

RARE AND ENDEMIC TAXA OF APIACEAE IN TURKEY AND THEIR CONSERVATION SIGNIFICANCE

N. ÖZHATAY¹, E. AKALIN¹, E. ÖZHATAY², S. ÜNLÜ¹

SUMMARY

The family Apiaceae (Umbelliferae) is the eighth largest family in Turkey. It is represented by 101 genera of which 53 have only 1 species and 451 species. After the publication of P. H. Davis' "Flora of Turkey and the East Aegean Islands, vol. 4 in 1972" 4 genera and 53 species are added to the Turkish flora.

Endemism of the family in Turkey is about 33% with 159 species of which 37 are endangered. The following 4 genera are monotypic endemic very locally distributed: *Ekimia bornmuelleri*, *Microscadium minutum*, *Olymposciadium caespitosum* and *Crenosciadium siifolium*. Other endemic genera (end. 100%) are: *Rhabdosciadium* (2 sp.), *Muretia* (1 sp.), *Kundmannia* (2 sp.), *Froriepia* (1 sp.), *Stenotaenia* (1 sp.).

Ferula halophila and *F. orientalis* are recorded in Bern Convention App. I, it means their habitats must be protected.

ÖZET

Apiaceae (Umbelliferae) familyası Türkiye'deki sekizinci büyük familyadır ve 53'ü sadece bir tür taşıyan 101 cinse ait 451 türle temsil edilir. P. H. Davis' "Flora of Turkey and the East Aegean Islands, vol. 4 in 1972" adlı eserinden sonar Türkiye florasına 4 cins 53 tür ilave edilmiştir.

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37'i tehlike altında 159 endemik türle familya'nın Türkiye'deki endemizm oranı %33'tür. Oldukça local 4 monotipik endemik cins bulunur: *Ekimia bornmuelleri*, *Microsciadium minutum*, *Olymposciadium caespitosum* ve *Crenosciadium siifolium*. Diğer endemik cinsler (%100 endemik): *Rhabdosciadium* (2 sp.), *Muretia* (1 sp.), *Kundmannia* (2 sp.), *Froriepia* (1 sp.), *Stenotaenia* (1 sp.).

Ferula halophila ve *F. Orientalis* Bern Sözleşmesi Ek I'de kayıtlı, habitatı mutlaka korunması gereken türlerdir.

Key words: Apiaceae (Umbelliferae), rare species, endemic, Turkey

INTRODUCTION

Turkey is among the richest countries in the world in terms of flowering plant diversity. With around 9300 flowering plant species, the flora is the richest of any country in Europe, North Africa and Middle East. It is more typical of a continent or tropical country than an individual temperate country.

Wild Flowering Plants in Turkey (3, 4, 8):

<u>Family</u>	<u>Genera</u>	<u>Species</u>	<u>Subspecies</u>	<u>Varieties</u>	<u>Total infrageneric taxa</u>
142	1138	8898	1680	1069	10754

Since the publication of the Flora of Turkey, the Turkish flora has received considerable attention from botanists both from Turkey and abroad. The second supplement of "Flora of Turkey and the East Aegean Islands" was published in 2000.

Since 2000, up until end of 2007, 470 taxa have been added based on 350 published papers on the flora of Turkey.

Additional taxa (Özhatay & Kültür 2006, Özhatay et al. 2009):

Genera: 16

Species: 354 /subspecies: 64 /variety: 38

Total infrageneric taxa: 470

TOTAL of the Turkish flora vascular plant are 9252 species and 11224 taxa.

The main reasons for this wealth are as follows:

- A variety of climates
- topographical diversity with marked changes in ecological factors over short distance
- geological and geomorphic variation
- a range of aquatic environments such as seas, lakes and rivers
- altitude variations from sea level to 5000 m
- the situation of the country at the junction of three major phytogeographical regions:

- Euro-Siberian
- Mediterranean
- Irano-Turanian
- There are a number of major mountain ranges in Anatolia which constitute effective barriers and these have further encouraged a greater diversity of species
- Additionally, during many historical periods, Anatolia has served as a passage way between the continents of Europe, Asia and Africa, resulting in the dispersal of a wide variety of plants and animals.

All these factors combined have provided many opportunities for the plants to evolve and differentiate creating the present wealth of species now estimated to be over 9252 taxa, about one third of which are endemics. (The Apiaceae is represented by 101 genera and 482 taxa in Turkey).

MATERIAL AND METHODS

Data were obtained by scanning the Floras, Check-Lists, Red Data Books, publications and our observations (1, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17)

RESULTS AND DISCUSSION

Apiaceae in Turkey

The family of *Apiaceae* with a total of 451 native species of which 159 are endemic in Turkey is remarkable in various respects.

After Graminae (131) and Compositae (126) , it is the thrid largest family Apiaceae (101), of the total number of the native genera and it is eighty largest family number of native species after Compositae (1132), Leguminosae (958), Labiatae(543), Cruciferae (509), Graminae (483), Caryophyllaceae (465) and Scrophulariaceae (463).

It is also the seventh largest family having high number of endemic species after Compositae (509), Leguminosae (375), Scrophulariaceae (241), Labiatae (240), Cruciferae (194) and Caryophyllaceae (187).

It is only family has 4 monotypic and endemic genera in Turkish flora. Photos are mainly from the herbarium specimens of the monotypic genera and their distribution given (2, 5) (Fig. 1-4, maps 1-4).

Turkish genera of Apiaceae are given in the Table 1 arranged in descending.

Result of endangered species of Apiaceae according to IUCN threat categories are:

En (Endangered): 29 (27 endemics / 2 non endemics)

DD (Data deficient): 25 (7 endemics / 17 non endemics)

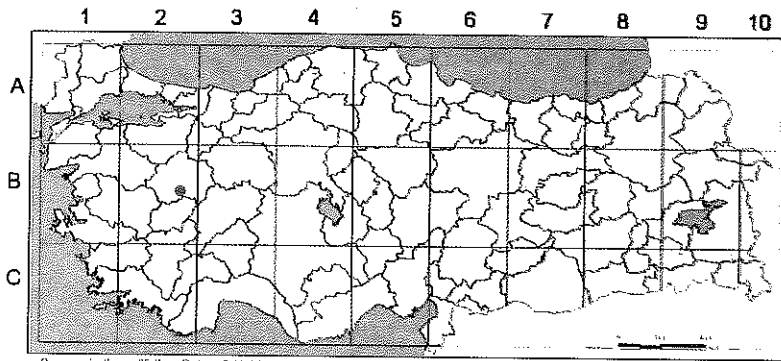
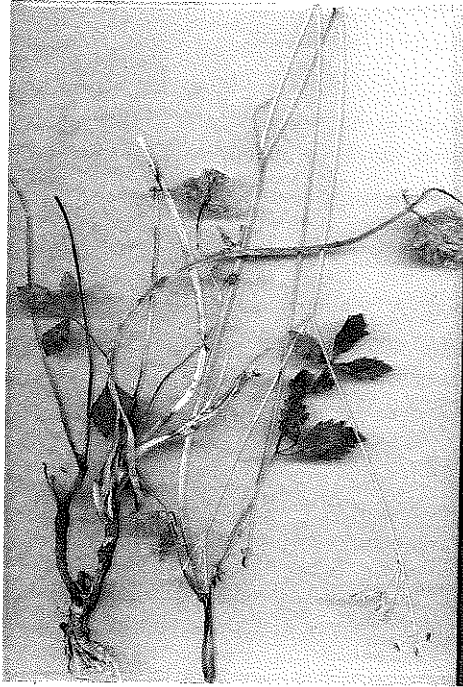
VU (Vulnerable): 88 (39 endemics / 49 non endemics)

CR (Critically endangered): 13 (12 endemics / 1 non endemics)

NL (Not listed): 1 (1 endemics)

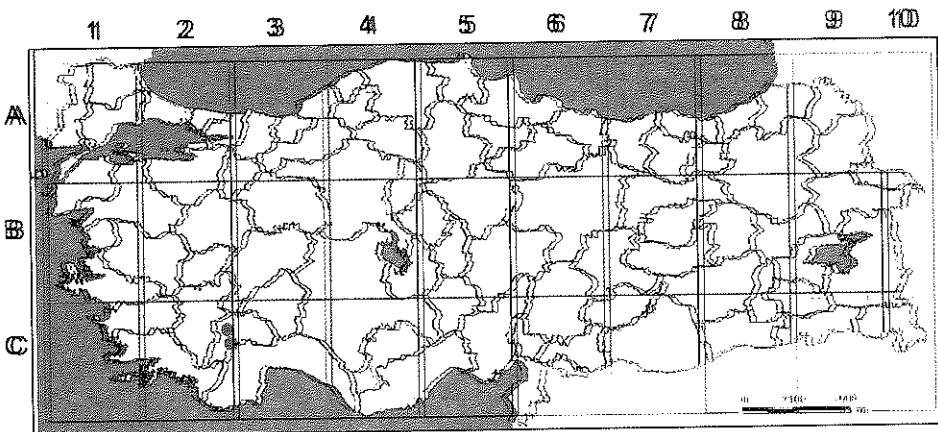
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Monotypic endemic genera in Turkey:



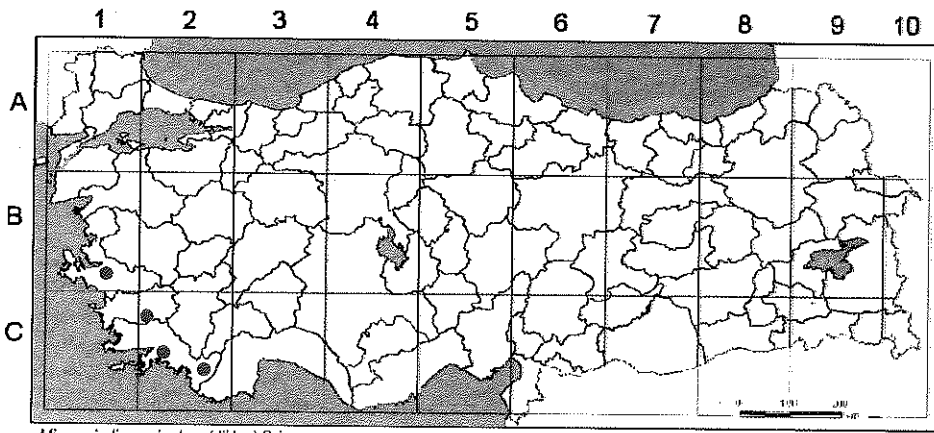
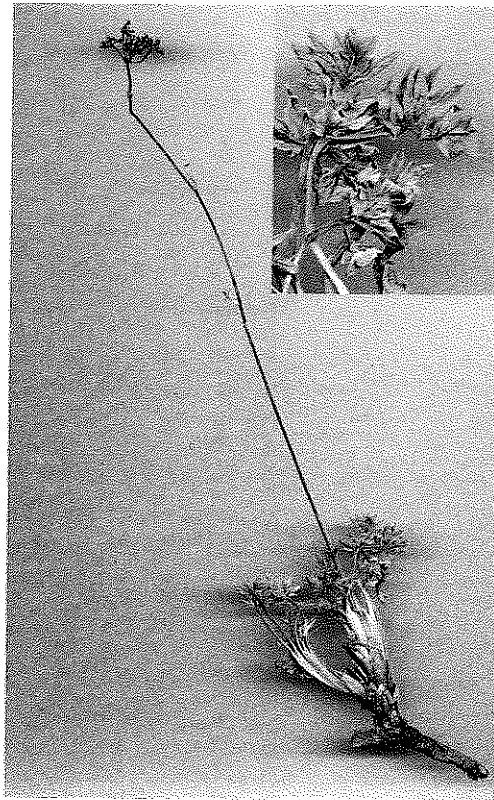
Crenosciadium siifolium Boiss. & Heldr.

Fig. 1. *Crenosciadium siifolium*; Herbarium specimen and distribution map
Localities: Murat Dağı, (Kütahya) ISTE 45913, 57730
Anamas Dağı (Isparta)



Ekimia bornmuelleri (Hub.-Mor. & Reese) H. Duman & M.F. Watson

Fig. 2. *Ekimia bornmuelleri*; Herbarium specimen and distribution map
 Localities: Dirmil-Tefenni (Burdur) ISTE 72127
 Salda Gölü (Burdur)
 Acıpayam (Denizli)

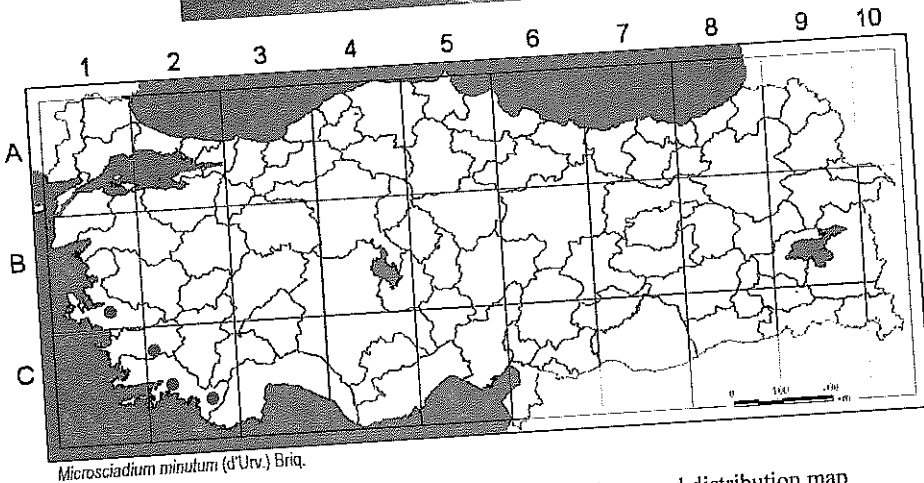
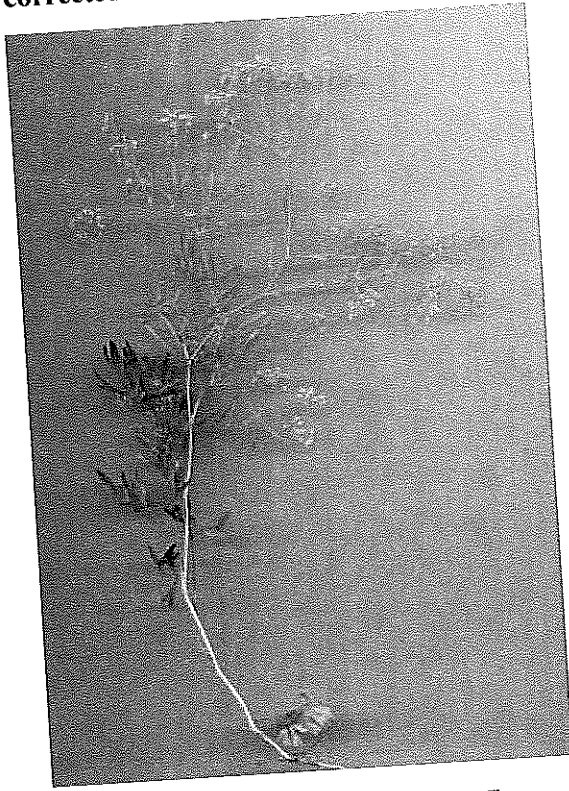


Microsciadium minutum (d'Urv.) Briq.

Fig. 3. *Microsciadium minutum*; Herbarium specimen and distribution map
 Localities: Bafa Gölü (Muğla) ISTE 68846; Fathiye (Muğla)
 Kavaklıdere (İzmir)
 Çine (Aydın)

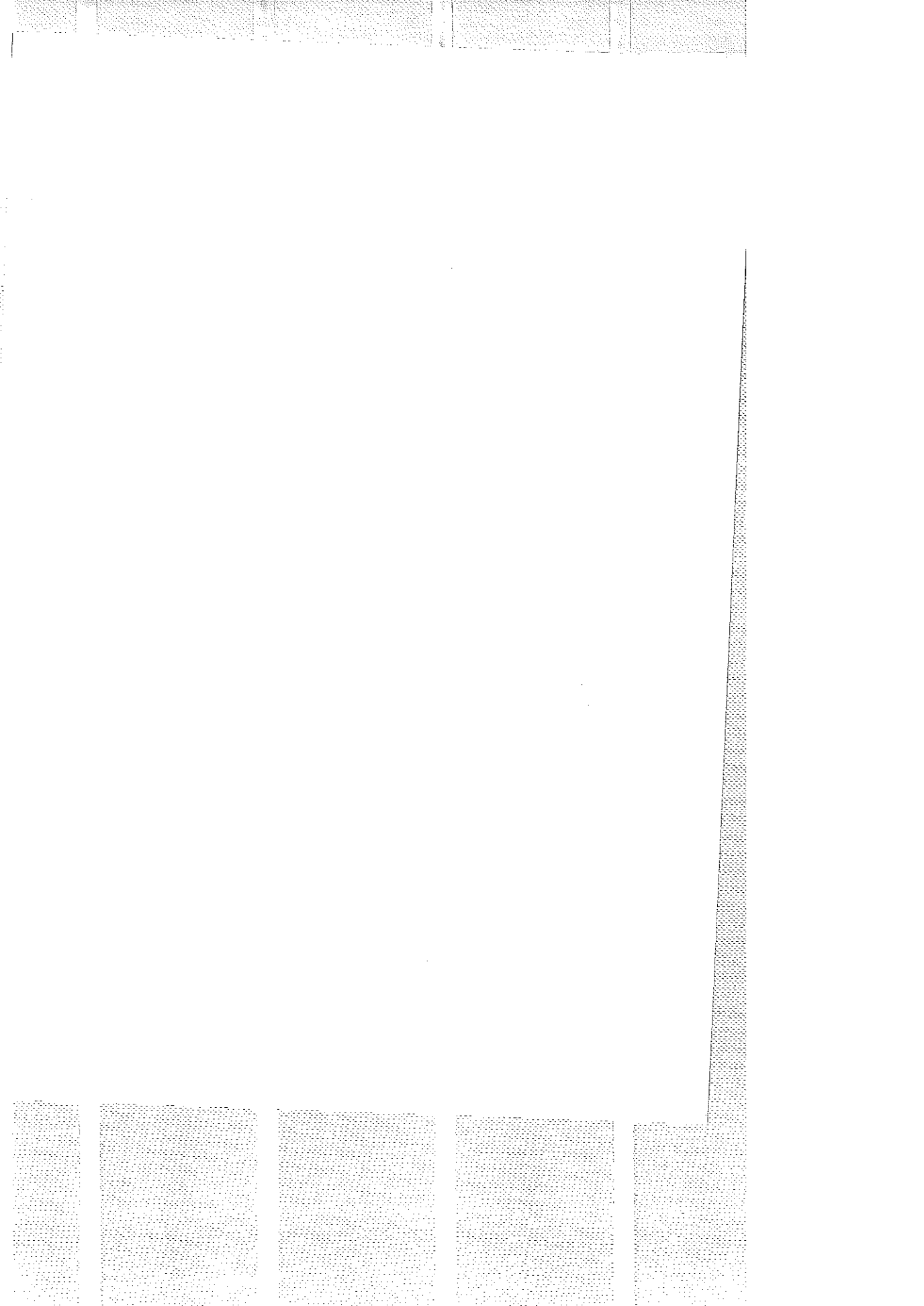
CORRECTION

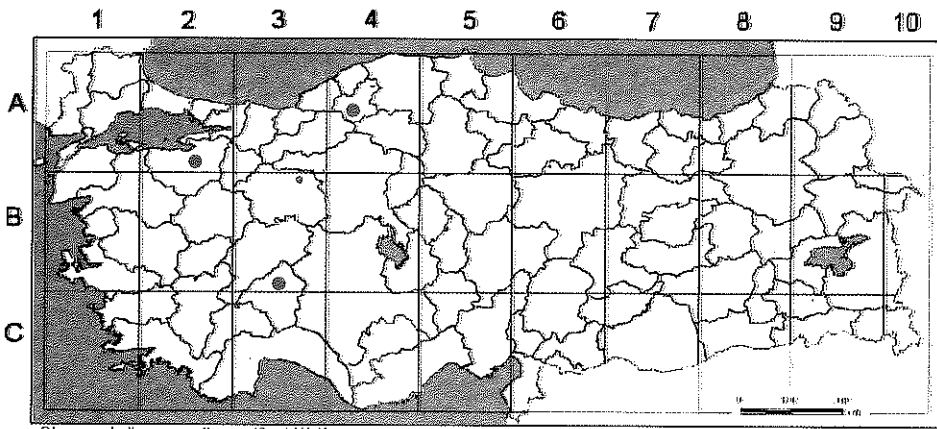
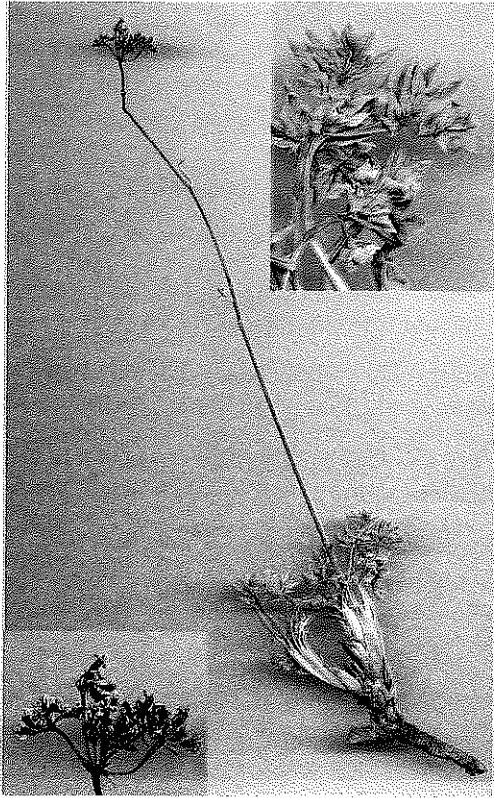
The page 6 was corrected as below.



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Olymposciadium caespitosum (Sm.) Wolf.

Fig. 4. *Olymposciadium caespitosum*; Herbarium specimen and distribution map
 Localities: Uludağ-Kilimli Göl (Bursa) ISTE 20930, 59571, 67266
 Karabük, Keltepe (Zonguldak)
 Eğridir, Barla Dağı (Isparta)

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