Locally Endemic Plants of Eskişehir

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ABSTRACT

Eskişehir is a province with a surface area of 13,500 km² located in the Central Anatolia Region. According to Davis 1969, Eskişehir, located in the B3 square, has altitudes between 185 m and 1850 m. The Alpagut location of the Middle Sakarya Valley is the lowest point and the Efsun Baba Hill is the highest point of the Türkmen Mountain. Sakarya River and Porsuk River are the most important rivers of the province and the Eskişehir Plain between Sündüken Mountains and Türkmen Mountains is the center of the province. The first records about the flora of Eskişehir date back to 1800 years. The first important recordings in Turkey are given in Flora. The first records about the flora of Eskişehir are based on the 1800 first important records in Turkey is given in Flora. After a large number of studies of the local and foreign researchers about the flora of Eskişehir. In the last 20 years, especially The floristic studies of the local researchers such as Atila OCAK, Onur KOYUNCU, Ö. Koray YAYLACI, Okan SEZER, Derviş ÖZTÜRK and Kurtuluş ÖZGİŞİ have determined the flora of Eskişehir significantly. In this study, biological, distribution and general population status, IUCN status, etc. of local endemic taxa in Eskişehir flora were investigated. up-to-date information on its features is presented.

Keywords: Flora, Endemism, IUCN, Biodiversity, Eskişehir, Turkey

INTRODUCTION

Turkey is one of the countries with the richest flora in the world with about 12,000 species and subspecies taxa. This number is important with the floristic richness and diversity of a country and the abundance of rare and endemic taxa. Approximately one-third of Turkey’s flora is endemic. Among the main reasons why our country has such a rich diversity are climatic and edaphic differences, geomorphological, topographic diversity, sea, river, lake, different water environment diversity, altitude differences ranging from 0-5000 m, Mediterranean, Iran-Turan, Europe - The fact that three different phytogeographical regions such as Siberia are located at the intersection point and it is a bridge between Southwest Asia and Europe. In addition, the fact that our country was not affected by the four glacial periods that the earth lived from 1 million years to 12 thousand years ago, and that migrating plants escaping from the glaciers descending from Northern Europe to the Mediterranean Sea in various ways, find our country as a kind of shelter area in Europe. This has caused the emergence of an otherwise opposite diversity in our country. Eskişehir has an enviable wealth in terms of flora.

The beginning of the floristic studies in our country started with the collection of plant samples from Anatolia by the French botanist, explorer J. P. Tournefourth between 1700-1702. Later French chemist and naturalist PM Aucher-Eloy, 1830-1838, German botanist KH Emile Koch 1836-1844, Swiss botanist PE Boissier 1842-1845, Russian naturalist, politician P. Tchitatcheff 1848-1863, French botanist BB Balansae 1854 -1857, German botanist PEE Sintenis 1883-1890, German botanist JJ Manisadjian 1890-1915 German botanist JFN Bornmüller 1892-1929, German botanist WE Siehe 1895-1924, Turkish national botanist
GVA Aznavour 1895-1930, German botanist K. Krause 1933-1939, Swiss amateur botanist Huber-Morath 1935-1964 and British botanist PH Davis continued to collect plant samples from our country between 1938-1982.

The main flora studies published in this period are as follows;
Species Plantarum, C. Linnaeus, 2 volumes, 1753
Asia Minor, 8 volumes, J. P. Tournefort (-1850)
Flora de Constantinople, 5 volumes, G. V. Aznavur (1861-1920)
Flora Orientalis, E. Boissier, 1867-1888
Flora of Syria, Paletine and Sinai, E. G. Post 1883-1896
Flora Kavkaza, D. Soknovski, 1911
On the Flora of the Gallipoli Peninsula, W. B. Turril, 1924
Addimentum ad florulum Lydiae, O. Schwarz, vol. I-II, 1934
The Flora of Ankara, K. Krause, 1937
Zur Flora von Armenien und Kurdistan, R. H. Rechinger, 1943
Turkey plant, H. Birand, 1952
Zur Flora von Syrien, Libanon, K. H. Reichinger, 1959
Flora Iranica, K. H. Reichinger, 1963-1984
Flora Lydiae, J. Bornmüeller, 1968

These studies, they have created a collection of several researchers and herbaria collections hosting, Turkey has an important knowledge of the Flora of writing. Flora of Turkey before this knowledge has provided an outline of the skin and work from a 5 formed from suplementu Flora orientalis between the years 1867-1888 by E. Boissier (Boissier, 1867-1888). The most comprehensive study of the flora of our country is the 10-volume book, Flora of Turkey and the East Aegean Islands, published by the British botanist P. H. Davis and colleagues between 1965-1988.

The surface area of Eskişehir is 13.500 km². The topographic structure of Eskişehir; The plains in the Sakarya and Porsuk basins and the surrounding mountains form them. The most important of these are Bozdağ, Sündiken, Sivrihisar and Türkmen mountains. The highest point of the province is Turkmen Mountain with 1825 m. Approximately 20% of the province is covered with natural forests. More than 80% of Eskişehir's flora elements show natural distribution in steppe ecosystems.

The first regular study in Eskişehir was carried out in 1991 by Tuna Ekim in Sündiken Mountains. Many floristic studies have been carried out since 1999. “The flora of Eskişehir Hekimdağ (Bozdag), M. Ardiç (1999); The Flora of dam pool of Musaözü and its environment, M. Erdir (1999); The Flora of Mihaliçık county (Eskişehir), B. Uryan (2000); Floristic and Ecological Characters of Arayit Mountain and Its Environs (Central Anatolia, Eskişehir-Turkey) C. Türe (2000); The Flora of Kalabak basin, Türkmen Mountain (Eskişehir), G. Hüner (2003); Büyükayyla (B3: Eskişehir) value less a systematic study flora, S. Arı (2007); The flora of Kirka (Eskişehir), H. H. Dere (2010); The flora of Beylikova (Eskişehir-Turkey), A. Umay (2010); Contributions to the flora of Eskişehir Hekimdağ (Bozdag), M. Sayarer (2010); Flora of Eskişehir Yazılıkaya valley and environment, B. Çingay (2011); Flora of Yunusemre (Eskişehir) and environs, K. Özişi (2013); Flora of Günyüzü (Eskişehir) and environs, Ö. K. Yavuz (2013); Macrophytic flora of Balıkdamlı Lake (Sivrihisar/Eskişehir), A. Beifenatekova (2013); Eskişehir on gypsum and marl soil flora and vegetation, D. Öztürk (2016); Flora of Phrygian Valley, O. Sezer (2016); Flora of the region between Aşaği Kepen-Ertuğrul-Buzluka (Sivrihisar-Eskişehir) villages, Y. N. Bahadir (2019).

Nearly 2000 plant species within the borders of Eskişehir province show natural distribution. More than 250 of these species are endemic to our country, that is, they grow only in Turkey. In addition, especially in
Sivrihisar, Günyüzü, Sündiken mountains and Türkmen Mountains, 40 of these species that grow in all the mountains, steppes, plains, highlands and forests of our province grow naturally only in Eskişehir province in the world.

These are; Acantholimon gemicianum, Acantholimon riatguelii, Achillea aleppica subsp. altinozlu, Achillea ketenoglu (şahcivanperçemi), Aethionema dumanii (yörüksaçtantasi), Alkanna sumbulii, Alyssum niveum (akkevke), Anthemis kotschyan var. gysico, Brassica elongata subsp. duralii, Bromus musadoghanii, Campanula pamphylica subsp. tokurri (tokurçani), Centaurea akmanii, Centaurea nivea (şirinsaribaş), Centaurea sericea (saklisaribaş), Cephalaria aytachii (beypelemiri), Convolvulus pulvinatus (çoändöşği), Euphorbia yildirimli, Ferula divaricata, Galium dincii, Genista kepenensis, Glaucomic secmenii, Gypsophila osmangaziensis (kocaçöven), Hedysarum duriae, Hedysarum hasanyildirimii, Hesperis turkmendaghensis (tataryıldızı), Hypericum sechmenii (seçmen kantaronu), Klasea yunus-emrei, Muscaris sivrhiyisdagdhlarenis (hisarsümülü), Onosma atila-ocakii, Polygala guneri, Salsola turcica (hoşoda), Sanguisorba minor subsp. ertugrulii, Sanguisorba muricata subsp. ertugrulii, Seseli phrygium (firigçaşri), Sideritis gulendamii (hanımçayı), Thymus ekimii, Verbascum eskisheirensis (eskisiğerkuyruğu), Verbascum gypsicola (mermersiğerkuyruğu), Veronica ersin-yucelii, Veronica ozturkii.
Alyssum niveum

Anthemis kotschyana var. gypsicola

Centaurea nivea

Centaurea sericea

Cephalaria aytachii

Convolvulus pulvinatus
RESULTS AND DISCUSSION

One of the biggest sources of wealth of countries is the biological wealth. Soil characteristics may limit the distribution and settlement of plant species in an area, leading to the formation of edaphic endemic plants that can only grow on specific soil types. These types of plants only adapt very well to their habitats. The irregular distribution of different types of soils makes these regions biodiversity points.
When examining the data of Turkey Plant Red Data Book shows that many plant species disappear in EX category. The only solution is to identify the endemic plant species and take the necessary protection measures to protect them.

All of these local endemic taxa, which have a natural distribution within Eskişehir province, are under various threats. These taxa fall into the CR-Critically Endangered, VU-Vulnerable and EN-Endangered categories according to IUCN criteria. According to the data obtained during field studies, no change in the IUCN criteria of these taxa is recommended. However, the population of taxa in Eskişehir is generally under the negative effects of urbanization, grazing, agricultural and forestry activities, mining activities and plant collection activities. Destructive elements on taxa should be minimized and situations that prevent growth of their populations should be eliminated. For these reasons, protection is recommended for all taxa.

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