), 23(1904).
320. *Euphorbia hypericifolia* L.
(**, a, vr, fl, fr): 22(485), 22(937), 22(2878).
321. *Euphorbia indica* Lam.
(*, a, vr, hr, fl, fr; M, I, S, T): 22(847), 22(1057), 1904).
322. *Euphorbia macrocarpa* Boiss.
(**, a, o, hr, fl, fr; M, I, T): 21(213), 21(320), 22(569), 22(639), 22(732), 23(1733).
323. *Euphorbia marginata* Pursh.
(**, a, vr, hr, fl; M): 22(821).
324. *Euphorbia petiolata* Banks & sol.
(*, a, c, fl, fr; M, I, S, T): 22(843), 23(1402), 23(1605), 23(1839), 23(1909).
325. *Euphorbia phymatoserma* Boiss & Gaill.
(**, a, vr, hr, fr; M, I, S): 23(1131), 23(1628).
326. *Ricinus communis* L.
(**, p, o, fr; M, I, S, T): 23(1604).

29. **FABACEAE**

327. *Alhagi graecorum* Boiss.
(*, p, c, fl; M, I, T): 21(365), 21(377), 22(407), 22(775), 22(930), 23(1232), 23(2048), 23(2209).
328. *Anagyris foetida* L.
(*, p, f, fl, fr; M, S, T): 22(167), 24(80).
329. *Arachis hypogaea* L.
(**, a, f, f, fl; M): 22(983), 23(997).
330. *Astragalus bombycinus* Boiss.
Other collections: 10 km South of Khanaqin, Reching 9072.
331. *Astragalus bruguieri* Boiss
(*, p, o, fl, fr; M, I): 22(174), (677).
332. *Astragalus caprinus* L. subsp. *lanigerus* (Desf.) Maire
(*, p, o, fl, fr; M, I, S, T): 22(173), 23(787).
333. *Astragalus chaborasicus* Boiss & hawsskn.
(*, p, c, fl, fr; M, S, T): 23(835), 23(835).
334. *Astragalus corrugatus* Bertol.
(*, a, o, fl, fr; M, I, S, T): 23(742).
335. *Astragalus curvirostris* Boiss subsp. *psilocarpus* Townsend
(*, p, r, fl; M, I): 23(93).
336. *Astragalus gossypinus* Fisch.
(*, p, c, fl, fr; M, I, S, T): 23(2089), 23(2117), 23(2245), 23(2272).
337. *Astragalus kirrindicus* Boiss.
(*, p, o, fr; M, I): 23(2163).
338. *Astragalus laguriformis* Freyn.
(*, p, o, fl; M, I, T): 23(1716).
339. *Astragalus schimperii* Boiss.
Other collections: Pilkana, 10 km East of Khanaqin, Rawi 12622.
340. *Astragalus Hamosus* L.
Other collections: Qizil Robat (Sa'diya) Guest 1965.
341. *Astragalus sp.*
(*, a, c, fl, fr; M, S): 23(978).
342. *Astragalus spinosus* (Forssk.) Muschl.
(*, p, c, fl, fr; M, I, S): 22(334), 23(147).
343. *Astragalus rawianus* Townsend
(*, p, r, fl; M, I): 21(120), 23(1620).

344. *Astragalus russelii* Banks & Sol.
(*, p, o; fl, fr; M, I, S, T): 23(12), 23(95), 23(575).
345. *Coronilla scorpioides* (L.) W. D.J. Koch
(a, o, fl; M, In, S, T): 21(55), 21(367), 22(144), 22(226), 22(280), 22(379), 22(702), 23(9), 23(124), 23(190), 23(229), 23(314), 23(417), 23(424), 23(571), 23(591), 23(741), 23(796), 23(840), 23(), 23(893), 23(965), 23(992), 23(1205), 23(1308), 23(1379), 23(1473), 23(1692), 23(1771), 23(1850), 23(1863).
346. *Glycyrrhiza glabra* L.
(p, c, fl, fr; M, I, S, T): 21(310), 22(435), 22(526), 22(967), 22(1097), 23(1799), 21(364), 23(381).
347. *Hippocrepis multisiliquosa* L.
(*, a, f, fl, fr; M, I, S, T): 22(148), 22(227), 23(279), 23(315), 23(574), 23(593), 23(744), 23(966), 23(1597).
348. *Hippocrepis unisiliquosa* L. subsp. *Bisiliqua* (Forssk.) Bornm.
(a, o, fl, fr; M, I, S, T): 22(23), 22(335), 23(58), 23(187), 23(227), 23(334), 23(438), 23(510), 23(654), 23(834), 23(1350), 23(1500), 23(1694).
349. *Hippocrepis areolata* Desv.
Other collections: Shahraban (Muqyadiya), Haines W. 844.
350. *Hymenocarpus circinnatus* (L.) Savi.
(a, f, fl, fr; M, I, S, T): 22(36), 22(269), 23(55), 23(192), 23(280), 23(316), 23(507), 23(833), 23(970), 23(976), 23(1202), 23(1300), 23(1477), 23(1498).
Other collection was in Kani Kirmaj, Poore 468.
351. *Lathyrus aphaca* L.
(*, a, c, fl, fr; M, I, T): 23(984), 23(1459).
352. *Lathyrus inconspicuus* L.
(*, a, o, fl, fr; M, I, S, T): 21(67), 21(134), 22(279), 23(189), 23(279), 23(312), 23(652), 23(839), 23(895), 23(1123), 23(1163), 23(1200), 23(1770).
353. *Lathyrus sphaericus* Retz.
(*, a, vr, fl, fr; M, I, S, T): 23(56), 23(739).
354. *Lens orientalis* (Boiss.) Hand. -Mazz.
(*, a, f, fr; M, I, S, T): 22(296), 23(1094), 23(1622).
355. *Lotus halophilus* Boiss. & Sprun.
(*, a, o, fl; M, I, S, T): 22(452).
356. *Medicago coronata* (L.) Bartal.
(*, a, o, fl, fr; M, I, S, T): 22(8), 22(336), 22(383), 23(231), 23(281), 23(341), 23(565), 23(650), 23(838), 23(979).
357. *Medicago intertexta* (L.) Mill.
(**, a, o, fl, fr; M, I, S, T): 22(613).
358. *Medicago laciniata* (L.) Mill.
(a, f, fr; M, I, S): 22(298), 23(527), 23(894).
359. *Medicago lupulina* L.
(*, a, o, fl, fr; M, I, S, T): 23(191), 23(653), 23(1497).
360. *Medicago minima* (L.) Bartal.
(*, a, o, fl, fr; M, I, S, T): 22(565), 23(460), 23(653), 23(853), 23(980), 23(1475).
361. *Medicago noeana* Boiss.
(*, a, r, fl, fr; M, T): 22(57).
362. *Medicago orbicularis* (L.) Bartal.
(*, a, c, fr; M, I, S, T): 21(185), 22(563).
363. *Medicago rigidula* (L.) All.
(*, a, r, fr; M, I, S, T): 22(309), 23(419), 23(784).
364. *Medicago rotata* Boiss.
(**, a, vr, fl, fr; M, S, T): 23(184).
365. *Medicago sativa* L.
(*, a, c, fl, fr; M, I, S, T): 21(231), 23(1395), 23(2053), 23(2205).
366. *Medicago* sp.
(a, o, fl, fr; M): 23(745).
367. *Melilotus messanensis* (L.) All.
Other collections: Jabal Hamrin, Anthony.
368. *Ononis reclinata* L.
(a, o, fl; M, I, S, T): 23(2355).
369. *Ononis serrata* Forssk.
(*, a, o, fl; M, I, S, T): 23(985), 23(1278), 23(1460).
370. *Onobrychis acaulis* Bornm.
(*, p, c, fl; M, I): 23(188), 23(651).
371. *Onobrychis caput-galli* (L.) Lam.
(a, f, fl; M, I, S, T): 21(65).
372. *Onobrychis cristo-galli* (L.) Lam
(*, a, c, fl, fr; M, I, S, T): 22(292), 22(700), 23(126), 23(186), 23(232), 23(278), 23(416), 23(509), 23(566), 23(590), 23(647), 23(836), 23(889), 23(964), 23(990), 23(1024), 23(1229), 23(1307), 23(1415), 23(1502).
373. *Onobrychis ptolemaica* (Del.) DC. subsp. **Macroptera**
(*, p, o, fl; M, I, S): 23(283).
374. *pisum sativum* L.
(*, a, c, fl, fr; M, I, S, T): 22(436), 23(1093), 23(1122), 23(1626).
375. *Prosopis farcta* (Banks et Sol.) Macbride
(*, c, fl, fr; M, I, S, T): 21(309), 21(373), 21(417), 22(852), 22(931), 23(1830), 23(2114), 23(2270).
376. *Scorpiurus muricatus* L. var. *muricatus*
(*, a, o, fl, fr; M, I, S, T): 21(244), 22(223), 22(281), 22(382), 22(451), 22(735), 23(228), 23(339), 23(743), 23(987), 23(1397), 23(1474), 23(1550), 23(2356).
377. *Scorpiurus muricatus* L. var. *subvillosus* (L.) Lam.
(*, a, c, fl, fr; M, I, S, T): 22(133), 22(339), 22(434), 22(479), 22(612), 22(701), 23(313), 23(418), 23(453), 23(512), 23(648), 23(786), 23(832), 23(892), 23(1052), 23(1201), 23(1230), 23(1499).
378. *Scorpiurus muricatus* L. var. *aknown*
(**, a, o, fl, fr; M): 23(181), 23(570).
379. *Trifolium arvense* L.
(*, a, o, fl, fr; M, I, S, T): 23(983).
380. *Trifolium campestre* Schreb.
(*, a, c, fl; M, I, S, T): 21(167), 22(333), 22(482), 22(553), 22(567), 22(651), 22(652), 23(808), 23(891), 23(981), 23(1160), 23(1203), 23(1231), 23(1299), 23(1344), 23(1407), 23(1471), 23(1496), 23(1551).
381. *Trifolium dasyurum* Presl.
(*, a, o, fl, fr; M, I, S, T): 23(837), 23(1121), 23(1199).
382. *Trifolium echinatum* Bieb.
Other collections: Darbandikhan, Sadiq & ali 152 (K).
383. *Trifolium haussknechtii* Boiss.
(**, a, r, fl, fr; M, I, T): 21(190), 22(551), 22(703).
Rare in Kurdistan Iraq, only found twice, in the N.W. sector of the moist steppe zone, and Bashiqa, between Fadhiliya and Bashiqa, (HUJ). The above collection is a third from Iraq.
384. *Trifolium lappaceum* L.
(*, a, o, fl, fr; M, I, S, T): 21(361), 23(1743).
385. *Trifolium purpureum* Loisel.
(*, a, c, fl, fr; M, I, S, T): 21(46), 21(209), 21(332), 22(376), 22(481), 22(564), 22(650), 22(733), 23(1625), 23(1693), 23(1722), 23(1746).
386. *Trifolium resupinatum* L.
(*, a, c, fl; M, In, S, T): 21(97), 21(162), 21(361), 21(395), 22(10), 22(73), 22(132), 22(243), 22(378), 22(450), 22(614), 22(676), 23(342), 23(463), 23(465), 23(480), 23(890), 23(988), 23(1279), 23(1365), 23(1405), 23(1438), 23(1548), 23(1798).
387. *Trifolium scabrum* L.
(*, a, o, fl, fr; M, I, S, T): 23(1525), 23(1624).
388. *Trifolium* sp.
(*, a, o, fl; M): 21(114).
389. *Trifolium stellatum* L.
(*, a, f, fl, fr; M, I, S, T): 21(7), 21(27), 21(104), 22(295), 23(649), 23(898), 23(977), 23(1053), 23(1159), 23(1290), 23(1501).
390. *Trifolium subterraneum* L.
Other collections: Darbandikhan, Haines 1624.
391. *Trifolium tomentosum* L. var. *tomentosum*
(a, o, fl, fr, M, I, T): 23(311), 23(564), 23(589), 23(2408), 23(1547).
392. *Trigonella uncinata* Banks & Sol.
(a, o, fl, fr; M, I, S, T): 23(511), 23(592), 23(809), 23(897), 23(969).
393. *Vicia articulata* Hornem.
(**, a, r, fl, fr; M, T): 22(222), 23(10), 23(183).

394. *Trigonella coerulescens* (M. Bieb.) Halacsy
Other collections: Tuz Khurmatu, Nabeleck 3048.
395. *Vicia assyriaca* Boiss.
(**, a, r, fl, fr; M, I, S, T): 22(97), 22(116), 22(130), 22(224), 22(337), 22(380), 23(185), 23(439), 23(468), 23(896), 23(968), 23(1396), 23(1845).
396. *Vicia hirsuta* (L.) S. F. Gray.
(**, a, vr, fl, fr; M, S, T): 22(278), 22(653), 23(1690), 23(2354).
397. *Vicia hybrida* L.
(* , a, r, fl, fr; M, I, S, T): 22(679).
398. *Vicia koeieana* Rech.f.
(**, a, r, fl; M, I, T): 23(1470).
399. *Vicia lathyroides* L.
(**, a, vr, fl, fr; M, S, T): 22(52), 22(282).
400. *Vicia michauxii* Spreng.
(* , a, o, fl, fr; M, I, S, T): 21(76), 22(283), 23(233), 23(1161).
401. *Vicia monantha* Retz.
(* , a, c, fl, M, I, S, T): 23(48).
402. *Vicia narbonensis* L.
(* , a, c, fl; M, I, S, T): 22(172), 22(477), 23(567), 23(1095), 23(1621).
403. *Vicia sativa* subsp. *amphicarpa* (Dorthe) Asch.
(* , a, o, fl, fr; M, S, T):
404. *Vicia sativa* subsp. *nigra* Ehrh.
(* , a, o, fl, fr; M, I, S, T): 21(77), 21(131), 21(184), 22(338), 23(285), 23(478), 23(738), 23(1198), 23(1691).
405. *Vicia sativa* subsp. *sativa* L.
(* , a, c, fl, fr; M, I, S, T): 21(211), 22(22), 22(131), 22(381), 22(453), 22(476), 22(552), 22(566), 22(704), 22(734), 23(588), 23(1120), 23(1888).
406. *Vicia tenuifolia* Roth.
(* , p, c, fl, fr; M, I, S, T): 23(1470).
407. *Vigna unguiculata* (L.) Walp.
(* , a, c, fl, fr; M, I, S, T): 23(2195).
- 30. FAGACEAE**
408. *Quercus persica* Jaub. & Spach
(* , p, r, fr; M, I): 21(449), 23(2129).
409. *Quercus brantii* Lindl.
(* , p, c, fr; M, I, S, T): 21(448), 22(708), 23(1738), 23(2017), 23(2141).
- 31. FRANKENIACEAE**
410. *Frankenia hirsuta* L.
Other collections: Mandali, Guest 786.
- 32. GENTIANACEAE**
411. *Blackstonia perfoliata* (L.) Hudson subsp. *perfoliata*
(* , a, r, hr, fl; M, S, T): 22(905).
412. *Centaurium pulchellum* (Sw.) druce.
(* , a, c, hr, fl; M, I, T): 23(1749).
413. *Schenkia spicata* (L.) G. Mans.
(**, a, o, hr, fl; M, I, S, T): 23(973).
414. *Centaurium tenuiflorum* (Hoffm. & Link) Fritsch
(**, a, o, hr, fl; M, I, S, T): 23(1298), 23(1342), 23(1457), 23(1514).
- 33. GERANIACEAE**
415. *Erodium ciconium* (Jusl.) L'Her. ex Aiton
(* , a, c, fl, fr; M, I, S, T): 21(13), 21(196), 23(51), 23(146), 23(345), 23(542), 23(926), 23(1172).
416. *Erodium cicutarium* (L.) L'Her. ex Aiton
(* , a, c, fl, fr; M, I, S, T): 21(52), 22(61), 22(147), 2(396), 23(175), 23(346).
417. *Erodium gruinum* (L.) L'Hér.
(* , a, f, fl, fr; M, I, S, T): 22(98), 23(50), 23(98), 23(145), 23(236), 23(326), 23(819), 23(1037).
418. *Erodium malacoides* (L.) L'Hér.
(* , a, f, fl, fr; M, I, S, T): 22(43), 23(268), 23(395), 23(486), 23(731), 23(1158), 23(1657).
419. *Erodium moschatum* (L.) L'Her. & Aiton
Other collections: Khanaqin, Reching 9023, 14107.
420. *Geranium dissectum* L.
(* , a, o, fl, fr; M, I, S, T): 22(635), 22(659), 23(1124).
421. *Geranium kurdicum* Bormm.
(* , a, fr, fl, fr; M, T): 21(169), 21(207), 22(555), 23(800), 23(1157), 23(1171), 23(1645).
422. *Geranium divaricatum*
423. *Geranium lucidum* L.
(* , a, o, fl, fr; M, I, S, T): 21(10).
424. *Geranium tuberosum* L.
(* , a, c, fl, fr, M, I, S, T): 23(1099), 23(1125).
(* , a, c, fl, fr; M, I, S, T): 22(902), 23(1842), 23(2192).
- 34. HYPERICACEAE**
425. *Hypericum amlysepalum*
(p, r, fl; M, I, S, T): 23(1720).
426. *Hypericum perforatum* L.
(p, c, fl; M, I, S, T): 23(2030).
427. *Hypericum triquetrifolium* Turra.
(p, f, fl; M, I, S, T): 22(815), 22(1089), 23(1982).
- 35. IRIDACEAE**
428. *Crocus biflorus* Mill. & Gard.
(**, p, r, hr, fl; M, I, T): 22(164).
429. *Gladiolus italicus* Mill. & Gard.
(* , p, c, hr, fl; M, I, S, T): 22(689).
430. *Moraea sisyrinchium* Ker Gawl.
(* , p, c, hr, fl; M, I, S, T): 22(45), 23(110), 23(143), 23(237), 23(525), 23(763), 23(842), 23(1139).
431. *Iris aucheri* (Bak.)
(* , p, o, fl; M, I, S, T): 23(1094).
432. *Iris postii* Mouterde & Nouv.
(**, p, c, hr, fl, fr; M, S): 23(109).
- 36. IXIOLIACEAE**
433. *Ixilirion tataricum* Herb
(p, c, fl; M, I, S, T) 23(403), 23(443), 23(497), 23(765).
- 37. JUNCACEAE**
434. *Juncus acutus* L.
(**, p, o, hr, fr; M, I, S, T): 22(473), 23(1812), 23(2222).
435. *Juncus bufonius* L.
(* , P, c, hr, fl, fr; M, I, S, T): 23(1373), 23(1544).
436. *Juncus hybridus* Brot.
(a, o, hr, fl, fr; M, I, T): 22(913), 22(995), 23(1393), 123(1740).
437. *Juncus rigidida* Desf.
(**, p, c, fl, fr; M, I, S, T): 22(887), 23(2040).
- 38. LAMIACEAE (LABIATAE)**
438. *Ajuga zakhoensis* Rech. F.
(**, a, r, fl; M, I): 22(797), 23(1665).
439. *Lallemantia iberica* Fisch. & A.C. Mey
(* , a, o, fl; M, I, S, T): 23(637).
440. *Lamium amplexicaule* L.
(* , a, c, fl, fr; M, I, S, T): 23(138), 22(297), 23(1101), 23(1130), 23(1208).
441. *Marrubium parviflorum* Fisch. & May.
(* , p, vr, fl; M, I, T): 22(395), 23(757).
442. *Marrubium vulgare* L.
(**, p, r, fl, fr; M, I, S, T): 22(573).
443. *Mentha longifolia* L. subsp. *typhoides* (Briq.) Harley.
(* , p, c, fl, fr; M, I, S, T): 22(906), 22(957), 22(992), 22(1068), 23(2238).
444. *Mentha spicata* L. subsp. *spicata*

- (**, p, f, fl, fr; M, I, S, T): 21(425), 22(1023), 23(1923), 23(2038), 23(2184)
445. *Micromeria myrtifolia* Boiss. & Hohen.
(* , p, o, fl, fr; M, I, S, T): 21(141), 21(224), 21(322), 22(556), 23(1683), 23(2144).
446. *Nepeta humilis* Benth.
(* , a, c, fl, fr; M, I, T): 23(2011).
447. *Nepeta nuda* L. subsp. *albiflora* (Boiss.) Gams.
(* , p, f, fl; M, S, T): 23(1664).
448. *Nepeta* sp.
(* , p, o, fl; M, I, S, T): 23(2165).
449. *Ocimum basilicum* L.
(**, a, f, fr, fl; M, I, S, T): 22(1006)
450. *Phlomis armenica* Willd.
(* , p, vr, fl, fr; M, I, T): 23(1314).
451. *Phlomis bruguieri* Desf.
(p, r, fl, fr; M, I, T): 22(812), 23(1255), 23(1524), 23(1736), 23(1968), 23(2001).
452. *Phlomis kurdica* Rech. F.
(* , p, r, fl; M, I, S, T): 22(796).
453. *Phlomis linearis* Boiss. & Balansa
454. *Phlomis rigida* Labill.
(* , p, o, fl; M, I, S, T): 23(2174).
455. *Phlomis* sp.
(* , p, r, veg; M, I): 23(1209).
456. *Phlomoides laciniata* (L.) Kamelin & Makhm.
(* , p, r, fl; M, I, S, T): 22(161).
457. *Salvia ceratophylla* L.
(**, b, r, fl; M, I, S, T): 23(108), 23(755), 23(1441).
458. *Salvia compressa* Vent.
(p, c, fl, fr; M, I, T): 21(94), 22(109), 22(143), 22(287), 22(422), 22(574), 23(448), 23(449), 23(920), 23(947), 23(1065), 23(1315), 23(1442), 23(1649).
Other collections: Darbandikhan, Barkley & Shehbaz 7701 (BUA).
459. *Salvia indica* L.
(* , p, f, fl; M, I, T): 21(166), 23(1100), 23(1610).
460. *Salvia multicaulis* Vahl.
(* , p, r, fl, fr, M, I, S, T): 23(799), 23(860).
- 561.. *Salvia palaestina* Benth.
(* , p, o, fl, fr; M, I, T): 21(31), 21(63), 21(93), 21(219), 21(240), 22(241), 22(287), 22(518), 22(667), 22(813), 23(308), 23(371), 23(502), 23(638), 23(756), 23(859), 23(1063), 23(1167).
462. *Salvia pocolata* Nab.
(* , p, o, fl, fr; M, I, T): 23(272), 23(948).
463. *Salvia spinose* L.
(* , p, f, fl, fr; M, I, S, T): 22(108), 23(394), 22(421), 22(490), 23(503).
464. *Salvia viridis* L.
(a, r, fl, fr; M, I, S): 23(1064), 23(1256).
465. *Stachys cretica* L.
(* , p, o, fl, fr; M, I, S, T): 23(2153).
466. *Teucrium polium* L.
(* , p, o, fl, fr; M, I, S, T): 21(29), 21(315), 23(314), 23(811), 23(1), 23(450), 23(921), 23(1066), 23(1254), 23(1302), 23(1360), 23(1360), 23(1443), 23(1663), 23(1762), 23(2008), 23(2244), 24(20).
467. *Teucrium oliverianum* Ging. & Benth.
(**, p, o, fl; M, I, S): 24(65).
468. *Thymbra spicata* L. subsp. *spicata*
(* , p, o, fl; M, I, S, T): 23(1734), 23(2081).
469. *Vitex agnus-castus* L.
(* , p, c, fl, fr; M, I, S, T): 22(286), 22(755), 22(870), 22(1005), 22(1021), 22(1107), 23(1822), 23(1897), 23(1925), 23(2039), 23(2218).
470. *Vitex negundo* L.
(* , p, o, fl, fr; M, I, S, T): 23(2241).
471. *Ziziphora capitata* L.
(* , a, c, fl, fr; M, I, S, T): 23(1129)

40. LILIACEAE

472. *Notholirion koeiei* Rech.f.
Other: Khanaqin, Graham 585 (BM).
473. *Tulipa systola* Stapf
(p, c, hr collections, fl; M, I, T): 22(53), 23(106), 23(732), 23(862), 23(1091), 23(1112).
474. *Gagea reticulata* (Pall) J. A. & J. H. Schultes.
(* , p, c, hr, fl; M, I, S, T): 22(178), 23(80), 23(107)

41. LINACEAE

475. *Linum strictum* L.
(**, a, vr, hr, fl, fr; M, I, T): 21(151).

42. LYTHRACEAE

476. *Ammannia baccifera* L.
(**, p, o, fl; M, I, T): 21(423).
477. *Ammannia verticillata* (Ard.) Lam.
(* , a, o, M, I, T): 21(443), 23(2194), 23(2247).
478. *Lythrum hyssopifolia* L.
(* , a, c, M, I, S, T): 23(1979).
479. *Lythrum salicaria* L.
(* , p, c, fr; M, I, S, T): 22(958), 23(1948), 23(2229).
480. *Lythrum silenoides* Boiss. & Noë
(* , a, o, fl, fr; M, I): 22(903), 23(1947), 23(2063), 23(2227).
481. *Lythrum tribracteatum* Spreng.
(**, a, vr, fl; M, I, S, T): 23(1007).
482. *Punica granatum* L.
(* , p, c, fl, fr; M, I, S, T): 23(2033), 24(17), 24(49).

42. MALVACEAE

483. *Abutilon indicum* (L.) Sweet subsp. *Indicum*
(**, p, vr, M): 23(1363).
484. *Alcea arbelensis* Boiss. & Hausskn.
(* , p, o, fl; M, I): 22(587).
485. *Alcea peduncularis* Boiss. & Hausskn.
(* , p, r, fl, fr; M, I): 22(660), 22(698).
486. *Alcea sulphurea* (Boiss. & Hohen.) Alef.
(p, o, fl, fr; M, I): 22(963), 23(1518).
487. *Alcea* sp.
(p, c, fl, fr; M, I, S, T): 22(328), 22(541), 22(542), 22(617), 22(719), 22(745), 23(1709), 23(1747), 23(2137).
488. *Malva hirsuta* (L.) F.W.Schultz
(* , a, fl, M, I, S, T): 22(230).
489. *Glossostemon bruguieri* Desf.
(p, o, fl; M, I): 24(62).
490. *Malva aegyptia* L.
(* , a, o, fl, fr; M, I, S, T): 23(264), 23(347).
491. *Malva neglecta* Wallr.
(* , a, f, fl, fr; M, I, S, T): 22(428), 22(521), 22(783), 23(162), 23(348), 23(541), 23(931).
492. *Malva nicaeensis* All.
(* , a, f, fl, fr; M, I, S, T): 21(195), 21(201), 21(256), 21(266), 22(7), 22(42), 22(261), 22(393), 22(471), 22(618), 23(3), 23(238), 23(263), 23(378), 23(263), 23(378), 23(444), 23(522), 23(630), 23(719), 23(1062), 23(1255), 23(1305), 23(1542), 23(2311).

44. MARTYNIACEAE

493. *Ibicella lutea* (Lindl.) van Eselt
(a, o, hr, fl, fr): 22(1106), 22(1110), 23(2200).

45. MORACEAE

494. *Ficus Carica* L. var. *carica*
(**, p, o, tr, fr; M, I, S, T): 23(2240), 24(29).
495. *Ficus carica* subsp. *ruppessris* (Hausskn. & Boiss.) Browicz
(* , p, c, tr, fr; M, I, S, T): 23(2146), 24(50).
496. *Ficus carica* L.

(**, p, vr, fr; M, I, T): 21(145).

497. *Morus alba* L.

(* , p, c, tr, fr; M, I, S, T): 23(2020), 24(12), 24(28).

498. *Morus nigra* L.

46. MYRTACEAE

499. *Eucalyptus citriodora* Hook

(**, p, o, frl, fr; M, I, T): 21(297).

47. HYDROCHARITACEAE

500. *Najas marina* L.

Other locations: 30 km South of Darbandikhan, Haines sn.

48. NITRARIACEAE

501. *Peganum harmala* L.

(p, c, fl; M, I, S, T): 21(261), 21(396), 22(323), 22(474), 23(1723).

49. ORCHIDACEAE

502. *Anacamptis collina* (Banks & Sol. ex Russell)

R.M.Bateman, Pridgeon & M.W.Chase

(* , p, r, fl; M, I, S, T): 23(861).

503. *Ophrys sphegodes* Mill.

(* , p, o, fl, fr; M, I, S, T): 23(1096)

504. *Orchis anatolica* Boiss. (L.) Rich.

(* , p, f, fl; M, I, S, T): 23(2358).

50. OROBANCHACEAE

505. *Orobanche aegyptiaca* Pers.

(* , a, o, fl, M, I, S, T): 23(243), 23(1276).

506. *Orobanche ramosa* L.

(* , a, o; M, I, S, T): 22(545).

51. PAPAVERACEAE

507. *Fumaria asepala* Boiss

(* , a, o, fl, fr; M, I, S, T): 22(24), 23(21), 23(47), 23(128),), 23(197), 23(364), 23(641), 23(711).

508. *Fumaria parviflora* Lam.

(* , a, c, fl, fr; M, S, T): 21(86), 22(85), 22(216), 22(243), 22(483), 23(933), 23(1223), 23(1280), 23(1293), 23(1370), 23(1419), 23(1449), 23(1509), 23(1545), 23(1772).

509. *Fumaria vaillantii* Loisel.

(* , a, r, fl, fr; M, I, S, T): 23(234), 23(427), 23(501), 23(537), 23(1859).

510. *Glaucium grandiflorum* Boiss. & A.Huet

(**, p, vr, fl, fr; M, I, T): 23(104), 23(377), 23(538), 23(713), 23(775).

511. *Glaucium corniculatum* (L.) Curits

(* , a, c, fl, fr; M, I, S, T): 23(856), 24(61).

512. *Roemeria argemone* (L.) C.Morales, R.Mend. & Romero García

(* , a, o, fl, fr; M, I, S, T): 23(376), 23(539).

513. *Papaver rhoeas* L.

(* , a, o, fl; M, I, S, T): 23(2346).

514. *Papaver dubium* L.

(**, a, o, fl, fr; M, I, S, T): 22(267), 23(22).

515. *Papaver glaucum* Boiss. & Hausskn
(a, c, fl, fr; M, I, S, T): 21(18), 21(57), 22(19), 22(168), 22(408), 22(536), 23(79), 23(642), 23(1028), 23(1224), 23(1322).

516. *Papaver macrostomum* Boiss. & A. Huet

(* , a, o, fl, fr; M, I, S, T): 21(178), 22(77), 22(709), 23(198), 23(321), 23(462), 23(857), 23(958), 23(1055), 23(1381), 23(1448), 23(1508).

517. *Roemeria hybrid* (L.) DC.

(* , a, c, fl; M, I, S): 23(712).

51. PARONYCHACAE

518. *Paronychia mesopotamica* Chaudhri

(* , p, r, fl; M, S): 22(822), 23(1451), 23(1655), 23(2007).

52. PEDIALACEAE

519. *Sesamum indicum* L.

(a, c, fl, fr; M, I, S, T): 23(2308).

53. PLANTAGINACEAE

520. *Plantago afra* L.

(* , a, f, fl, fr; M, I, S, T) 22(44), 22(123), 23(154), 22(220), 22(245), 22(330), 22(399), 23(62), 23(96), 23(178), 23(208), 23(251), 23(323), 23(349), 23(374), 23(452), 23(527), 23(616), 23(693), 23(875), 23(879), 23(944), 23(1186), 23(1352).

521. *Plantago amplexicaulis* var. *bauphula* (Edgew.) Rech.f.

(**, a, o, hr, fl, fr; M, I) 22(16), 22(162).

522. *Plantago coronopus* subsp. *Coronopus*

(**, a, vr, hr, fl, fr; M): 23(615), 23(694), 23(1237).

523. *Plantago lagopus* L.

(* , a, f, hr, fl, fr; M, I, S): 23(64), 23(206), 23(350), 23(373), 23(526), 23(612), 23(878), 23(974), 23(1538).

524. *Plantago lanceolata* L.

(* , p, f, hr, fl, fr; M, I, S, T): 22(62), 22(125), 22(155), 22(263), 22(331), 22(472), 22(610), 22(712), 22(854), 22(892), 23(136), 23(179), 23(253), 23(432), 23(482), 23(580), 23(715), 23(874), 23(1041), 23(1185), 23(1235), 23(1345), 23(1425), 23(1453), 23(1510), 23(1810), 23(1873).

525. *Plantago loeflingii* L.

(**, a, f, hr, fl, fr; M, I, T): 23(692).

526. *Plantago ovata* Forssk.

(* , a, c, hr, fl, fr; M, S, T): 23(135), 23(180), 23(252), 23(352), 23(375), 23(451), 23(613), 23(691), 23(1040), 23(1361).

527. *Plantago tenuiflora* Waldst.

(* , a, vr, hr, fl, fr; M, I): 23(1976).

54. PLATANACEAE

528. *Platanus orientalis* L.

(p, o; M, I, S, T): 22(885).

55. POACEAE

529. *Aegilops caudata* L.

(* , a, vr, fr; M, I, S, T): 22(66), 23(1394), 23(1751).

530. *Aegilops columnaris* Zhuk.

(* , a, vr, fr; M, I, S, T): 23(1195), 23(1196), 23(1666).

531. *Aegilops crassa* Boiss. & Hohen.

(**, a, f, fr; M, I, S, T): 23(254), 23(299).

532. *Aegilops neglecta* Req. ex Bertol. subsp. *neglecta*

(* , a, vr, fr; M, I, S, T): 22(592), 22(671), 22(728), 23(1148).

533. *Aegilops triaristata* Willd.

(* , a, o, fr; M, I, S, T): 22(648).

534. *Aegilops triuncialis* L.

(a, c, fr; M, I, S, T): 21(142), 21(328), 22(576), 22(668), 22(729), 23(812), 23(1080), 23(1147), 23(1219), 23(1558), 23(1750).

535. *Agrostis mediterranea* Röser & Tkach

(* , a, r, fr; M, I, S, T): 22(203), 22(441), 22(600), 23(1006).

536. *Agrostis alopecuroides* Lam.

(**, p, c, fr; M, I, S, T): 22(492), 22(674), 22(730), 23(901), 23(1341), 23(1391).

537. *Agrostis viridis* Gouan subsp. *viridis*

(**, a, r, fr; M, I, S, T): 23(1001).

538. *Arundo donax* L.

(**, p, o, fl; M, I, S, T): 22(1039), 22(1093), 23(2189).

539. *Avena barbata* Pott ex Link

(* , a, o, fr; M, I, S, T): 21(72), 21(75), 21(153), 21(197), 21(228), 21(306), 21(369), 22(37), 22(204), 22(250), 22(342), 22(369), 22(494), 22(510), 22(604), 22(672), 23(300), 23(380), 23(560), 23(665), 23(937), 23(1082), 23(1217), 23(1355), 23(1432), 23(1504), 23(1634),

540. *Avena barbata* Pott ex Link subsp. *hirtula* (Lag.) Tzvelev.

- (* , a, vr, fr; M, I, S, T): 21(138), 23(425), 23(782), 23(1002).
 541. *Avena barbata* Pott & Link. subsp. *wiestii* (Steud.) Mansf.
 (* , a, o, fr; M, I, S, T): 21(257), 22(139), 23(188), 23(446), 22(580), 22(751), 23(201), 23(495), 23(903), 23(1306), 23(1554), 23(1741), 23(1828).
 542. *Brachypodium sylvaticum* (Huds.) P.Beauv
 (* , p, o, fr; M, I, S, T): 21(129), 21(272), 22(100), 22(153), 22(156), 22(202), 22(290), 22(364), 22(497), 22(512), 23(26), 23(203), 23(304), 23(386), 23(426), 23(493), 23(562), 23(810), 23(902), 23(942), 23(998), 23(1212), 23(1339), 23(1461).
 543. *Bromus danthoniae* Trin. var. *danthoniae*
 (a, c, fr; M, I, S, T): 22(254), 23(338), 23(707), 23(1635), 24(79).
 544. *Bromus danthoniae* Trin. subsp. *lanuginosus* Rozhev.
 (a, o, fr; M, I, S, T): 21(135), 22(731), 23(877), 23(1029).
 545. *Bromus danthoniae* Trin. var. *danthoniae* X *Bromus danthoniae* Trin. subsp. *lanuginosus* Rozhev.
 (* , a, o, fr; M, I, S, T): 22(343), 23(1220).
 546. *Bromus diandrus* Roth.
 (* , a, vr, fr; M, I, S): 21(186), 21(199), 22(579), 22(649).
 547. *Bromus lanceolatus* Roth. var. *lanuginosus* (Poir.) Dinsm.
 (* , a, o, fr; M, S, T): 22(575), 23(436), 23(1078).
 548. *Bromus madritensis* L.
 (* , a, c, fr; M, I, S, T): 21(20), 21(21), 21(33), 21(44), 21(112), 21(222), 21(243), 22(3), 22(40), 22(69), 22(86), 22(112), 22(122), 22(157), 22(189), 22(198), 22(252), 22(361), 22(425), 22(498), 22(499), 23(23), 23(28), 23(75), 23(155), 23(260), 23(296), 23(333), 23(383), 23(430), 23(629), 23(659), 23(706), 23(780), 23(864), 23(900), 23(1005), 23(1036), 23(1083).
 549. *Bromus rubens* L. subsp. *rubens*
 (* , a, o, fr; M, I, S, T): 22(439), 23(704), 23(1301).
 550. *Bromus scoparius* L.
 (* , a, f, fr; M, I, S, T): 22(577), 22(646), 23(470), 23(1004), 23(1557), 23(1633).
 551. *Bromus squarrosus* L.
 (** , a, vr, fr, M, I, S, T): 22(644).
 552. *Bromus tectorum* L.
 (* , a, c, fr; M, I, S, T): 21(164), 21(177), 22(51), 22(645), 23(154), 23(621), 23(1136), 23(1150).
 553. *Cenchrus americanus* (L.) Morrone
 (** , a, f, fr; M, I, T): 22(1034), 22(1073).
 554. *Chloris virgata* SW.
 (** , a, r, fr; M, I): 22(1061).
 555. *Cymbopogon jwarancusa* subsp. *olivieri* (Boiss.) Soenarko
 (p, o, fr; M, I): 24(82).
 556. *Cynodon dactylon* (L.) Pers. var. *dactylon*
 (p, c, fr; M, I, S, T): 21(270), 22(424), 22(496), 22(752), 23(1847), 23(2292).
 557. *Dactyloctenium aegyptiacum* (L.) Willd
 (** , a, o, fr; M, I, T): 22(1063).
 558. *Dichanthium annulatum* (Forssk.) Stapf.
 (* , p, o, fr; M, I, S, T): 22(447), 22(602), 23(1795).
 559. *Digitaria sanguinalis* (L.) Scop.
 (* , a, o, fr; M, I, S, T): 23(1956).
 560. *Echinaria capitata* (L.) Desf.
 (* , a, o, fr; M, I, S, T): 22(640).
 561. *Echinochloa colonum* (L) Link.
 (a, o, fr; M, In, S, T): 21(424), 21(429), 22(1035), 22(1072), 22(1092), 22(848), 22(917), 22(929), 22(973), 22(999), 23(1390), 23(1556), 23(1594), 23(1760), 23(1793), 23(1829), 23(1846), 23(1874), 23(1884), 23(1920), 23(1970).
 562. *Echinochloa crus-galli* (L.) P. Beauv. sups. Brevistea (Doel). Neilr.
 (** , p, c, fr; M, I, S, T): 3(2255).
 563. *Echinochloa crus-galli* (L.) P. Beauv. sups. *Crusgalli*
 (* , a & p, c, fr; M, I, S, T): 22(998), 22(1091), 23(2047), 23(2248).
 564. *Enneapogon persicus* Boiss.
 Other collections: 3 km West Darbandikhan, Jaf & Springfield 16343 (BAG).
 565. *Eragrostis bariana* Launert.
 (** , a, vr, fr; I): 23(2284).
 566. *Eragrostis barrelieri* Dav.
 (** , a, vr, fr; M, I, S): 21(443), 22(1038).
 567. *Eragrostis diarrhena* (Schult.) Steud.
 Other collections: Darbandikhan, Agnew & al 1855 (K).
 568. *Eragrostis minor* Host.
 (* , a, o, fr; M, I, S, T): 23(2044).
 569. *Eragrostis pilosa* (L.) P.Beauv.
 (* , a, o, fr; M, I, T): 23(2202).
 570. *Festuca myuros* L.
 (* , a, o, fr; M, I, S, T): 23(624), 23(1034), 23(1210).
 571. *Hemarthra compressa* (L. f.) R.Br.
 Other collections: Darbandikhan, Agnew & al1844 (K).
 572. *Henrardia pubescens* (Bertol.) C.E. Hubbard
 Other collections: Kifri anon sn (BAG).
 573. *Heterantheum piliferum* (Banks & Sol.) Hochst. & Jaub. & Spach
 (a, c, fr; M, I, S, T): 21(34), 22(578), 22(582), 23(385), 23(940), 23(1194), 23(1631).
 574. *Hordeum bulbosum* L.
 (* , p, f, fr; M, I, S, T): 21(189), 22(539), 22(581), 22(727), 23(1668).
 575. *Hordeum distichon* L.
 (a, c, fr; M, I, S, T): 22(344), 23(381), 23(663).
 576. *Hordeum geniculatum* All.
 (* , a, c, fr; M, I, S, T): 23(77), 23(1463).
 577. *Hordeum glaucum* Steud.
 (a, c, fr; M, I, S, T): 21(23), 21(71), 21(136), 21(251), 22(5), 22(41), 22(113), 22(190), 22(247), 22(347), 22(371), 22(507), 22(711), 23(27), 23(101), 23(150), 23(297), 23(332), 23(382), 23(456), 23(563), 23(626), 23(702), 23(811), 23(931), 23(996), 23(1032), 23(1215), 23(1347).
 578. *Hordeum spontaneum* Koch.
 (* , a, c, fr; M, I, S, T): 21(64), 21(106), 21(291), 22(39), 22(291), 22(370), 22(444), 22(500), 22(599), 22(642), 22(673), 22(798), 23(153), 23(298), 23(336), 23(781), 23(899), 23(1081), 23(1102), 23(1149), 23(1389), 23(1669).
 579. *Hordeum vulgare* L.
 (** , a, c, fr; M, I, S, T): 21(70), 22(52), 23(1433).
 580. *Imperata cylindrica* (L.) Raeusch.
 (* , p, c, fr; M, I, T): 22(200), 22(440), 23(471).
 581. *Lolium subulatum* Vis.
 (** , a, vr, fr; M, S, T): 21(273).
 582. *Lolium multiflorum* Lam.
 (** , a, r, fr; M, I, S, T): 21(19), 22(71), 22(726), 23(708), 23(1349).
 583. *Lolium persicum* Boiss. & Hohen. ex Boiss.
 (a, r, fr; M, I, S, T): 23(1218).
 584. *Lolium rigidum* Gaudin.
 (* , a, c, fr; M, I, S, T): 21(73), 22(6), 22(199), 22(251), 22(345), 22(439), 22(509), 23(29), 23(204), 23(257), 23(301), 23(335), 23(467), 23(491), 23(532), 23(561), 23(628), 23(664), 23(865), 23(905), 23(943), 23(999), 23(1033), 23(1294), 23(1435), 23(1465), 23(1593), 23(1759).
 585. *Melica jacquemontii* Decne.
 (* , p, o, f; M, I, S, T): 23(1724), 24(58).
 586. *Nardurus maritimus* (L.) Murb.
 Other collections: North East of Darbandikhan, Poore 574 (K).
 587. *Oryza sativa* L.
 (a, c, fr; M, I, S, T): 23(2235).
 588. *Phalaris Brachystachys* link.
 (* , a, o, fr; M, I, S, T): 22(346), 22(511), 23(384), 23(1503).
 589. *Phalaris minor* Retz.
 (* , a, c, fr; M, I, T): 21(271), 21(400), 22(137), 22(289), 22(495), 23(142), 23(156), 23(202), 23(441), 23(573), 23(623), 23(938), 23(1000), 23(1216), 23(1434).
 590. *Phalaris paradoxa* L.
 (* , a, o, fr; M, I, S, T): 22(363), 22(442), 23(255), 23(331), 23(1595).
 591. *Phalaris tuberosa* L.

- (**, p, o, fr; M, I, S, T): 22(725).
 592. *Phragmites australis* (Cav.) Trin.
 (**, p, o, fr; M, I, S, T): 23(2221), 23(2249), 23(2264).
 593. *Poa bulbosa* L.
 (*, p, f, fr; M, I, S, T): 23(620), 23(705), 23(783), 23(1035), 23(1193).
 594. *Poa siniaca* Steud.
 (*, p, fr; M, I, S, T): 23(256), 23(695), 23(1103).
 596. *Psilurus incurvus* (Gouan) Schinz
 Other collections: Khanaqin, Cowan & Darington 213 b.
 596. *Rostraria cristata* (L.) Tazvelev
 (*, a, o, M, I, S, T): 21(254), 22(242), 23(709), 23(1211).
 597. *Schismus barbatus* (L.) Thell
 (**, a, o, fr; M, I, T): 23(387), 23(494), 23(1372).
 598. *Setaria verticillata* (L.) P. Beauv.
 (*, a, o, fr; M, I, S, T): 22(972), 22(1062), 23(1794).
 599. *Sphenopus divaricatus* (Gouan) Rechb.
 Other collections: Khanaqin, Reching 14132.
 600. *Sorghum bicolor* (L.) Moench
 (*, a, c, fr; M, I, S, T): 22(879).
 601. *Sorghum halepense* (L.) Per
 (*, p, o, fr; M, I, S, T): 21(370), 21(426), 22(362), 22(426), 22(493), 22(603), 22(753), 22(855), 22(928), 22(974), 22(847), 22(1000), 22(1037), 23(1592), 23(1792), 23(1827), 23(1921), 23(2291).
 602. *Sorghum × drummondii* (Nees ex Steud.) Millsp. & Chase
 (*, a, o, fr; M, I, S, T): 21(239), 23(1841), 23(1875), 23(2232).
 603. *Stipa barbata* Desf.
 (*, p, o, fr; M, I, S, T): 23(2275), 24(78).
 604. *Stipa dregeana* Steud.
 (*, a, c, fr; M, I, S, T): 21(35), 21(75), 21(242), 22(38), 22(72), 22(111), 22(152), 22(158), 22(367), 22(427), 23(25), 23(44), 23(76), 23(102), 23(129), 23(152), 23(258), 23(337), 23(379), 23(431), 23(559), 23(625), 23(701), 23(863), 23(904), 23(939), 23(1031), 23(1214), 23(1376).
 605. *Stipa lagascae* Roem. & Schult.
 (*, p, vr, fr; M, I, S, T): 23(2014), 23(2088).
 606. *Taeniatherum caput-medusae* (L.) Nevski
 var. *asperum* (Simonk.) A. Pujadas
 (*, a, o, fr; M, I, S, T): 21(66), 21(174), 21(329), 22(643), 23(1637), 23(1667), 23(1713).
 607. *Tripidium ravennae* (L.) H. Scholz
 (**, p, o, fl, fr; M, I, S, T): 23(2180), 23(2212), 23(2304).
 608. *Triticum aestivum* L.
 (*, a, c, fr; M, I, S, T): 21(193), 22(508), 23(700), 23(997), 23(1079), 23(1216), 23(1464).
 609. *Triticum boeoticum* Boiss.
 (*, a, r, fr; M, I, S, T): 21(74), 21(330), 22(641).
 610. *Triticum durum* Desf.
 (*, a, c, fr; M, I, S, T): 21(292), 22(372), 23(151), 23(627), 23(1367).
 611. *Vulpia persica* (Boiss. & Buhse) V.I. Krecz. & Bobrov
 (*, a, vr, fr; M, I): 23(367).
 612. *Vulpia hirtiglumis* Boiss. & Hausskn. Zea mays
 (*, a, r, fr; M, T): 22(257).
59.. POLYGONACEAE
 613. *Persicaria maculosa* Gray
 (**, a, vr, hr, fl, fr; M, I, T): 21(428), 22(145), 22(1032), 22(1105), 23(1807), 23(1824), 23(1930), 23(1974), 23(2050), 23(2179), 23(2236).
 614. *Polygonum aviculare* L.
 (*, p, f, hr, fl, fr; M, I, S, T): 21(236), 21(301), 21(402), 22(516), 22(760), 22(989), 22(1042), 22(1046), 22(1065), 22(1104), 23(429), 23(1281), 23(1452), 23(1521), 23(1576), 23(1603), 23(1775), 23(1844), 23(1901), 23(1929), 23(2070), 23(2109),
 615. *Polygonum argyrocoleum* Steud. And Kunze
 (*, a, o, hr, fl, fr; M, I): 23(2172), 23(2290).
 616. *Pteropyrum aucheri* Jaub.
 (p, f, shr, fl, fr; M, I): 23(2003), 23(2213), 23(2271).
 617. *Pteropyrum naufelum* AL-Khayat and Nordic
 (**, p, r, shr, fl, fr; M, I): 23(2252).
 618. *Rumex dentatus* subs. *Mesopotamicus* Rech. F.
 (a, c, hr, fr; M, I, S): 21(382), 22(606), 22(994), 22(1047), 23(10009), 23(1522), 23(1577), 23(1602), 23(1790), 23(1857), 23(1885), 23(1918), 23(1945), 23(1954).
 619. *Rumex cyprius* Murb.
 (*, a, o, hr, fr; M, I, S): 23(13), 23(421), 23(636), 23(801), 23(820), 23(1060), 23(1311), 23(1421).
 620. *Rumex pulcher* subsp. *Anodontus* Hawsskn.
 (*, b, c, hr, fr; M, I, S): 21(362), 22(411), 22(456), 22(538), 22(697), 23(929), 22(1978).
 621. *Rumex tuberosus* subsp. *Horizontalis* C. (Koch) Rech. F.
60. PORTULACACEAE
 622. *Portulaca grandiflora* Hook., Bot. & Mag.
 (**, a, vr, fl, fr; M, T): 22(1051).
 623. *Portulaca oleracea* L.
 (*, a, o, hr, fl, fr; M, I, S, T): 22(784), 22(850), 22(858), 22(889), 22(934), 22(982), 22(1031), 23(1856), 23(1890), 23(1902), 23(2206), 23(2256).
61. POTAMOGETONACEAE
 624. *Potamogeton nodosus* Poir.
 (*, p, o, hr, fl, fr; M, I, S, T): 22(960), 22(1040), 23(2051).
62. PRIMULACEAE
 625. *Anagallis arvensis* L.
 (a, f, hr, fl, fr; M, I, S, T): 21(59), 21(339), 22(47), 22(217), 22(265), 22(310), 22(409), 22(448), 22(484), 22(609), 22(706), 22(776), 22(891), 23(38), 23(61), 23(111), 23(130), 23(173), 23(200), 23(249), 23(310), 23(365), 23(420), 23(458), 23(485), 23(496), 23(536), 23(632), 23(722), 23(804), 23(962), 23(994), 23(1174), 23(1222), 23(1374), 23(1398), 23(1581), 23(1758), 23(1851), 23(1898), 23(1946).
 626. *Dionysia bornmuelleri* (Pax) Clay.
 (**, p, vr, sh, fl, fr; M, I): 21(11).
 627. *Dionysia odora* Fenzl.
 (*, p, vr, sh, fr; M): 22(1088).
63. PTERIDACEAE
 628. *Adiantum capillus-veneris* L.
 (*, p, c; M, I, S, T): 21(1), 21(167).
 629. *Anogramma leptophylla* (L.) Link
 Other collections: East of Darbandikhan, Barkley & Haddad 7756 (BUA).
64. RANUNCULACEAE
 630. *Adonis dentata* Delile
 (a, c, fl, fr; M, I, S, T): 22(46), 22(100), 22(293), 23(161), 23(236), 23(277), 23(353), 23(369), 23(499), 23(556), 23(753), 23(870), 23(930), 23(963), 23(1126), 23(3241).
 631. *Delphinium flavum* DC.
 (a, o, fl; M, I, S): 22(699).
 632. *Delphinium peregrinum* L.
 (*, a, r, fl; M, I, S, T): 22(799), 23(2092), 23(2116).
 633. *Nigella oxypetala* Boiss.
 (*, a, o, fl, fr; M, I, S, T): 23(1684), 23(2115).
 634. *Ranunculus asiaticus* L.
 (*, a, c, fl, fr; M, I, S, T): 21(2), 23(235), 23(246), 23(363), 23(500), 23(640), 23(710), 23(776), 23(876), 23(914).
 635. *Ranunculus chius* DC.
 (*, a, o, fl; M, I, S, T): 22(410), 22(627).
 636. *Ranunculus millefolius* Banks & Sol.
 Other collections: 4 km North Darbandikhan, Barkley & Haddad 7460, 33244, (BUA, K).
 637. *Ranunculus oxyspermus* Willd.
 (*, p, f, fl; M, I, S, T): 23(1090), 23(1127).

65. **RESEDACEAE**

638. *Reseda alba* L.
(*, p, f, fl, fr; M, I, S, T): 23(267).
639. *Reseda aucheri* Boiss.
Other collections: Naft Khana, Guest 1851 (K).
640. *Reseda lutea* L.
(**, a or b, vr, fl, fr; M, I, S, T): 22(420), 23(329), 23(388), 23(760), 23(1059), 23(1321), 23(2273)..

65. **RHAMNACEAE**

641. *Ziziphus nummularia* (Burm.f.) Wight & Arn.
(p, c, fr, fl; M, I, S, T): 22(1109).
642. *Ziziphus mauritiana* Lam.
(p, c, fr; M, I, S, T): 21(101).
643. *Paliurus spina-christi* Mill.
(p, f, fl, fr; M, I, S, T): 23(2016).

66. **ROSACEAE**

644. *Crataegus azarolus* L.
(*, p, c, fl, fr; M, I, S, T): 21(160), 21(454), 21(883), 23(2087), 23(2160).
645. *Rhaphiolepis bibas* (Lour.) Galasso & Banfi
(*, p, o, fr, M, I, S, T): 24(35).
646. *Geum urbanum* L.
(*, p, o, fl; M, I, T): 21(202).
647. *Malus domestica* (Suckow) Borkh.
(**, p, r, fr; M, I, S, T): 24(32).
648. *Malus sylvestris* Mill.
(**, p, a, fr; M, I, S, T): 24(37).
649. *Poterium lasiocarpum* Boiss & Hausskn
(*, p, f, fl, fr; M, I, S, T): 21(214), 22(543), 22(681), 22(747), 23(754), 23(2028), 23(2093).
650. *Prunus arabica* (Oliv.) Meikle
(*, p, c, fr; M, I, S, T): 21(122), 2(317), 23(797), 23(1327), 23(2274), 24(6).
651. *Prunus argentea* (Lam.) Rehd. var. *argentea*
(*, p, f, fr; M, I, S, T): 23(2349).
652. *Prunus armeniaca* L.
(p, c, fr; M, I, S, T): 24(34).
653. *Prunus microcarpa* C. A. Mey var. *pubescens* (Bornm) Meikle
(*, p, f, fr; M, I, S, T): 21(109), 21(255), 23(2348), 24(43).
654. *Prunus persica* (L.) Stokes
(p, f, fr; M, I, S, T): 24(33).
655. *Rosa xdamascena* Mill.
(p, c, fl; M, I, S, T): 24(36).
656. *Rubus sanctus* Scherb.
(*, p, c, fl, fr; M, I, S, T): 21(338), 21(384), 22(522), 22(882), 22(907), 22(993), 22(1014), 23(1808), 23(2062).

67. **RUBIACEAE**

657. *Asperula sp*
(**, a, r, fr; M): 23(2015), 23(2296).
658. *Callipeltis cucularis* (L.) Rothm.
(*, a, f, fl, fr; M, I, S, T): 21(113), 21(146), 21(321), 22(588), 22(636), 22(795), 23(1702), 23(2269).
659. *Callipeltis factorovskiyi* (Eig) Ehrend.
(**, a, vr, fl, fr; M, I, S, T): 23(1313).
660. *Callipeltis microstegia* Boiss.
(*, a, f, fl, fr; M, I, S, T): 23(394).
661. *Galium ceratopodum* Boiss.
(a, o, fr, M, I, S, T): 21(116), 21(155), 23(871).
662. *Galium setaceum* Lam.
(*, a, c, fl, fr; M, I, S, T): 22(285), 22(631), 22(801), 23(261), 23(633), 23(806), 23(1188), 23(1312), 23(1400), 23(1458), 23(1703).
663. *Galium spurium* L.
(*, a, c, fl, fr; M, I, S, T): 21(200), 22(163), 22(505), 23(217).

664. *Galium tricornerum* Dandy
(*, a, c, fl, fr; M, I, T): 22-(234), 22(259), 22(405), 22(449), 22(486), 22(779), 23(393), 23-(585), 23(668), 23(1241), 23(1343), 23(1427), 23(1515), 23(1539).
665. *Mericalpaea ciliata* (Banks et Sol.) Eig.
(**, a, vr, fr; M, S): 22(329), 23(884), 23(1058), 23(1277).
666. *Sherardia arvensis* L.
(*, a, c, fl; M, I, S, T): 23(2350).
667. *Theligonum cynocrambe* L.
Other collections: Darbandikhan, Barkley 7751 (BUA).

68. **RUTACEAE**

668. *Haplophyllum tuberculatum* Forssk.
(p, o, hr, fl, fr; M, I, S, T): 21(83), 21(281), 22(300), 22(238), 23(262), 22(316), 22(423), 23(758), 23(945), 23(1039), 23(1226), 23(1328), 23(1356), 23(2404), 23(1446), 23(1627), 23(1697).
669. *Citrus limon* (L.) Osbeck
(p, c, fr; M, I, S, T): 24(27).
670. *Citrus maxima* (Burm.) Merr.
(*, p, f, fr; M, I, S, T):
671. *Citrus aurantium* L.
(p, c, fr; M, I, S, T): 24(24).

69. **SALICACEAE**

672. *Populus euphratica* Oliv.
(p, c, tr, fl; M, I, S, T): 21(119), 22(165), 22(528), 23(1944), 23(2032), 23(2278).
673. *Salix acmophylla* Boiss.
(p, c, tr, fl; M, I, S, T): 22(1044), 23(1044), 23(1953), 23(1975).
674. *Salix aegyptiaca* L.
(*, p, o, tr, fl; M, I, T): 22(996), 22(1045), 23(2297).
675. *Salix triandra* L. *bornmuelleri* (Hausskn.)
(*, p, r, fl; M, I, T): 22(954), 23(2034), 23(2059), 23(2242).

70. **SAPINDACEAE**

676. *Dodonaea viscosa* (L.) subsp. *angustifolia* (L.f.) J.G. West
(*, p, o, M, I, S): 24(6).

71. **SCROHULARIACEAE**

677. *Scrophularia azerbaijanica* Grau
(*, p, o, fl, fr; M, I, T): 21(127), 23(92), 23(255), 23(824), 23(1017), 23(1320), 23(1450), 23(2006).
678. *Scrophularia deserti* Delile
(*, p, o, fr; M, I, S): 23(1961), 23(2233), 23(2262).
679. *Scrophularia hypericifolia* Wydler
(**, p, r, fr; M, S): 23(427), 23(777), 23(1154).
680. *Scrophularia pruinosa* Boiss.
(*, p, f, fr; M, I, T): 21(4), 23(1190), 23(1705), 23(1973).
681. *Verbascum alceoides* Boiss. & Hausskn.
(*, p, f, fl, fr; M, I, S, T): 21(95), 22(170), 22(294), 23(778), 23(1189), 23(1505), 23(1696), 23(2078).
682. *Verbascum assureense* Bornm. & Hand. -Mazz.
(**, p, o, fl; M, I, S): 22(228), 23(1238).
683. *Verbascum calvum* Boiss. & Kotschy
(*, p, vr, fl; M, T): 23(2154).
684. *Verbascum carduochorum* Bornm.
(*, p, c, fl, fr; M, I, S, T): 22(228), 22(780), 22(965), 22(1081), 24(89).
685. *Verbascum pseudodigitalis* Nábelek var. *phoenicandrum*
(**, p, o, fl; M, I, S, T): 23(1763).
686. *Verbascum racemiferum* Boiss. & Hausskn.
(**, p, r, fl; M, T): 22(919)

72. **SOLANACEAE**

687. *Datura innoxia* Mill.
(**, p, f, fl, fr; M, I, S, T): 23(1952), 23(1896), 23(2267).
688. *Datura stramonium* L.

Other collections: Darbandikhan, Haines sn.

689. *Hyoscyamus leptocalyx* Stapf.

(**, p, r, fl, fr; M, I, S, T): 23(2168).

690. *Hyoscyamus niger* L.

(* , a or b, o, fl, fr; M, I, S, T): 23(1257).

691. *Hyoscyamus reticulatus* L.

(* , b, r, fl, fr; M, I, T); 21(359), 22(397), 23(49), 23(271).

692. *Lycium shawii* Roemer & Schultes

(* , p, o, fl, fr; M, I, T): 22(341).

693. *Lycopersicon esculentum* Miller

(a, c, fl, fr; M, I, S, T): 23(2226).

694. *Physalis alkekengi* L.

(* , a, r, fl, fr; M, I, T): 21(406), 21(420), 22(773), 22(838), 22(1010), 22(1026), 22(1049), 22(1064), 22(1094), 23(1776), 23(1835), 23(1862), 23(1892), 23(2293)

695. *Physalis divericata* D. Don

(* , a, f, fl, fr; M, I, T): 22(932), 22(970), 22(1025), 22(1543), 23(1596), 23(1777), 23(1781), 23(1893), 23(1916), 23(1971), 23(2198), 23(2234).

696. *Solanum alatum* Moench

Other collections: Darbandikhan Zebar 9272

697. *Solanum luteum* Miller(*, a, c, fl, fr; M, I, S, T): 21(238), 23(53), 23(2282).

(p, b, fl, fr; M, I, S, T): 24 (68).

698. *Solanum nigrum* L.

(* , a, o, fl, fr; M, I, T): 22(607), 22(774), 22(874), 22(964), 22(1048), 23(1788), 23(1803), 23(1826), 23(1861), 23(1927), 23(2022).

699. *Solanum* sp.

(* , a, o, fr; M): 21(172), 22(554)

73. TAMARICACEAE

700. *Tamarix macrocarpa* (Ehrenb.) Bunge

(**, p, o, fl; M, I, S): 23(1922).

701. *Tamarix kotschyi* Bunge

(**, p, vr, fl; M, I): 23(2056).

702. *Tamarix ramosissima* Ledeb.

(**, p, c, fl; M, I): 21(173), 22(179), 23(208), 22(332), 22(959), 23(1010), 23(1695), 23(2188).

74. THYMELAEACEAE

703. *Dendrostellera lessertii* (Wikstr.) van Tiegh.

Other collections: Jabal Hamrin, Bornmueller 1785

75. TYPHACEAE

704. *Typha domingensis* Pers.

(*p, c, fr; M, I, S, T) 22(175), 22(598), 22(979), 22(1028), 22(1071), 23(1949), 23(1959), 23(2061), 23(2177), 23(2239).

705. *Typha lugdunensis* Chab. ex Ser.

Other collections: Darbandikhan, Barkley 5213 (BUA, K).

76. URTICACEAE

706. *Urtica pilulifera* L.

(a, c, fl, fr; M, I, S, T): 22(547), 23(1142).

707. *Parietaria iudaica* L.

(p, c, fl, fr; M, I, S, T): 21(154), 21(227), 22(546), 23(1986).

77. VAHLIACEAE

708. *Vahlia weldenii* Rechb.

Other collections: Jabal Hamrin, Sutherland 286.

78. VITACEAE

709. *Vitis vinifera* L.

(* , p, f, fl, fr; M, I, S, T): 24(31).

79. ZYGOPHYLLACEAE

710. *Zygophyllum fabago* L.

Other collection: Jabal Hamrin, Sutherland 210 (BM).

711. *Fagonia olivieri* DC.

Other collections: Jabal Hamrin, Evans 140.

712. *Tribullus terrestris* L.

(a, f, fl, fr; M, I, S, T): 22(761), 22(971), 22(1020), 22(1076), 23(1455), 23(1580), 23(2591), 23(1756), 23(2069), 23(2201), 23(2299).

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Author Contributions

A H. H. and S. A. A. contributed to the concept and design of the work and drafted the manuscript. The authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

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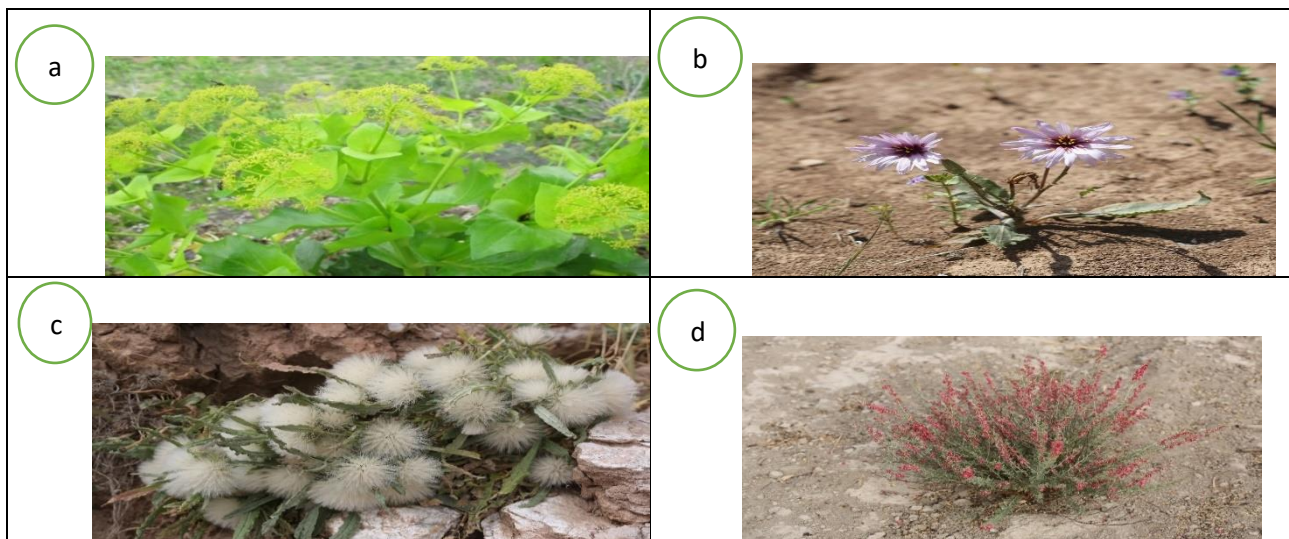
Competing interests

The authors declare no competing interests.

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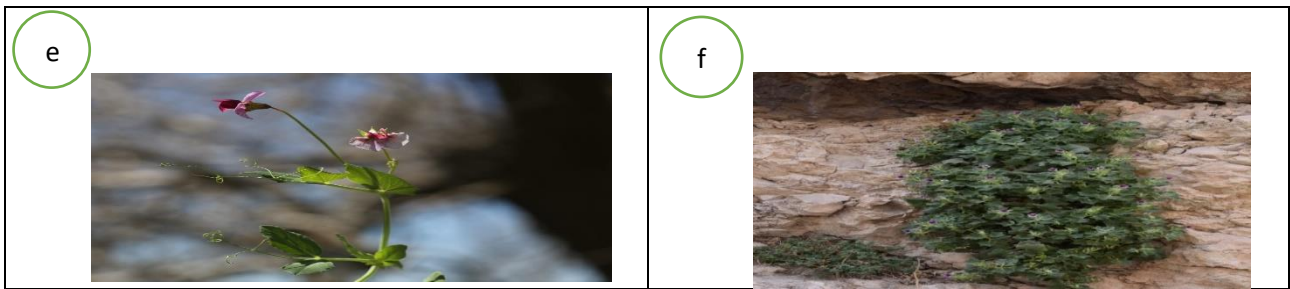


Figure 5: a. *Smyrniium cordifolium* Boiss., b. *Scorzonera phaeopappa* Boiss., c: *Jurinea carduiiformis* (Jaub. & Spach) Boiss., d. *Pteropyrum aucheri* Jaub. & Spach, e. *Lthyrus inconspicuus* L., f. *Hyoscyamus leptocalyx* Stapf.

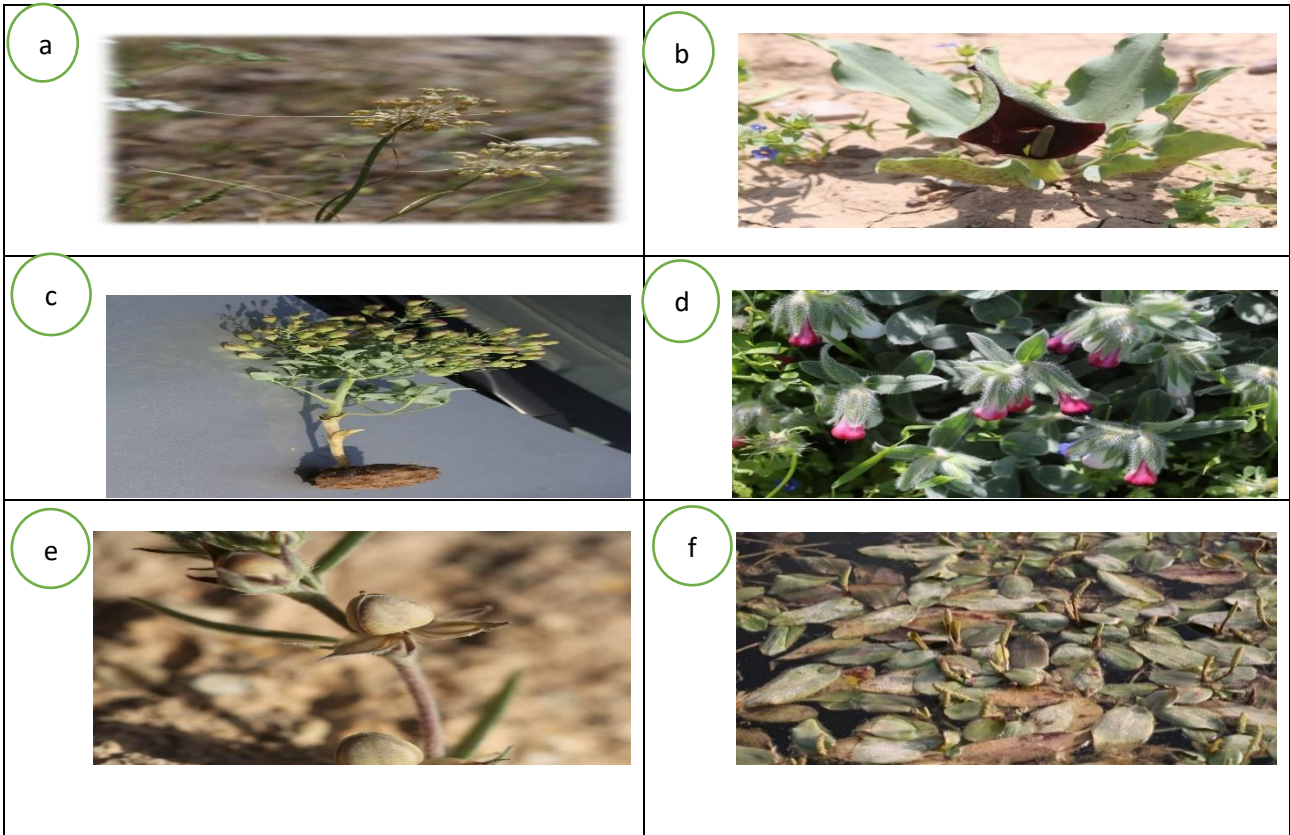
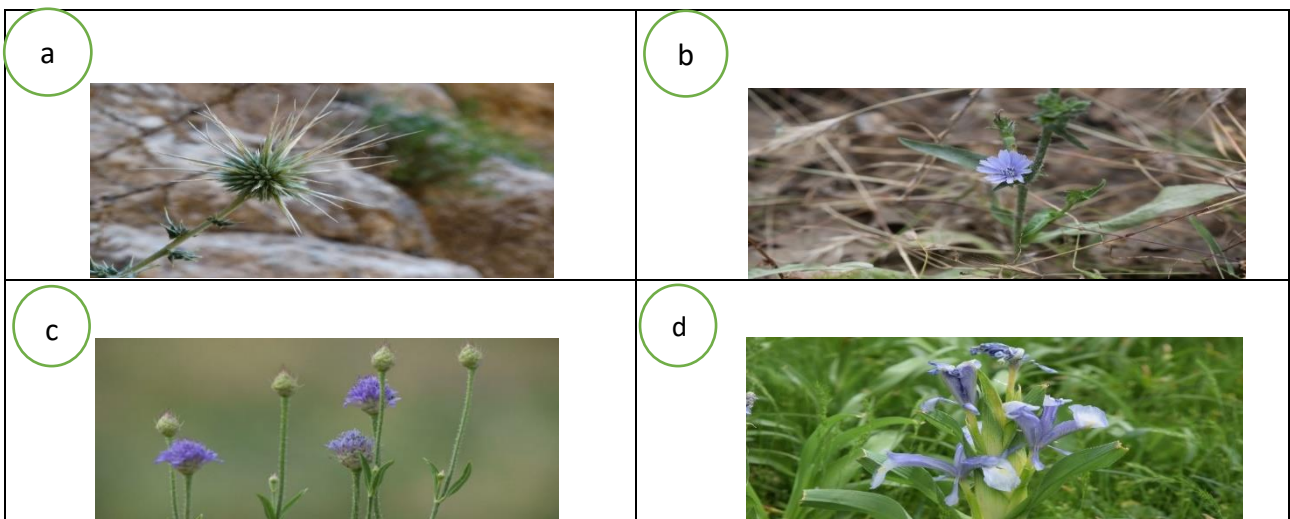


Figure6: a. *Allium stramenium*, b. *Biarum bovei* Blume, c. *Leontice leontopetalum* L., d. *Onosma alborosea* Fisch. & C.A. Mey, e., *Helianthemum ledifolium* subsp. *lasiocarpum* (Willk.) Rech. f. *Potamogeton nodosus* Poir.



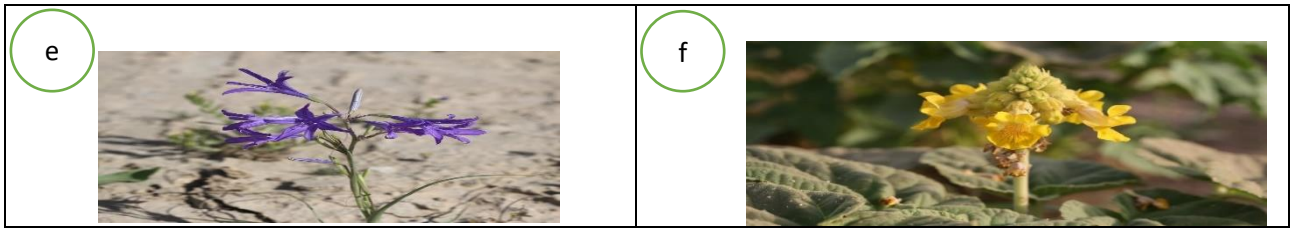


Figure 7: a: *Echinops fraudator* C.C. Towns, b. *Cichorium pumilum* Jacq., c. *Cephalaria syriaca* (L.) Schard, d. *Iris aucheri* (Baker) Sealy, e. *Ixiolirion tataricum* (Pall.) Schult. & Schult.f., f. *Ibicella lutea* (Lindl.) van Eselt



Figure 8: a. *Anthemis hylina* DC., b. *Nigella oxypetala* Boiss., c. *Biscutella didyma* L., d. *Euphorbia hirta* L., e. *Rumex tuberosus* subsp. *Horizontalis* C. (Koch) Rech. F., f. *Phlomis armeniaca* Willd.