

Five Critically Endangered Species in Malatya Province (Turkey)

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Abstract Five species endemic to Malatya province in Turkey, *Hipricum malatyanum* Peşmen (Hypericaceae), *Lotus malatayicus* Ponert (Fabaceae), *Centaurea brevifimbriata* Hub.-Mor. (Asteraceae), *Chaenorhinum cryptarum* (Boiss.et Hauskn.) Davis (Scrophulariaceae), and *Phlomis integrifolia* Hub.-Mor. (Lamiaceae), are critically endangered in nature, due to the deterioration of the habitats. These species were observed in the habitats for a period of 20 years by the authors. In Malatya province the habitats are gradually disappeared for reasons such as open fields, creating vineyards and orchards, and the effect of erosion.

Keywords Endemic, Plant, Turkey

species. More than 30% of the species are endemic. Malatya is located in the south-east of Turkey (Figure 1). At the same time it is at the south-east of the Anatolian Diagonal, which is one of the main endemic centres in Turkey [1,2]. Due to its location Malatya province has a rich flora. Also there are many endemic species grown in the province [3].

The authors began to studies on Flora of Malatya in 1990 and still are continuing to study on. [312]. Firstly floristic researches were carried out in the province [6,7,10]. Later researches have been focused on endemic species of the province [3,8].

Malatya is located SE of Turkey and East of Anatolian diagonal. According to grid square system that used in The flora of Turkey and The East Aegean Islands, the west part of the province is located in square B6 and east part in B7 (14).

1. Introduction

Turkey has a rich flora with more than 10,000 plants

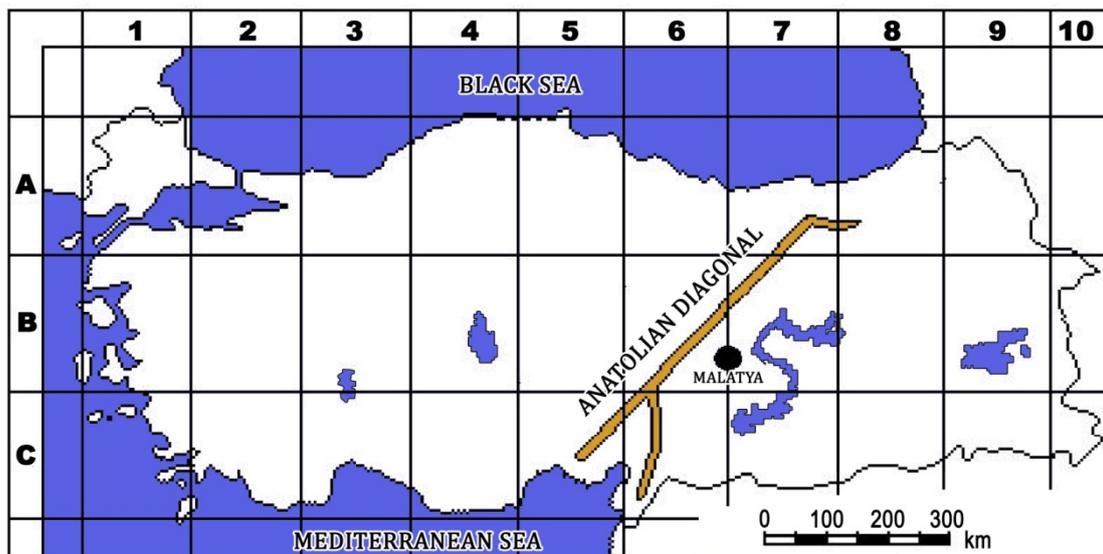


Figure 1. The map of Turkey, Anatolian Diagonal and location of Malatya province

2. Materials and Methods

Materials of this paper are five plant species endemic to Malatya province. These species are *Hipricum malatyanum*, *Lotus malatayicus*, *Centaurea brevifimbriata*, *Chaenorhinum cryptarum*, and *Phlomis integrifolia*. Approximately 50 endemic species grown in Malatya province were observed periodically since 1990 by the authors. Firstly specimens of the species were collected and prepared according to established herbarium techniques. Secondly all the specimens were identified using Flora of Turkey [13]. Later field studies were made periodically for observations. At the field studies which carried out, the living members of the species were counted. At the same time, the amount of reduction of natural habitats of every species was tried to determine. According to the IUCN rules, threat categories of the species were examined to determine [15, 16]. The most endangered Five of the 50 endemic species are given here for pay attention of researchers. The photos were taken by the authors during the field studies.

3. Results

Hipricum malatyanum Pesmen (Hypericaceae)

This is delicate species grown west face of Beydağı at limestone rock crevices. Individuals of this species do not grow together and spread far from each other. Thus, there is no a healthy population in its habitat. The biggest threat to this species is erosion and grazing. The second author was met only five individuals at the locus classicus, and one individual north of Beydağı in 2008.

Lotus malatayicus Ponert (Fabaceae): Figure 2

This species is perennial and showy white flowered. It grows on the southern slope of Beydağı, around Kilizik village. The peasants cultivate grapes and the natural areas are converted to vineyards by them. Therefore, the habitat of the species is disappearing. Today, it became rare species found between the vineyards. Last time we controlled the area in 2009 and five individual was found between the vineyards.



Figure 2. *Lotus malatayicus*

Centaurea brevifimbriata Hub.-Mor (Asteraceae)

This handsome species is native to the south-east of Darende district and grows marly places. Marly soils are easily eroded. The area is open to the wind and water erosions. There is also over-grazing. in the area. In addition, suitable areas are converted to field and the garden continuously. For all these reasons the habitat of the species was declined 85% in last two decades. The last time 15 individuals were count in the 4 km square by the authors.

Chaenorhinum cryptarum (Boiss. et Hausskn.) Davis (Scrophulariaceae): Figure 3

The species is 5-15 cm tall, delicate and annual. It grows in limestone caves. The species was collected first time from north face of Beydağı in 1865 by Haussknecht. Since then, the plant was not found again. Many times we went to the areas of the plant can be found but could not find the plant. Because shepherds use all the caves as animals shelter. Just we thought that the species was extinct, we met it in a small cave which animals could not reach. Last time we went to same cave and 17 individuals were found in 2009.

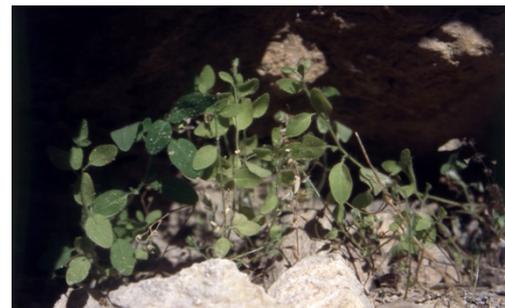


Figure 3. *Chaenorhinum cryptarum* in the cave (habitat)

Phlomis integrifolia Hub.-Morr. (Lamiaceae): Figure 4

This species found 40 km north of Malatya and grows deep soiled grassy place. Due to appropriate climate and soil structure, the natural habitats of the species were converted to the field by farmers in 1990s. *P. integrifolia*, today, has become a rare species found only narrow border of the fields. Thus, it is impossible to determine the number of individuals. According to our observations, the habitat of species has declined 95% in the last 20 years.

As a result, the species mentioned above are CR threat category according to IUCN criteria



Figure 4. *Phlomis integrifolia*

4. Discussion

As the human population increase, due to natural habitats to be converted to fields, vineyards and gardens are declining. In addition, overgrazing, erosion and reduction of rainfall also has negative effects on plant life. Steppes are suitable to create fields, vineyards and gardens. In Malatya province is lack of forest and steppe are common. The last two decades, large area converted to farms in the province by villager. Field studies showed that when individuals reduced, the chance of pollination and seed formation is decreased. Also, observed species cannot reproduce vegetatively. For all these reasons, many endemic species are under threat. As a result, If recovery the species mentioned above will be extinct the near future.

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