

The Liverworts (*Hepaticae*) of Sinop and Its Environs (Ayancık, Boyabat and Gerze)

Barbaros ÇETİN

University of Ankara, Faculty of Science, Department of Biology, 06100, Ankara-TURKEY

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Abstract: In the vegetation period, a total of 45 plant specimens were collected from the area between 1993 and 1995. At the end of this investigation 19 liverworts species were identified, belonging to 13 families and 14 genera. Of these, 8 taxa are new for the A3 grid-square. *Blasia pusilla* L., is reported for the second time from Turkey.

Key Words: *Marchantiopsida*, Liverwort, Flora.

Sinop ve Çevresi (Ayancık, Boyabat ve Gerze) Ciğerotları (*Hepaticae*)

Özet: 1993-1995 yılları arasında vejetasyon döneminde yöreden 45 bitki örneği toplanmıştır. Bu araştırma sonucunda 13 familyaya ait 14 cins ve 19 ciğerotu türü saptanmıştır. Bunlardan 8'i A3 karesi için yenidir. *Blasia pusilla* L., Türkiye'den ikinci kez rapor edilmiştir.

Anahtar Sözcükler: *Marchantiopsida*, Ciğerotu, Flora

Introduction

Although *Pteridophyta* and *Spermatophyta* in Turkey have been thoroughly researched in 10 volumes (1, 2), studies on *Hepaticae* are still continuing (3–5). There are also some publications from the Black Sea region of Turkey (6, 7). There is no single publication covering all the flora of liverworts of Turkey. This study will therefore shed light to the flora of liverworts and contribute to the documentation of the flora of the country. As such, the present investigation was planned to fill in the gap existing in the hepatic flora of this region and prepare a local herbarium of these specimens too. The study area is in the A3 grid-square according to the system adopted by Henderson (8).

The region has the characteristics of a oceanic as well as a Mediterranean climate (9). It is known that Hepatics are better adapted to a damp habitat. In this study area, at higher altitudes, where the oceanic influence can be seen, the amount of annual rainfall is more than that of lower altitudes, where the significant summer dryness, characteristic of the Mediterranean climate, occurs. This verity makes the area interesting. In addition, 800-1200 m. of the study area is next to subalpine region and this is a spoiled area.

Description of the Study Area

The study area, Sinop and its environs (Ayancık, Boyabat and Gerze), is located in the central Black Sea region. The lowest part of the area is the coast around Hamsiloz in Sinop. The highest parts of the area are Çangal Mountain (1586 m.) in Ayancık and Elmadağ (1200 m.) in Gerze (Figure 1).

Material and Method

The specimens of hepatics were collected during the excursions carried out between September and June 1993 to 1995. These were thoroughly cleaned with water so as to remove the mud and have a clear picture of their colour. The material was brought to the laboratory in a small polyethylene bags and separated in the groups. These were then put into special herbarium envelopes without pressing. Latter were left in the light, in a room with no air current. A part of these specimens were left fresh, for a study of their morphological and anatomical features.

The species new for the grid-square is shown with the sign (*) All the specimens are deposited at the herbarium of the Biology Department, Faculty of Science, University

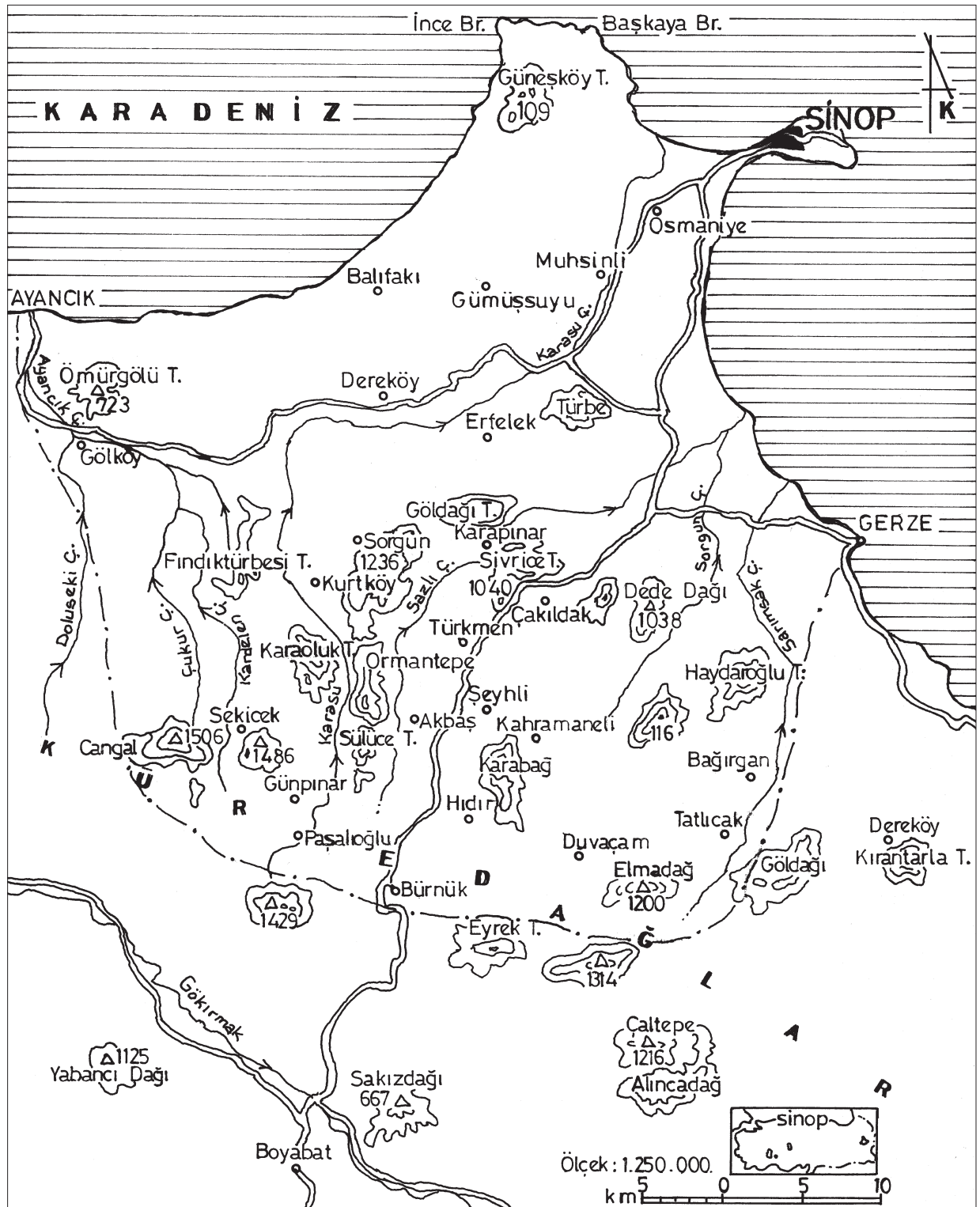


Figure.

of Ankara (ANK). The samples were identified using appropriate literature (10-11). The taxonomic arrangement, numbering and nomenclature follow Grolle (12).

References

- Davis, P.H., Flora of Turkey and the East Aegean Islands 1-9, Edinburg Uni. Press, (1965-1985)
- Davis, P.H., Mill, R.R., Tan, K., (eds.) Flora of Turkey and the East Aegean Islands (Supplement). Vol. 10. Uni. Press, Edinburgh (1988).
- Çetin, B., Checklist of the Liverworts and Hornworts of Turkey. Lindbergia, 14: 12-14, (1988).
- Gökler, I., Öztürk, M., İstanbul ili (A1) Ciğerotları (Marchantiopsida) XII. Ulusal Biyoloji Kongresi, 174-176, (1994).
- Gökler, I., Öztürk, M., Liverworts of Turkish Thrace. Bocconea 5: 319-323, (1996).
- Gökler, I., Öztürk, M., Artvin İli (A4, A5) Ciğerotları (Marchantiopsida) XI. Ulusal Biyoloji Kongresi, 185-194, (1992).
- Gökler, I., Öztürk, M., An Investigation on the Liverworts (Hepaticae) of Black Sea Region. Doğa Tu. Botanik D. 13, 2: 243-248, (1989).
- Henderson, D.M., Prentice, D.T., Contributions to the Bryophyte Flora of Notes Roy. Bot. Gard. Edib., 29: 235-262, (1969).
- Akman, Y., Daget, T., Quelques aspects Synaptiques des Climats de la Turquie Bul. Soc. Long. Geogr. Tome 5, Fasc 3: 270-300 (1971).
- Watson, E.V.P., British Mosses and Liverworts. Cambridge Univ. Press (1981).
- Amel, S., Moss Flora of Fennoscandia, Fasc. 1 Hepaticae. Stockholm, (1981).
- Grolle, R., Hepatics of Europe including the Azores: an annotated list of species, with synonyms from recent literature. J. Bryol. 12: 403-459, (1983).

The Floristic List

MARCHANTIOPSIDA

Conocephalaceae

1- *Conocephalum conicum* (L.) Underw.

A3- Sinop; Ayancık-Çangal forest, Dereyayla, on wet rock, 820m., 17.9.93, Çetin 2008.

Distribution: Common, Europe, Asia, N. Africa, N. America.

Marchantiaceae

*2- *Marchantia paleacea* Bertol

Hamsiloz, on wet rock, 20m., 17.3.93, Çetin 1999.

A4, C12, Europe, N. Africa, Asia, N. and C. America.

3- *M. polymorpha* L.

Ayancık; Akgöl, small water fall, on rock, 1100m., 17.6.94, Çetin 2018.

Common, Europe, Asia, Africa, America, Iskandinavia.

Metzgeriaceae

4- *Metzgeria furcata* (L.) Dum.

Ayancık; Çangal, Karadere, on wet soil, 1180m., 17.9.93, Çetin 2009. Hamsiloz, on bark, 20m., 16.9.93 Çetin

Commen, Europe, Asia, N.Africa, America, Australia.

Pelliaceae

5- *Pellia endiviifolia* (Dicks.) Dum.

Gerze; Elmadağ, Suludüzü forest, on wet soil, 1100m., 18.9.93, Çetin 2013.

Common, Europe, Asia, N. America.

*6- *P. pepiphylla* (L.) Corda

Gerze; Elmadağ, Tatlıca village, on wet soil, 920m., 18.9.93, Çetin 2012. Ayancık; Akgöl, on wet soil, 850m., 23.9.94, Çetin.

A1, A2, A4, C11. Europe, Asia, N. America.

Blasiaceae

*7- *Blasia pusilla* L.

Gerze; Elmadağ, Tatlıca village, on wet soil, 900m., 18.9.93, Çetin 2011.

A4, Europe, Asia, N. America.

Codoniaceae

*8- *Fossombronia pusilla* (L.) Nees

Hamsiloz, on wet soil, 30m., 16.9.93., Çetin 2002.

A4, B6, C11, C12, Europe, Asia, N. America

Plagiochilaceae

*9- *Plagiochila asplenioides* (L.) Dum.

Ayancık; Akgöl, near water fall on rock, 1050m., 17.6.94, Çetin 2017.

A2, A4, A5, Europe, Asia, N. America, Scandinavia.

10- *P. porellodies* (Torey ex Nees) Lindenb.

Ayancık; Çangal forest, on soil, 1180m., 17.7.93, Çetin 2010.

A2, A3, A4, B6, C11, Europe, Asia, N. America.

Geocalyceae

11- *Lophocolea bidentata* (L.) Dum.

Ayancık; Çangal, on bark, 1100m., 16.6.94, Çetin 2016. Hamsiloz, on bark, 20m., 16.9.93, Çetin 2003.

A1, A2, A3, A4, B6, Europe, Asia, N. America.

12- *L. minor* Nees

Gerze; Elmadağ, on wet soil, 1200m., 18.9.93, Çetin 2014.

A1, A2, A3, A4, Europe, Asia, Iskandinavia.

*13- *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dum.

Ayancık; Akgöl, on wet soil, 900m.,
23.9.94, Çetin 2020.

A4, A6, Europe, Asia, N. America

Calypogeiceae

*14- *Calypogeia fissa* (L.) Raddi

Hamsiloz, on soil, 25m., 16.9.93, N.
America.

Radulaceae

*15- *Radula complanata* (L.) Dum.

Ayancık; Çangal forest, Karadere, on soil,
1180m., 17.9.93, Çetin 2007. Elmadağ, on
bark, 1200m., 18.9.93, Çetin 2007a.

A1, A2, A4, B6, C11, Europe, Asia, N.
America, Scandinavia.

Porellaceae

16- *Porella platyphylla* (L.) Pfeiff.

Ayancık; Akgöl, on rock, 1000m.,
17.6.94, Çetin 2015. Elmadağ, on bark,
850m., 18.9.93, Çetin 2015a.

Common, Europe, Asia, K. Africa, N.
America. Scandinavia.

Frullaniaceae

17- *Frullania dilatata* (L.) Dum.

Boyabat; Çangal 850m., on bark,
18.6.94, Çetin 2019. Hamsiloz, on rock,
25m., 16.9.93, Çetin 2021. Gerze, Elmadağ,
on bark, 500m., 18.9.93, Çetin 2023.

Common, Europe, Asia, N. America,
Scandinavia.

18- *F. tamarisci* (L.) Dum.

Hamsiloz, on soil, 16.9.93, Çetin 2005.

A1, A2, A3, A4, B6, C13, Europe, Asia,
N. America.

Lejeuneaceae

19- *Lejeunea cavifolia* (Ehrh.) Lindb.

Gerze; Başaltı district, on soil, 500m.,
18.9.193, Çetin 2006a. Ayancık; Dereyayla,
on soil, 820m., 17.9.93, Çetin 2006.
Hamsiloz; on soil, 30m., 16.9.93, Çetin
2022.

Common, Europe, Asia, N. America.