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(REVIEW ARTICLE)

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Review with checklist of monocot in the herbarium of Iraq Natural History Museum

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Abstract

This study was conducted to make an inventory of the monocot plants that were collected before and now which stored in the herbarium of Iraq Natural History Museum for identifying them. The herbarium contains avery large and varied number of plants from different parts in Iraq and for different and varied environments. The plants collected, arranged and identified using taxonomic keys specific to these families. Currently, the plant samples are in the herbarium of Iraq Natural History Museum to be an important scientific reference for all researchers inside and outside the country. With the identification of botanical scientists for each family, gender and year in which it was first diagnosed.

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

1. Introduction

Monocotyledons (monocots) are the most important major radiations of angiosperm swhich recognized like a group since studies for seed structure with John Ray (1682, 1696, 1703) at the seventeenth century[1,2]. One of the major differences between the monocots and the dicots is their possession for a single cotyledon (vs. usually only two in other angiosperms) Most monocots contain parallel leaf venation, floral parts with threes, sieve-tube plastids in several cuneate protein crystals, scattered vascular bundles for their stems, has no vascular-cambium-producing secondary phloem and secondary xylem [3,4,5]. In spite of their lack of a vascular cambium, some monocots, Also can become trees in increases the stem diameter by a novel process, The termed ‘‘anomalous’’ secondary growth, the plants are able to add more new vascular bundles and parenchyma to the primary bodyThat main division for Poales is that to the graminid and cyperid clades. Cyperaceae and Juncaceae are the important sister taxonomic, not intermingled like in some previous studies. Then their sister Thurniaceae follows. Poaceae is the most famous family in Iraq, Ecdeiocoleaceae Followed by the rest of the monocots families [6,7].

2. Material and methods

All specimens of Monocot families in various habitats in Iraq which saved in the herbarium for Iraq Natural History Museum were written down. Used many taxonomic keys identification and diagnosed genera such as:[8]

3. Results and discussion

In this study checklist for monocot in the herbarium in Iraq Natural History Museum showed many families as fallow:

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3.1. Alismataceae 1799

Alisma gramineum Lej. (1811)
Alisma lanceolatum With. (1796)
Alisma plantago-aquatica L. (1753)
Damasonium alisma Mill. (1768)

3.2. Araceae 1789

Biarum Schott 1832

3.3. Asparagaceae 1789

Hyacinthella nervosa (Bertol.) Chouard 1931
Leopoldia comosa (L.) Parl. 1847
Ornithogalum arcuatum Steven 1829
Ornithogalum magnum Krasch. & Schischk. 1935
Ornithogalum montanum Cirillo 1811
Ornithogalum narbonense L. 1756

3.4. Butomaceae 194

Butomus umbellatus L. (1753)

3.5. Cyperaceae 1789

Cyperus laevigatus subsp. distachyos (All.) Ball (1878)
Blysmus Panz. ex Schult. (1824)
Bolboschoenus schmidii (Raymond) Holub (1973)
Bolboschoenus glaucus (Lam.) S.G.Sm. (1995)
Carex platyphylla J.Carey (1847)
Carex diluta M.Bieb. (1808)
Carex divisa Huds. (1762)
Cyperus glaber L. (1771)
Cyperus longus L. (1753)
Cyperus rotundus L. (1753)
Cyperus difformis L. (1756)
Cyperus fucosus K.L.Wilson (1991)
Cyperus glaber L. (1771)
Cyperus michelianus subsp. pygmaeus (Rottb.) Asch. & Graebn. (1904)
Cyperus conglomeratus Rottb. (1773)
Fimbristylis dichotoma (L.) Vahl (1805)
Eleocharis palustris (L.) Roem. & Schult. (1817)
Scirpoides holoschoenus (L.) Soják (1972)
Schoenoplectus lacustris (L.) Palla (1888)

3.6. Gramineae (Poaceae) 1789

Paspalum distichum L. (1759)
Aegilops columnaris Zhuk. (1928)
Aegilops crassa Boiss. 1846
Aegilops tauschii Coss. (1849)
Aegilops neglecta Req. ex Bertol. (1834)
Aeluropus lagopoides (L.) Thwaites (1864)
Aeluropus littoralis (Gouan) Parl. (1850)
Elymus repens (L.) Gould (1947)
Eremopyrum orientale (L.) Jaub. & Spach (1851)
Agrostis gigantea Roth (1788)
Polypogon viridis (Gouan) Breistr. (1966)
Alopecurus apiatus Ovcz. (1934)
Alopecurus arundinaceus Poir. (1808)
Alopecurus myosuroides Huds. (1762)

Alopecurus vaginatus (Willd.) Kunth (1833)
Gastridium ventricosum (Gouan) Schinz & Thell. (1913)
Bromus rubens L. 1755
Stipagrostis plumosa Munro ex T.Anderson (1860)
Arrhenatherum elatius (L.) P.Beauv. ex J.Presl & C.Presl. (1819)
Arrhenatherum kotschyi Boiss. (1846)
Arundo donax L. (1753)
Avena barbata Pott ex Link (1799)
Avena fatua L. (1753)
Avena ventricosa Balansa (1854)
Avena barbata Pott ex Link (1799)
Boissiera squarrosa (Sol.) Nevski (1934)
Briza humilis M.Bieb. (1808)
Bromus brachystachys Hornung (1833)
Bromus danthoniae Trin. 1831
Bromus japonicus Thunb. 1784
Bromus lanceolatus Roth 1797
Bromus modestus Renvoize 1994
Bromus scoparius L. 1755
Bromus tomentellus Boiss. 1846
Calamagrostis epigejos (L.) Roth 1788
Catabrosa P.Beauv., 1812
Catapodium rigidum (L.) C.E.Hubb. 1953
Chrysopogon gryllus (L.) Trin. 1820
Crypsis Aiton 1789
Ctenopsis De Not. 1847
Cymbopogon schoenanthus (L.) Spreng. 1815
Cynodon dactylon (L.) Pers. 1805
Cynosurus elegans Desf. 1798
Dactylis glomerata L. 1753
Dactyloctenium aegyptium (L.) Willd. 1809
Desmazeria Dumort. (1824)
Desmostachya bipinnata (L.) Stapf 1900
*Digitaria sanguinalis (*L.) Scop. 1771
Leptochloa fusca (L.) Kunth 1829
Echinochloa colona (L.) Link 1833
Echinochloa crus-galli (L.) P.Beauv. 1812
Elionurus hirtifolius Hack. 1889
Eragrostis basedowii Jedwabn. 1923
Eragrostis cilianensis (All.) Janch. 1907
Eragrostis diarrhena (Schult. & Schult.f.) Steud. 1854
Eremopyrum bonaepartis (Spreng.) Nevski 1933
Eremopyrum distans (K.Koch) Nevski 1933
Eriochloa succincta (Trin.) Kunth 1833
Festuca arundinacea Schreb.
Heteranthelium piliferum (Sol.) Hochst. ex Jaub. & Spach 1850
Hordeum marinum subsp. gussoneanum (Parl.) Thell. 1908
Hordeum marinum Huds. 1778
Imperata cylindrica (L.) Raeusch. 1797
Lolium persicum Boiss. & Hohen. 1854
Lolium temulentum L. 1753
Milium pedicellare (Bornm.) Roshev. ex Melderis 1952
Piptatherum holciforme (M.Bieb.) Roem. & Schult. 1817
Panicum miliaceum L. 1753
Parapholis incurva (L.) C.E.Hubb. 1946
Pennisetum divisum (Forssk. ex J.F.Gmel.) Henrard 1938
Phalaris minor Retz. 1783
Phalaris paradoxa L. 1763
Phleum alpinum L. 1753

Phleum exaratum Griseb. 1846
Phleum pratense L. 1753
Phragmites australis (Cav.) Trin. ex Steud. 1841
Poa bulbosa L. 1753
Poa angustifolia L. 1753
Poa annua L. 1753
Poa trivialis L. 1753
Polypogon monspeliensis (L.) Desf. 1798
Saccharum strictum (Host) Spreng. 1815
Schismus barbatus (L.) Thell. 1907
Sclerochloa dura (L.) P.Beauv. 1812
Cutandia memphitica (Spreng.) Benth. 1881
Secale montanum Guss. 1825
Sorghum halepense (L.) Pers. 1805
Sphenopus divaricatus (Gouan) Rchb. 1830
Stipa barbata Desf. 1798
Stipa bromoides (L.) Dörfl. 1897
Stipa capensis Thunb. 1794
Brachypodium distachyon (L.) P.Beauv. 1812
Vulpia ciliata Dumort. 1824

3.7. Hydrocharitaceae 1789

Vallisneria spiralis L. 1753

3.8. Iridaceae 1789

Crocus cancellatus Herb. 1841
Gladiolus atroviolaceus Boiss. 1854
Gladiolus italicus Mill. 1768
Gladiolus italicus Mill. 1868
Iris persica L. 1753
Iris sisyrinchium L. 1753

3.9. Ixioliriaceae 2015

Ixiolirion tataricum (Pall.) Schult. & Schult.f. (1829)

3.10. Juncaceae 1789

Juncus articulatus L. 1753
Juncus bufonius L. 1753
Juncus fontanesii J.Gay ex Laharpe 1825
Juncus inflexus L. 1753

3.11. Liliaceae 1789

Gagea bulbifera (Pall.) Salisb. 1806

3.12. Orchidaceae 1789

Epipactis helleborine (L.) Crantz 1769
Orchis mascula (L.) L. 1755
Neotinea tridentata (Scop.) R.M.Bateman, Pridgeon & M.W.Chase 1997

3.13. Potamogetonaceae

Potamogeton crispus L. 1753
Stuckenia pectinata (L.) Börner 1912
Potamogeton perfoliatus L. 1753
Potamogeton pusillus L. 1753
Zannichellia palustris L. 1753

3.14. Ruppiaceae 2010
Ruppia maritima L. 1753

3.15. Typhaceae 1789

Typha domingensis Pers. 1807

3.16. Xanthorrhoeaceae 1829

Asphodelus ramosus L. 1753
Asphodelus tenuifolius Cav. 1801

Monocots account about a quarter forangiosperm species richness and are among the very most economically and culturally important plants [9, 10], which have cereals (grasses), palms, orchids and lilies[11,12,13]. So it was observed that the increase in species richness in genera associated with attributes which bestow increased speciation rates and/or may be decreased extinction rates [14,15]

4. Conclusion

The study for our article showed that The presence of a large number of plants preserved in the herbarium of Iraq Natural History Museum, which date back to different periods of time, belonging to families of monocots The publication of these families is a way to facilitate the search for researchers of plant species belonging to these families, which are easy to obtain when published in a scientific journal.

Compliance with ethical standards

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Disclosure of conflict of interest

No Conflict of interest.

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