Review with checklist of Fabaceae in the herbarium of Iraq natural history museum

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Abstract

This study aimed to make an inventory of leguminous plants for the purpose of identifying the plants that were collected over long periods and stored in the herbarium of Iraq Natural History Museum. It was found that the herbarium contains a large and varied number of plants from different parts of Iraq and in different and varied environments. It was collected and arranged according to a specific system in the herbarium to remain an important source for all graduate students and researchers to take advantage of these plants. Also, the flowering and fruiting periods of these plants in Iraq were recorded for different regions. Most of these plants begin to flower in the spring and thrive in fields and farms.

Keywords: Fabaceae; Herbarium; Iraq; Natural; History; Museum

1. Introduction

Leguminosae, Fabaceae or Papilionaceae, which was called as legume, pea, or bean Family, belong to the Order of Fabales [1]. The Fabaceae family have 727 genera also 19,325 species, which contents herbs, shrubs, trees, and climbers [2]. The distribution of fabaceae family was variety especially in cold mountainous regions for Europe, Asia and North America, It is also abundant in Central Asia and is characterized by great economic importance. It is one of the three most important plant families for flowering plants [3]. The leaves of Fabaceae family are stipulate, alternate, pinnately or palmately. The petioles base are enlarged to a pulvinus [4]. Also the flower is perigynous, zygomorphic, racemes, spikes, or heads, And the perianth have a calyx and corolla for five segments [5]. The Fabaceae family has petals which are overlapping in bud and the posterior petal outermost in position. The androecium have 10 stamens in two [6]. The pistils are simple, divided into a single style and stigma, also a superior ovary have one locule divided to 2-many marginal ovules. The fruits are always legume [7]. The Fabaceae family are particularly diverse in all tropical forests and temperate shrublands [8].

2. Material and methods

All specimens of Fabaceae family in various habitats of Iraq and saved in the herbarium of Iraq Natural History Museum was written down and studied its geographical distribution. Used many taxonomic keys identification and diagnosed genera such as: [9,10,11,12].

3. Results and discussion

In this study checklist of fabaceae in the herbarium of Iraq Natural History Museum showed many genera as fallow:
Acacia Mill., 1754

In the herbarium of Iraq Natural History Museum it was found two species which were they Acacia nilotica (L.) Delile and Acacia gerrardii Benth.

HAB. Acacia nilotica (L.) Delile, Alluvial desert, near a date garden, alt. c. 2 m., fl. Sept.-Dec., fr. July-Dec.

HAB. Acacia gerrardii Benth., Sandy gravel desert in a broad open wadi, alt. c. 250 m., fl. Jun.-Jul, fr. Oct.-Nov.

Amorpha L., 1753

In the herbarium of Iraq Natural History Museum it was found one species which was Amorpha fruticosa L.

HAB. Amorpha fruticosa L., cultivated in gardens in the desert region of Iraq, alt. 35 m., fl. Apri.-May.

Alhagi Adans., 1763

In the herbarium of Iraq Natural History Museum it was found two species which were they Alhagi maurorum Medik. and Alhagi graecorum Boiss.

Alhagi maurorum Medik. Alluvial soil in valley on limestone, alt. 650 m., fl. and fr. Aug.

Alhagi graecorum Boiss., lower mountain valley sides, orchards and garden, ditches and canal banks, up to alt. 1500 m. fl. Jun.-Aug., fr. Aug.-Dec.

Albizia Durazz, 1772

In the herbarium of Iraq Natural History Museum it was found one species which was Albizia lebbeck (L.) Benth.

HAB. Cultivated in parks and gardens, along canals and quays, up to c.50m

Fl. May-June
Fr. Dec.-Feb.

Astragalus L., 1753

In the herbarium of Iraq Natural History Museum it was found many species which were they Astragalus bruguieri Boiss., Astragalus campylorhynchus Fisch. & C.A.Mey., Astragalus corrugatus Bertol., , Astragalus alexandrii Kharadze, Astragalus ambytropis Barneby, Astragalus anistocarpus Boiss. & Hausskn., Astragalus spinosus Astragalus schimperi Boiss., Astragalus tribuloides Delile, Astragalus porphyrodon C.C.Towns, Astragalus ocephalus Boiss., Astragalus gillettii C.C.Towns, Astragalus alyssoides Lam., Astragalus echinops Boiss., Astragalus brachycarpus M.Bieb., Astragalus pulcher Korovin, Astragalus mollissimus Torr., Astragalus dendroproselius Rech.f., Astragalus dactylocarpus Boiss., Astragalus gattatus, Astragalus oxyglottis M.Bieb.

Bauhinia L., 1753

In the herbarium of Iraq Natural History Museum it was found one species which was Bauhinia rasimosa Lam.

HAB. Bauhinia rasimosa Lam. Cultivated in desert region in Iraq.

Caesalpinia L. 1753

In the herbarium of Iraq Natural History Museum it was found one species which was Caesalpinia gilliesii (Hook.) D.Dietr.

HAB. Caesalpinia gilliesii (Hook.) D.Dietr. cultivated in gardens up to 50 m. alt., fl. Jun.-Aug., fr. Sep.-Nov.
Cassia L. 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Cassia fistula* L.

**HAB.** *Cassia fistula* L. cultivated in the southern sector of the region of Iraq.

Ceratonia L., 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Ceratonia siliqua* L.

**HAB.** *Ceratonia siliqua* L. cultivated in the desert of Iraq, alt. c. 35 m., fl. And fr. Apr.

Cicer L., 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Cicer arietinum* L.

**HAB.** *Cicer arietinum* L. mountains slopes in grassy places, cultivated hillsides, alt. up to 1900 m., fl. And fr. May- July.

Colutea L. 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Colutea cilicica* Boiss. & Balansa

**HAB.** *Colutea cilicica* Boiss. & Balansa rocky mountain slope, in a ravin, open places in oak forest, alt. 950-1900 m., fl. And fr. May- June.

Coronilla L. 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Coronilla scorpioides* (L.) Koch

**HAB.** *Coronilla scorpioides* (L.) Koch upland slopes on clay soils, alt. 200-1000 m., fl. And fr. Apr.- June.

Dalbergia Lf.

In the herbarium of Iraq Natural History Museum it was found one species which was *Dalbergia sissoo* DC.

**HAB.** *Dalbergia sissoo* DC. Cultivated in the steppe and desert region of Iraq, up to alt. 250-300 m., fl. And fr. Apr.-Oct.

Gleditsia L. 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Gleditsia triacanthos* L.

Glycyrrhiza L.

In the herbarium of Iraq Natural History Museum it was found one species which was *Glycyrrhiza glabra* L.

Hippocrepis L., 1753

In the herbarium of Iraq Natural History Museum it was found one species which was *Hippocrepis unisiliquosa* L.

Hymenocarpos Savi

In the herbarium of Iraq Natural History Museum it was found one species which was *Hymenocarpos circinnatus* (L.) Savi

Leucaena Benth., 1842

In the herbarium of Iraq Natural History Museum it was found one species which was *Leucaena leucocephala* (Lam.) de Wit
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HAB. Cultivated gardens up to alt.c.50 m.
fl. May-October
fr. July- November

*Lathyrus* L.

In the herbarium of Iraq Natural History Museum it was found many species which were they *Lathyrus aphaca* L., *Lathyrus annuus* L., *Lathyrus cassius* Boiss., *Lathyrus inconspicuos* L., *Lathyrus cicera* L., *Lathyrus hirsutus* L., *Lathyrus sativus* L.

*Lotus* L., 1753

In the herbarium of Iraq Natural History Museum it was found many species which were they *Lotus gebelia* Vent., *Lotus corniculatus* L., *Lotus lanuginosus* Vent.

HAB. *Lotus gebelia* Vent. Common in the forest zone of Iraq, and in oak forest, alt. 600-2300 m., fl. And fl. May- June.

HAB. *Lotus corniculatus* L. common in the forest zone of Iraq, on mountains slopes, up to alt. 2400 m., fl. And fr. June-Aug. in the mountains Mar.-May. On the lower plain.

HAB. *Lotus lanuginosus* Vent, desert plains, alt. 50-600 m., fl. And Fr. Mar.- June.

*Lens* Mill.

In the herbarium of Iraq Natural History Museum it was found many species which were they *Lens orientalis* (Boiss.) Schmalh., *Lens culinaris* Medik [13].

*Medicago* L.

In the herbarium of Iraq Natural History Museum it was found many species which were they *Medicago phrygia* (Boiss. & Balansa) E.Small, *Medicago monspeliaca* (L.) Trautv., *Medicago monantha* (C.A.Mey.) Trautv., *Medicago sativa* L., *Medicago orbicularis* (L.) Bartal., *Medicago laciniata* (L.) Mill., *Medicago ciliaris* (L.) Krock., *Medicago lupulina* L., *Medicago polymorpha* L., *Medicago coronata* (L.) Bartal [14].

*Melilotus* Mill.

*Melilotus indicus* (L.) All. In dry steppic plains, sandy gravel, up to alt. c. 250 m. fl. And fr. Mar.- Apr [15,16].

Onobrychis Mill.

In the herbarium of Iraq Natural History Museum it was found many species which were they Onobrychis ptolemaica (Delile) DC., *Onobrychis acaulis* Bornm., *Onobrychis caput-galli* (L.) Lam., *Onobrychis schahuensis* Bornm.

*Ononis* L., 1753

In the herbarium of Iraq Natural History Museum it was found many species which were they *Ononis viscosa* L., *Ononis spinosa* L.

HAB. *Ononis viscosa* L., in one district of the N.E. sector of the lower forest zone of Iraq.

HAB. *Ononis spinosa* L., mountain slopes, in oak forest, destroyed forest and above tree line, alt. 650-2500m., fl. May-Aug., fr. Jul.-Sept.

*Parkinsonia* L.

In the herbarium of Iraq Natural History Museum it was found one species which was *Parkinsonia aculeata* L.
In the herbarium of Iraq Natural History Museum it was found one species which was *Pisum sativum* L.

**Pisum L.**

HAB. *Pisum sativum* L. in the forest zone of Iraq, grassy mountains slopes, cultivated in grain field, alt. 700-1600 m., fl. And fr. Apr.-May.

**Prosopis L., 1767**

In the herbarium of Iraq Natural History Museum it was found many species which were they *Prosopis juliflora* (Sw.) DC., *Prosopis farcta* (Banks & Sol.) J.F.Macbr.

*Prosopis juliflora* (Sw.) DC. Mountain valleys, in open forest, on arable land, up to alt. 1500 m., fl.

HAB. *Prosopis farcta* (Banks & Sol.) J.F.Macbr. cultivated in gardens in the desert region of Iraq, up to alt. 50 m., fl. April-May, fr. July-February.

**Trifolium L., 1753**

In the herbarium of Iraq Natural History Museum it was found many species which were they *Trifolium campestre* Schreb., *Trifolium echinatum* M.Bieb., *Trifolium fragiferum* L., *Trifolium hirtum* All., , *Trifolium lappaceum* L., *Trifolium leucanthum* M.Bieb., *Trifolium medium* L., *Trifolium nigrescens* Viv. *Trifolium purpureum* Loisel., *Trifolium pilulare* Boiss., *Trifolium repens* L., *Trifolium resupinatum* L., *Trifolium scabrum* L., *Trifolium stellatum* L., *Trifolium spinosum* L., *Trifolium tomentosum* L., *Trifolium grandiflorum* Schreb [17, 18].

**Trigonella L.**

In the herbarium of Iraq Natural History Museum it was found many species which were they *Trigonella astroides* Fisch. & C.A.Mey., *Trigonella caesisyriaca* Boiss., *Trigonella hamosa* Del. ex Smith, *Trigonella foenum-graecum* L., *Trigonella filipes* Boiss., *Trigonella stellata* Forssk., *Trigonella spicata* Sm., *Trigonella uncinata* Banks & Sol.

**Vicia L., 1824**

In the herbarium of Iraq Natural History Museum it was found many species which were they *Vicia tenuifolia* Roth, *Vicia ervilia* (L.) Willd., *Vicia tenera* Benth., *Vicia narbomerpis* L., *Vicia monantha* Retz., *Vicia michauxii* Spreng., *Vicia hybrida* L., *Vicia sativa* L., *Vicia palaestina* Boiss., *Vicia assyrriaca* Boiss.

**Vigna Savi, 1824**

In the herbarium of Iraq Natural History Museum it was found many species which were they *Vigna radiata* (L.) R.Wilczek, *Vigna unguiculata* (L.) Walp.

*Vigna radiata* (L.) R.Wilczek, cultivated as a summer pulse crop in Iraq. Up to alt. 50 m.

HAB. *Vigna unguiculata* (L.) Walp, cultivated on the lower alluvial plain in the desert region of Iraq., up to alt. c. 50 m. fl. And fr. Jun.-Oct.

Legumes were very widely distributed, and the third-largest land plant family at terms for number of species, behind the families Orchidaceae and Asteraceae.

4. Conclusion

The study showed the genus and species of the leguminous family which found in the herbarium of Iraq Natural History Museum and their spread in various as they are the most important widespread plant families and bear many difficult environmental conditions. Therefore, it will be a reference for many researchers and those interested in this aspect.
Compliance with ethical standards

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Disclosure of conflict of interest
There's no conflict of interest in this research.

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