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Geophytes of Yazılıkaya (Han-Eskişehir, Turkey)

Abstract

Çingay, B., Ataşlar, E. & Koyuncu, O.: Geophytes of Yazılıkaya (Han-Eskişehir, Turkey). — *Boccone* 24: 227-230. 2012. — ISSN 1120-4060.

The aim of the research is to identify different species, risk categories, protection situations and to reveal new record species both for Eskişehir and B3 square which Eskişehir located in. In this poster, it is particularly concentrated on geophytic species in the region among many other plant species of analyses. Actually, 42 geophytic taxa belonging to 10 families and 21 genera are gathered from the investigation area. 1 taxa are new records for B3, 8 taxa are endemic and 3 taxa are rare to Turkey. According to floristic regions, 12 Mediterranean elements are ranked first, followed by 6 Irano-Turanian elements and 2 Euro-Siberian elements. 24 of the identified species are widespread and of unknown phytogeographic origin. In addition, 37 of the collected taxa are determined to be monocotyledons and the remaining 5 are dicotyledons. The families with the most taxa in the research area are: *Hyacinthaceae* 8 and *Iridaceae* 7. Concerning the number of species, the major genera in this region are as follows: *Crocus* L. (6) *Allium* L. and (5) *Gagea* Salisb. (4).

Introduction

The rich Turkish flora has a high percentage of endemism and because it has a wide range of habitats, it has a large flora. In Turkey, floristic studies are undertaken to examine the rich biodiversity and to protect vulnerable species for the future. This poster is on geophyte species from the Yazılıkaya District which in ancient times was known as Midas city. The name Yazılıkaya, (Turkish for “inscribed rock”), comes from the Phrygian ancient monument, called the Midas Monument. Yazılıkaya, is a small village situated 80 km from Eskişehir, located on the “Phrygian Plateau” This is a roughly square shaped area bordered by Eskişehir city to the north, Kütahya to the west, Afyonkarahisar to the south, and Seyitgazi to the northeast. This plateau lies at the foot of the Türkmen Mountains to the west and in some places reaches 1600 meters. In ancient times the region was known as the east and middle Phrygia. There are many ancient Phrygian remains and monuments near the village. The village is situated on a rocky area on the northwest side of the plateau and both the area and the forest is protected as a first degree archeological site. The research area has a remarkable soil structure, plateau characteristics and floristic composition. The aim of the two year field research study is to identify the Flora of Yazılıkaya and its surrounding area. The first part of the study which has been carried out from March 2009 to January 2010, gives the results about the geophyte species of the research area.

Table 1. List of Geophytes of Yazılıkaya (Eskişehir).

	<i>Polygonatum orientale</i> Desf.	
	<i>Anemone blanda</i> Schott & Kotschy	
Ranunculaceae	<i>Ranunculus ficaria</i> subsp. <i>ficariiformis</i> Rouy & Fouc.	
	<i>Corydalis solida</i> (L.) Sw. subsp. <i>solida</i>	
Papaveraceae	<i>Fumaria officinalis</i> L.	
Paeoniaceae	<i>Paeonia mascula</i> subsp. <i>arietina</i> Cullen & Heywood	
	<i>Allium atrovioleaceum</i> Boiss.	
	<i>A. cupani</i> subsp. <i>hirtovaginatam</i> (Kunth) Stearn	Medit
	<i>A. flavum</i> var. <i>minus</i> Boiss.	Endemic, Euxine
	<i>A. pallens</i> L. subsp. <i>pallens</i>	Medit
Alliaceae	<i>A. wiedemannianum</i> Regecl	Ir-Tur
	<i>Colchicum burttii</i> Meikle	Endemic, E.Medit
	<i>C. szovitsii</i> Fisch. & C.A.Mey.	Ir-Tur
	<i>C. triphyllum</i> G.Kunze	Medic
	<i>Merendera attica</i> (Spruner) Boiss. & Spruner	E.Medit
Colchicaceae	<i>M. sobolifolium</i> Fisch. & C.A.Mey.	Ir-Tur
	<i>Hyacinthella lineata</i> (Stuedel) Chouard	Endemic, E.Medit
	<i>Muscari comosum</i> (L.) Mill.	Medit
	<i>M. neglectum</i> Guss.	
	<i>M. tenuiflorum</i> Tausch	
	<i>Ornithogalum sphaerocarpum</i> Kerner	
	<i>O. comosum</i> L.	
	<i>O. alpigenum</i> Stapf	Endemic, E.Medit
Hyacinthaceae	<i>Scilla bifolia</i> L.	Medit
	<i>Fritillaria pinardii</i> Boiss.	Ir-Tur
	<i>Gagea bohemica</i> (J.&C.Presl) Pascher	
	<i>G. granatelli</i> (Parl.) Parl.	Medit
	<i>G. villosa</i> var. <i>villosa</i> (M.Bieb) Duby.	Medit
	<i>G. bithynica</i> Pascher	Rare, E.Medit
Liliaceae	<i>Tulipa armena</i> var. <i>lycica</i> (Bakcr) Marais	Endemic
	<i>Crocus ancyrensis</i> (Herb.) Maw	Endemic, Ir-Tur
	<i>C. chrysanthus</i> (Herb.) Herb.	
	<i>C. danfordiae</i> Maw	Endemic
	<i>C. flavus</i> Weston subsp. <i>flavus</i>	Euro-Sib
	<i>C. pallasii</i> Goldb. subsp. <i>pallasii</i>	
	<i>C. oliveri</i> Gay. subsp. <i>oliveri</i>	
Iridaceae	<i>Iris schachtii</i> Markgraf	Endemic, Ir-Tur
	<i>Orchis mascula</i> subsp. <i>pinetorum</i> (Boiss & Kotschy) G. Camus	Medit
	<i>Epipactis helleborine</i> subsp. <i>densifolia</i> (W.Hahn & al.) Krutz.	New records for B3, Rare
	<i>Cephalanthera rubra</i> (L.) L.C.M Richard	
Orchidaceae	<i>C. epipactoides</i> Fisch. & C.A.Mey.	Rare, Euro-Sib

Material and methods

The method employed is the grid square method adopted by Davis, (Davis 1965). The research area is located in B3 square. It is a triangle-shaped area located inside four villages: Şükranlı to the north, Ağlarca to the south, Gökçeğüney to the west and Kayı to the east. The first field work was carried out on 18.03.2009 and the last on 26.01.2010. During this time plant material samples were collected at intervals of 2-3 weeks. These specimens were numbered, pressed and dried in a herbarium press. They are retained in the herbarium in the Nezahat Gökyiğit Botanic Garden (NGBB) and at Eskişehir Osmangazi Üniversitesi Fen Edebiyat Fakültesi Herbarium.

For identification of the material, several references were used including the Flora of Turkey and the East Aegean Islands (Davis 1965-1985; Davis & al. 1988; Güner & al. 2000) along with the check-lists by Özhatay & al. (2006) and Özhatay & al. (2009). A complete list of flora, is given according to the order in the Flora of Turkey and the East Aegean Islands (Davis 1965-1985; Davis & al. 1988; Güner & al. 2000) in Table 1. This Table gives the family and species names and the author(s), if it is endemic and the phytogeographic region element. Endemic and rare species are categorized according to the IUCN Red Data categories by Ekim & al. (2000), and the IUCN Survival Commission (2001). The following category abbreviations are used in the text: VU (Vulnerable), LR (Least concern), and DD (Data deficient) in Table 2.

Discussion and conclusion

This study comprehends the results of field research conducted at regular periods of 2-3 weeks during the last year in order to identify the Flora of Eskişehir Yazılıkaya and its environment. As a result of this study, 42 geophytic taxa belonging to 10 families and 21 genera are gathered from the investigation area. One taxa are new records for B3, 8 taxa

Table 2. Threatened categories of plants geophytes collected from the research area (Ekim & al. 2000).

Names of plants	Threatened category
<i>Allium flavum</i> var. <i>minus</i> Boiss.	VU
<i>Allium wiedemannianum</i> Regel	LR
<i>Hyacinthella lineata</i> (Steudel) Chouard	LR
<i>Ornithogalum alpigeneum</i> Stapf	LR
<i>Gagea bithynica</i> Pascher	LR
<i>Tulipa armena</i> var. <i>lycica</i> (Baker) Marais	LR
<i>Colchicum burttii</i> Meikle	LR

are endemic and 3 taxa are rare to Turkey. According to floristic regions, 12 Mediterranean elements are ranked first, followed by 6 Irano-Turanian elements and 2 Euro-Siberian elements. 24 of the identified species are widespread and of unknown phytogeographic origin. In addition, 37 of the collected taxa are determined to be monocotyledons and the remaining 5 are dicotyledons. The families with the most taxa in the research area are Hyacinthaceae 8 and Iridaceae 7. Concerning the number of species, the major genera in this region are as follows: *Crocus* L. (6), *Allium* L. and (5) *Gagea* Salisb. (4). (Table 1 and 2). To conclude, it is significant to underline that this is the preliminary results of two-year research concerning the Flora of Yazılıkaya and its environment.

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